Labor force and Demography of inequality

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Outline

- Labor force
- Demographic changes and labor outcomes
- National transfer accounts
- Demography of inequality
- Inequality and mobility

Labor force

- Introduction
- Measuring the labor force
- Substantive uses of labor force measures
- Theoretical considerations
- Additional analytic approaches
- Research directions

Introduction

- The labor force refers to all members of the population above a minimum age
  - They are working or looking for work
  - Also known as economically active population
- Labor force is a measure of labor supply
  - People who produce goods and services whose value is counted in the Gross National Product

Importance of labor force

- Labor force is related to production and consumption

- Size, composition and changes of labor force are of significant interest to
  - Demographers
  - Sociologists
  - Economists
  - Policy makers

Measuring the labor force

- Important measure in demography and economics to analyze labor force is the dependency ratio
  - Numerator: people below age 15 plus people 65+
  - Denominator: people aged 15–64
  - Multiplied by 100
  - Interpretation: number of dependents per 100 workers
  - Youth dependency ratio: only <15 in numerator
  - Old-age dependency ratio: only 65+ in numerator

Assumptions

- Assumptions of demographic ratio interpretation
  - All adults in working ages (15–64) are at work
  - No one younger than 15 nor older than 65 is working

Dependency ratio can increase

- Increase in number of dependents per worker
- Rise in fertility
- More people retiring earlier
- More people living longer after retiring

Dependency ratio can decrease

- Larger denominator
  - Influx of working-age migrants
- Smaller numerator
  - Decline in fertility
  - High mortality affecting more children or the elderly

Business cycle

- Understanding the business cycle in modern economies is important for policymakers
  - Estimate number and characteristics of unemployed persons in working ages
  - Examine racial differences in unemployment over the business cycle
  - For this purpose, we would need to measure specific subgroups in the denominator, such as
    - By unemployment status
    - By race/ethnicity

Administrative records

- Administrative records are insufficient for measuring unemployment
- Records of unemployment compensation program undercount unemployed workers
  - Those who have exhausted their benefits or who never qualified for benefits
  - New entrants looking for their first jobs are ineligible for compensation
  - Some firms and industries are not covered by the program
- Adults who attend school, are ill, retire early... are not counted as employed or unemployed

Measuring unemployment

- The labor force concept was developed to measure unemployment
- During the Great Depression of the 1930s, U.S. demographers and statisticians began a series of studies attempting to quantify unemployment
- Objective and replicable method was developed
  - Questions identify if adults over the minimum working age (16 in the US, 15 in others) were employed, unemployed, or not in the labor force (NILF)
  - Labor force measure has no maximum age

Questions for unemployment

- Person is **employed** if "yes" to any of these
  - Was individual at work for at least one hour for pay or profit during the week preceding the survey?
  - If no, was individual working at least 15 hours unpaid in a family-owned enterprise?
  - If no, did individual have a job, but was not at work (e.g., vacation, temporarily ill)?
- Person is **unemployed** if "yes" to any of these
  - Was individual available for work and actively looked for work during the past four weeks?
  - Was individual waiting for result of job search?
  - Was individual waiting to report to a job within the next month?
- Person is **NILF** if not classified above
  - e.g., retirement, disability, school, home responsibilities

Unemployment rate

- Employed and unemployed are considered the labor force
- Unemployment rate (multiplied by 100)
  - Numerator: unemployed
  - Denominator: employed and unemployed
  - Interpretation: percentage of labor force that is actively seeking employment

Labor force participation rate

- Numerator: employed and unemployed
- Denominator: working age population
- Multiplied by 100
- It can be estimated by
  - Sex
  - Age groups
  - Race/ethnicity
  - Educational attainment
  - Geographic areas: urban/rural, states, counties, cities

Employment-population ratio

- Numerator: employed
- Denominator: working age population
- Multiplied by 100
- Employment-population ratio and unemployment rate can rise at the same time
  - It is possible to have more employed and unemployed people when the labor force grows

US unemployment rates' trends

- In the United States, male unemployment rates are higher than women's rates
- African-American unemployment are twice as high as those for whites
- Hispanic unemployment rates are intermediate between African-American and white unemployment rates

Limitations of LF measures

- Unemployment rate
  - It omits discouraged workers who are not seeking work because they believe that no work is available
- Employment definition
  - Too generous: includes those who worked as little as one hour of paid employment
  - Too restrictive: omits work of volunteers, homemakers, caregivers
- Labor force participation rates
  - Inmates of institutions and military are excluded even if they receive wage
  - Young people have lower rates due to full-time school attendance and childbearing
- Employment-population ratio
  - In an aging population with declining fertility, this ratio rises as an effect of changing age structure

Substantive uses of labor force measures

- Labor force and level of economic development
- Macro-level studies
- Micro-level studies

Labor force and level of economic development

- Comparing labor force participation rates across countries is affected by demographic differences
  - Age structure
  - Social structures
  - Presence of social security system

LF rates and development

- Labor force participation rate for a demographic group or for an industry is a proxy for more economic development
  - Services that were performed at home enter the market economy
  - Recent increases in female labor force participation
  - Women in the labor force may intensify occupational segregation
  - More generous provision of disability payments and retirement income
  - Assumption that economic development leads to separation of workplace from home is now questioned

Macro-level studies

- Macro-level analysis of labor force
  - Size, composition, changes
  - Size of labor force relative to entire population
  - Census and survey data for a state or nation
- Examples
  - Demographic dividend refers to the potential for economic growth from the relative increase of workers in the labor force due to declining fertility
  - Ecological studies may employ local labor force participation rate or unemployment rate as independent variables

Micro-level studies

- Micro-level studies use data for individuals
  - Typically from surveys or census microdata samples
  - E.g., Current Population Survey
  - Measure association of a person's labor force status with other characteristics, such as sex, age, race/ethnicity, level of education, language, place of birth, marital status, fertility, migration history
- These studies are used to understand differences of labor force behavior among demographic groups

Theoretical considerations

- Demographic transition theory and economic development theory
- Human capital theory
- Labor market discrimination
- Fertility and women's labor force participation

Demography and economics

- Demographic transition theory is assumed to be more or less linear
  - Start from a stable population with high fertility and high mortality
  - Followed by decline in mortality
  - Later followed by a decline in fertility
  - Complete in a stable population with low birth and death rates
- How fast this happens and under what circumstances is a function of many factors, such as economic development

Human capital theory

- Human capital theory can be used to understand why some workers are more likely to be employed, have higher income, have better jobs
  - Same variables used to predict income may be used to predict labor force participation
  - Personal characteristics and endowments
  - Education, training, migration...
- Concept of social capital
  - Effect of social networks (e.g., families, churches, classmates) in helping to match workers with jobs

Labor market discrimination

- Theories of labor market discrimination examine racial, ethnic, and gender differences in labor force participation rates, occupational attainment, or earnings
  - Human capital is insufficient to explain differences
  - Divide labor supply (workers) by more/less preferred workers (race, sex...)
    - Statistical discrimination
  - Institutional equity and affirmative action policies seek to overcome statistical discrimination
    - It is rare to examine discrimination directly, so we can infer it when differences persist even with several controls

Fertility and women's labor force

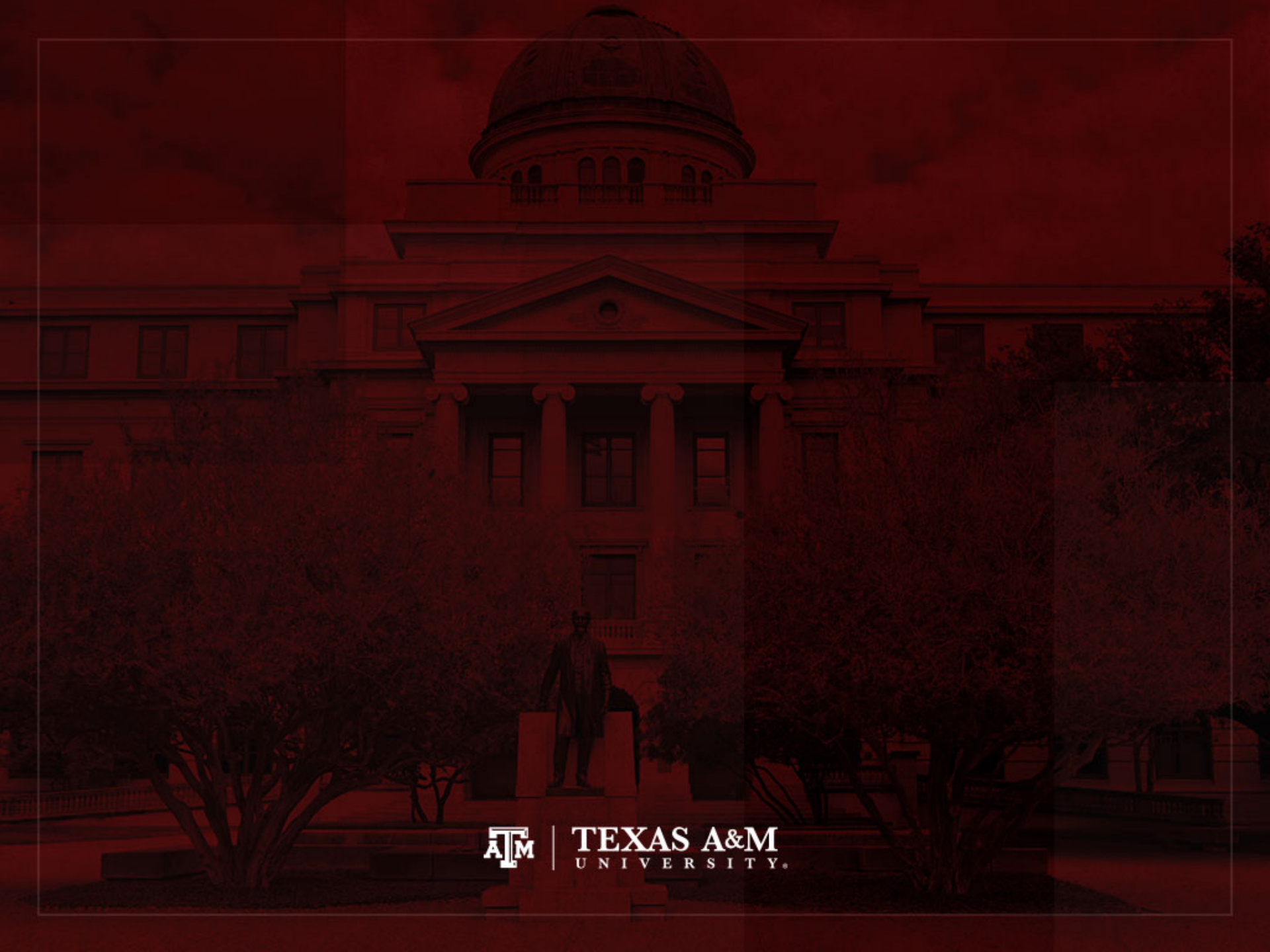
- Why some women enter the labor force?
  - Structural characteristics of the economy help to shape the general demand for women's labor
  - Women's family responsibilities are intervening variables
  - Variations by generation, ethnicity, immigrant status, religion
  - Child care availability
  - Possibility of husbands/wives to work different shifts
- Reverse (mutual) causality between fertility and female labor force participation

Additional analytic approaches

- Tables of economically active life
  - Generate multiple increment-decrement tables to model not only effect of mortality, but also the effect of entries into and exits from the labor force
- Underemployment
  - Refining the employment rate
- Longitudinal measures
- Informalization and its effects on labor force indicators

Research directions

- Age structure and retirement
- Youth labor force attachment
- The future of work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Demographic changes and labor outcomes

- Within the labor force (15–64 years of age)
  - Population is getting older and better educated in Mexico and Brazil with regional variation
  - Age and education increase earnings
- **Are there other effects of changing age and educational compositions on male earnings?**
- Larger proportion of older and more educated males
  - Generates competition in the labor market
  - Negative associations with earnings of competing workers

Source: Amaral et al. 2015.

Previous studies

- **Human capital**
  - Schooling and work experience improve earnings (Mincer 1974)
  - Those least likely to attend college benefit most from it (Brand, Xie 2010)
- **Baby boom cohort**
  - Cohort sizes depress earnings, effects increase with education (Bloom et al. 1987; Easterlin 1978; Freeman 1979; Welch 1979)
  - Effects do not diminish with age and persist after retirement (Berger 1985; Sapozknikov, Triest 2007)
- **More effects of cohort size**
  - **U.S.:** improves wages, employment, labor force participation (Autor et al. 1998; Katz, Autor 1999; Katz, Murphy 1992; Shimer 2001)
  - **OECD:** depresses youth employment (Korenman, Neumark 2000)
  - **Europe:** depresses employment and earnings (Biagi, Lucifora 2008; Brunello 2010; Skans 2005)
    - Stronger for those with secondary education (Moffat, Roth 2016)

Main contribution

- Few studies addressed how demographic and educational compositions affect earnings in developing countries
  - **China:** significant cohort-size effects for rural, least educated, and males (Fan et al. 2015)
  - **Brazil:** increasing concentration of educated workers (Queiroz, Golgher 2008), but less is known about effects on earnings
- **Mexico and Brazil**, compared to developed countries
  - Worse income inequality
  - Faster changes in age composition
  - Lower educational attainment
  - More regional variation

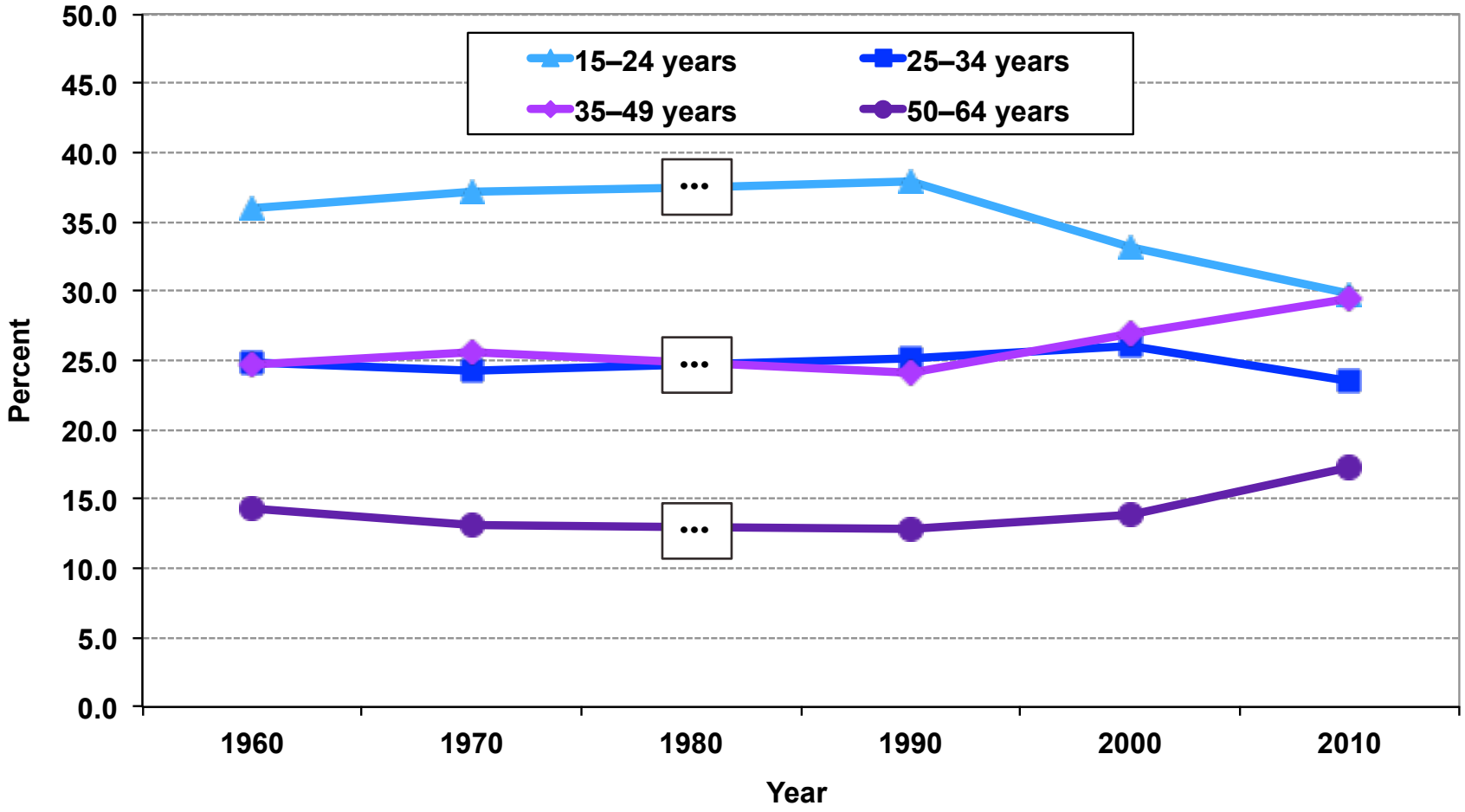
Mexico & Brazil

- **Fertility decline** is contributing to changes in age composition (CONAPO 2004, 2014; IBGE 2012)

Total Fertility Rate	1970	2010
Mexico	6.8	2.3
Brazil	5.8	1.9

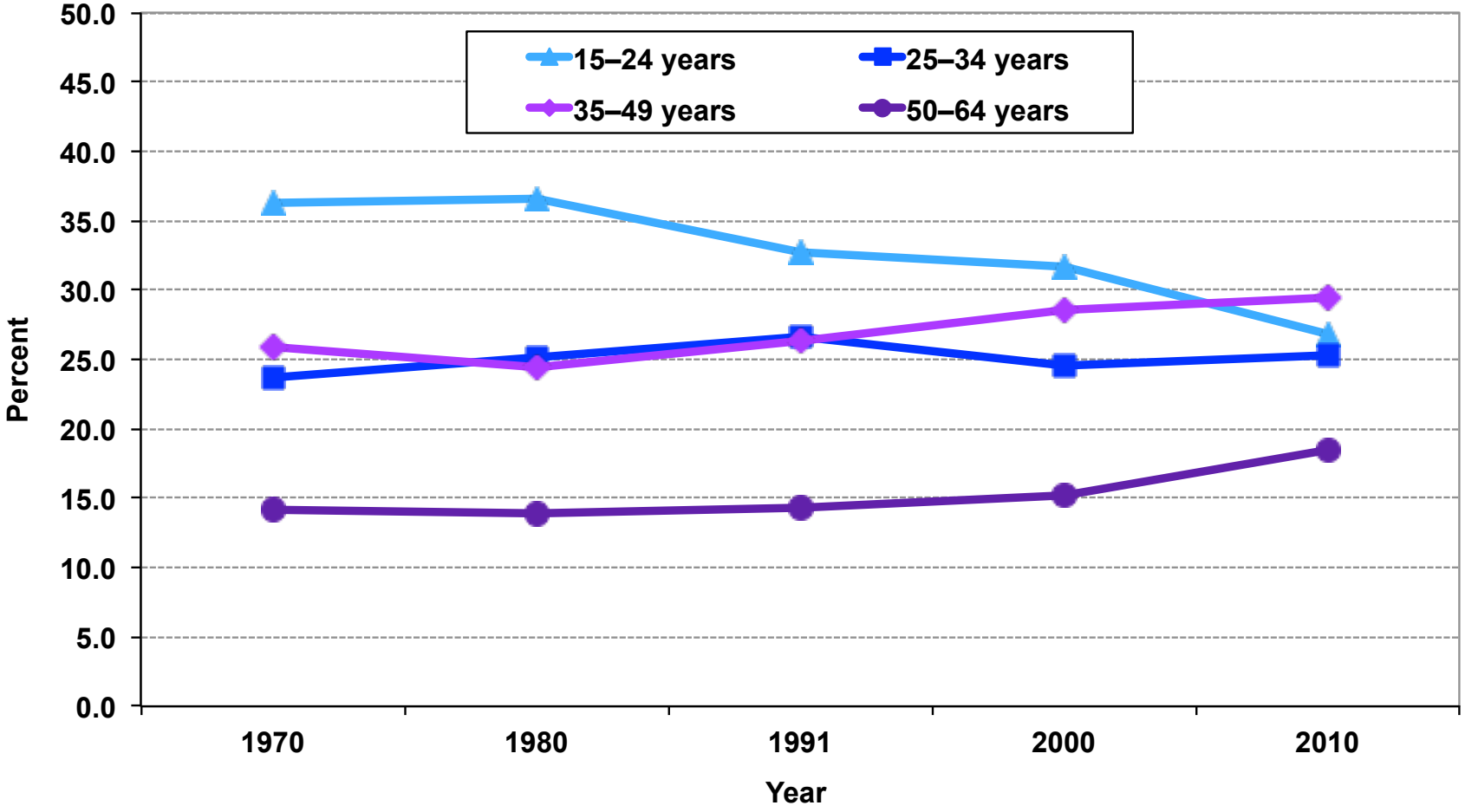
- **Educational expansion** began late and has a long way to go (Barro, Lee 2001; Marcílio 2001, 2005; Rios-Neto, Guimarães 2010; Lustig et al. 2013)
- Improvement in educational attainment coincides with decline in family size and school-age children (Lam, Marteleto 2005, 2008)

Male age composition Mexico, 1960–2010



Source: 1960, 1970, 1990, 2000, and 2010 Mexican Demographic Censuses.

