Understanding Inequality, Poverty and Intergenerational Mobility

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Outline

- Politics and Analysis
- Individual Income Inequality
  - Wage Rates, Schooling and Productivity
  - Labor Force Participation and Social Welfare
- Household Income Inequality
  - Marital Sorting
  - Single Parenthood
  - HK Divorce Rate among Top 10 in the World
  - Minimum Wage Effects
- Household and Individual Income Inequality
- Inequality and Lifetime Earnings
- Inequality and the Poverty Line
- Inequality and Intergenerational Mobility – US and HK
- Divorce, Public Housing, and Next Generation Poverty
- Early Childhood Intervention and Parenting

KEY TAKE AWAYS (Slide 1)

- Measured income is unequal for many different reasons, most of it is noise, especially for household income

- Individual income inequality has been rising because of underinvestment in education

- Individual income has not grown very much over time except among the top 30%

KEY TAKE AWAYS (Slide 2)

- In the past two decades around 3% of the population has decided not to work for no reason most likely because of more generous welfare benefits

- Minimum wages has no effect on reducing housing income inequality and have small effects on alleviating poverty

- Household income inequality has been rising because of rising divorce rates

KEY TAKE AWAYS (Slide 3)

- Divorce rates are at 50% higher among tenants than homeowners

- Remarriage rate are much higher for men than women

- Our public rental housing program in general and the allocation criterion in particular generate perverse incentives for low-income families to become divorced

- Creating additional housing demand and …

KEY TAKE AWAYS (Slide 4)

- Broken families most probably worsen intergenerational mobility, especially among low-income single parent families

- Many of these families are concentrated in the public housing estates, and will continue to be

- Policy interventions to enhance mobility and alleviate poverty must occur when the children are very young

KEY TAKE AWAYS (Slide 5)

- Public rental housing expenditures have serious fiscal consequences

- New Subsidized Housing Scheme centered around homeownership (rather than public rental units) with heavy land premium studies somewhat like Singapore's HDB may be only choice

Politics and Analysis

- Inequality, poverty and intergenerational mobility were not political issues in pre-industrial societies (with the possible exception of extreme poverty bordering on starvation leading to open rebellion)
- They are now in industrial societies
- The Left interprets these issues as unequal power relations between capital and labor
- Economists interpret the issues as unequal opportunities and differential incentives than can be remedied by correct policies and worsened by incorrect ones

- Common tendency in highly politicized discussions is to confound the following concepts:
  - Inequality of income or wealth
  - Poverty
  - Intergenerational mobility
- One such example is to use income inequality measures to define poverty, e.g., poverty lines
- An example of the confounding of inequality and intergenerational mobility is the Great Gatsby Curve

What Determines Individual Income Inequality?

- Focus on one component of income: individual labor earnings
- Earnings = Wage x Hours worked per period
- Inequality of wage rates and hours of work affect inequality of earnings
- Wage rate depends on productivity *(education, soft skills, and health*)
- Hours worked per year depends on incentives (*wage rate, other sources of income, taxes and subsidies, health, economic conditions, ability and opportunity to work with others*)

Net Annual Percentage Increase in Population Aged 15 and Over by Educational Attainment (1961-2011)

Educational Attainment	1961 - 1971	1971 - 1976	1976 - 1981	1981 - 1986	1986 - 1991	1991 - 1996	1996 - 2001	2001 - 2006	2006 - 2011
Upper Secondary & Matriculation	5.1	0.4	5.2	4.0	0.3	1.3	1.2	-1.9	2.8
Non-degree post-secondary			21.6	4.2	13.6	-2.3	-4.9	15.2	4.3
Degree course	0.9	4.6	0.8	5.4	6.2	12.5	4.1	4.1	3.1

Average Years of Schooling in Hong Kong and Singapore (aged 25+)

	Years of Schooling					
	Men and Women		**Men**		**Women**	
	Hong Kong	**Singapore**	**Hong Kong**	**Singapore**	**Hong Kong**	**Singapore**
1981	6.2	4.7	7.3	5.6	5.0	3.7
1991	7.5	6.6	8.3	7.3	6.7	5.9
2001	8.6	8.6	9.2	9.2	8.0	8.1
2011	9.7	10.1	10.2	10.6	9.2	9.7

# Total Factor Productivity in Hong Kong and Singapore 1960-2011
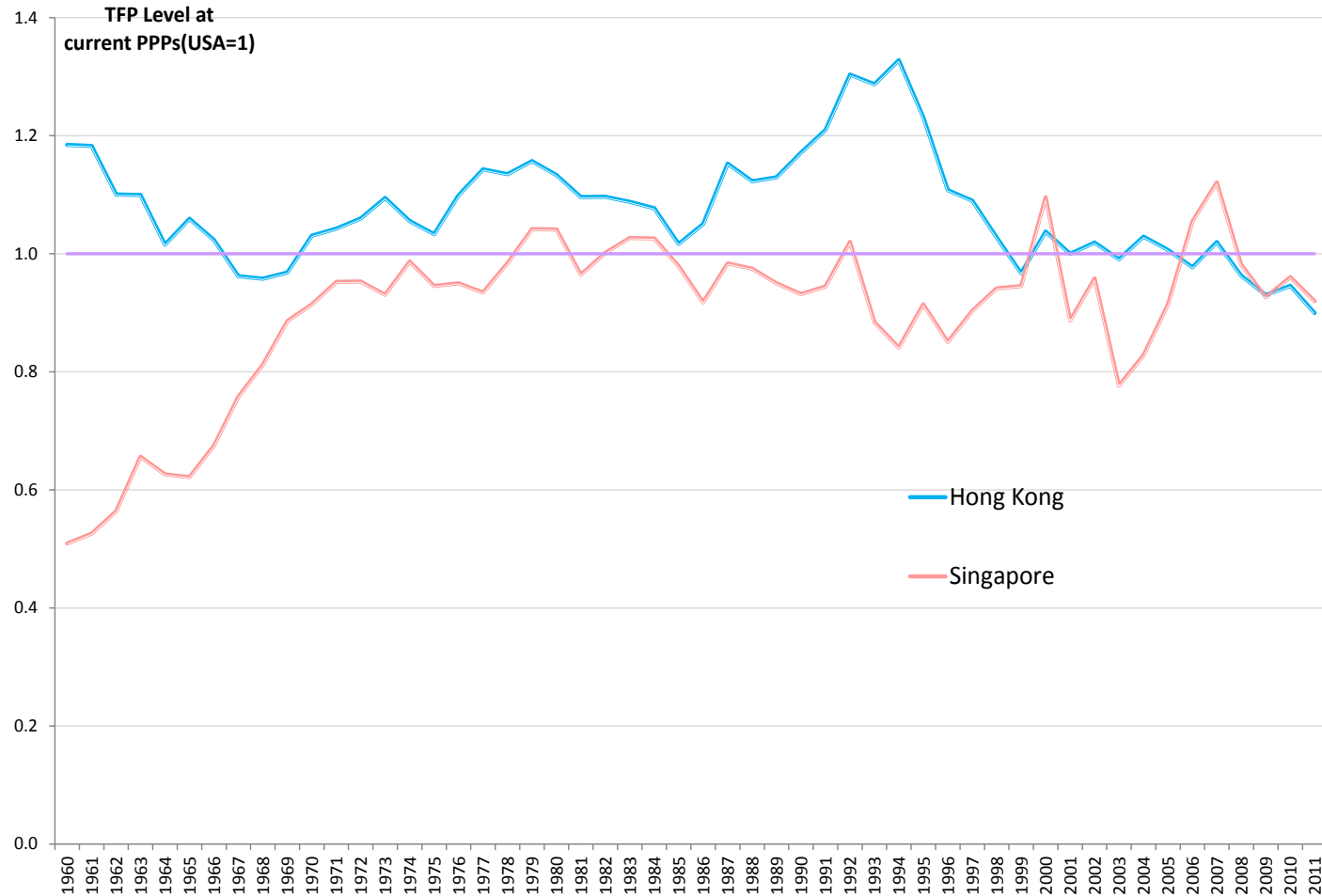
Annual Percentage Growth of Real Median Monthly Individual Income from Main Employment by Decile Groups (1981-2011)

	1981-1996	1996-2011	1981-2011
1st decile (lowest)	5.69	0.25	2.85
2nd	5.04	-0.20	2.30
3rd	5.12	0.37	2.64
4th	4.74	0.70	2.63
5th	4.72	1.08	2.82
6th	4.46	1.34	2.83
7th	4.26	1.50	2.83
8th	4.62	1.99	3.25
9th	5.68	2.10	3.82
10th (highest)	7.16	2.08	4.51

Labor Force Participation Rates in Hong Kong and Singapore 2011 (percentages)

| Age	Both Sexes (%)		Men (%)		Women (%)	
	Hong Kong	Singapore	Hong Kong	Singapore	Hong Kong	Singapore
15-19	15.5	12.3	15.8	14.6	15.2	9.8
20-24	64.6	62.8	64.5	63.2	64.6	62.5
25-34	85.7	88.9	92.1	94.8	79.9	83.7
35-44	79.8	86.1	92.1	97.4	69.7	75.8
45-54	75.0	81.8	89.2	94.8	61.8	68.9
55-64	49.2	63.3	64.9	79.3	33.4	47.6
65+	7.0	19.9	11.5	30.2	3.0	11.6
Overall	**57.9**	**66.1**	**67.0**	**75.6**	**49.6**	**57.0**

