

The Social and External Benefits of Education

(for primary, secondary, tertiary education)

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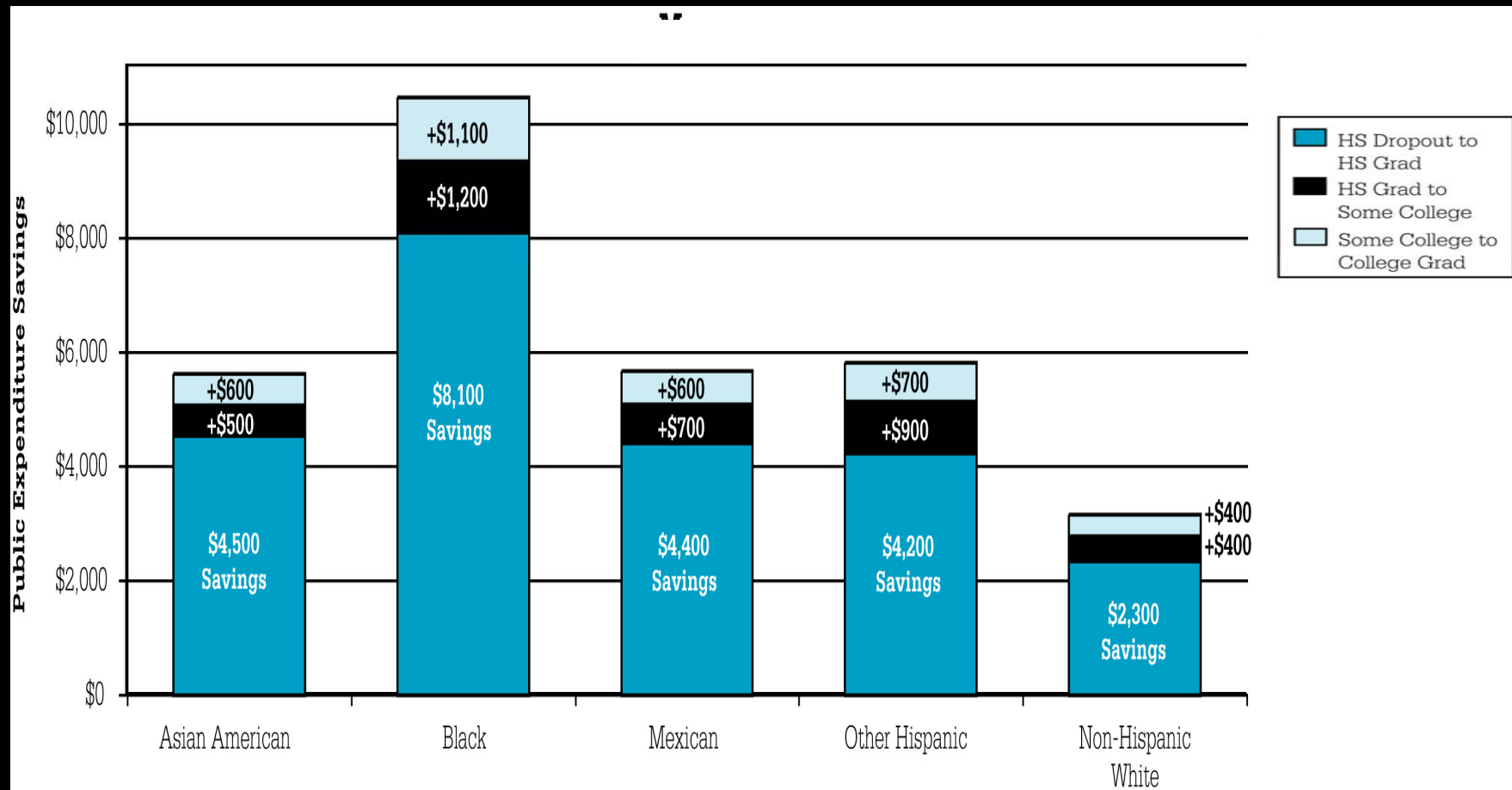
Terminology