Male age composition Brazil, 1970–2010



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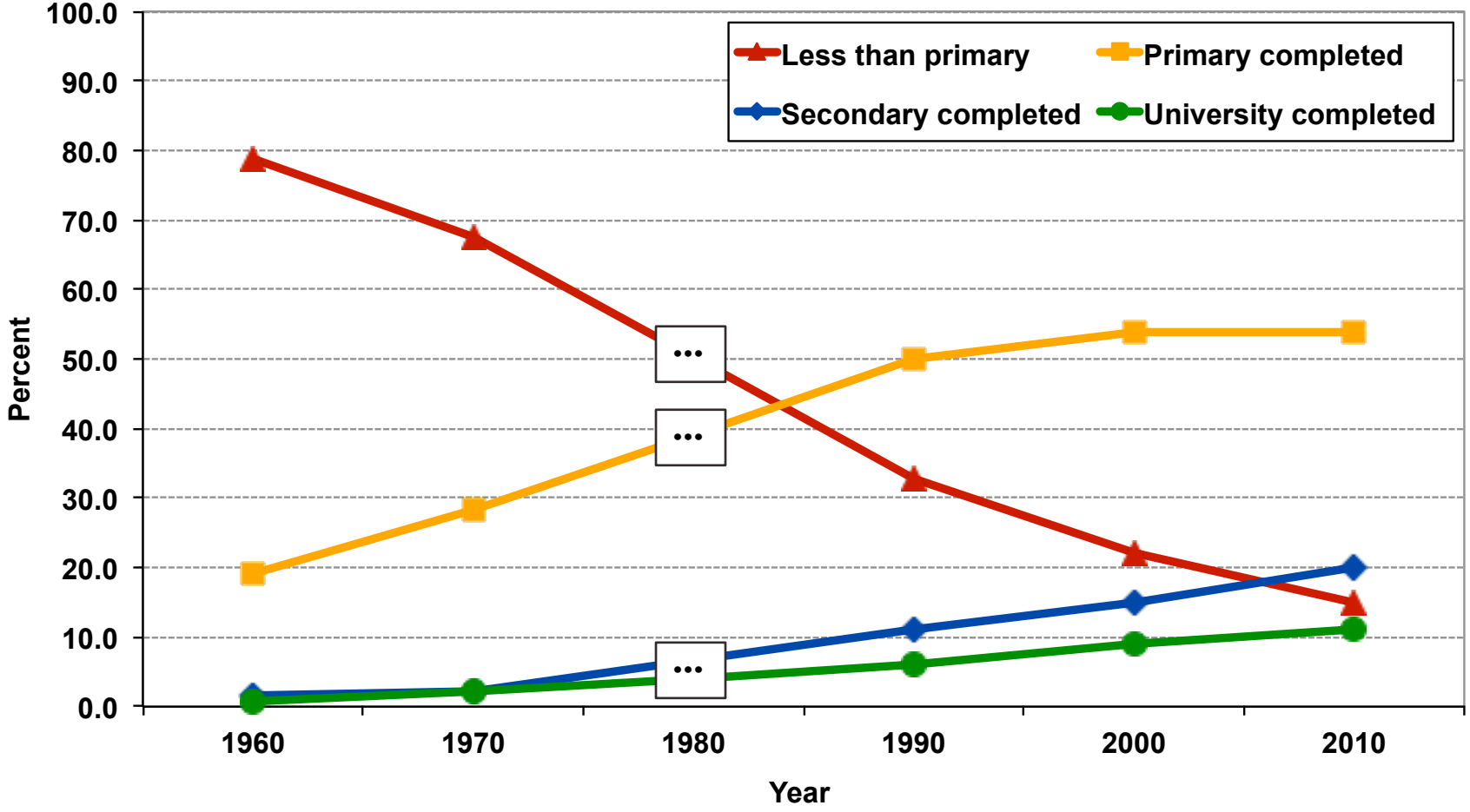
Male education composition Mexico, 1960–2010



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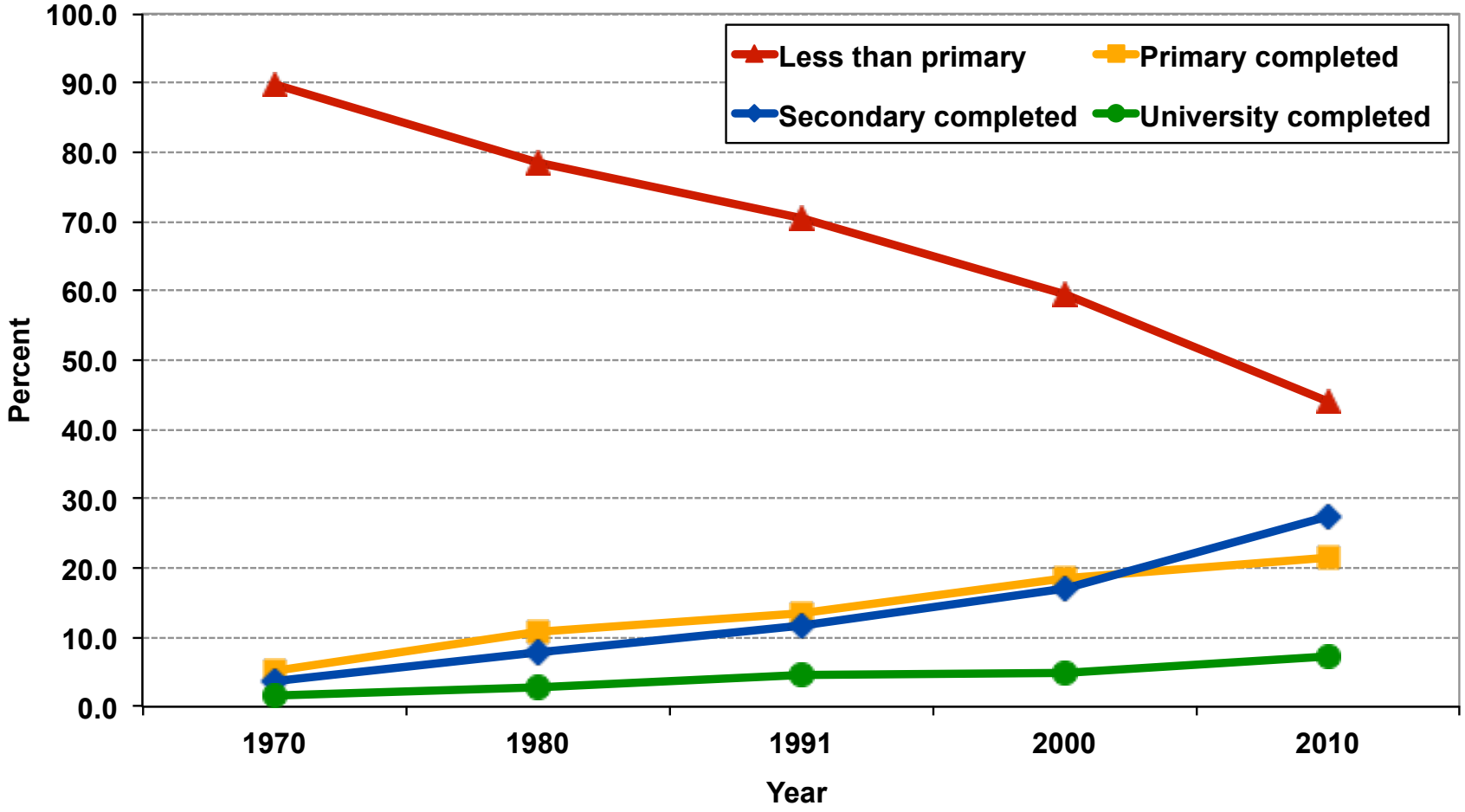
Male education composition Brazil, 1970–2010



Source: 1970, 1980, 1991, 2000, and 2010 Brazilian Demographic Censuses.

Micro-data

	Mexico	Brazil
Years	1990, 2000, 2010	1970, 1980, 1991, 2000, 2010
Minimum comparable areas	2,456 municipalities (consistent boundaries only for last three censuses)	502 micro-regions
Earnings	All occupations	Main occupation
Age	Youths (15–24) Young adults (25–34) Experienced adults (35–49) Older adults (50–64)	
Education	Less than primary completed Primary completed Secondary completed University completed	
Age-education	16 age-education groups	

Aggregate-level data

- **Data** is aggregated by year, area, and age-education groups
  - Mexico: 3 years * 2,456 municipalities * 16 age-education groups
  - Brazil: 5 years * 502 micro-regions * 16 age-education groups

- Cells with less than 25 people receiving income were excluded
  - Mexico: 82,604 observations remained
  - Brazil: 32,201 observations remained

- **Only male population**
  - Labor force participation is not driven by level of earnings, fertility decline, and changes in educational attainment

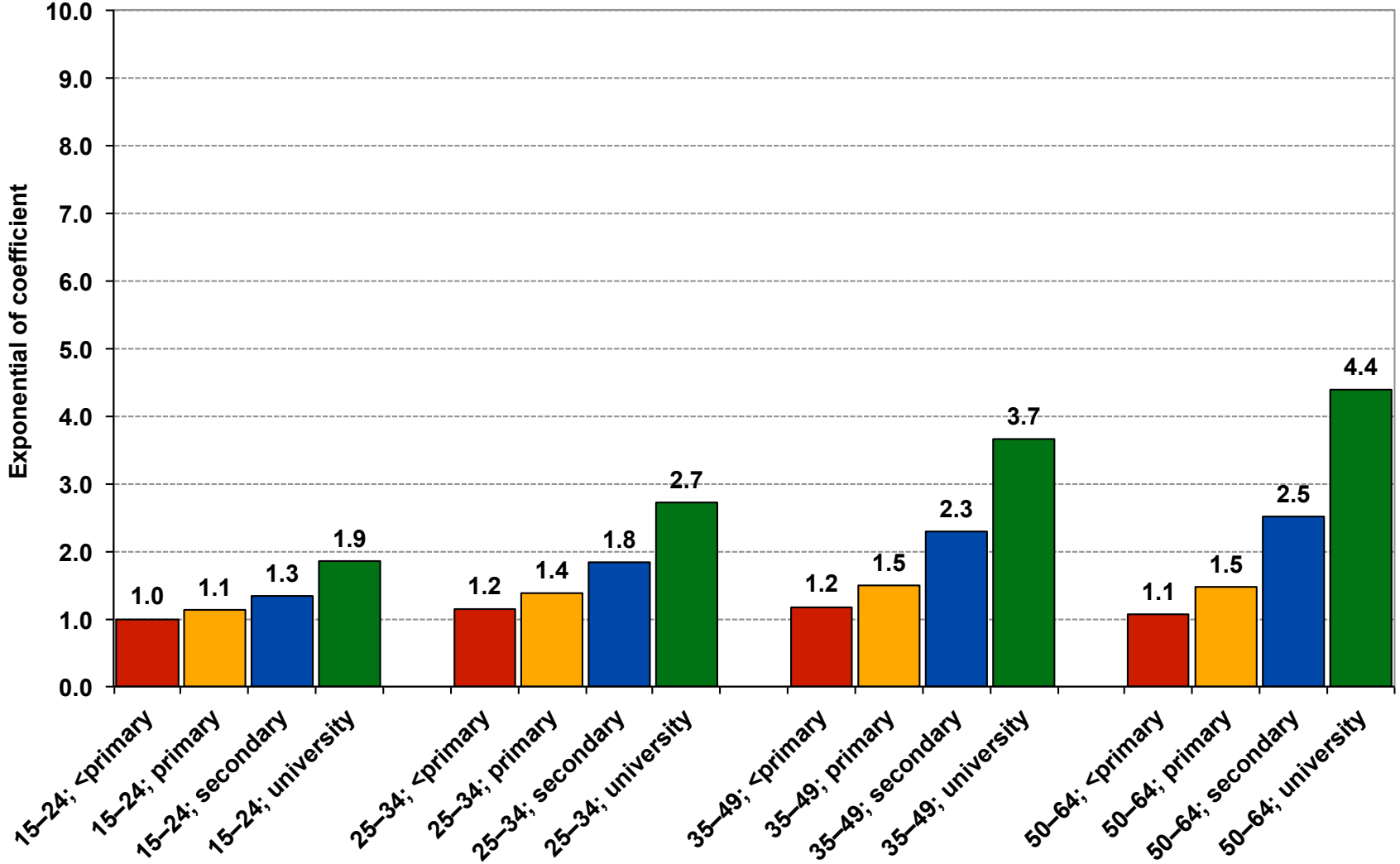
Data setup

Year	Area	Age-education group G11–G44	Log of mean earnings $\log(Y_{git})$	Distr. of male pop. P11–P44	P11	P12	P13	P14	...	P44	Num. of obs.
1970	110006	15–24 years & < primary	5.80	0.221	0.221	0	0	0	...	0	2,016
1970	110006	15–24 years & primary	6.02	0.102	0	0.102	0	0	...	0	927
1970	110006	15–24 years & secondary	6.57	0.007	0	0	0.007	0	...	0	62
1970	110006	15–24 years & university	7.58	0.001	0	0	0	0.001	...	0	11
...	...	...	...	...	...	...	...	...	...	...	...
1970	110006	50–64 years & university	7.91	0.002	0	0	0	...	...	0.002	15
...	...	...	...	...	...	...	...		...	...	...

Fixed effects models

	Baseline model	Composition model
Dependent variable		
Logarithm of the mean real monthly earnings by age-education group, area, and time	$\log(Y_{git})$	$\log(Y_{git})$
Independent variables		
16 age-education indicators * time	$(G_{11}–G_{44}) * \theta_t$	$(G_{11}–G_{44}) * \theta_t$
Distribution of male population into 16 age-education groups * time		$(P_{11}–P_{44}) * \theta_t$
Area-time fixed effects	α_{it}	α_{it}

Effects of age-education indicators (G_{11}–G_{44}) Baseline model, Mexico, 2010



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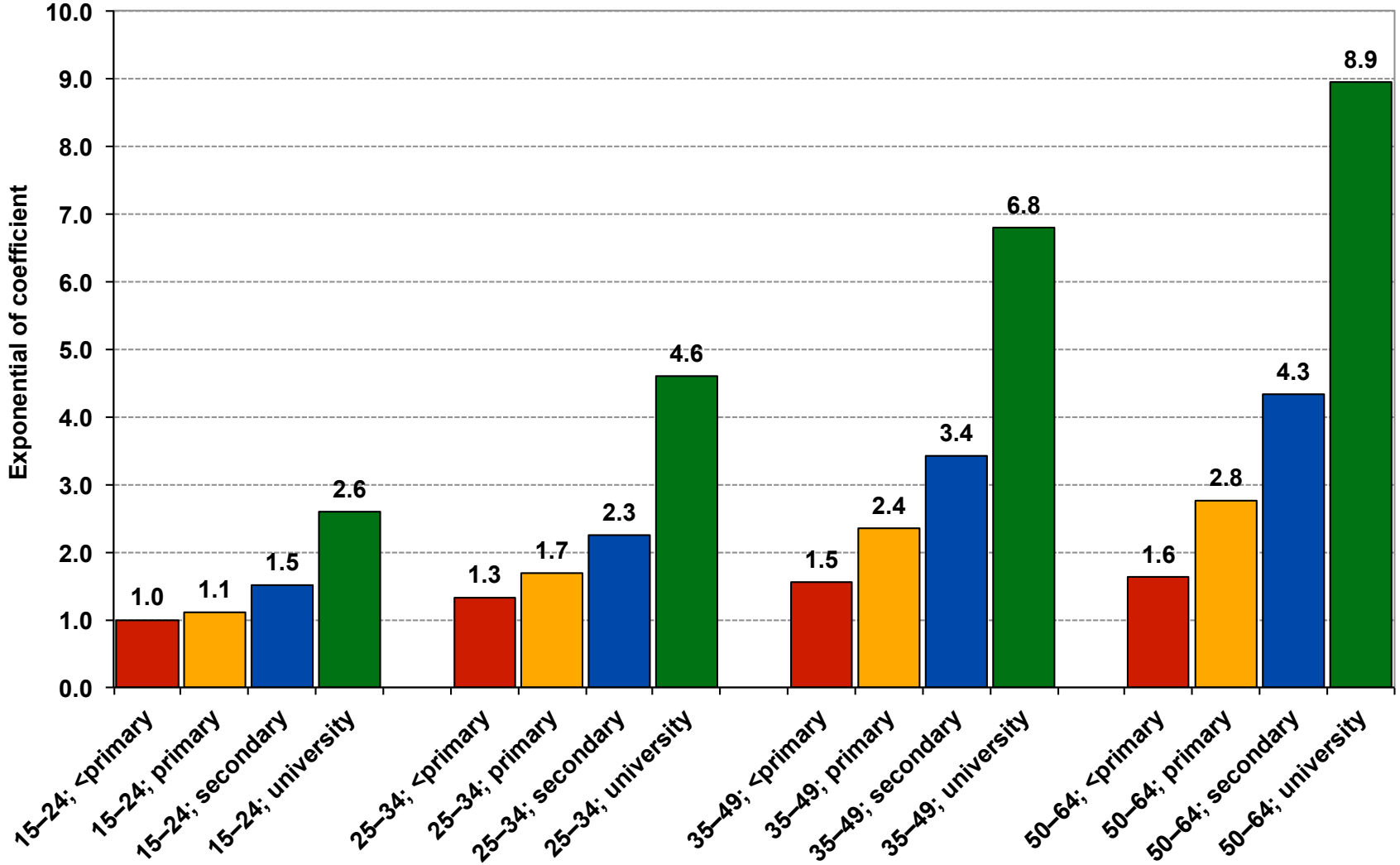
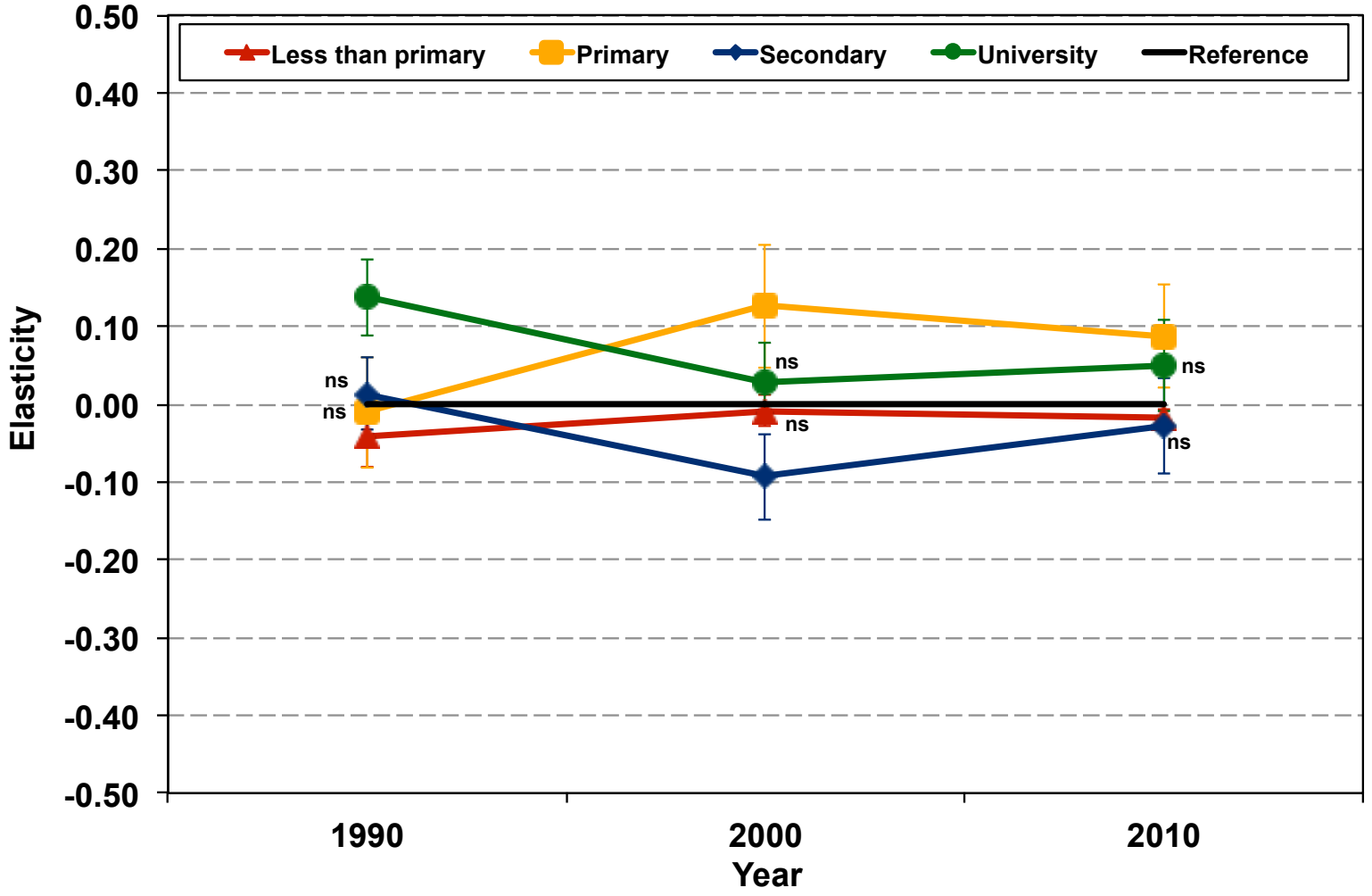
Effects of age-education indicators (G_{11}–G_{44}) Baseline model, Brazil, 2010



Source: 1970, 1980, 1991, 2000, and 2010 Brazilian Demographic Censuses.