Percentage of Men not in the Labor Force for No Compelling Reason by Age Group
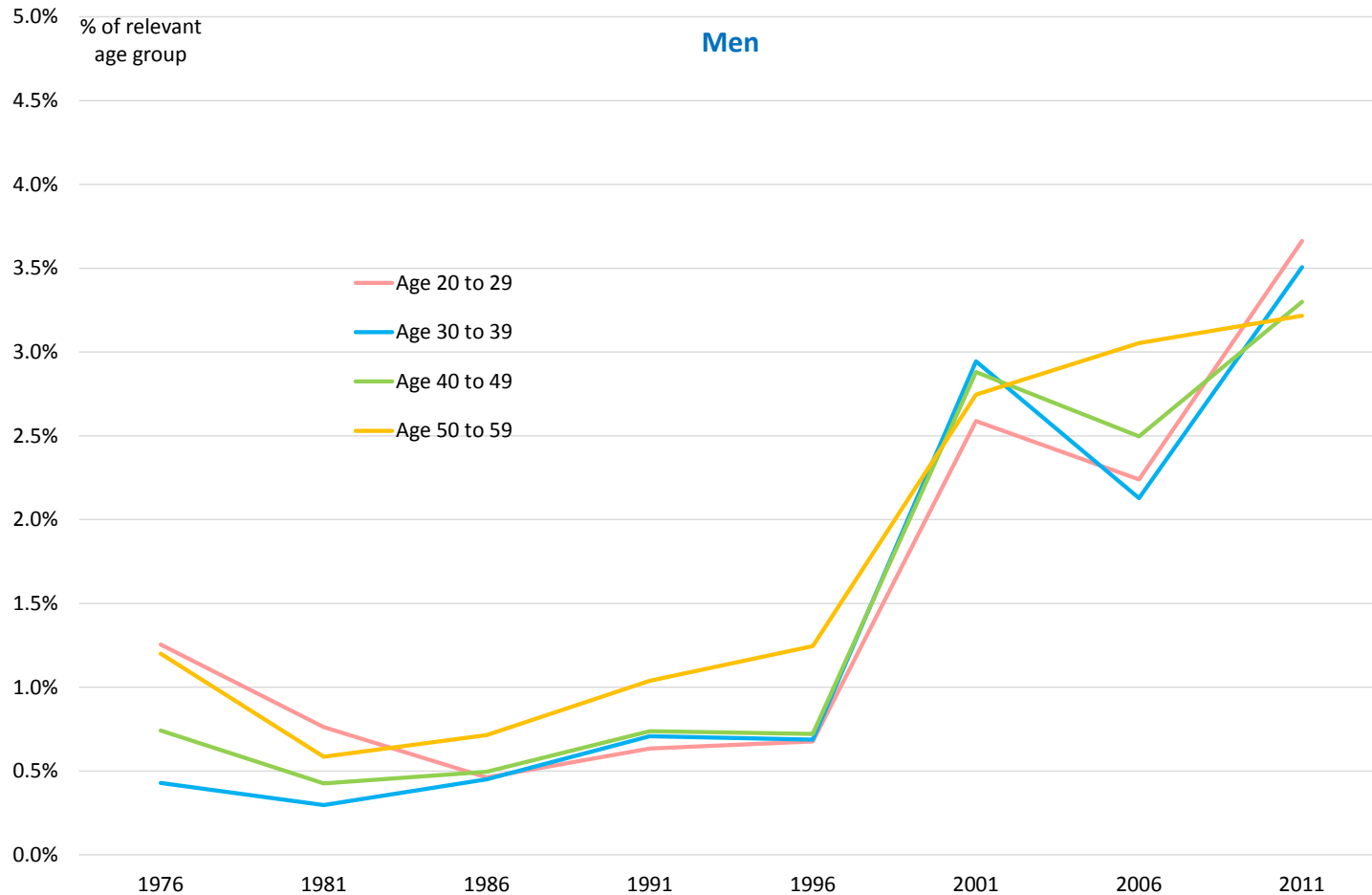
Percentage of Women not in the Labor Force for No Compelling Reason by Age Group
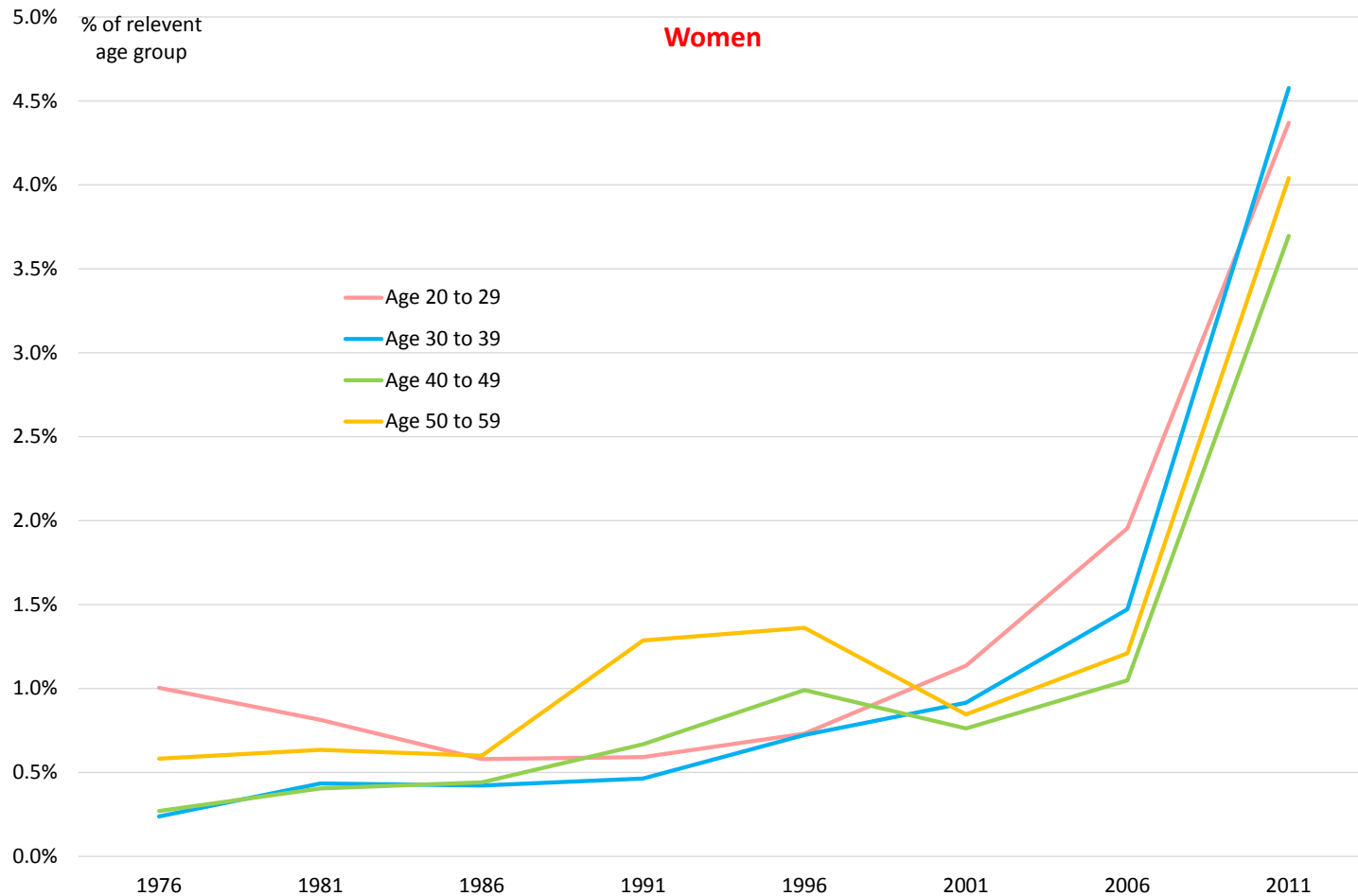
Public Expenditure – Social Welfare, Health and Education
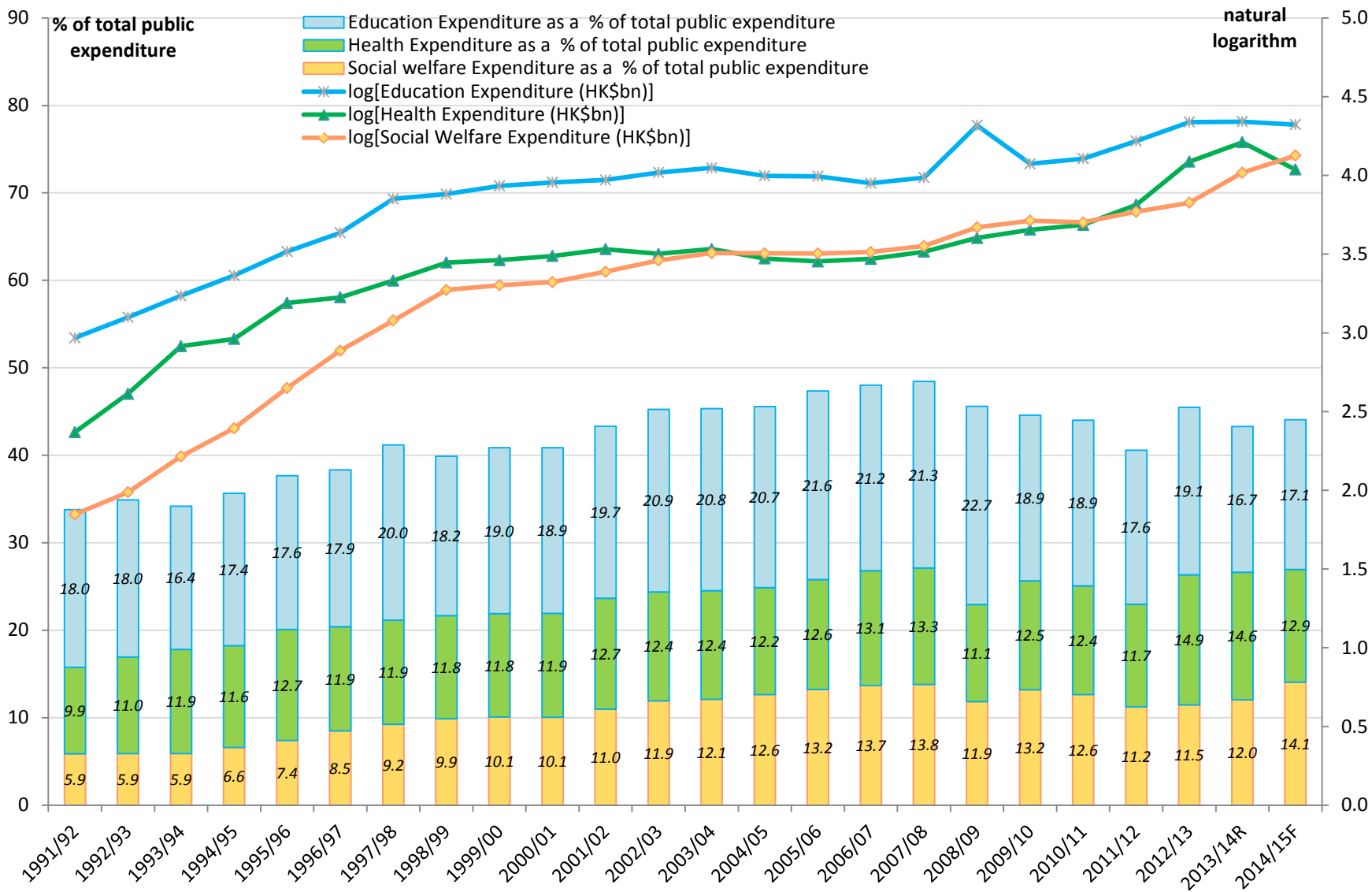
Household Income Inequality

- Ability and opportunity to work with whom? Household members? Depend on their wage rates and hours worked?
- Household earnings is the sum of members' individual earnings
- Household size matters. Whether members work matters. All affects household earnings inequality.
- Who marries who matters. Who divorces who matters
- Why? And how has this changed over time?