- **External Benefits** (“Market Benefits”)
 - Private actions that affect others (sport/work)
 - “*Person A’s investment benefits person B*”
 - Address directly via tax/subsidy (education tax credit)

- **Social Benefits** (“Non-Market Benefits”)
 - Private actions that affect community (crime/health)
 - Hence desirability of investment by society
 - Return on investment must be weighted against alternatives (building prisons or roads etc)

Social Benefit – Example

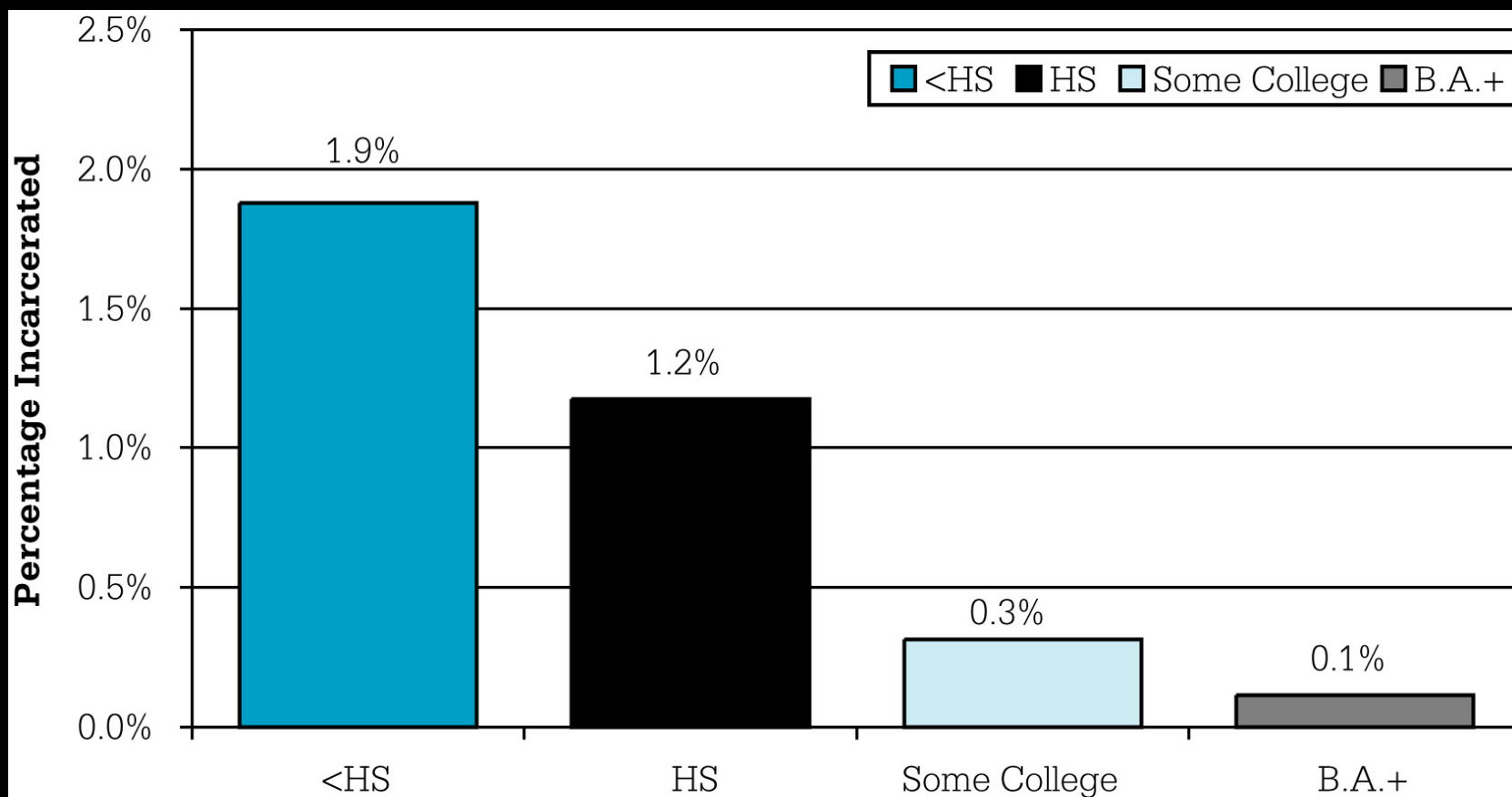
Annual Savings on Social Programs Due to Increased Education