Effects of group proportions (P_{21}–P_{24}) on earnings, Mexico, 1990–2010

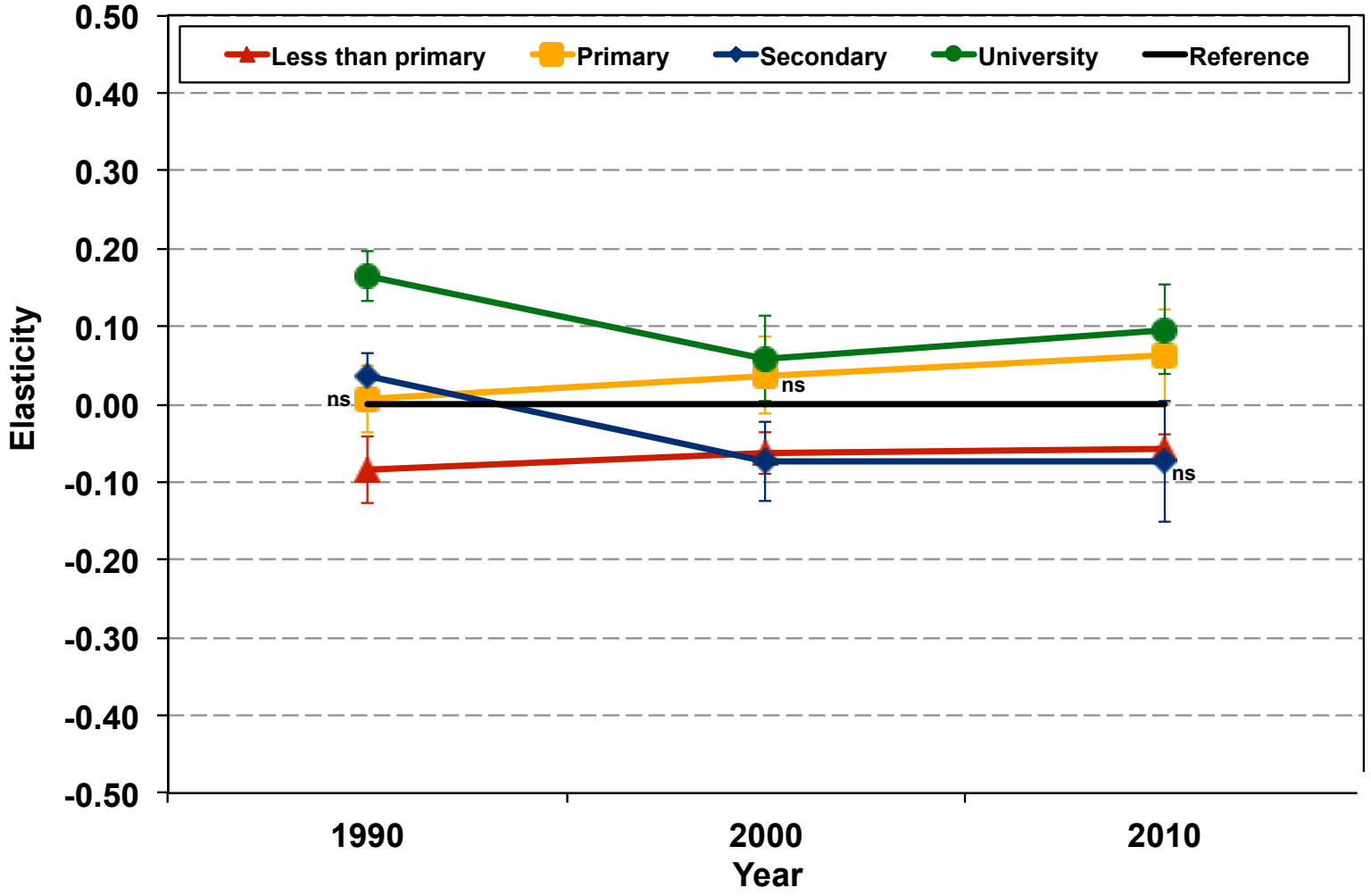
25–34 years



Source: 1990, 2000, and 2010 Mexican Demographic Censuses.

Effects of group proportions (P_{31}–P_{44}) on earnings, Mexico, 1990–2010

35–49 years



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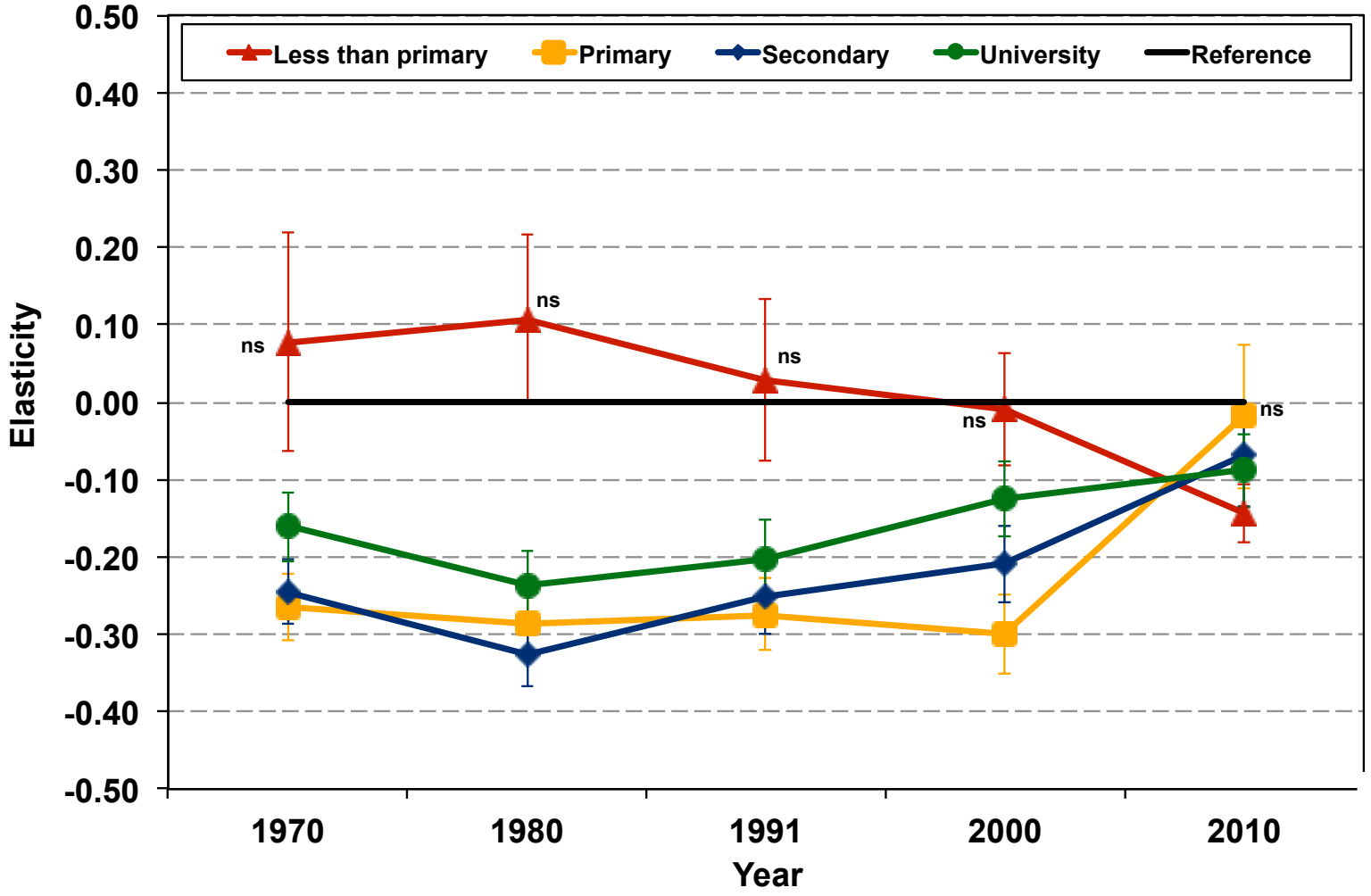

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Effects of group proportions (P_{31}–P_{34}) on earnings, Brazil, 1970–2010

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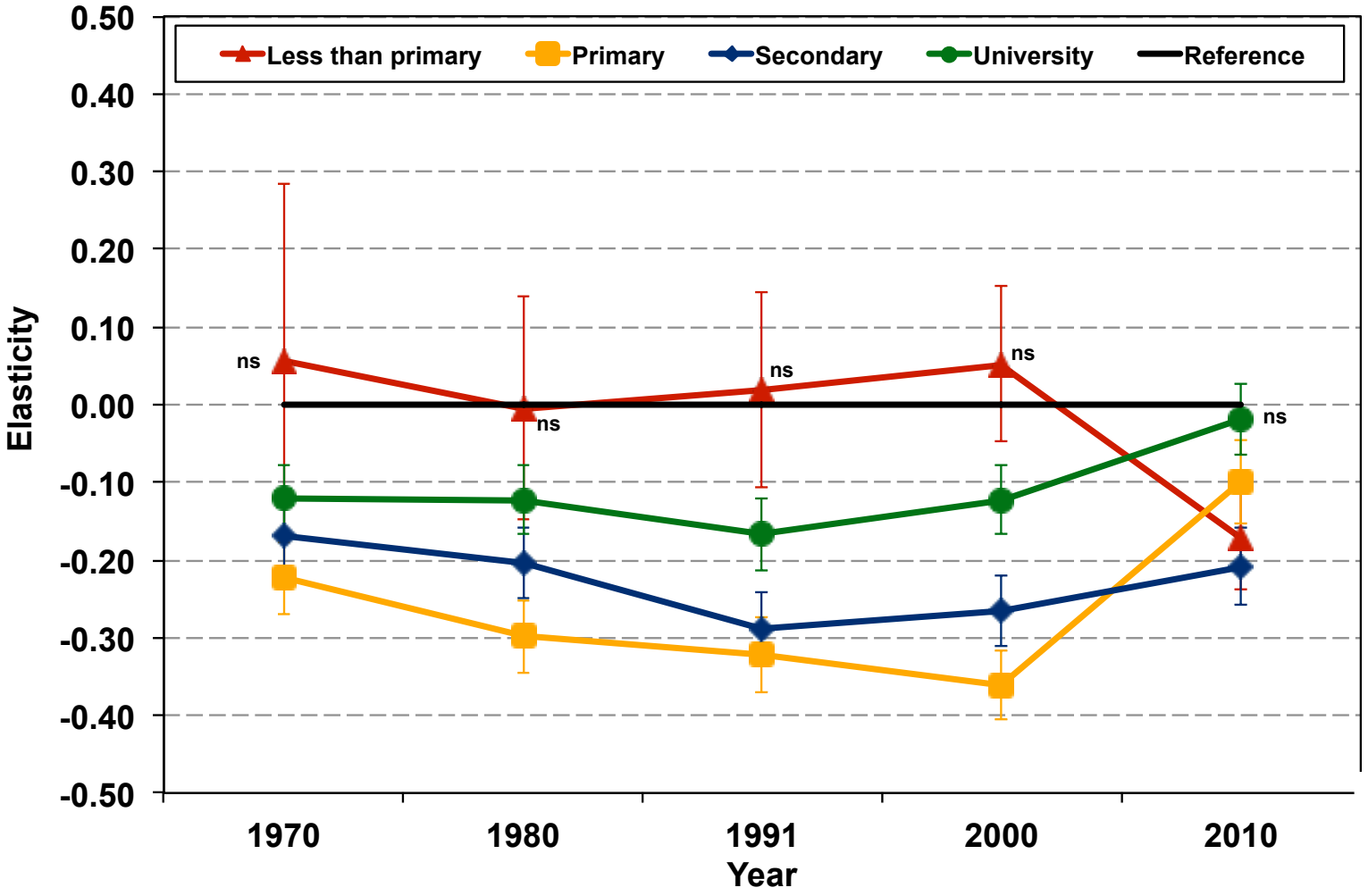


Source: 1970, 1980, 1991, 2000, and 2010 Brazilian Demographic Censuses.

Final considerations

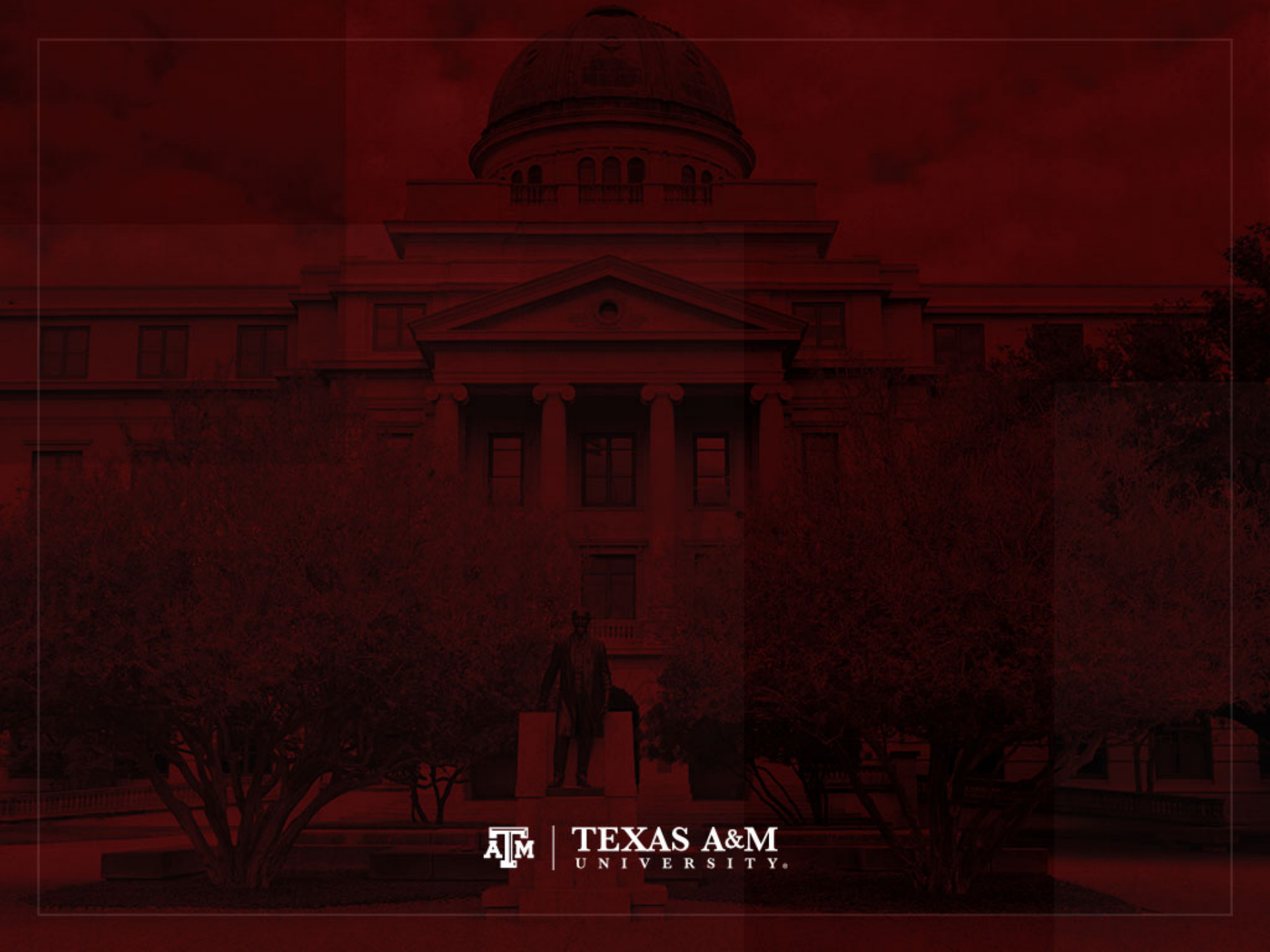
- **In line with previous studies**
  - Larger cohort-education size generally depresses earnings
  - **Mexico:** slower changes in age-education composition might be a reason for smaller effects
- **Men with low education**
  - Decreasing over time, but their earnings are not increasing
- **Secondary-school groups**
  - Already have lower earnings than university graduates
  - Moreover, these groups are increasing over time and experiencing negative correlations with earnings
- **Time**
  - Correlations are becoming less negative over the years
  - Still strong for secondary-school groups in Brazil, 2010

Implications

- **Reduction in income inequality**

- **More better-educated men**
  - Negative associations with earnings
  - This reduced differentials in relation to lower-educated men

- **Fewer younger men**
  - Smaller negative associations with earnings
  - This prevented greater disparities in relation to older men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National Transfer Accounts

- The goal of the National Transfer Accounts (NTA) project is to improve understanding of how population growth and changing population age structure influence
  - Economic growth
  - Gender and generational equity
  - Public finances
  - Other important features of the macro-economy

Source: http://www.ntaccounts.org.

NTA in several countries

- Research teams in more than 60 countries are constructing accounts that measure how people at each age
  - Produce
  - Consume
  - Share resources
  - Save for the future
- These accounts are designed to complement the UN System of National Accounts, population data, and other important economic and demographic indicators

Source: http://www.ntaccounts.org.

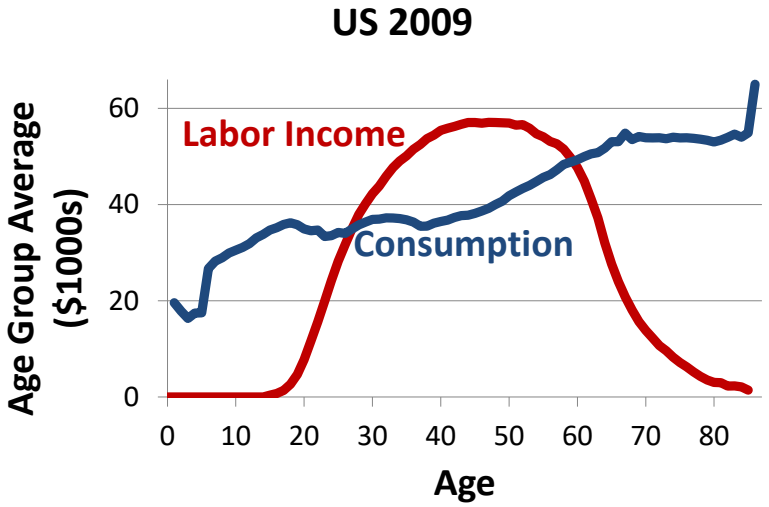
Motivation and goals

- Some topics that can be learned from NTA...
- What is the nature of the generational economy in different countries, regions, times, etc.?
- Are our support systems sustainable?
- Does the generational economy impact economic growth?
- How is the generational economy changing?

Source: Donehower 2015.

What is an age profile in NTA?