Marital Sorting

- Educated men marries educated women
- More women become well educated and therefore more working women
- Households with well educated couples become a two-income family
- M:100+W:50 => HH:100; M:100+W:75 => HH:175
- Households with less well educated couples remain a one-income family
- M:60+W:30 => HH:60; M:60+W:45 => HH:60

- 50 years ago most women did not work, even well educated women

- Today more well educated women work, but many of the less well-educated still does not work

- Household earnings inequality therefore increases even if individual earnings inequality does not

- Should we be worried?
- About what?
  - Inequality?
  - Intergenerational mobility?
- Individual earnings inequality has not changed very much over time
- Household earnings inequality has risen a lot more?
- How about intergenerational mobility?
- What has happened?

Single Parenthood

- Divorces have increased rapidly in HK
- They are higher among low-income families
- Consider two households:
  - Family R => M=100 W=100 Total=200
  - Family P => M=50 W=50 Total=100
  - Average household income = 150
- Now Family P divorces
  - Family R => M=100 W=100 Total=200
  - Family P1 => M=50
  - Family P2 => W=50
  - Average household income = 100 inequality widens

Rising Incidence of Divorce 1971-2011

	1971	1981	1991	2001	2011
Number of single-person households per 1000 households	145	152	148	156	171
Number of divorces granted per 1000 households	0.79	1.66	3.98	6.54	8.27
Number of divorced individuals per 1000 households	9.5	19.5	33.8	74.2	117.4
Percentage of single parents among ever-married households (age≤65 with children≤age18)	6.0%	8.7%	8.6%	11.5%	15.4%

Note: Blue font figures are for 1976

HK Divorce Rate among Top 10 in the World

• Russia	4.8	Switzerland	2.8
• Belarus	4.1	Ukraine	2.8
• USA	3.6		
• Gibraltar	3.2	Hong Kong	2.9
• Moldova	3.1		
• Belgium	3.0	China	2.0
• Cuba	2.9	UK	2.0
• Czech Rep	2.9	Singapore	1.5

Household and Individual Income Inequality

|	1976	1981	1991	2001	2011
Gini-coefficient of Monthly Household Income	0.429	0.451	0.476	0.525	0.537
Log Variance of Monthly Household Income	0.688	0.783	0.887	0.967	1.131
Household income percentile ratio P90/P10	6.22	7.44	8.15	10.19	13.11
Gini-coefficient of Monthly Individual Income	0.411	0.398	0.434	0.466	0.487
Log Variance of Monthly Individual Income	0.529	0.462	0.488	0.603	0.708
Individual income percentile ratio P90/P10	5.00	4.26	4.61	6.05	6.33

Cumulative Number of Households and Households with Minimum Wage Workers by Income Deciles 2011

	Households with Minimum Wage Workers		All Households	
	Cumulative Numbers	Cumulative Share	Cumulative Numbers	Cumulative Share
Lowest Decile	8115	0.067	260462	0.110
Lowest to 2nd Decile	23527	0.195	489762	0.207
Lowest to 3rd Decile	43829	0.362	758652	0.321
Lowest to 4th Decile	61017	0.504	968403	0.410
Lowest to 5th Decile	76934	0.636	1215405	0.514
Lowest to 6th Decile	91618	0.757	1424599	0.603
Lowest to 7th Decile	105844	0.875	1712650	0.725
Lowest to 8th Decile	113938	0.942	1918450	0.812
Lowest to 9th Decile	118291	0.978	2149216	0.909
Lowest to Highest Decile	120953	1.000	2363276	1.000

Lifetime Earnings

- Who is rich? Who is poor? What is a person's true economic position?
- Earnings at a time or over a lifetime?
- A cross-section measure of household income takes a snapshot at a moment in time
- People have different life expectancies and are at different ages
- Can a snapshot be representative of a lifetime's earnings?
- Schooling is a much better measure of lifetime earnings; and of economic position

Mean Earnings by Age, 2009
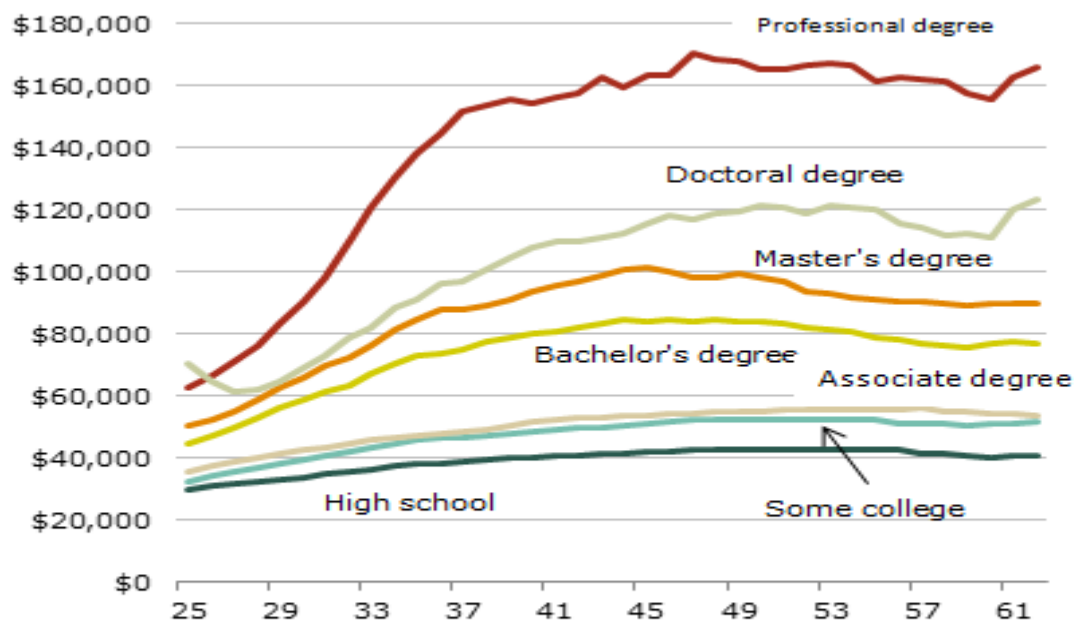
Source: 2009 American Community Survey (ACS) Integrated Public Use Micro Sample

Notes: Estimated for full-time, full-year workers. Plots show a 3-year moving average.

From Inequality to the Poverty Line

- Who is in poverty?
- Those with low income? Or those who have inadequate consumption?
- Implicit shifting of concepts – from low productivity to inadequate consumption
- Social welfare replaces economic productivity
- Measuring household spending is more challenging and time consuming than measuring household income
- So poverty is now defined as 50% below the median income of households – the poverty line is therefore tied to income inequality

Median Monthly Household Income by Age of Head of Household in 2011

Median Monthly Household Income by Size of Head of Household in 2011
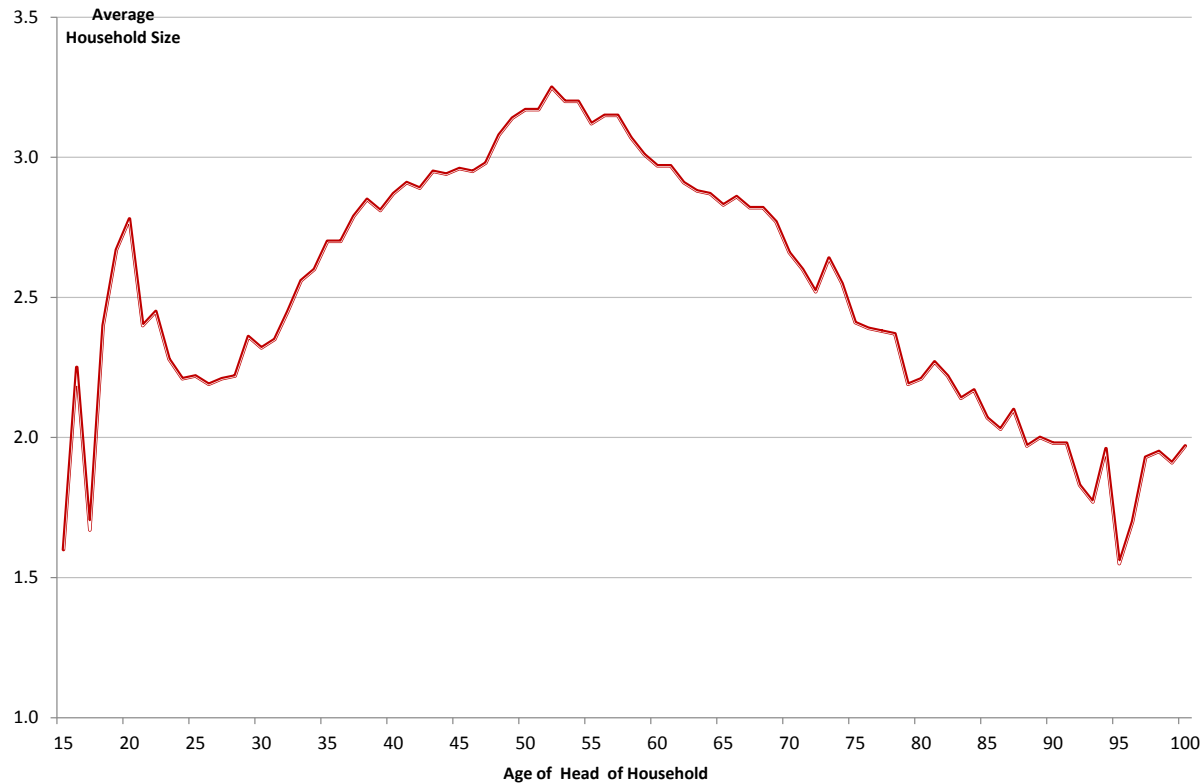
- Who is in poverty?
- Find the median income of households with similar sizes – then take 50%
- Find the median income of households with similar ages of the head – then take 50%
- How Sensitive is the Poverty Line?