Savings for 30-Year-Old Men Relative to High School Dropouts, 2003 Dollars. Source: Vernez, G., R.A. Krop and C.P. Rydell. (1999). *Closing the Education Gap*. Santa Monica: Rand Corporation.

Social Benefit - Crime

Incarceration Rates by Education



Source: Harlow, C.W. (2003). *Education and Correctional Populations for 1997*. Bureau of Justice Statistics, Department of Justice. NCJ195670.

Terminology

■ External Benefits

- Measured by education effect on average income
 - Range: 23% to 0%
 - E.g., Benhabib & Spiegel (1994), Heckman and Klenow (1997), Topel (1999)

■ Social Benefits

- Measurement is a leap of faith
 - Range 29%-10%
 - McMahn (1997) in “The Social Benefits of Education” (U Michigan Press)

Social Rates of Return

McMahn (1997), Psacharopoulos & Patrinos (2004)

	External Benefit	Social Benefit Accruing to Individual	Social Benefit Accruing to Society	Total Social Rates of Return (Cols 1+2+3)
Primary	8.5	6.8	2.5	17.8 (13.4)
Secondary	9.4	7.5	2.8	19.6 (10.3)
Higher	8.5	6.8	2.5	17.8 (9.5)

“In the case of education, some have succeeded in identifying positive externalities but few have been able to quantify them... [The] empirical evidence is scarce and inconclusive. In fact, some estimates give negative values, while others give very high estimates.

— Psacharopoulos & Patrinos (Education Economics, 2004)

Economists (and others) have generally had little success in estimating the social effects of different investments, and, unfortunately, education is no exception.

— Gary S. Becker 1992 Nobel Laureate (“Human Capital”)

Studies of model early [childhood development] intervention programs do not show universally positive results... Studies with nonrandomized designs frequently find insignificant or wrong-signed effects.

— Janet Currie (Journal of Economic Perspective, 2001)

Data and Statistics

Social Benefits of Education

■ Clear Implications:

- Social Benefits **cannot** be confirmed by the data
 - Measurement and Identification problems create near insurmountable statistical issues
- No Consensus Estimates, no Estimate Ranges
- Be distrustful of strong language and high estimates in papers that are not in accepted journal

The Problem:

Establishing a Causal Relationship

Example: Why does Medina have below average crime?

Because it has above average education?

The Problem:

Establishing a Causal Relationship

Example: Why does Medina have below average crime?
because it has above average education?

Education → Less crime?

or

Less crime → attracts better educated population?

or

Education → Income → Policing?

or

Income → Education?

Untold amounts of time, money and energy
have been spent to connect these dots

Solution:

- Refer to **ASSOCIATION** not **CAUSATION**

- *“More education is associated with less crime”*

vs.