- A schedule of age-specific average flow amounts
- Based on flow measure or proxy indicator from
  - A household survey
  - A government report
  - Other NTA age profiles
  - NTA assumptions
- Smoothed over age
- Adjusted up or down so that aggregate flow matches an aggregate estimate from national accounts



Source: Donehower 2015.

Economic lifecycle

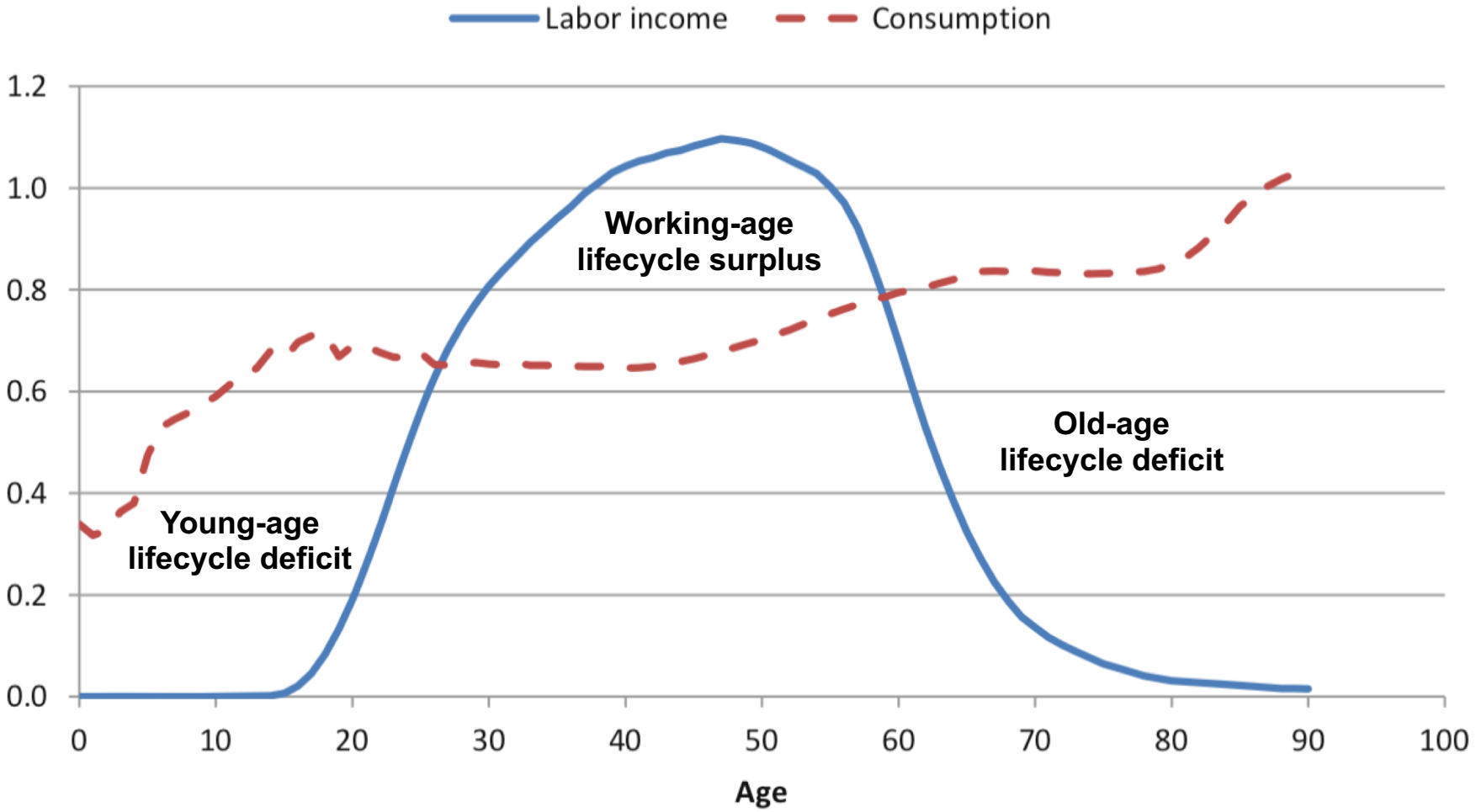


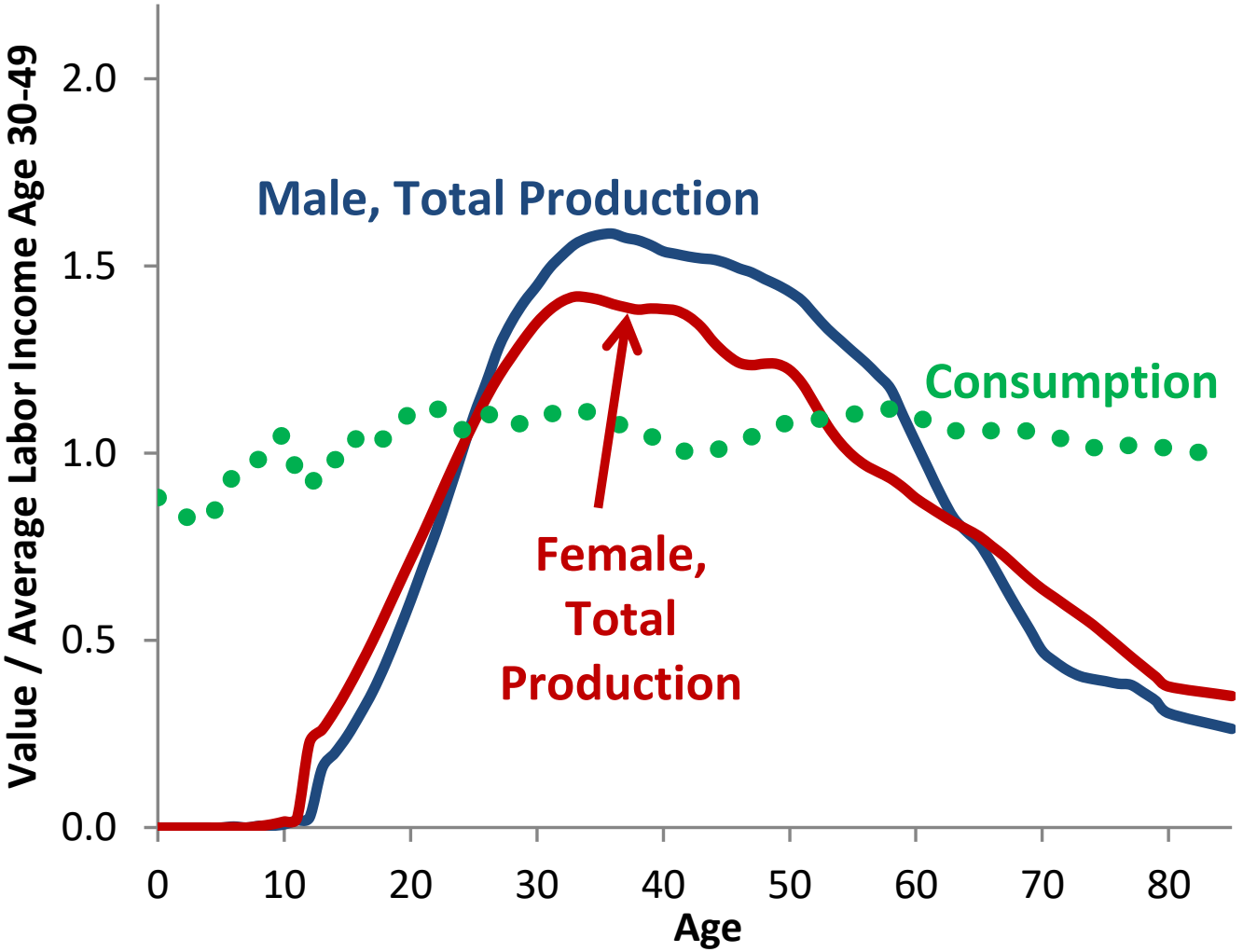
Fig. 24.1 Per capita consumption and labor income by age, high-income countries, circa 2006. Per capita consumption and labor income are expressed relative to the average of per capita labor income for persons 30–49. (Source: Mason et al. 2017; updated estimates provided at www.ntaccounts.org)

Type of work and time

- Use information to classify type of work
  - Labor market vs. household
  - Paid work vs. unpaid work
- Identify productive activities in a time use survey
- Estimate age profile of unpaid household production in time units
- Impute consumption and transfers to individuals in household and community

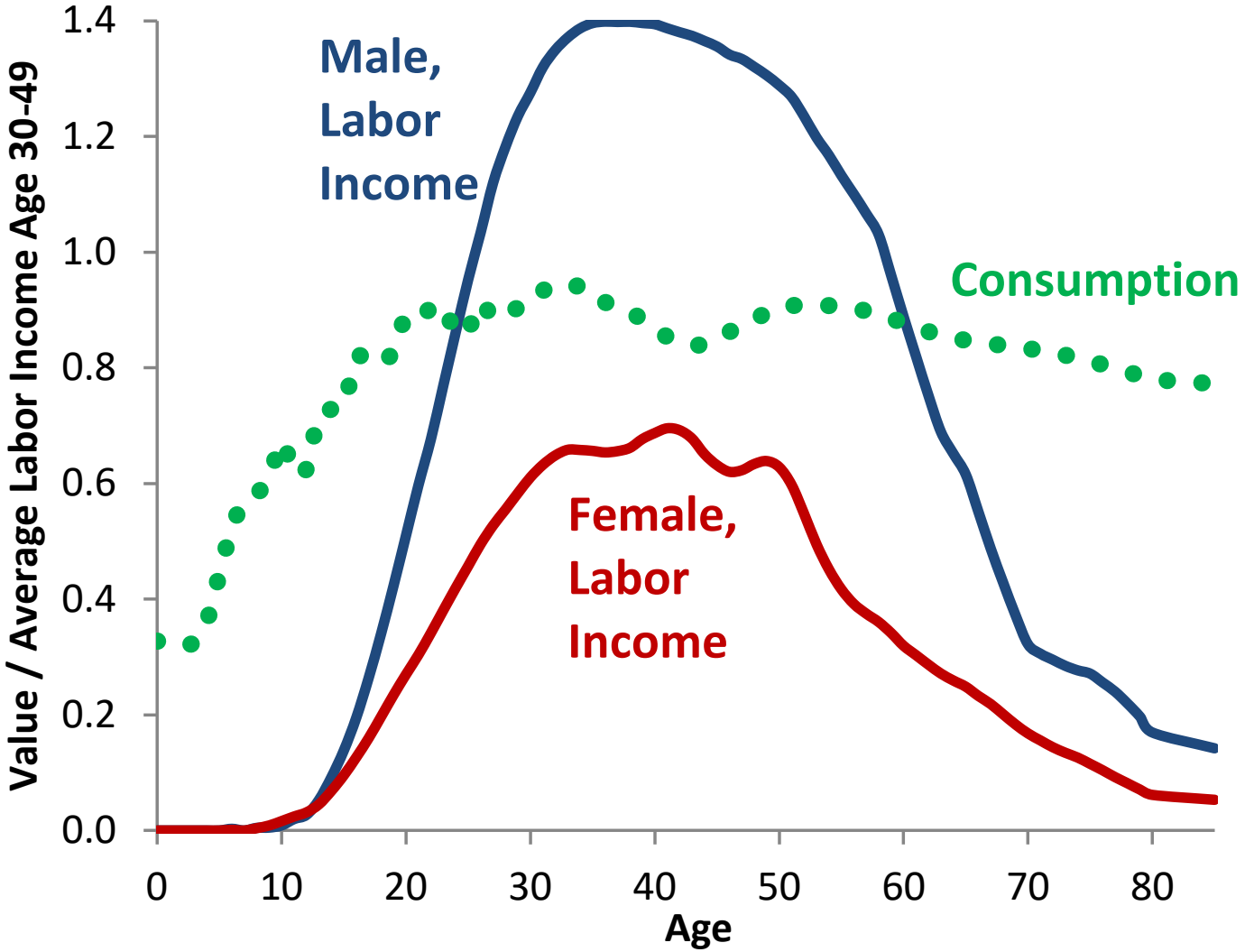
Source: Donehower 2015.

Gender in the total economy Mexico, 2005



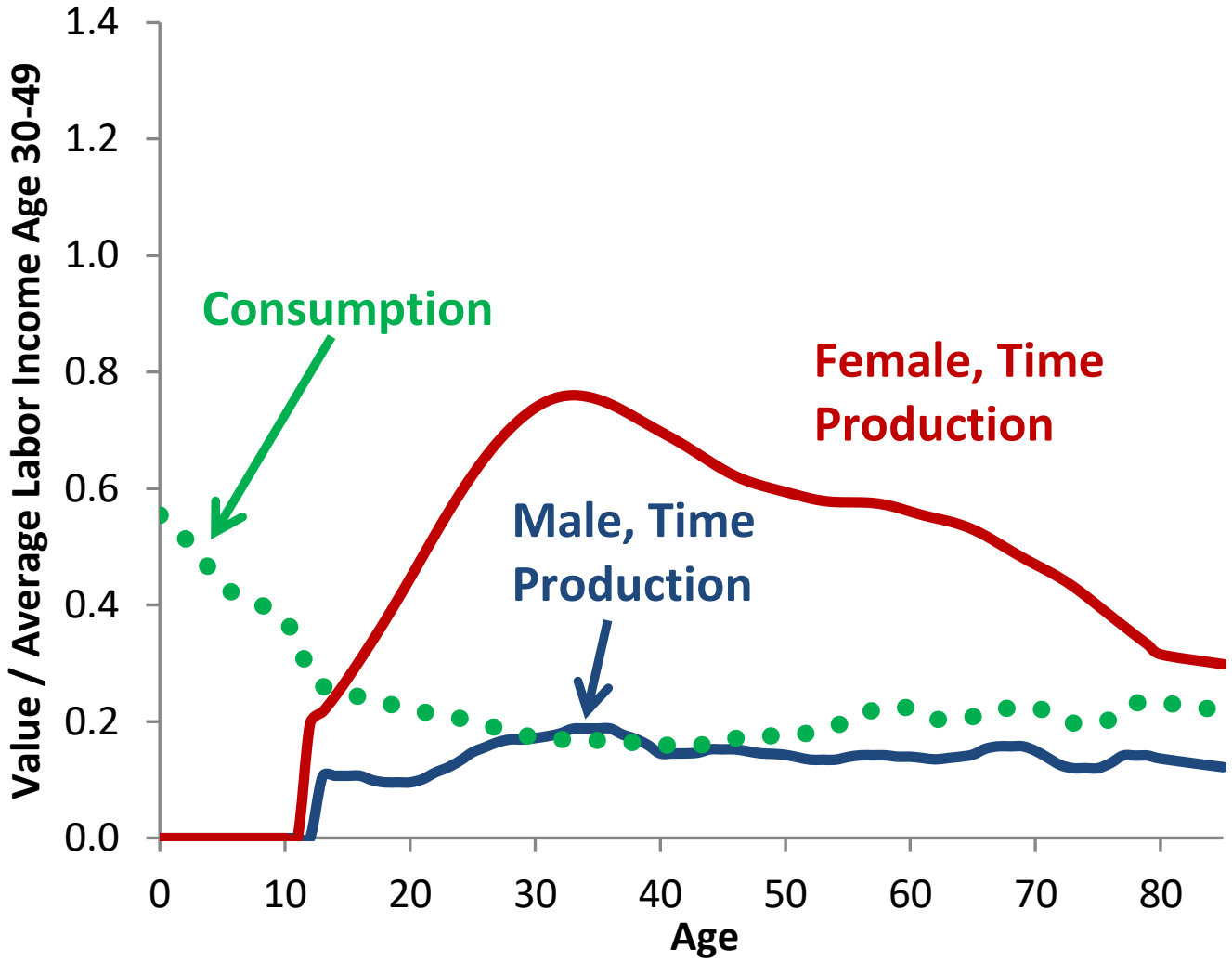
Source: Donehower 2015.

Gender in the labor market Mexico, 2005



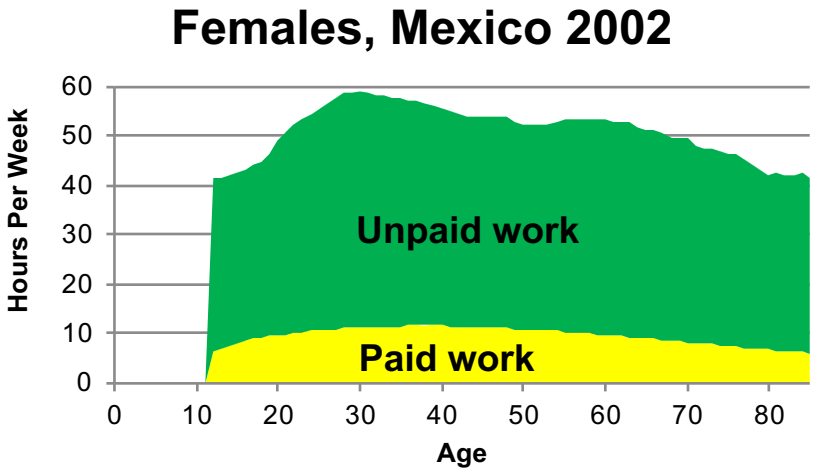
Source: Donehower 2015.

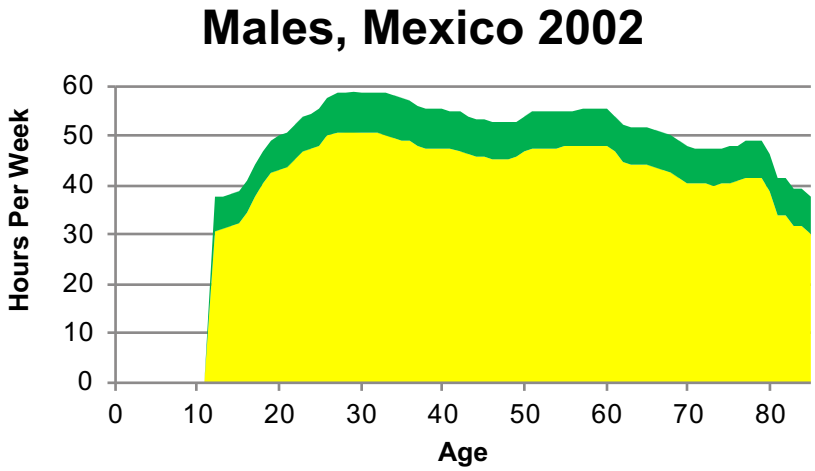
Gender in the household Mexico, 2005

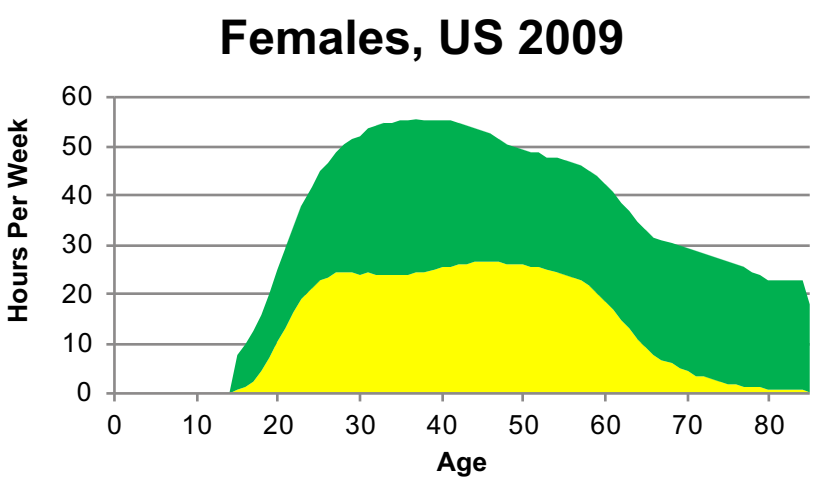


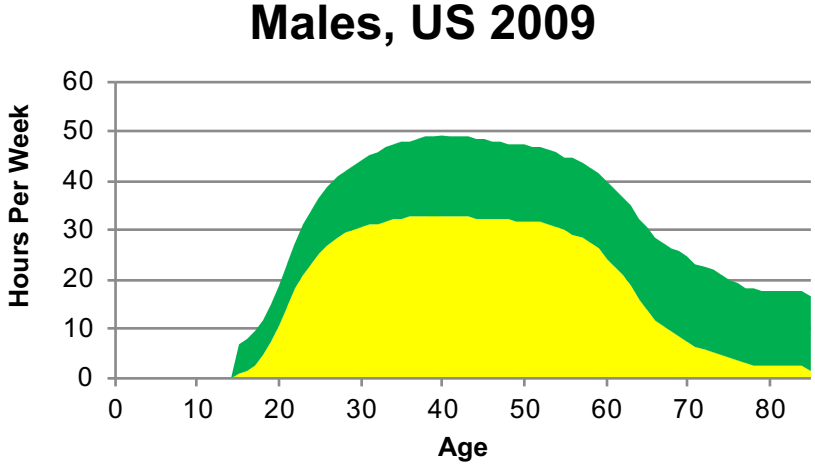
Source: Donehower 2015.