Numbers and Percentages of Households Classified as Poor under Two Poverty Lines at 50% of median household income

| Poverty Line by Household Size			Poverty Line by Age of Head		
House hold size	Poor	Not-Poor	House hold size	Poor	Not-Poor
1	127140 (32%)	269080 (68%)	1	213720 (54%)	182500 (46%)
2	154400 (26%)	439120 (74%)	2	173300 (29%)	420220 (71%)
3	113080 (19%)	487220 (81%)	3	94020 (16%)	506280 (84%)
4	82700 (17%)	412600 (83%)	4	54480 (11%)	440820 (89%)
5+	32640 (16%)	171480 (84%)	5+	16020 (8%)	188100 (92%)
Total	509960 (22%)	1779500 (78%)	Total	551540 (24%)	1737920 (76%)

Numbers and Percentages of Households classified as Poor under Two Poverty Lines at 50% of median household income

Poverty Line by Household Size			Poverty Line by Age of Head		
Age of Head	Poor	Not-Poor	Age of Head	Poor	Not-Poor
< 25	5000 (22%)	17560 (78%)	< 25	4580 (20%)	17980 (80%)
25-34	20000 (9%)	191220 (91%)	25-34	41740 (20%)	169480 (80%)
35-44	66000 (15%)	373360 (85%)	35-44	97880 (22%)	341880 (78%)
45-54	101620 (15%)	555780 (85%)	45-54	135620 (21%)	521780 (79%)
55-64	97760 (20%)	384720 (80%)	55-64	123520 (26%)	358960 (74%)
65-74	95700 (40%)	145720 (60%)	65-74	71900 (30%)	169520 (70%)
75+	123880 (53%)	110740 (47%)	75+	76300 (33%)	158320 (67%)
Total	509960 (22%)	1779500 (78%)	Total	551540 (24%)	1737920 (76%)

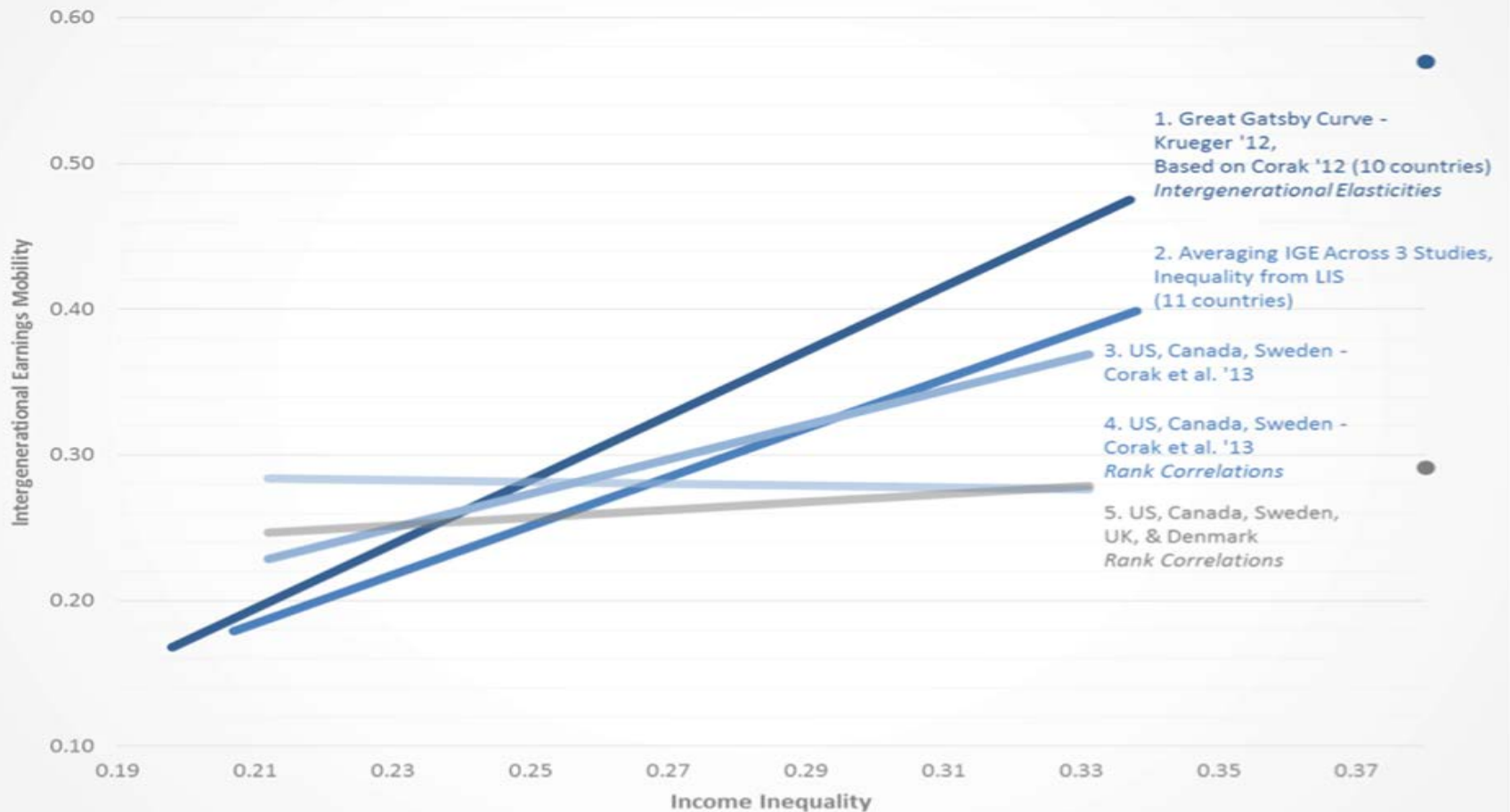# Inequality and Intergenerational Mobility

- Is inequality and intergenerational mobility related?

"The Great Gatsby Curve"
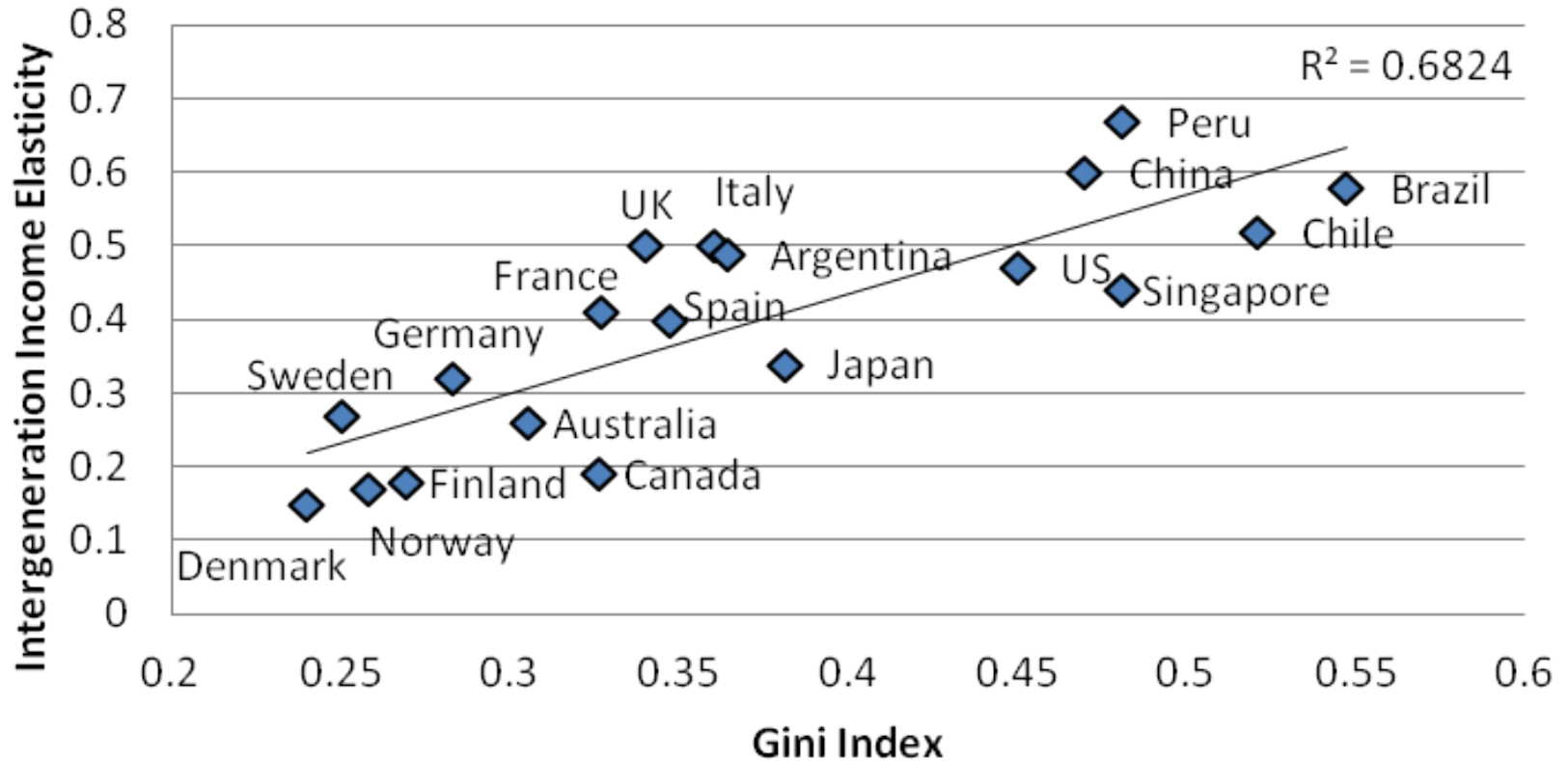
Prof Alan Krueger , Chair of the US Council of Economic Advisors (2012)