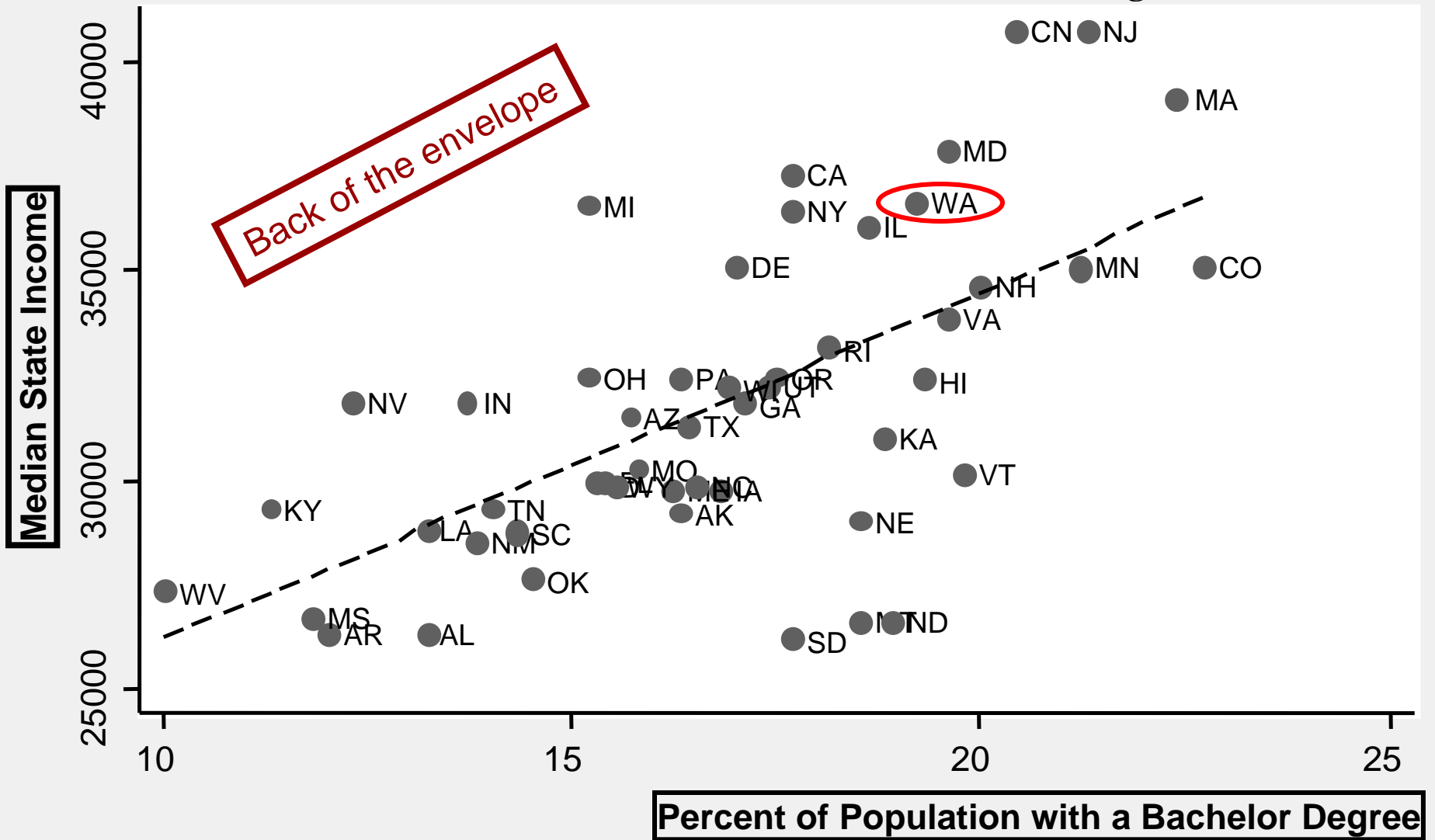
- “More education causes less crime”

Relevance for WA

- **Assuming**
 - average magnitudes are correct
 - return on education is $\sim 8\%$ - 20%
- How relevant are these US results for WA?
 - Most articles average over national or international data
- Actual statements that pertain to WA require actual econometric studies with WA data
- What DO we know about WA data?