Time of each type of work









Source: Donehower 2015.

NTA reallocations

- The National Transfer Flow Account is estimated with a set of reallocations
  - Public transfers
  - Asset-based reallocations
  - Private transfers

Source: http://www.ntaccounts.org.

Public transfers

- For NTA, public transfers refer to all transactions with the government
  - "Public transfers" may be a misleading title, since it is sometimes used to refer only to public education, public health, Social Security...
  - NTA refer to all transactions with the government
  - "Government transactions" is a better description
- Public sector transactions for households in NTA mirror those of the government sector
  - Inflows into the household sector from the government are outflows from the government to the households sector

Source: http://www.ntaccounts.org.

Asset-based reallocations

- Asset-based reallocations are the composite of two flows
  - Asset income
  - Savings
- In NTA, two kinds of asset income are distinguished
  - Capital income
    - Return to capital held by corporations and households
  - Property income

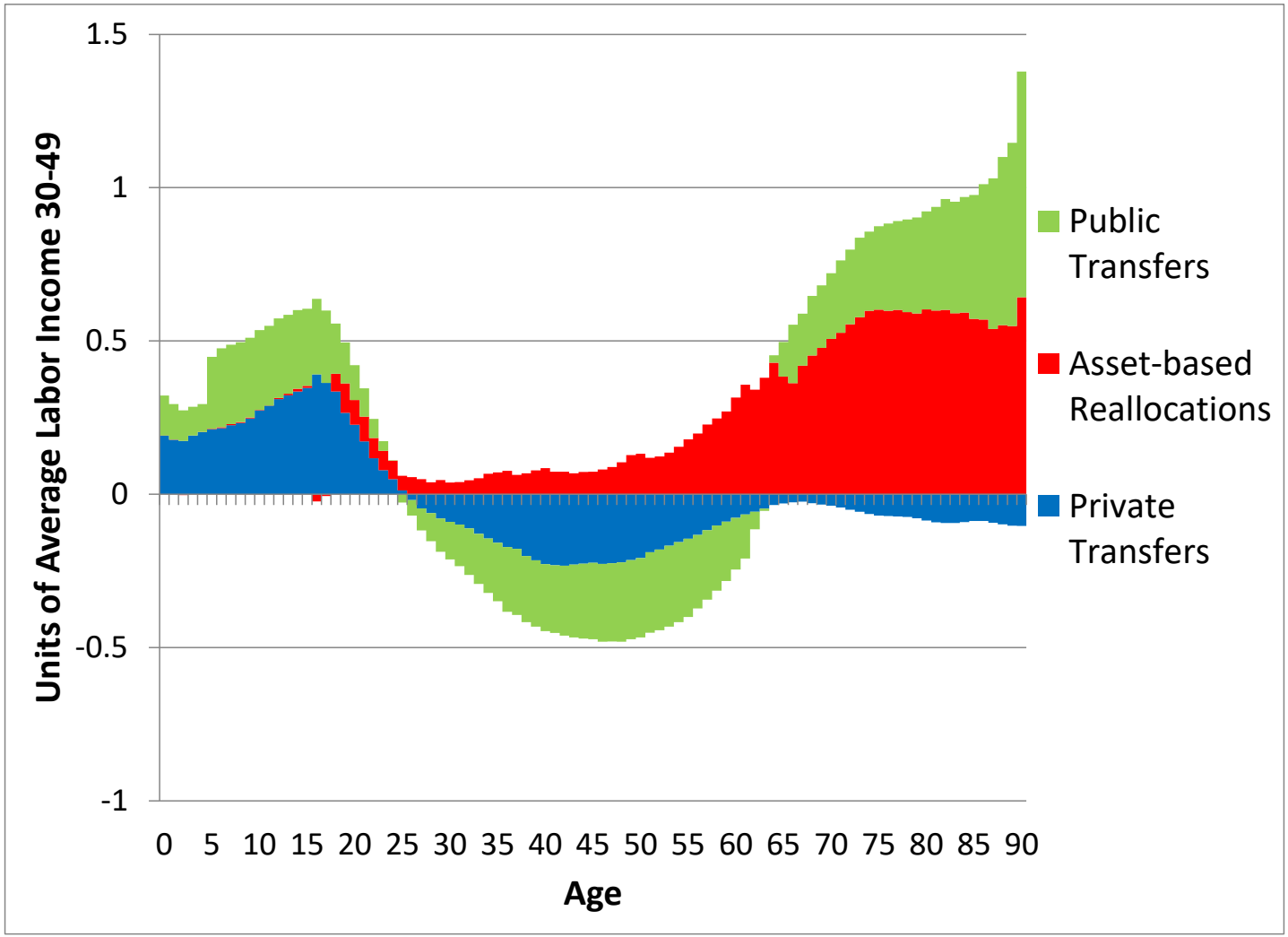
Source: http://www.ntaccounts.org.

Private transfers

- Transfer of current income
  - Across households
  - From households to non-profit institutions
  - Within households
- They are estimated after the researcher has estimated the economic lifecycle, public transfers, and public asset-based reallocations
- Capital transfers such as bequests, dowry, and similar large transfers are not current transfers and are not included in the Flow Account

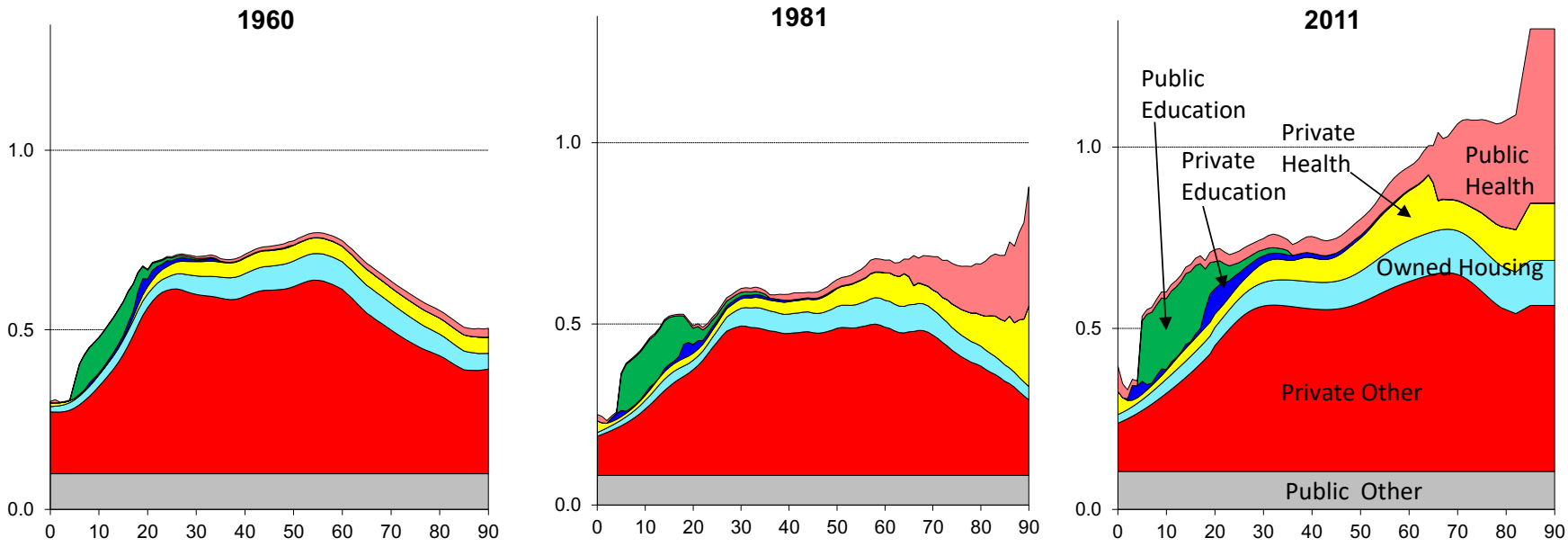
Source: http://www.ntaccounts.org.

NTA reallocations by age United States, 2011



Source: Donehower 2015.

Change over time, US total consumption



– In units of average labor income, ages 30-49

Source: Donehower 2015.

NTA reallocations by countries

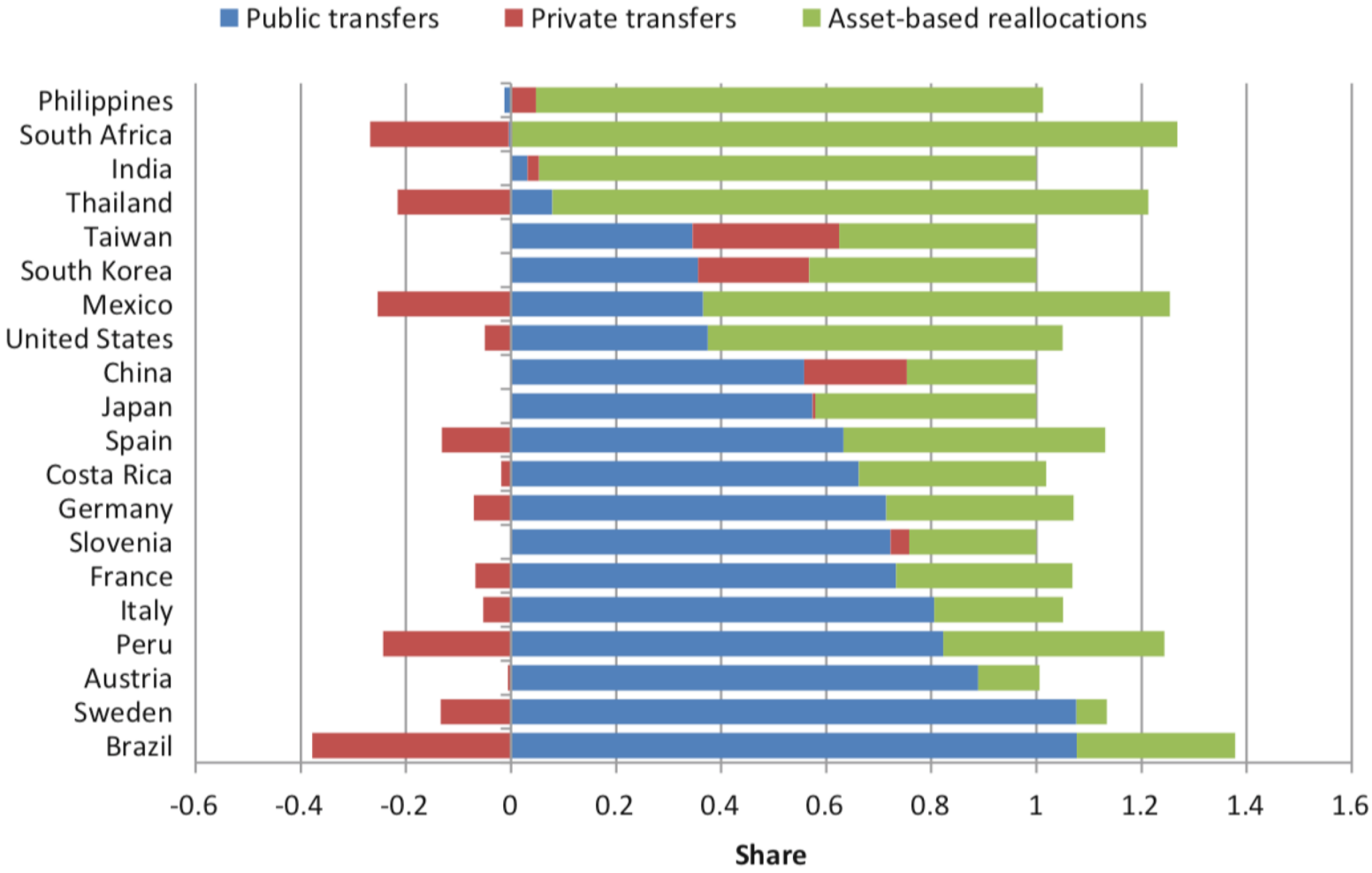


Fig. 24.2 Age-reallocations (public transfers, private transfers, and asset-based reallocations) as a proportion of the gap between consumption and labor income, 65 and older, selected countries. (Source: Mason and Lee (2017); also see www.ntaccounts.org)

NTA and public policies

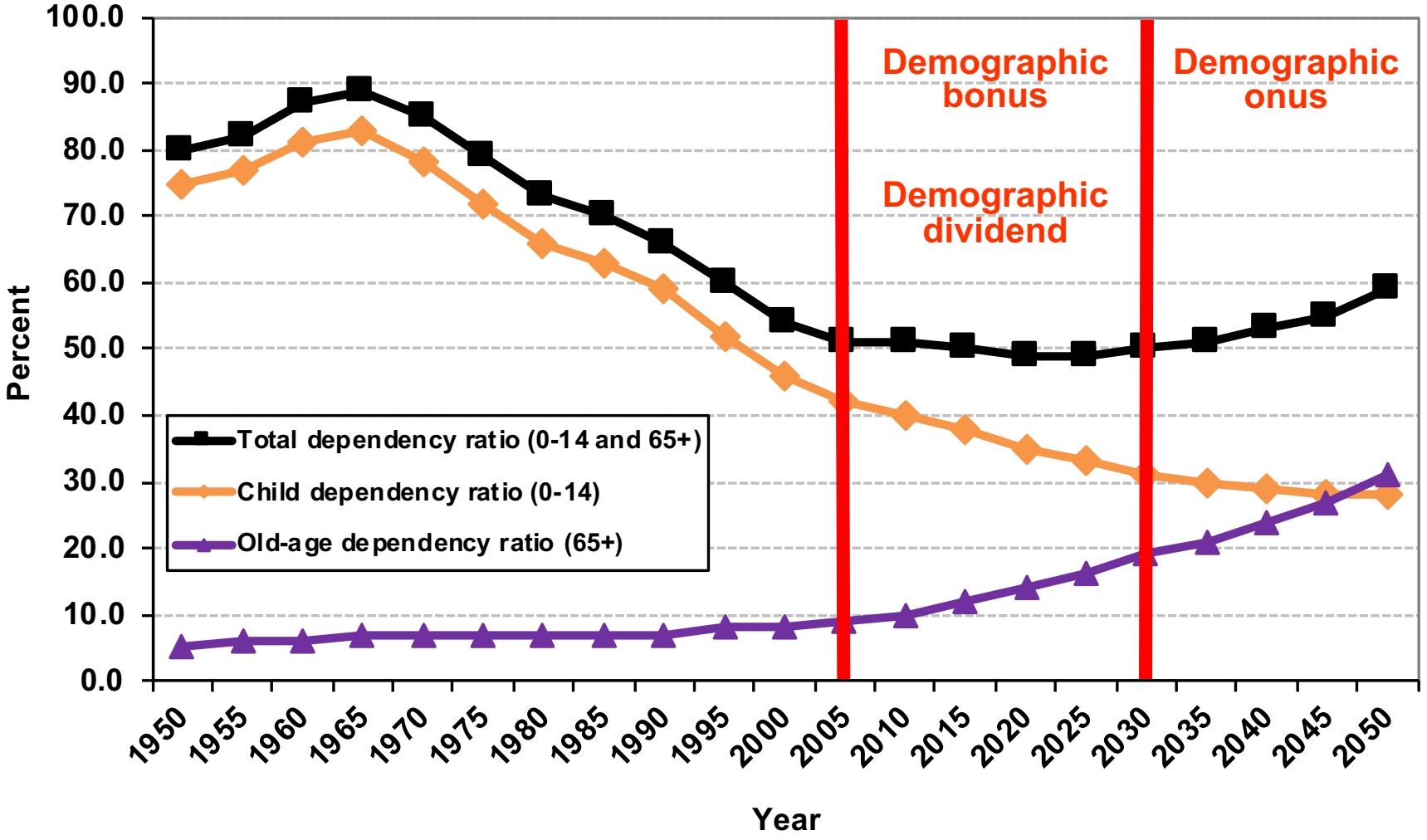
- The NTA project is shedding light on many areas of importance to policymakers
  - Public policy on pensions, health care, education, and reproductive health
  - Social institutions, such as the extended family
  - The full economic contribution of women
  - Social, political, and economic implications of population aging

Source: http://www.ntaccounts.org.

Demographic dividends

- First demographic dividend
  - Age structures favorable to production
  - More working-age population relative to children and elderly
- Second demographic dividend
  - Age structures favorable to capital
  - Fertility decline associated with greater human capital investment per child
  - Older populations concentrated in ages with more assets which can be invested to increase the capital to labor ratio

Dependency ratios, Brazil 1950–2050



Source: United Nations - http://esa.un.org/unpp (medium variant).

Rate of growth of support ratio

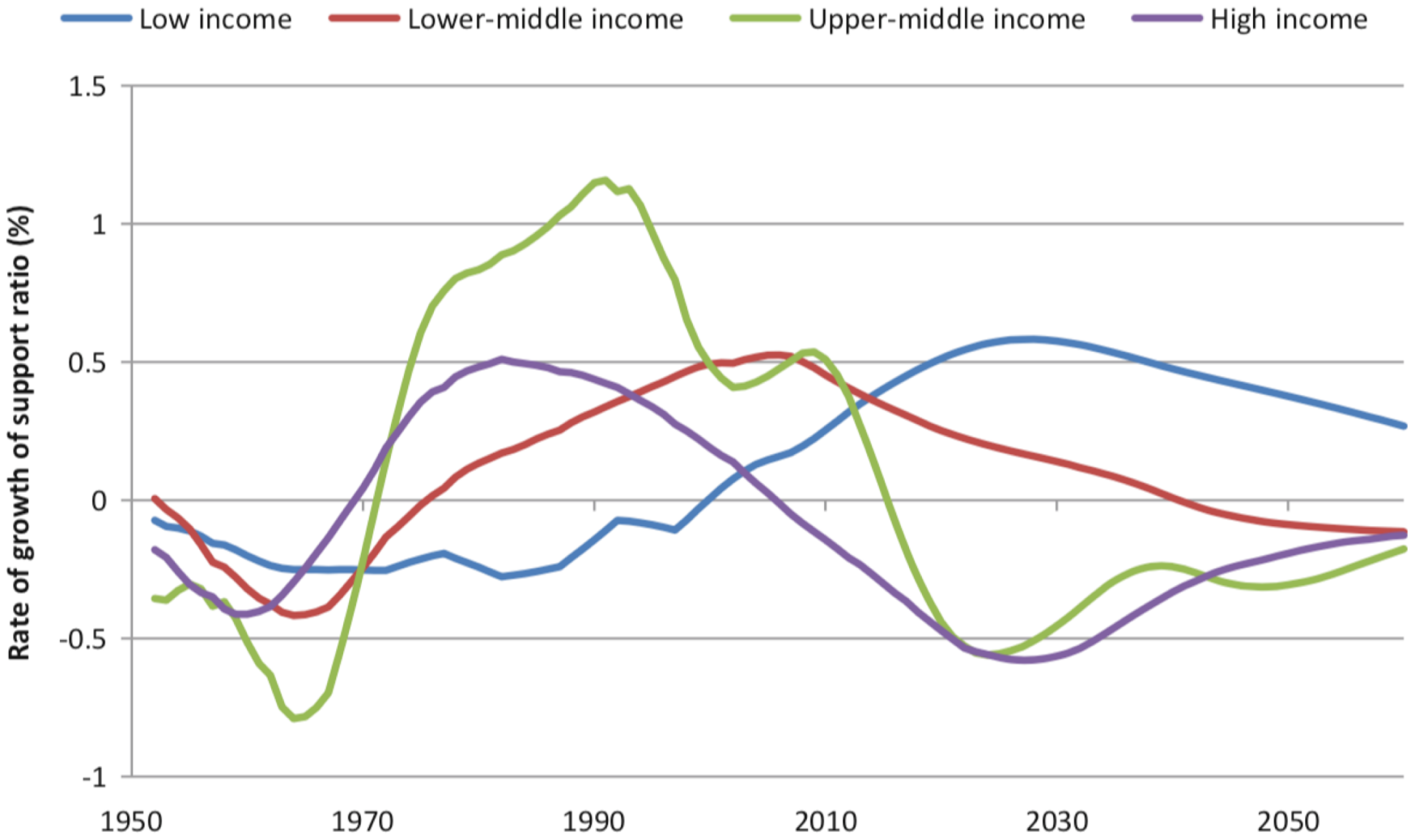


Fig. 24.3 Rate of growth of the support ratio, 1950–2060, four income groups as of 2016 (high, upper middle, lower middle, and low). (Source: Mason et al. (2017); www.ntaccounts.org (indicators) accessed 12/19/2017)