Collapse of the Great Gatsby Curve

1. Great Gatsby Curve - Krueger '12, Based on Corak '12 (10 countries) *Intergenerational Elasticities*

2. Averaging IGE Across 3 Studies, Inequality from LIS (11 countries)

3. US, Canada, Sweden - Corak et al. '13

4. US, Canada, Sweden - Corak et al. '13 *Rank Correlations*

5. US, Canada, Sweden, UK, & Denmark *Rank Correlations*

Y-axis: Intergenerational Earnings Mobility (0.10 to 0.60)

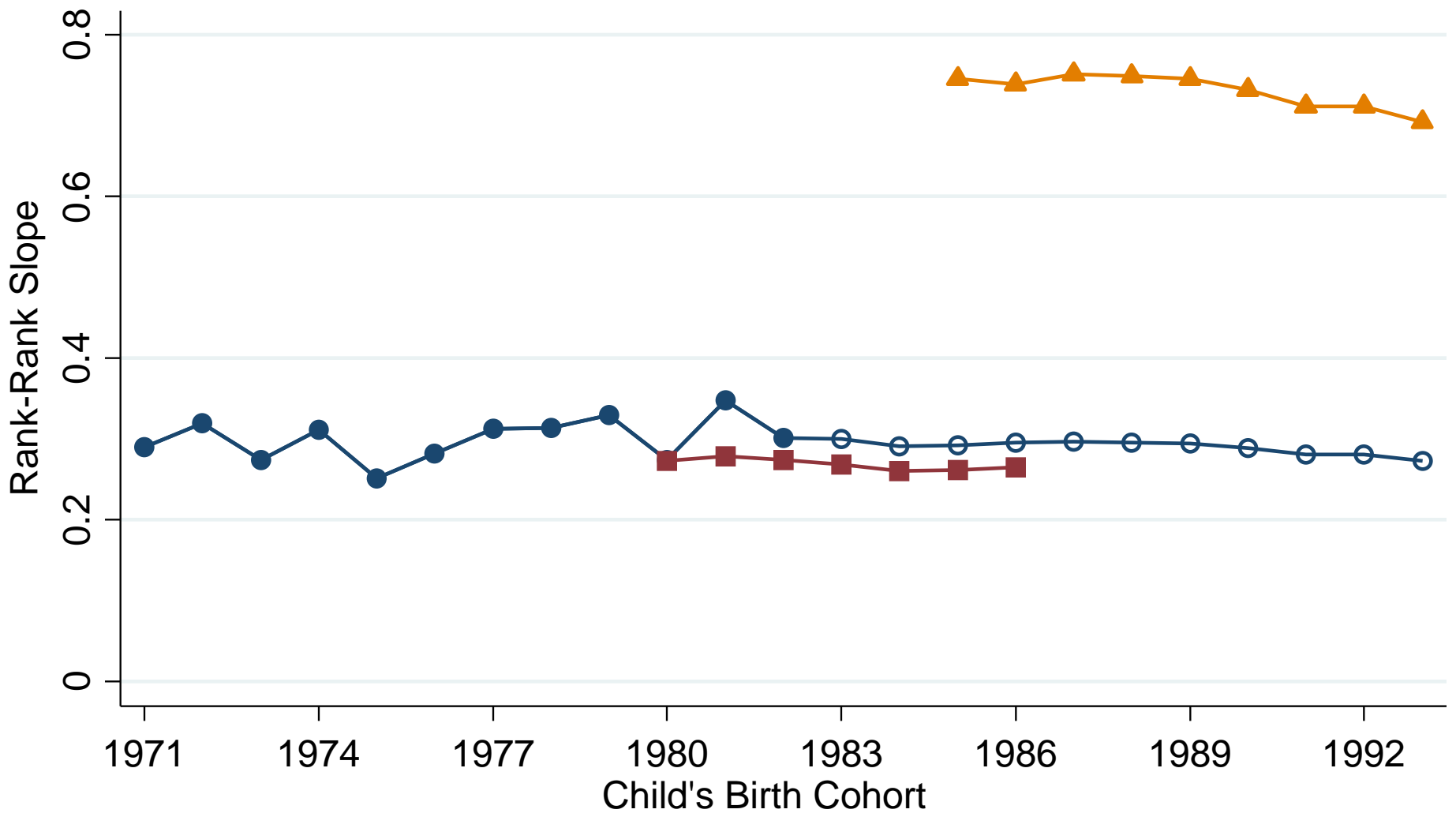X-axis: Income Inequality (0.19 to 0.37)

US Intergenerational Mobility

Raj Chetty, Nathaniel Hendren, Patrick Kline, Emmanuel Saez

- Growing public perception that intergenerational mobility has declined and income inequality has risen in the US

- Analyze trends in mobility for 1971-1993 birth cohorts using administrative data on more than 50 million children and their parents
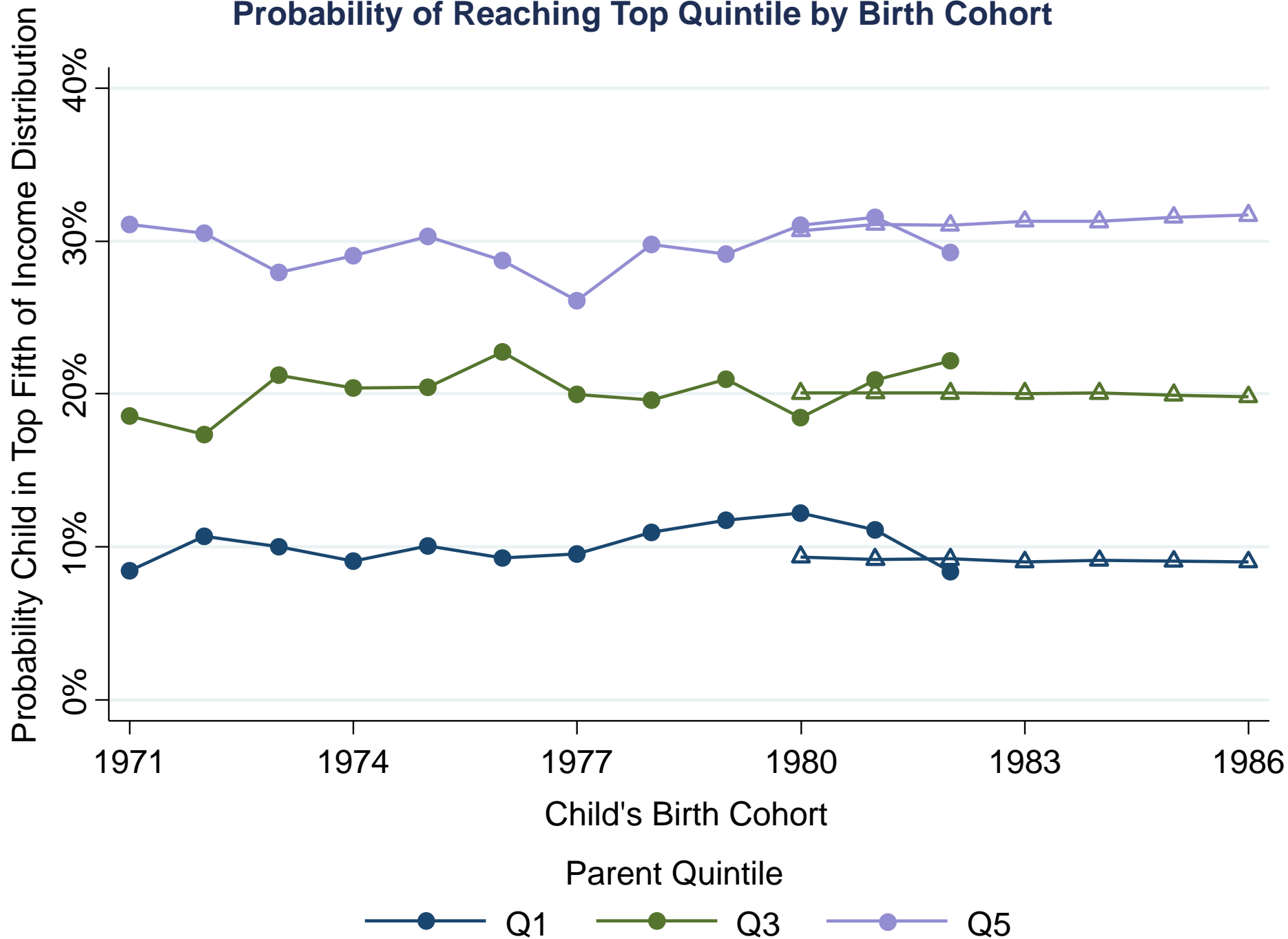
- **Two main empirical results**
  - Relationship between parent and child percentile ranks is extremely stable
    - Chance of moving from bottom to top fifth of income distribution no lower for children entering labor market today than in the 1970s
  - Inequality increased in this sample, consistent with prior work
    - Consequences of the "birth lottery" – the parents to whom a child is born – are larger today than in the past

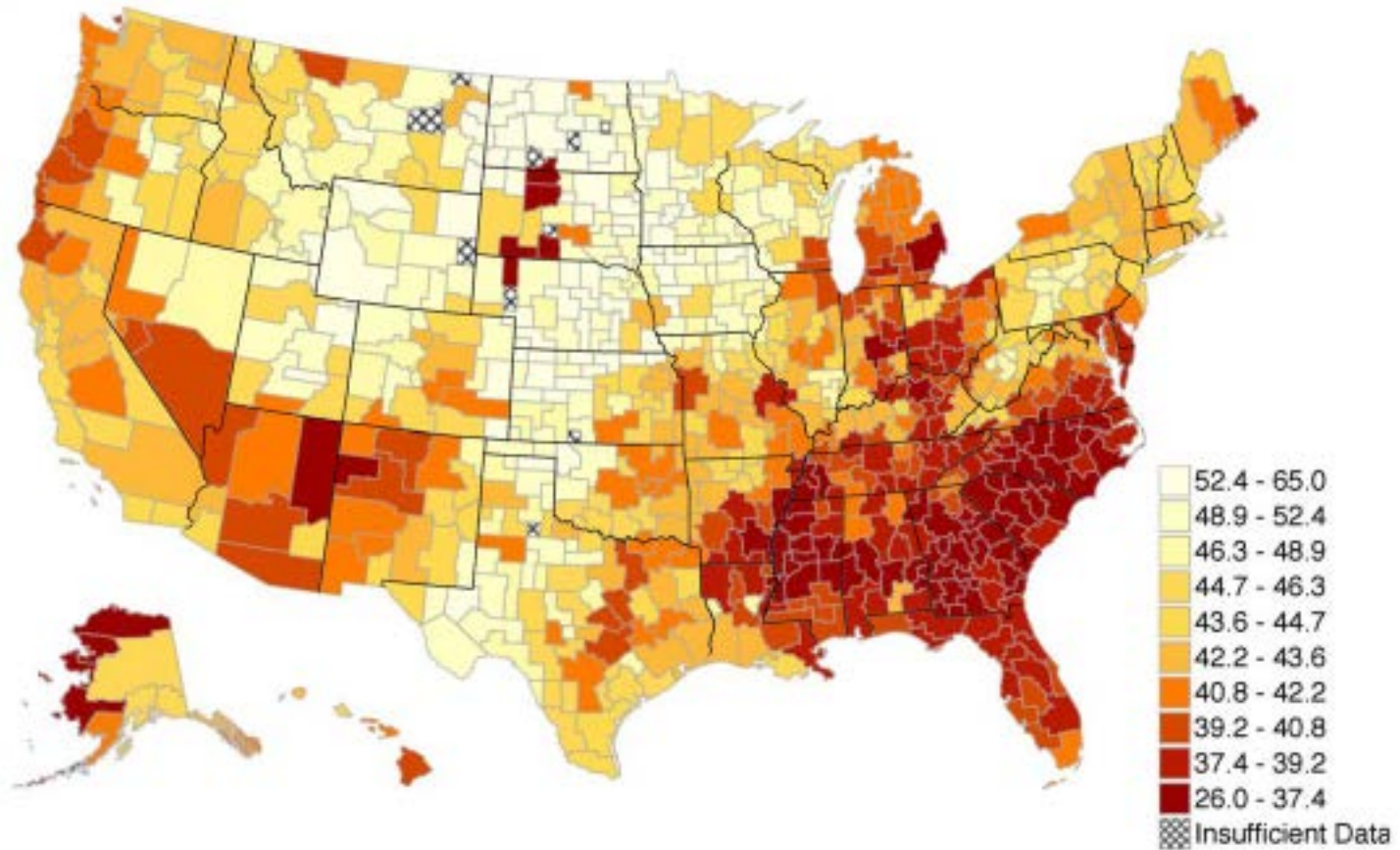**Intergenerational Mobility Estimates for the 1971-1993 Birth Cohorts**

Probability of Reaching Top Quintile by Birth Cohort

Y-axis: Probability Child in Top Fifth of Income Distribution

X-axis: Child's Birth Cohort

Parent Quintile: Q1, Q3, Q5

Geography of US Intergenerational Mobility

|	
☐	52.4 - 65.0
☐	48.9 - 52.4
☐	46.3 - 48.9
☐	44.7 - 46.3
☐	43.6 - 44.7
☐	42.2 - 43.6
☐	40.8 - 42.2
☐	39.2 - 40.8
☐	37.4 - 39.2
☐	26.0 - 37.4
▨	Insufficient Data

US Cities

Upward Mobility in the 50 Biggest Cities: The Top 10 and Bottom 10

Rank		Odds of Reaching Top Fifth Starting from Bottom Fifth	Rank		Odds of Reaching Top Fifth Starting from Bottom Fifth
1	San Jose, CA	12.9%	41	Cleveland, OH	5.1%
2	San Francisco, CA	12.2%	42	St. Louis, MO	5.1%
3	Washington DC, DC	11.0%	43	Raleigh, NC	5.0%
4	Seattle, WA	10.9%	44	Jacksonville, FL	4.9%
5	Salt Lake City, UT	10.8%	45	Columbus, OH	4.9%
6	New York, NY	10.5%	46	Indianapolis, IN	4.9%
7	Boston, MA	10.5%	47	Dayton, OH	4.9%
8	San Diego, CA	10.4%	48	Atlanta, GA	4.5%
9	Newark, NJ	10.2%	49	Milwaukee, WI	4.5%
10	Manchester, NH	10.0%	50	Charlotte, NC	4.4%

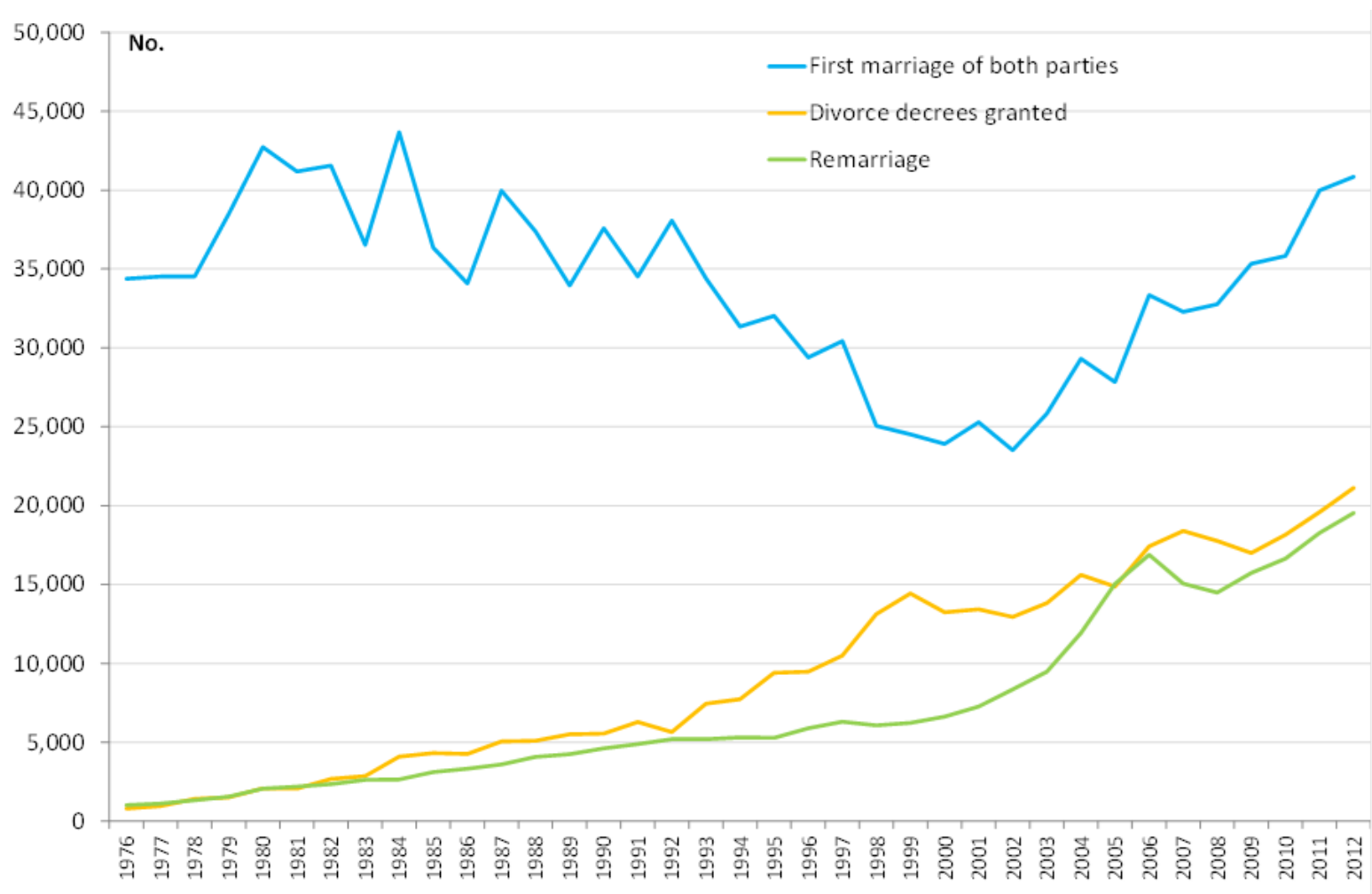# Differences in Mobility are Strongly driven by factors while children are growing up

Upward Mobility by Share of Single Mothers in a Community
A. Upward Mobility vs. Fraction Single Mothers in CZ

Correlation = -0.764
(0.074)

Upward Mobility ($\bar{y}_{25}$)