Research example

- Ronald Lee
  - “Intergenerational Transfers and the Economic Life Cycle: A Cross- cultural Perspective”

Lee: Intergenerational transfers

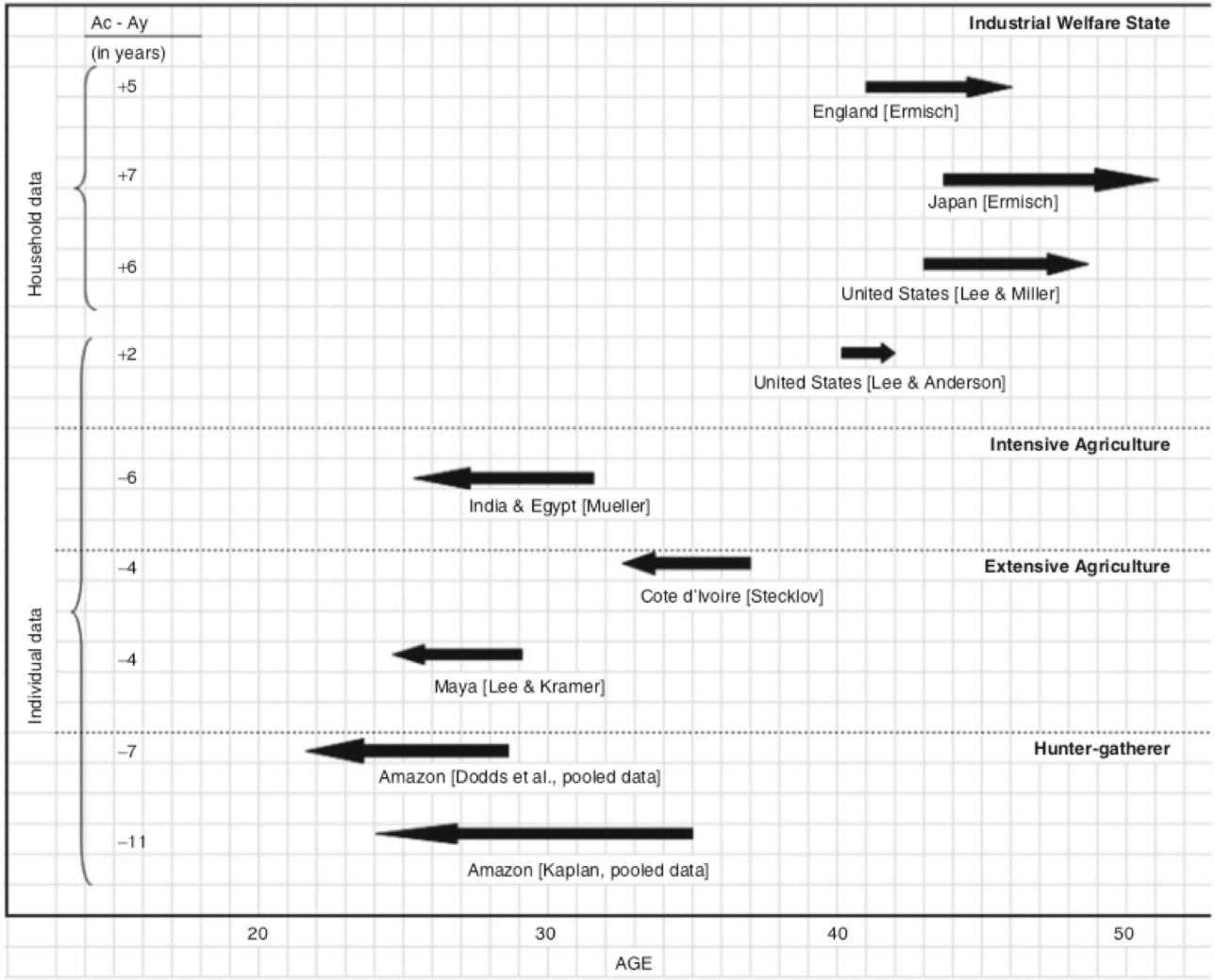
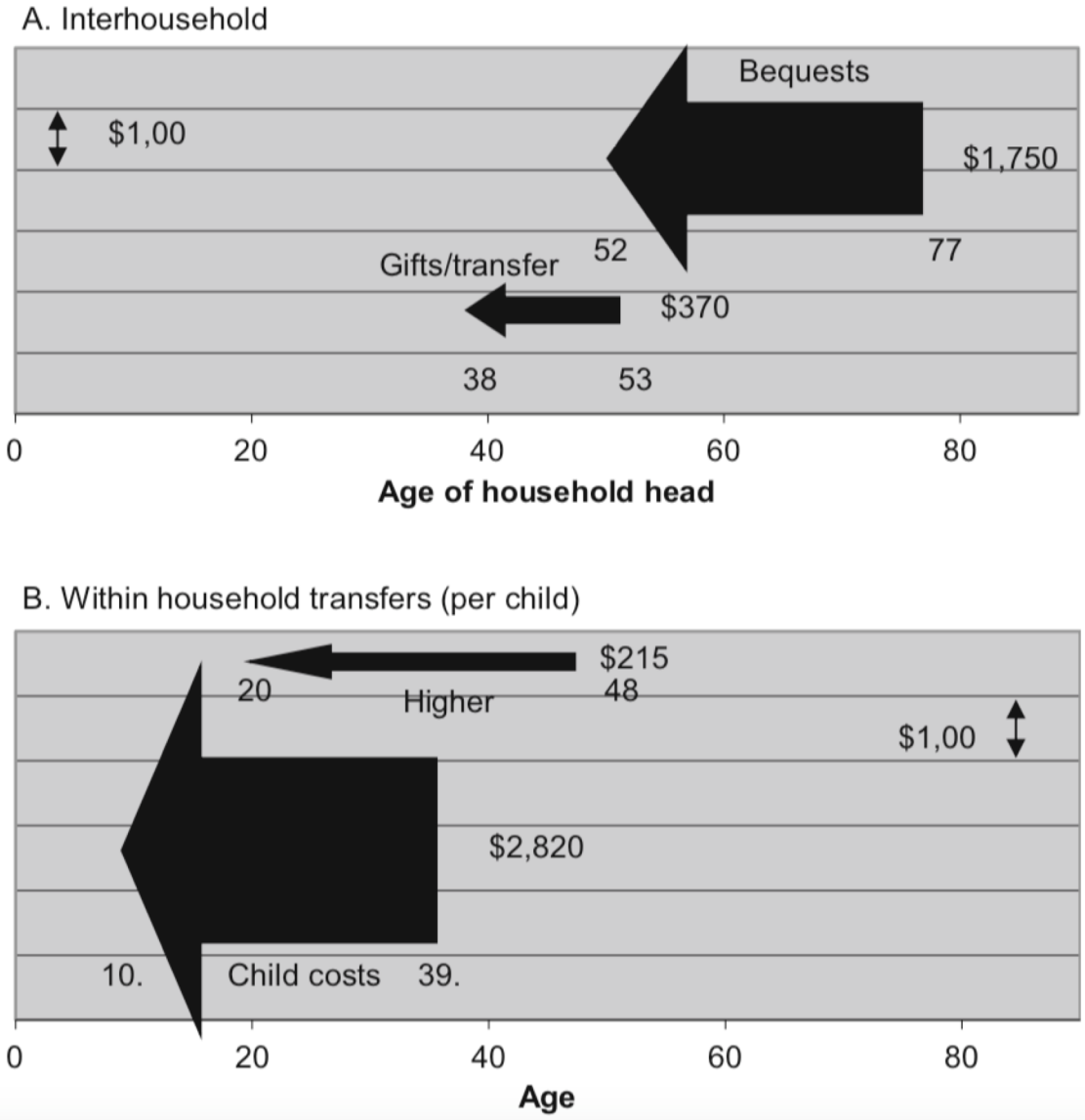
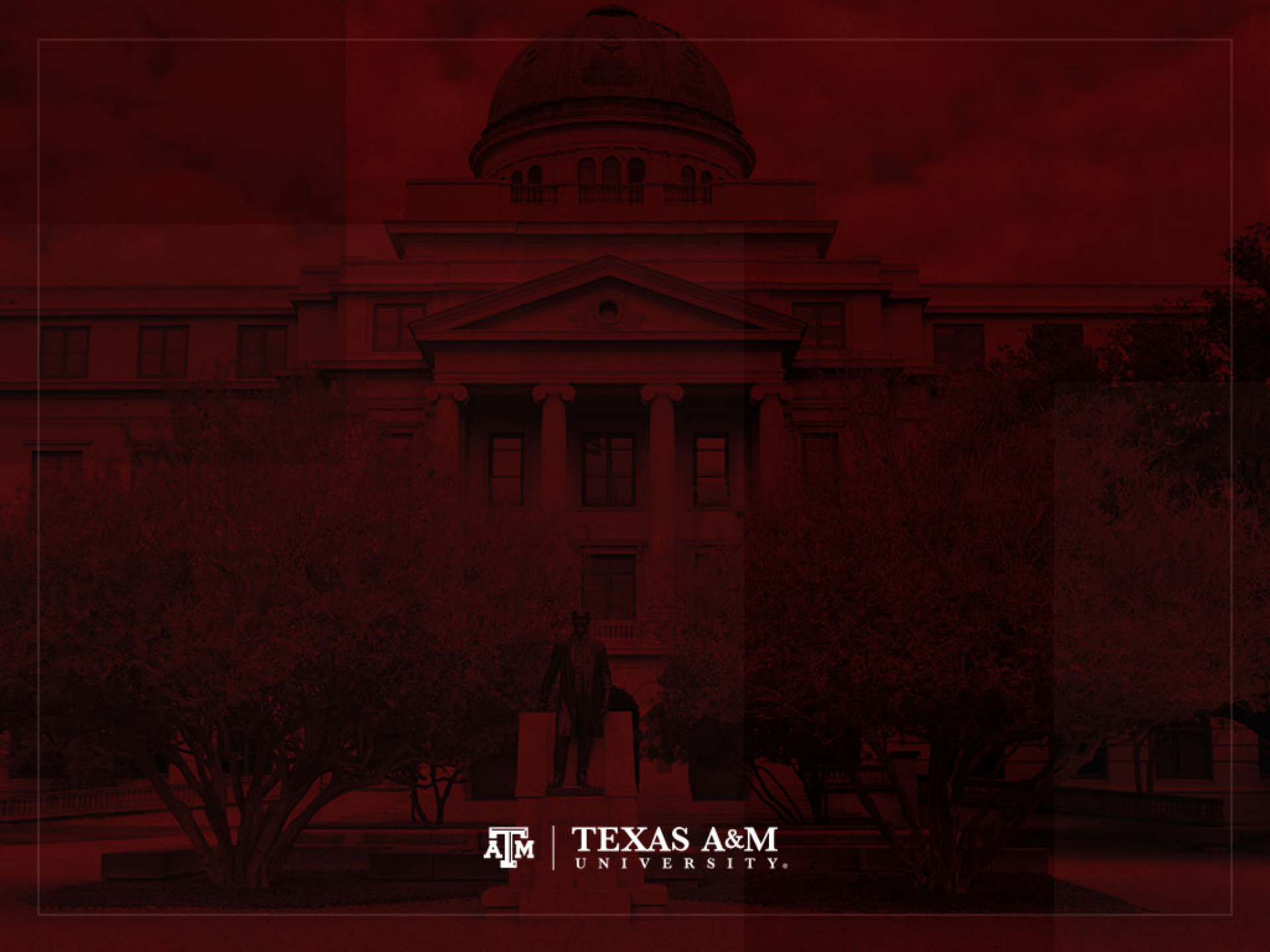


Fig. 24.4 Summary of inter-age reallocations in various contexts

Lee: Intergenerational transfers

Fig. 24.5 Familial transfers in U.S. (**a**) Interhousehold (**b**) Within household transfers (per child)




TEXAS A&M
UNIVERSITY

Demography of inequality

- Global inequality: Rising or falling?
- Inequality and poverty in the United States
- Inequality across age groups
- Racial and ethnic gaps
- Education and gender gaps
- Regional patterns of poverty and inequality
- Public policy efforts to reduce inequality

Global inequality: Rising or falling?

- Differences in inequality across countries

Table 11.1 Countries with the highest and lowest levels of inequality, ranked by the Gini index, 2007–2016

Highest inequality	Lowest inequality
South Africa, 63.2	Slovenia, 25.0
Namibia, 61.0	Ukraine, 25.2
Botswana, 60.5	Czech Republic, 26.3
Zambia, 56.4	Norway, 26.3
Central African Rep., 56.2	Slovak Republic, 26.5
Lesotho, 54.2	Sweden, 26.9
Colombia, 54.2	Denmark, 27.2
Honduras, 54.1	Finland, 27.5
Brazil, 53.1	Belarus, 27.5
Panama, 51.8	Algeria, 27.6
	Iceland, 27.6

Note: Rankings reflect the average reported Gini index for countries with data available 2007–2016
Source: World Bank, DataBank (2017)

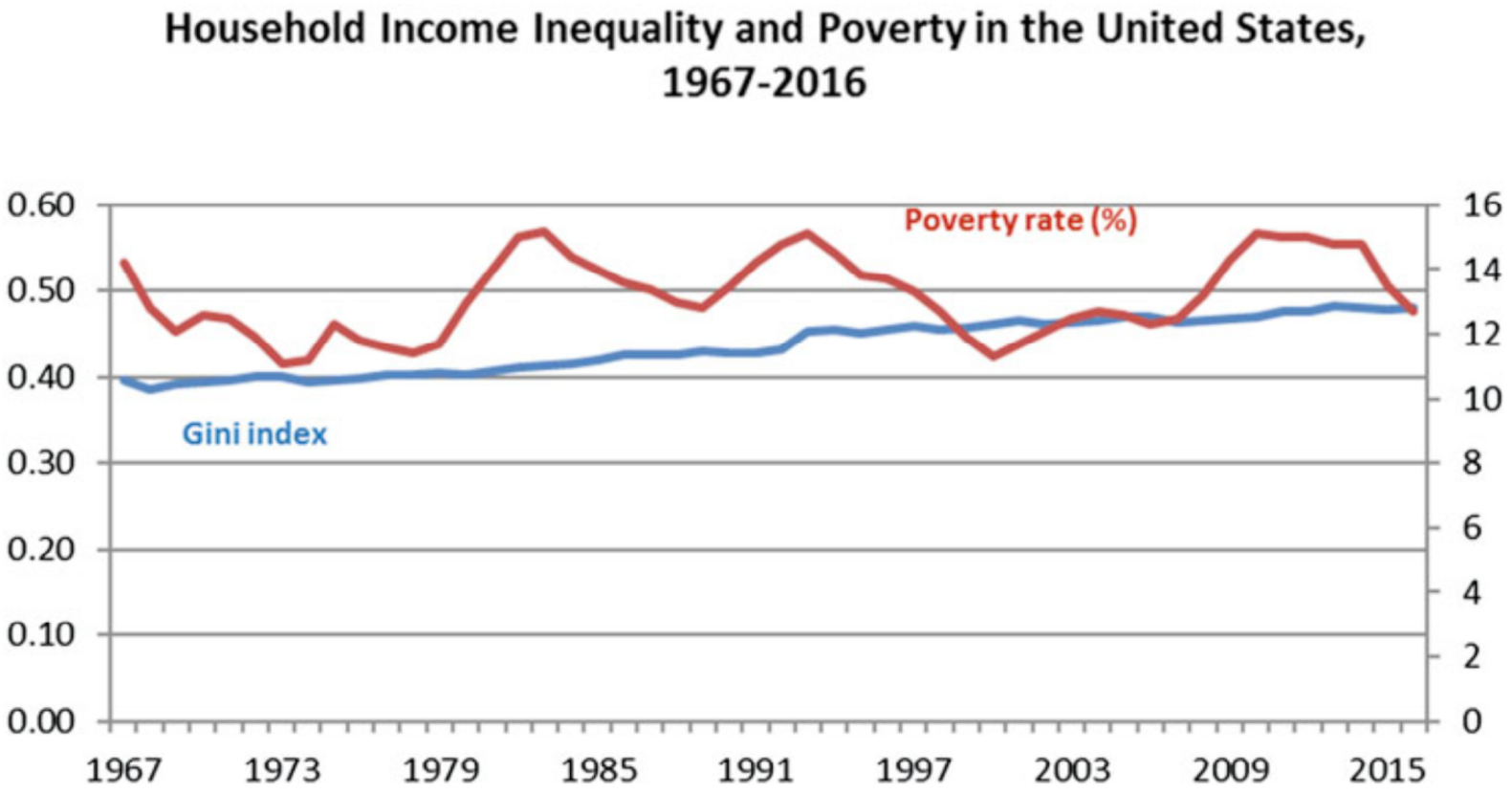


Fig. 11.1 Levels of inequality have increased while poverty rates have fluctuated in the United States. (Source: U.S. Census Bureau, Current Population Survey)

Inequality across age groups

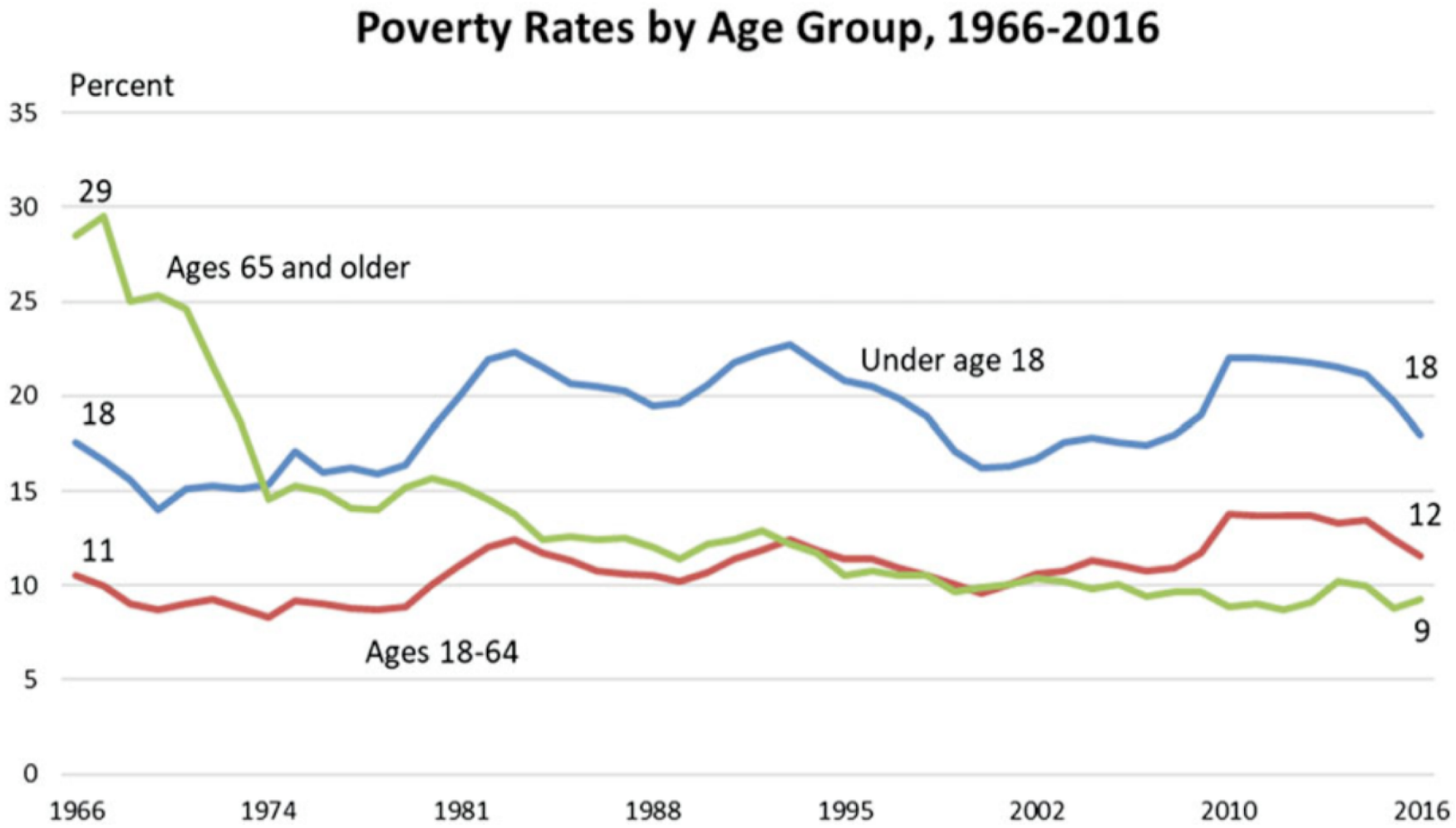


Fig. 11.2 There is a persistent poverty gap between children and older Americans. (Source: U.S. Census Bureau, Current Population Survey)