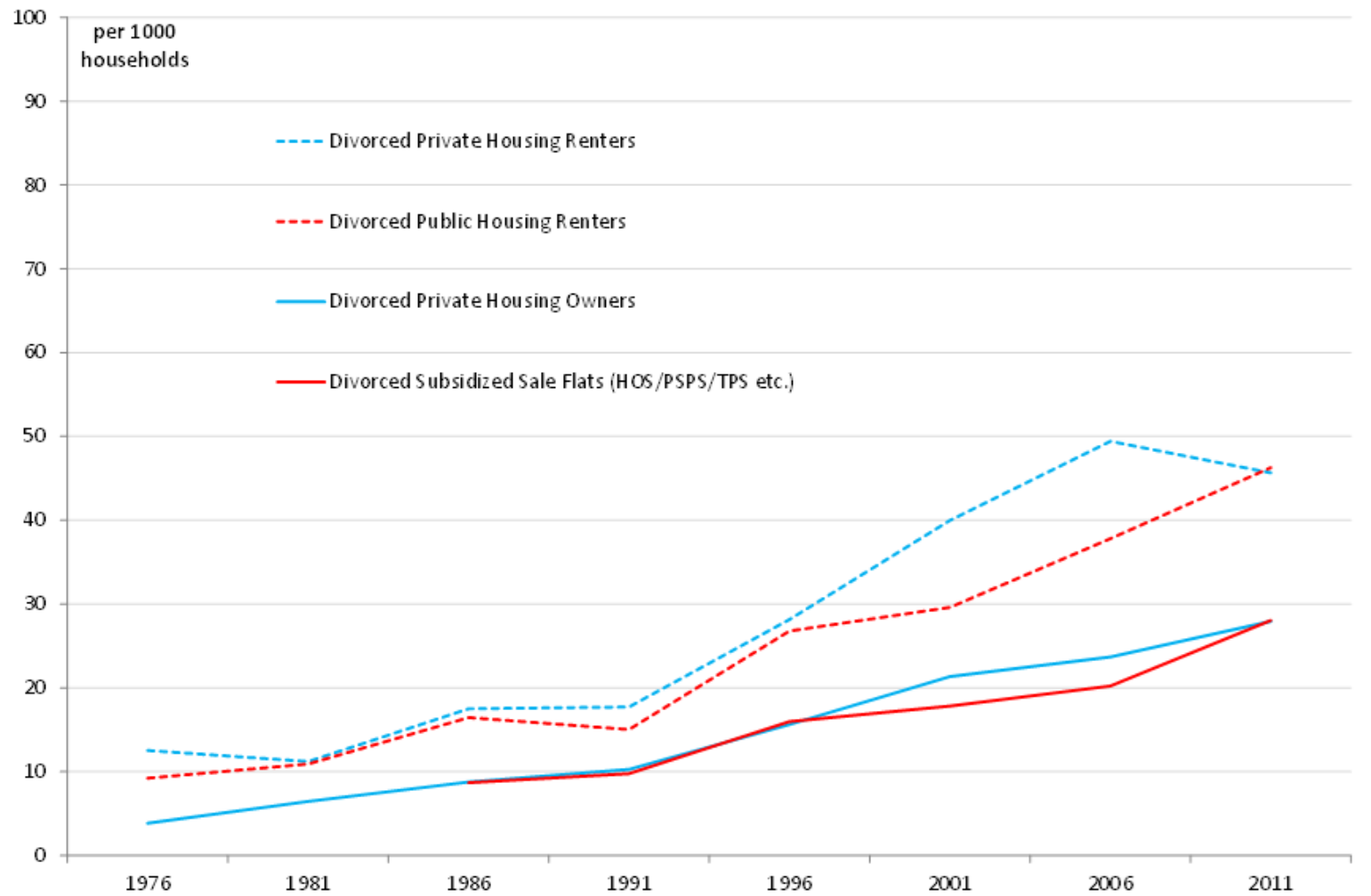Fraction of Children Raised by Single Mothers
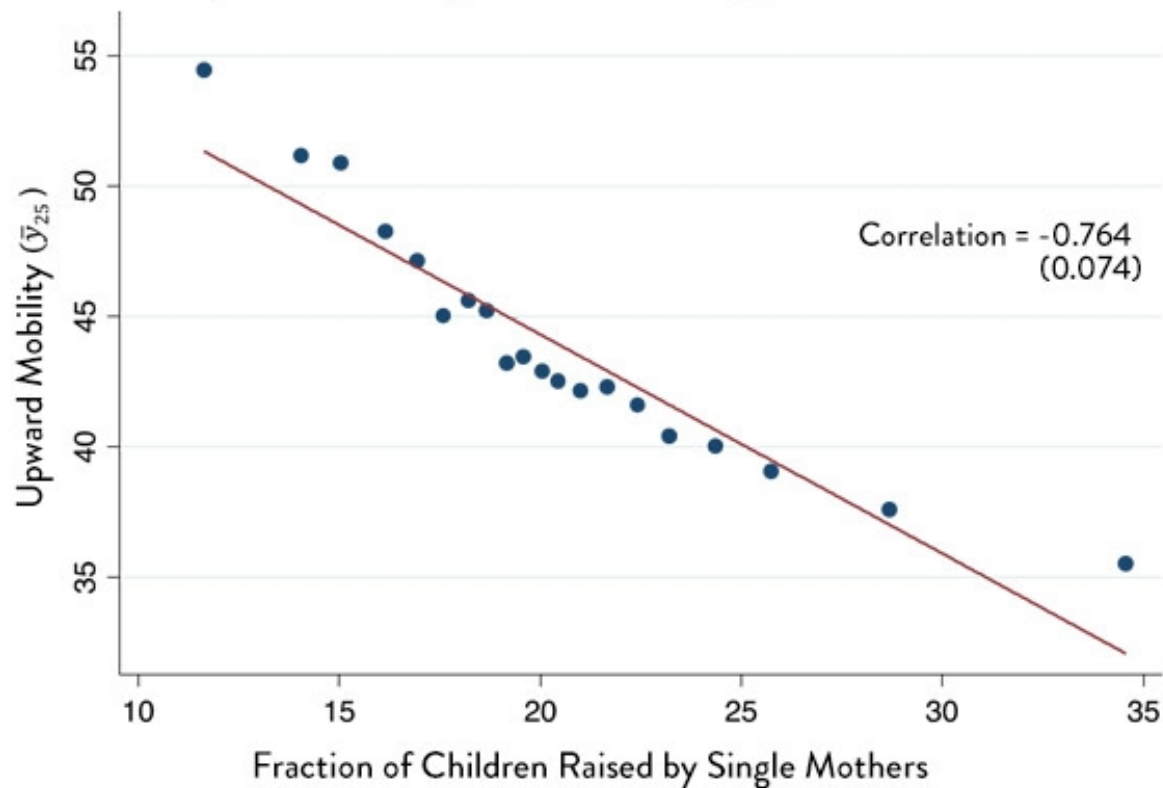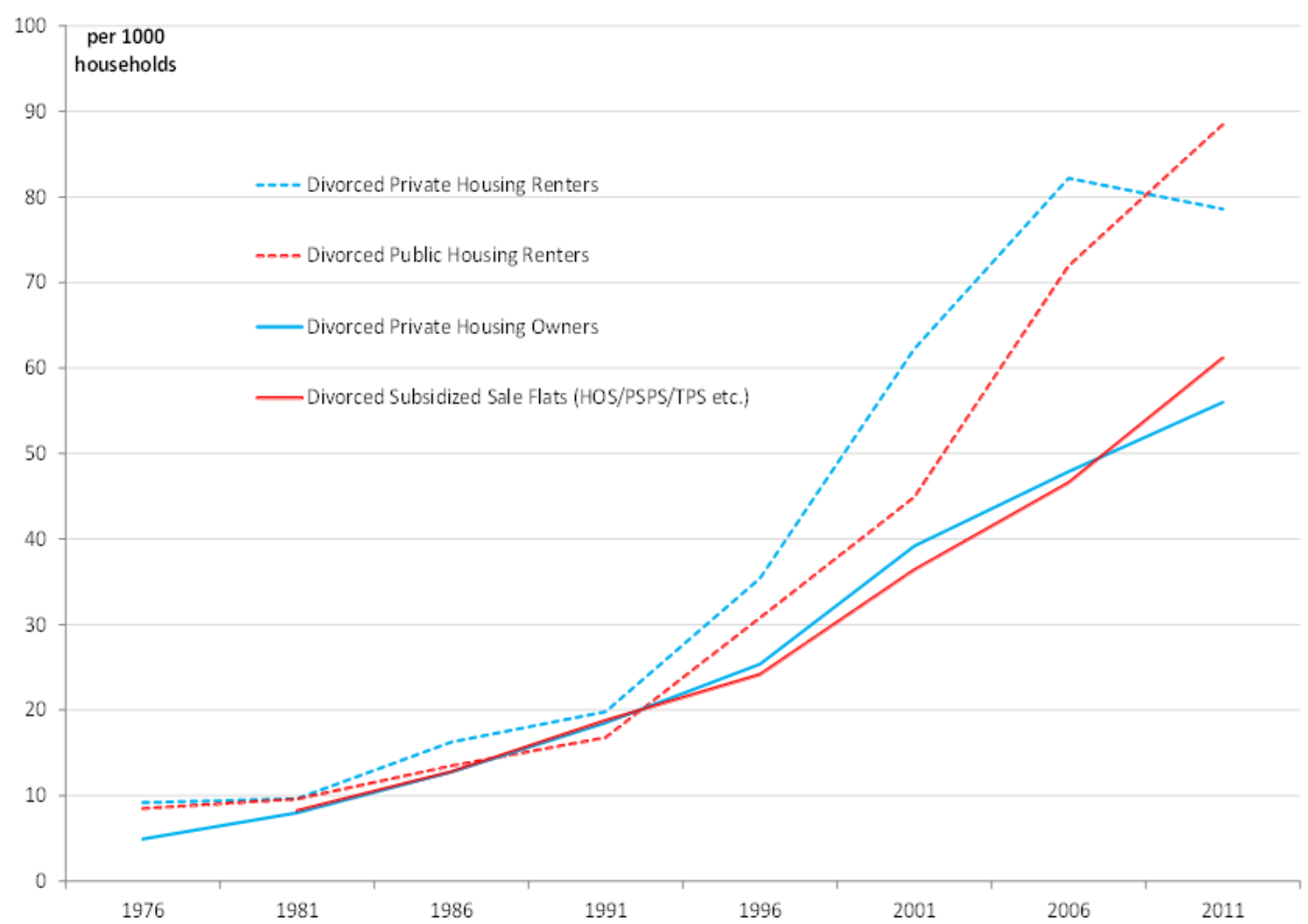
Source: Chetty, et al., 2014

First Marriages, Divorces and Remarriages

Number of Divorced and Separated Men per 1000 Households by Housing Tenure

Number of Divorced and Separated Women per 1000 Households by Housing Tenure

Housing Tenure of Married and Divorced Men and Women (thousands)

Marital Status and Sex	Year	Public Renter	Private Renter	Subsidized Flats	Private Owner	Total
Married men	1991	473	244	101	467	1285
	2001	506	242	281	579	1608
	2011	502	267	304	679	1752
Married women	1991	464	198	103	476	1240
	2001	470	219	278	567	1537
	2011	481	258	302	679	1721
Divorced men	1991	8	5.9	1	5	21
	2001	21	15	6	13	56
	2011	41	19	11	21	92
Divorced women	1991	9	7	2	11	29
	2001	33	24	11	25	92
	2011	78	33	23	42	176

The State of White America, 1960-2010

- Compares 2 fictional towns
- Fishtown – working class
- Belmont – professionals

- http://www.newcriterion.com/articles.cfm/Belmont---Fishtown-7250
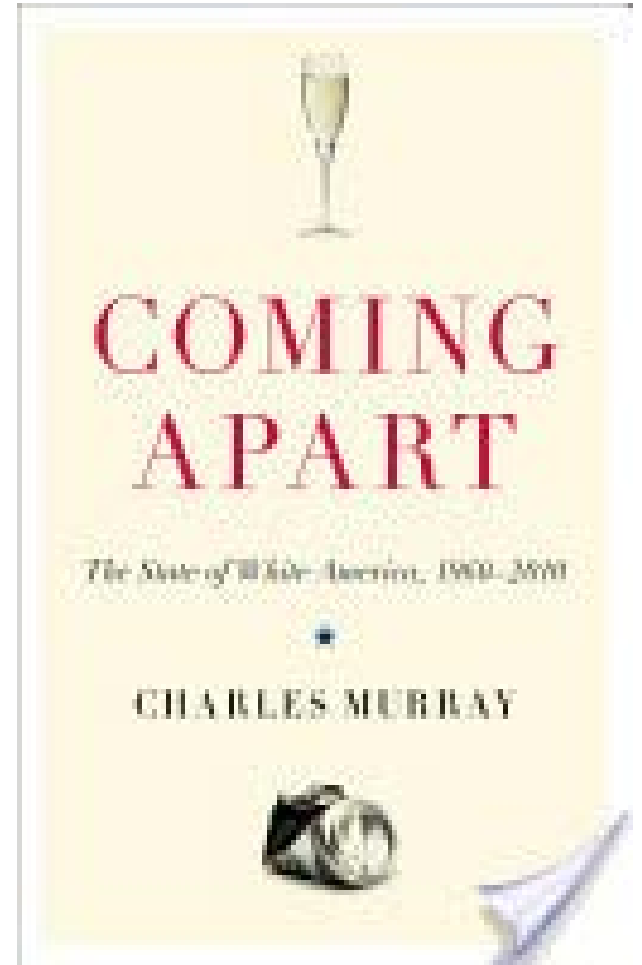
It Pays to Invest in Early Education

- Nobel economist James Heckman evaluated numerous programs and concluded that early interventions makes a huge difference
- IQ becomes more difficult to change after 10
- Other factors like conscientiousness and motivation also play a huge role
- When it comes to the matter of forming skills, parenting is critical
- Alfred Marshall, in his *Principles of Economics*, remarked "The greatest capital that you can invest in is human capital, and, of that, the most important component is the mother."

- Some kids grow up in one of the worst circumstances financially, living in some of the worst ghettos, and they succeed
- They succeed because an adult figure, typically a mother, maybe a grandmother, nourishes the kid, supports the kid, protects the kid, encourages the kid to succeed
- This overcomes the bad environment he was born into

- What the War against Poverty was doing 50 years ago was to give people money to change poverty and hopefully raise the standards of the next generation
- But it didn't seem to have done much good
- What we failed to understand was that the real poverty was parenting
- Of course, when the kid is starving and doesn't get any food, then of course money would matter, but this is not what we are facing today here

- So what we are getting now is kids growing up in a new form of child poverty

- That new form of child poverty is actually threatening their ability to go to school, their willingness to learn, their attitudes and their motives

- That's a major source of worsening intergenerational mobility and inequality

# A Foal can Stand Up to Feed One Hour after Birth

A Toddler can Barely Walk Unassisted after One Year

How Housing Policy Can Help Lower Divorce Rates and Improve the Future of the Next Generation?

- Current housing strategy will break public resources and low tax rates

- Historically for every 4 PRH units we build we also build 2 HOS units

- 1 of the HOS units is allocated to PRH households the other to private sector renters

- PRH units incur recurrent losses and have to be financed by profits from sale of HOS units

Public Expenditure Shares 1990-2015
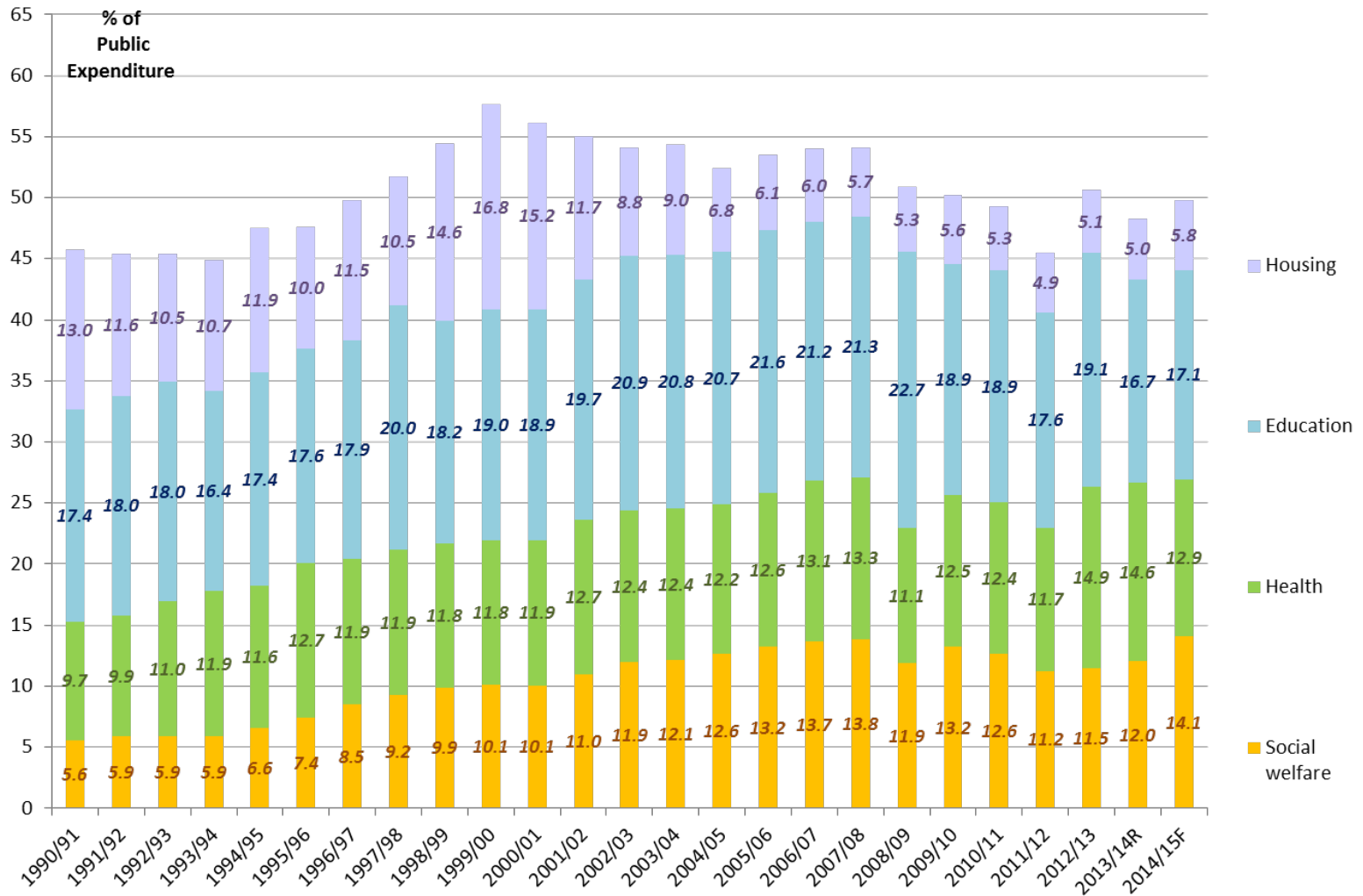
How Housing Policy Can Help Lower Divorce Rates and Improve the Future of the Next Generation?

- Make the poor homeowners will reduce divorce rates and give poor children a better deal

- Why concentrate the poorest in PRH estates where divorce rates are highest

- Better role models in a mixed neighborhood is good for children's development

- A city of homeowners is less politically divided

- Today's median household income is $20000 plus, the poor can never become homeowners unless the property market collapses permanently

- Introduce a Subsidized Homes Scheme (SHS)
- Single scheme for rent w/option to buy at any time
- Similar in nature to Singapore's HDB
- Land premiums on SHS units must be discounted to affordable levels benchmarked against income
- No restrictions on resale say after 5 years on open market
- Allow owners of SHS units to possess redevelopment rights (differs from Singapore)

Conversion to SHS

- Unify PRH, TOS and HOS units into a single SHS scheme

- Convert existing PRH, TOS and HOS units into SHS

- Convert PRH into SHS scheme via a revised TPS (issue is land premium)

- Revive and revise TPS to converge on SHS

- Reduce exorbitant land premium for HOS and TPS units to converge on SHS units

- Allow no restrictions on resale after 5 years on open market

- Permit redevelopment rights

An 80+ Percent Homeownership Target

	2011 (Census)		2013 Q1 (GHS)		10-year Housing Strategy (2013/14 - 2022/23)	2023	
	Domestic Households (No.)	%	Domestic Households (No.)	%		Domestic Households (No.)	%
Homeownership Rate %	*52.1%*		*51.4%*			*82.8%*	
Private Housing	1,251,713	*52.8%*	1,278,200	*53.6%*	188,000	1,466,200	*51.3%*
Private Owners	855,980	*36.2%*	866,400	*36.3%*	127,432	993,832	*34.8%*
Private Renters	395,733	*16.8%*	411,800	*17.3%*	60,568	472,368	*16.5%*
Public Housing	1,098,507	*46.4%*	1,089,700	*45.7%*	282,000	1,371,700	*48.0%*
Subsidized Owners	377,615	*15.9%*	360,100	*15.1%*	-	360,100	*12.6%*
Subsidized Renters	720,892	*30.4%*	729,600	*30.6%*	-	729,600	*25.5%*
Unsold TPS	63,042	2.7%	59,006	2.5%	-	59,006	2.1%
Built before 1997/98	370,106	*15.6%*	358,550	*15.0%*	-	358,550	12.6%
Built 1997/98-2012/13	287,744	*12.1%*	312,044	*13.1%*	-	312,044	*10.9%*
Subsidized Homes Scheme (SHS)	-	-	-	-	-	-	-
Built 2013/14-2022/23	-	-	-	-	282,000	282,000	*9.9%*
Temporary Housing	18,580	*0.8%*	18,300	*0.8%*	-	18,300	*0.6%*
Total	2,368,800	100.0%	2,386,200	100.0%	470,000	2,856,200	100.0%

Thank you very much!