Racial and ethnic gaps

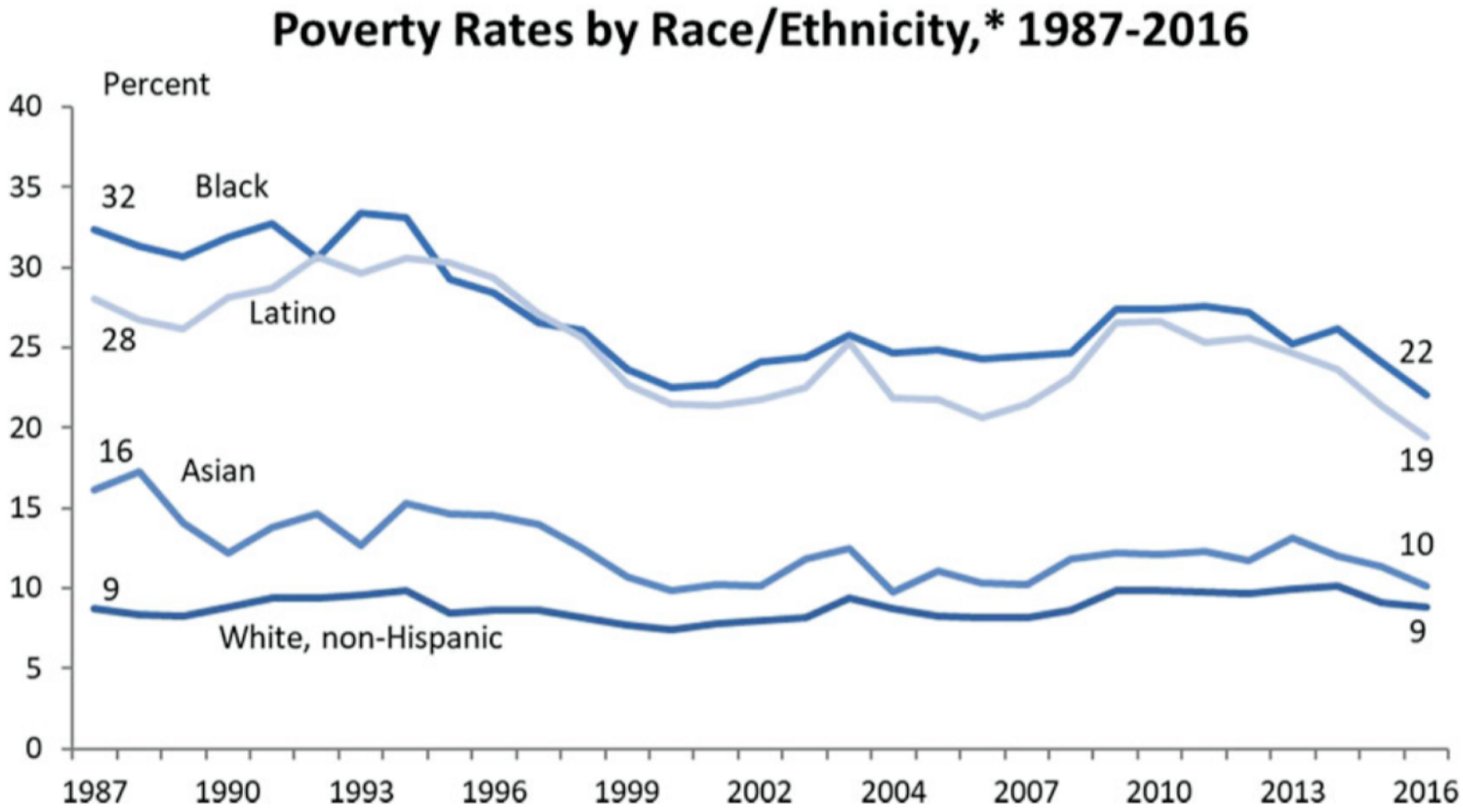


Fig. 11.3 There is a persistent racial/ethnic gap in U.S. poverty rates. (Source: U.S. Census Bureau, Current Population Survey. Starting in 2000 racial categories include those who selected only one race. *Note: Data for American Indians are not shown because of sampling error. The poverty rate for American Indians/Alaska Natives was estimated to be 25% in 2016)

Racial and ethnic gaps

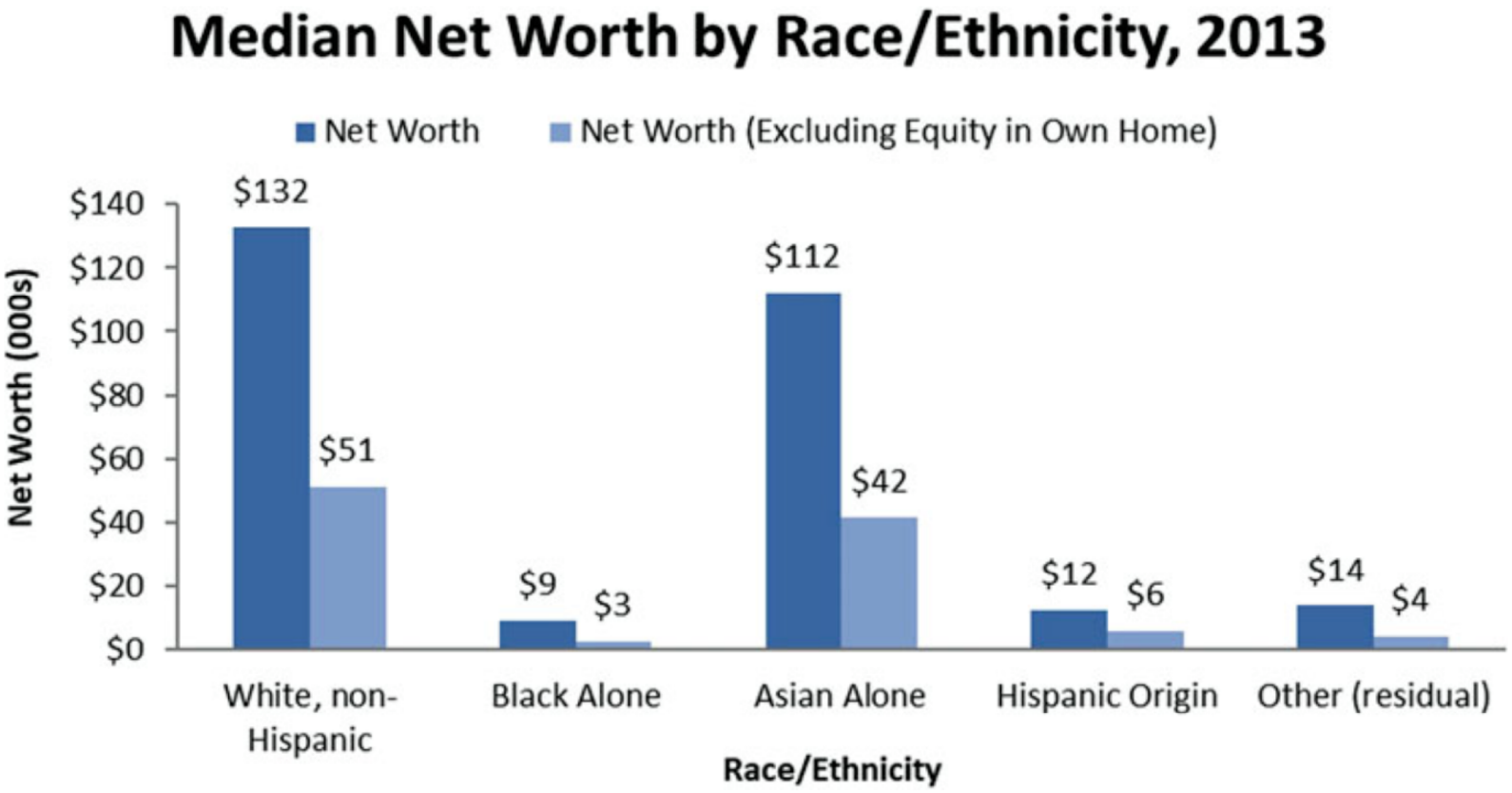


Fig. 11.4 Median net worth varies widely across racial/ethnic groups in the United States. (Source: U.S. Census Bureau, Survey of Income and Program Participation, 2014 Panel, Wave 1)

Education and gender gaps

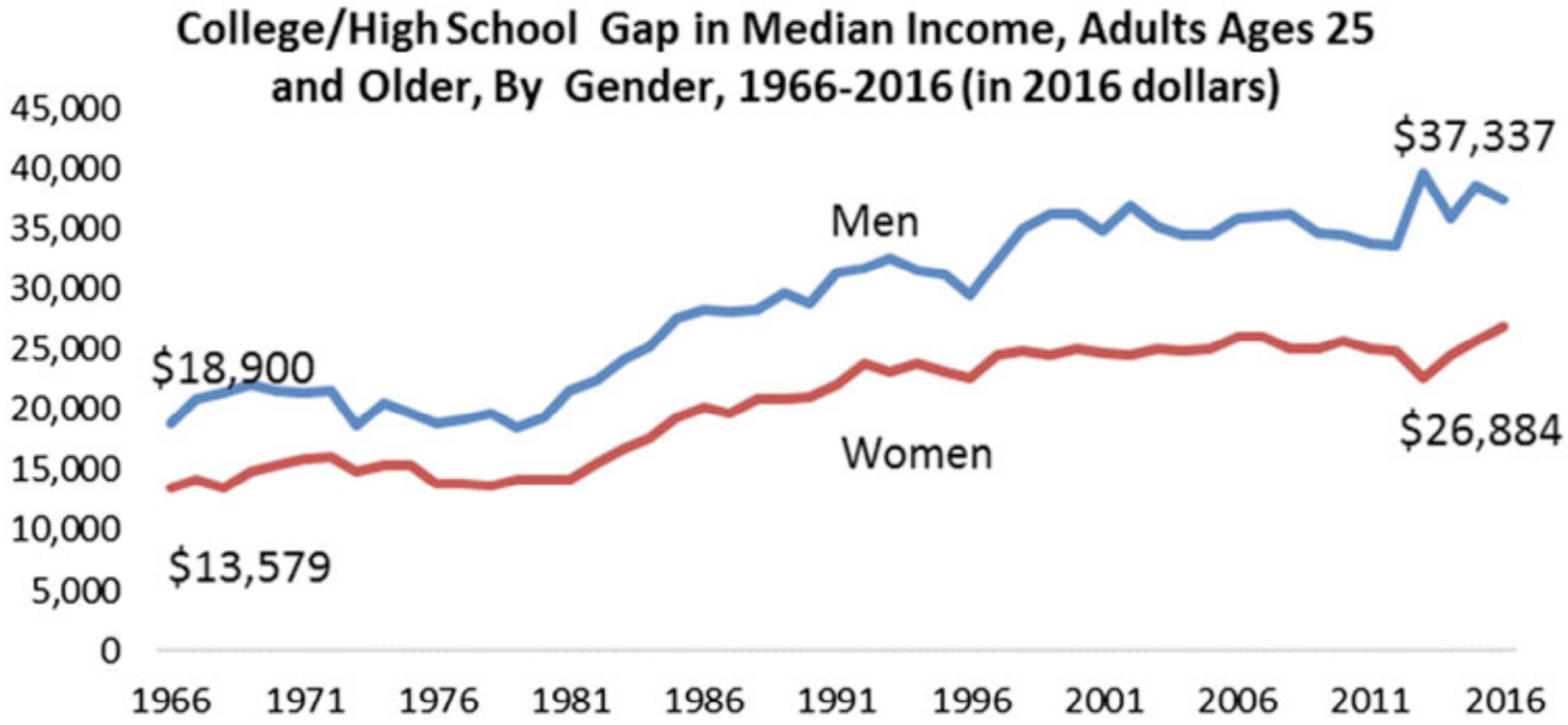


Fig. 11.5 The economic gap between those with and without college degrees has increased in the United States. (Note: College completion data through 1990 are based on four+ years of college: data for 1991–2016 are based on bachelor's degree or more. Source: U.S. Census Bureau, Current Population Survey)

Regional patterns of poverty and inequality

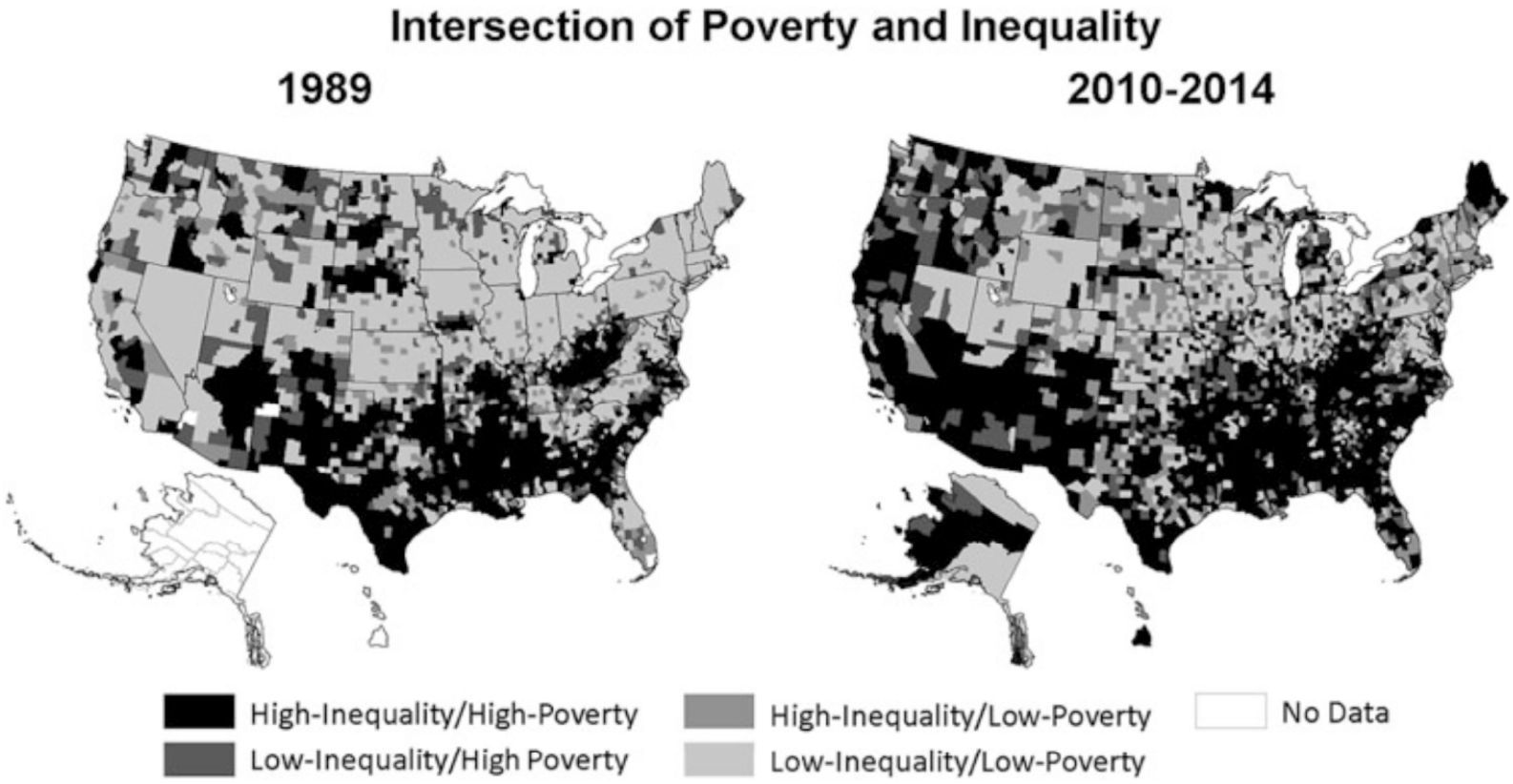


Fig. 11.6 Poverty and inequality have increased in many U.S. counties, especially in the South. (Source: PRB analysis of data from the U.S. Census Bureau)

Regional patterns of poverty and inequality

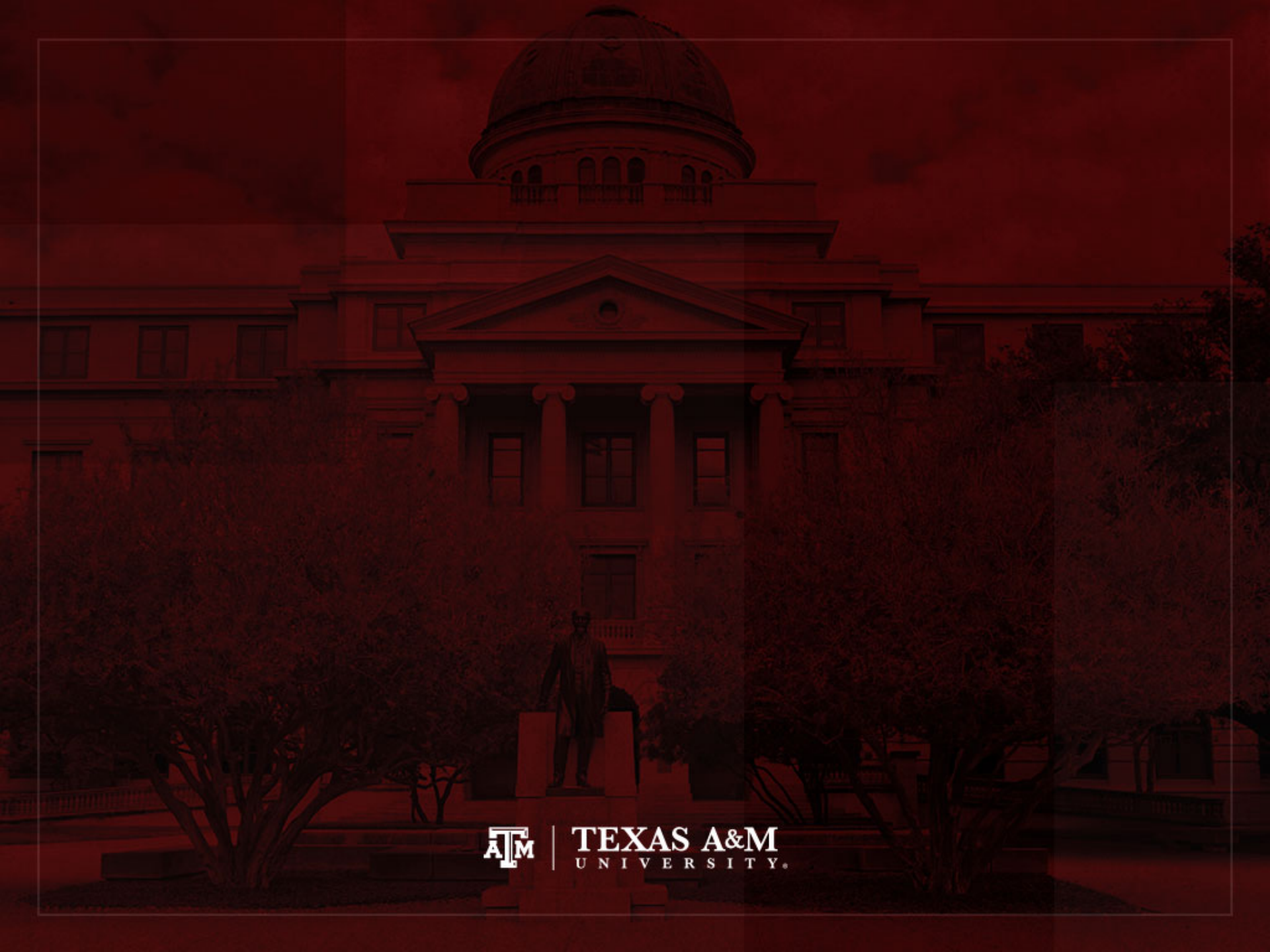
Table 11.2 The intersection of poverty and inequality in U.S. counties, 2010–2014

	Low-poverty	High-poverty
Low-inequality	891 counties (28%)	379 counties (12%)
High-inequality	571 counties (18%)	1201 counties (41%)

Source: Analysis by the authors of data from the U.S. Census Bureau, American Community Survey

Public policy efforts to reduce inequality

- Policy initiatives to address inequality
- Equalizing income
  - Taxes and transfers
- Equality of access and opportunity
  - Education
  - Employment and wages


TEXAS A&M
UNIVERSITY

Inequality and mobility

- Is there an association between income inequality and intergenerational mobility?

- Income inequality: rising since the 1980s
  - Driven mostly by increased wages for highly educated workers and top earners

- Intergenerational mobility
  - Degree to which conditions at birth and childhood determine situation later in life (Roemer et al. 2003)
  - Indicates whether there is less mobility for children of low-income parents

Source: Amaral et al. 2019.

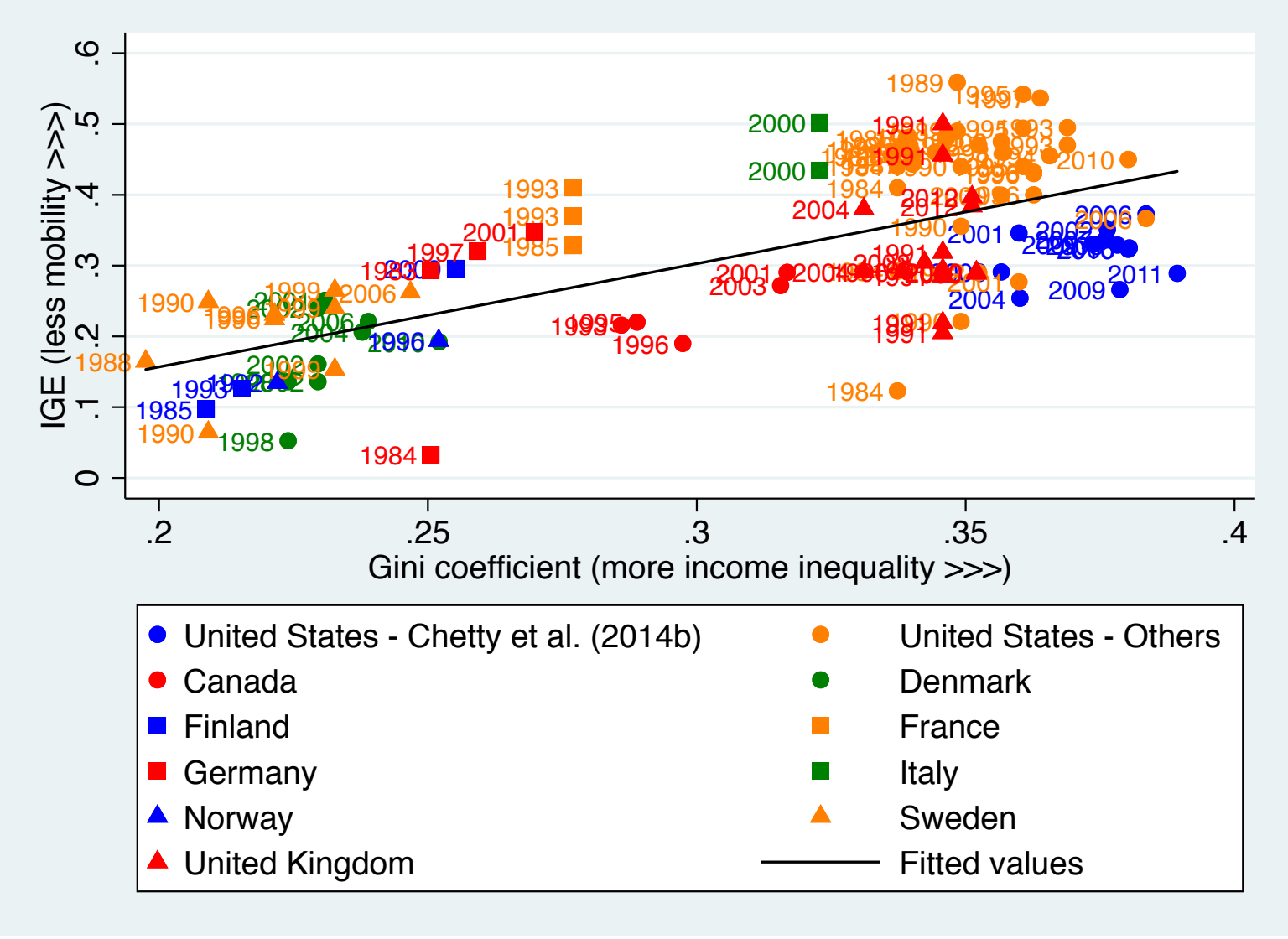
Great Gatsby curve

- Cross-country correlation between intergenerational mobility and income inequality (Corak 2013, Corak et al. 2014, Krueger 2012, OECD 2011, 2015)

- Measuring intergenerational mobility
  - Refers to how much income of children (when adults) is determined by income of parents

- Intergenerational income elasticity (IGE)
  - Estimated from regression of child income to parental income (in logs)

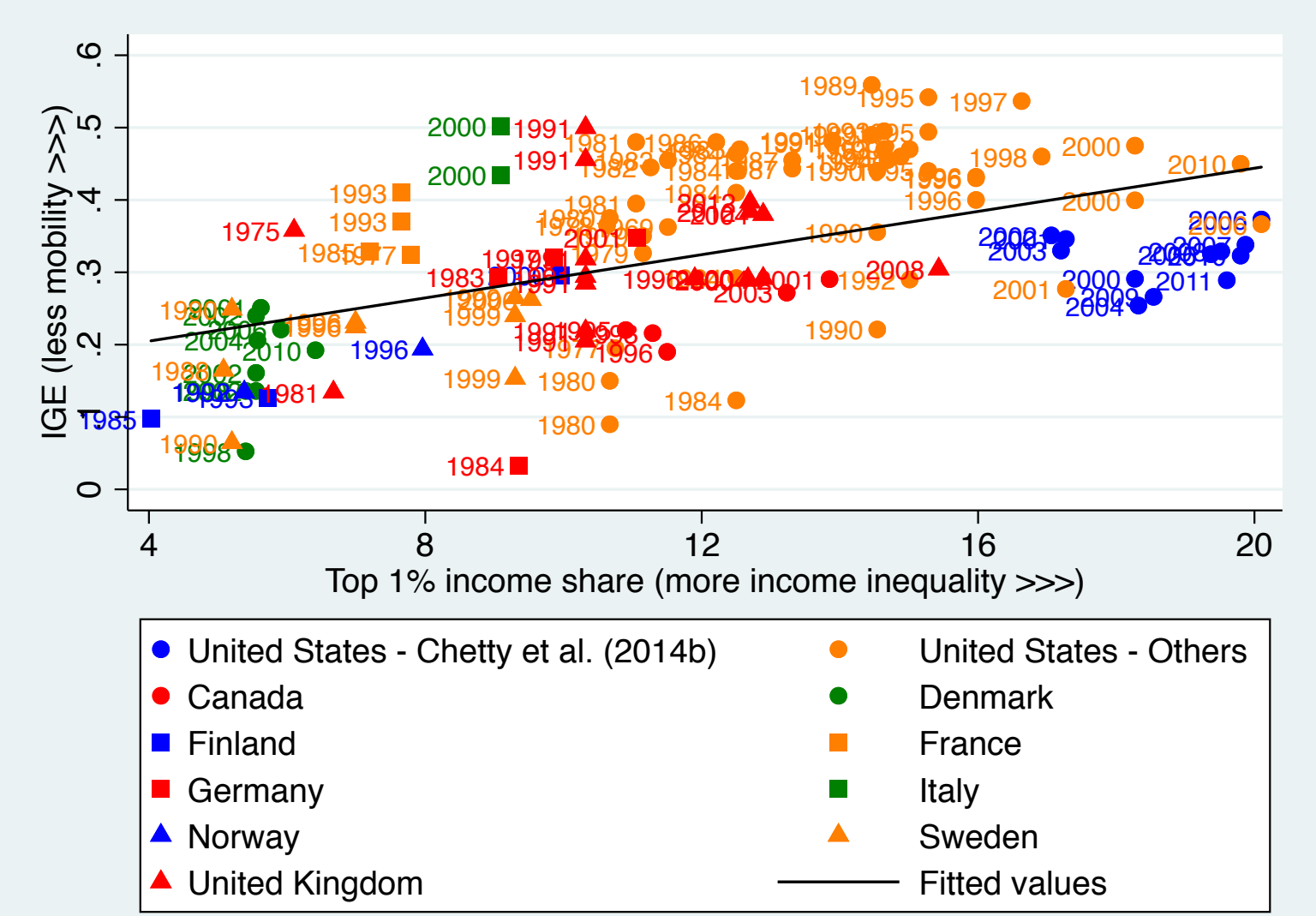
Great Gatsby curve: IGE & Gini



Correlation=0.666 (p=0.000; p=0.001 when clustering standard errors by study)

Source: OECD and mobility measures from a series of studies.

Great Gatsby curve: IGE & Top 1%



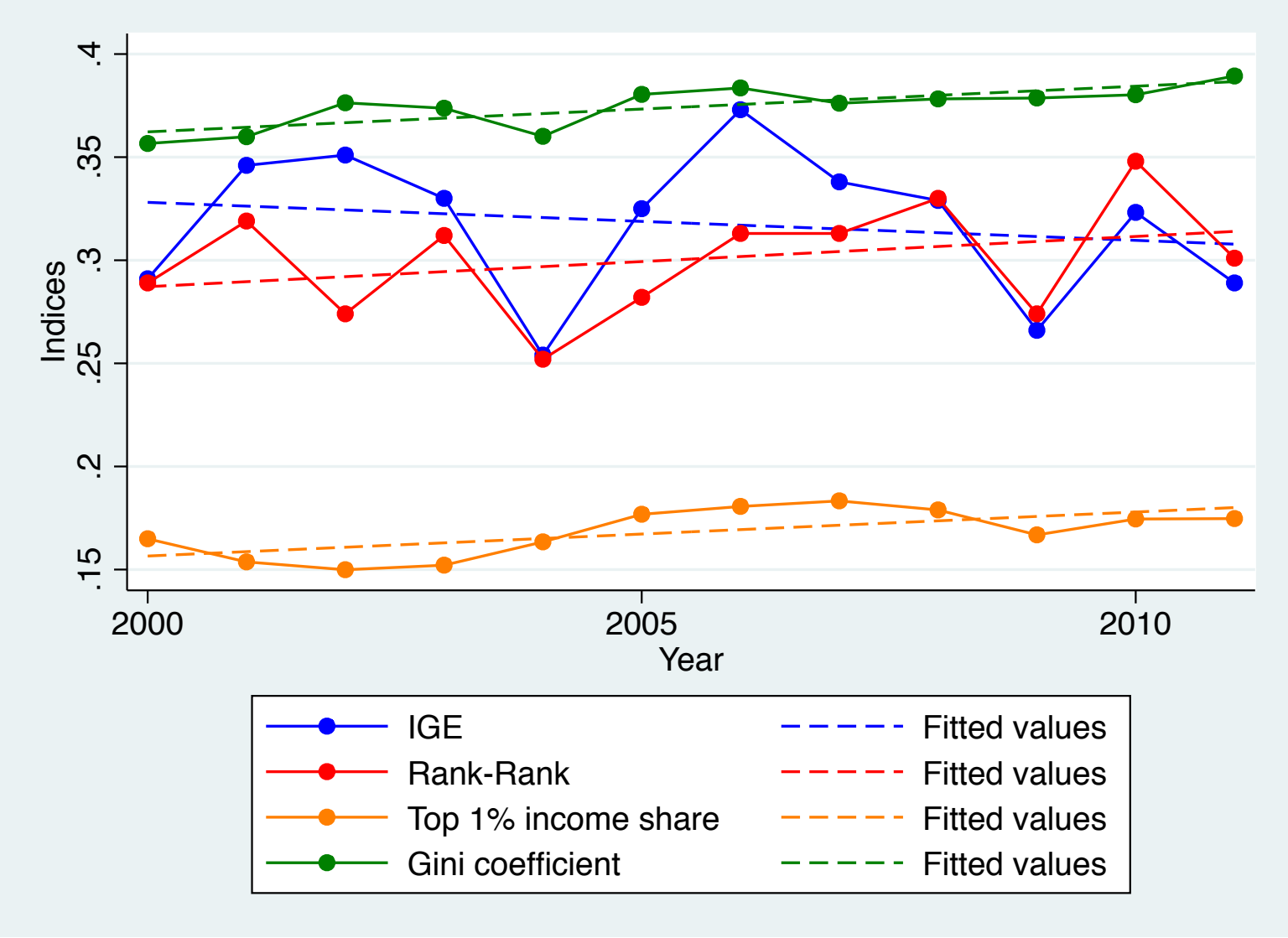
Correlation=0.514 (p=0.000; p=0.006 when clustering standard errors by study)

Source: World Top Income Database and mobility measures from a series of studies.

Further questions

- Do different measures of income inequality yield different results?
  - Gini coefficient
  - Top 1% income share
- Does the methodology used in estimating IGE influence these associations?
- Does within country (across time) changes in inequality also relate to changes in IGE?
  - This can be seen as a panel data version of the Great Gatsby curve (Chetty et al. 2014a, 2014b)

Great Gatsby curve across time



Source: Chetty et al. 2014b.

Meta-analysis

- IGE is derived from research studies
  - No official and comparable statistics
- This approach allows us to control for differences in methodology and context
- Causality is hard to establish
  - Indicators are results of complex social and economic outcomes
- We analyze correlations across countries and time, as well as within countries

Data for OLS models

- Dependent variable: intergenerational mobility (IGE)
  - Studies about Canada, Denmark, Finland, France, Germany, Italy, Norway, Sweden, United Kingdom, United States
- Independent variable: income inequality
  - Gini coefficient (Organisation for Economic Co-operation and Development)
  - Top 1% income share (World Top Income Database)
- Control variables
  - Children's earnings: male, female, both
  - Parents' earnings: father, mother, both
  - Number of years of parental earnings
  - Age of children and parents
  - Type of children's earnings: individual, family
  - Country and paper fixed effects

IGE & Gini coefficient

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Gini coefficient	1.434*** (0.099)	1.682*** (0.123)	1.144** (0.456)	1.059* (0.542)	1.439*** (0.178)	0.857 (0.736)
Children's earnings		X		X		X
Parents' earnings		X		X		X
# years of earnings		X		X		X
Age of children		X		X		X
Age of parents		X		X		X
Type of earnings		X		X		X
Country			X	X		X
Paper					X	X
R^2	0.377	0.535	0.533	0.622	0.720	0.760
Adjusted R^2	0.375	0.519	0.519	0.598	0.679	0.708
Observations	347	347	347	347	347	347

*** Significant at p<0.01. ** Significant at p<0.05. * Significant at p<0.1.

Source: OECD and mobility measures from a series of studies.

IGE & Top 1% income share

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Top 1% income share	0.016*** (0.002)	0.017*** (0.002)	0.006** (0.002)	0.004 (0.004)	0.020*** (0.003)	0.023*** (0.006)
Children's earnings		X		X		X
Parents' earnings		X		X		X
# years of earnings		X		X		X
Age of children		X		X		X
Age of parents		X		X		X
Type of earnings		X		X		X
Country			X	X		X
Paper					X	X
R^2	0.115	0.246	0.281	0.339	0.460	0.486
Adjusted R^2	0.114	0.229	0.268	0.313	0.406	0.414
Observations	554	554	554	554	554	554

*** Significant at p<0.01. ** Significant at p<0.05. * Significant at p<0.1.

Source: World Top Income Database and mobility measures from a series of studies.

Standardized coefficients

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Gini coefficient	0.614***	0.720***	0.490**	0.454*	0.617***	0.367
Top 1% income share	0.340***	0.362***	0.129**	0.082	0.428***	0.489***
Control variables		Methods	Country	Methods Country	Paper	Methods Country Paper

*** Significant at p<0.01. ** Significant at p<0.05. * Significant at p<0.1.

Source: OECD, World Top Income Database, and mobility measures from a series of studies.

Final considerations

- **Across countries**, there is a correlation between income inequality and intergenerational mobility
  - Stronger bivariate associations with the Gini coefficient
- **Across time and within countries**, inequality does not always have significant correlations with mobility
  - In models controlled for methods, country, and paper, there is no significant correlation with the Gini coefficient
- Drivers of cross-country variations in income inequality may be different than drivers of within-country variations
  - Recent increases in inequality at the top of the distribution (top 1% income share) might be negatively affecting mobility
  - Instead of variations across the income distribution (Gini coefficient)

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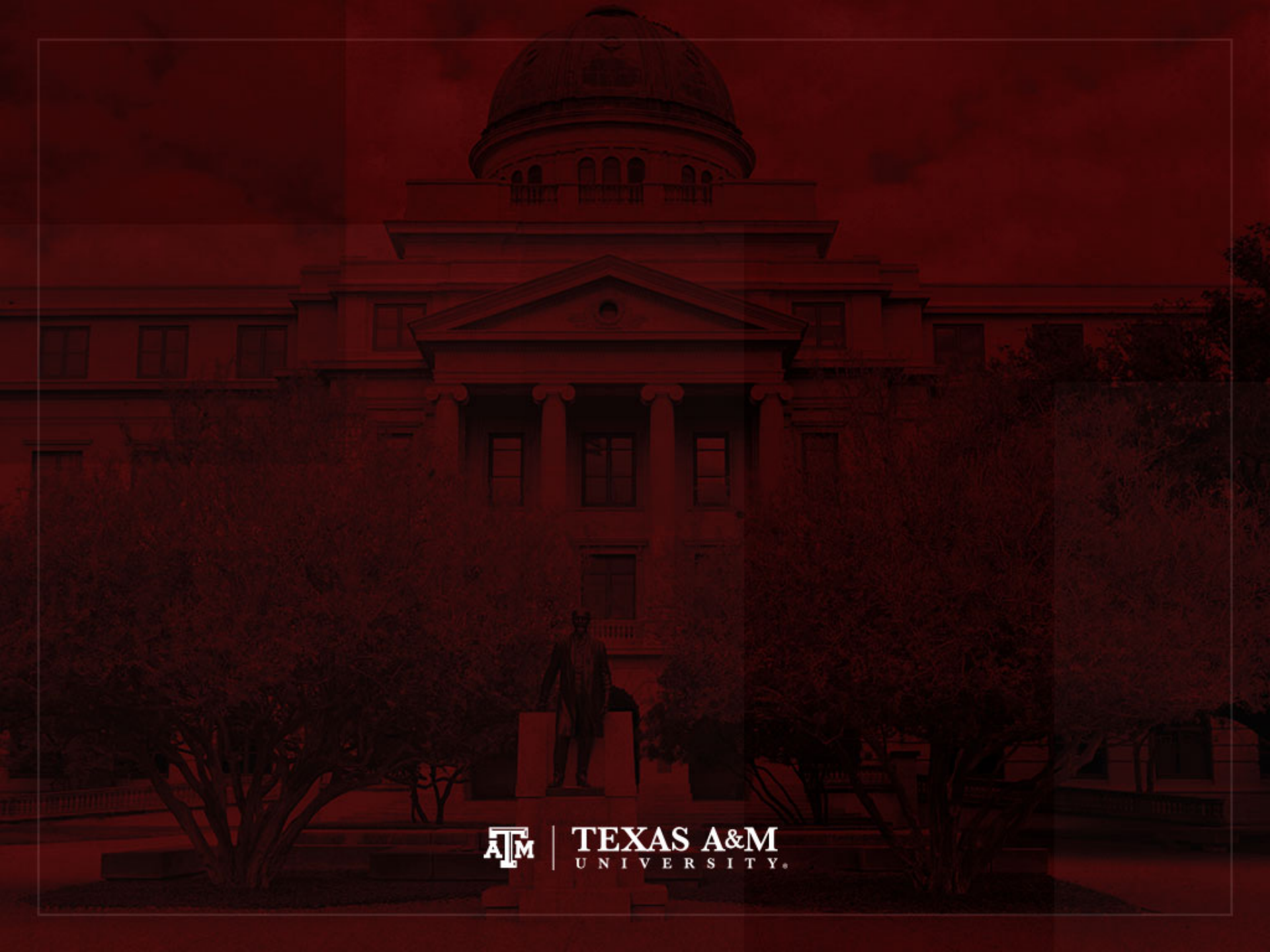
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