Educational Attainment & Median Income

Using US State Data, a 1% increase in workers with Bachelor Degrees is associated with a \$823 increase in Median Earnings

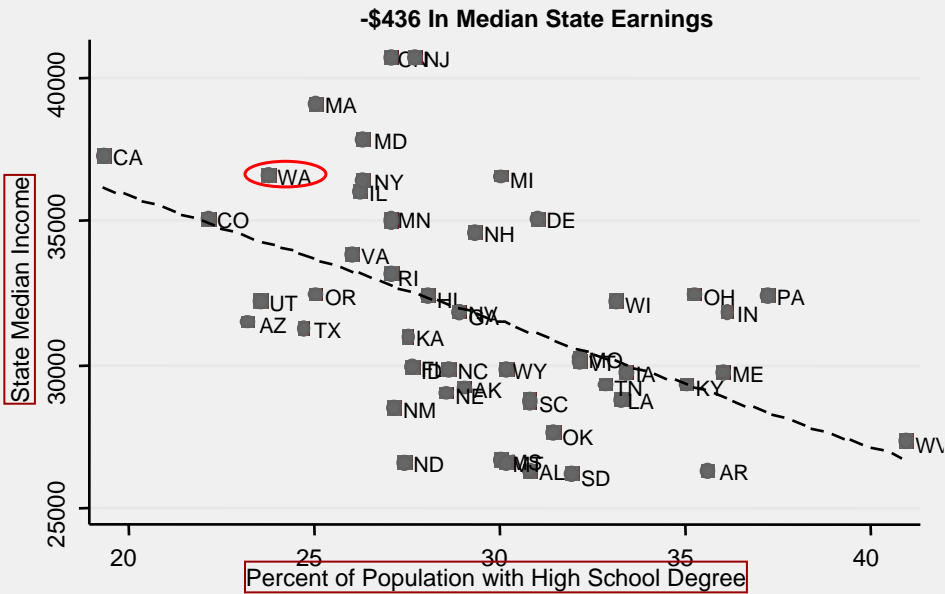


Back-of-the-Envelope Education Benefits If Washington had...

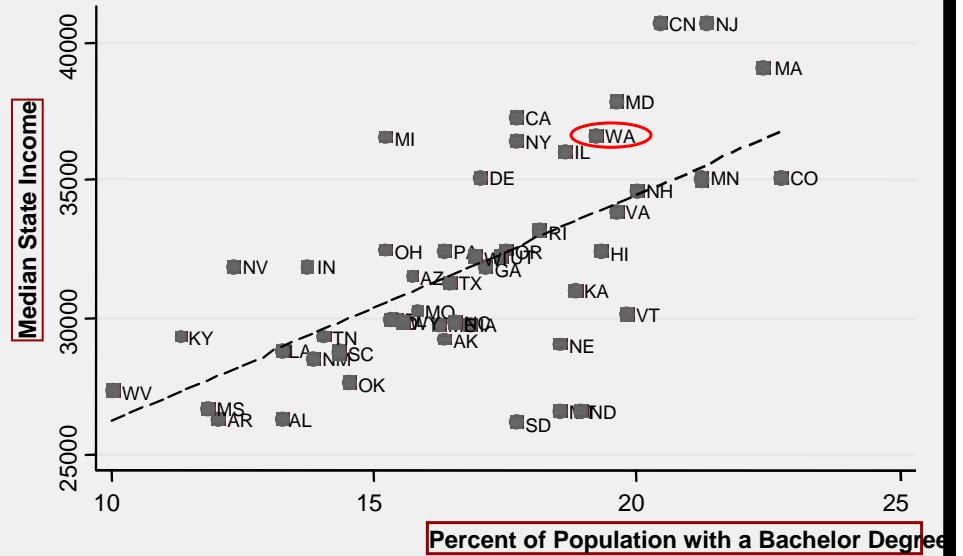
...1% more workers whose highest degree is	Increase in WA Median Income	Change in total WA income
High School	- \$ 436	-\$750 Mil
Some College Experience	- \$ 182	- \$320 Mil
BA	+ \$ 823	+ \$1.4 Billion
Advanced Degree	+ \$ 1456	+\$2.5 Billion

These figures are subject to all the above mentioned interaction and control biases
that haunt the estimates in this literature

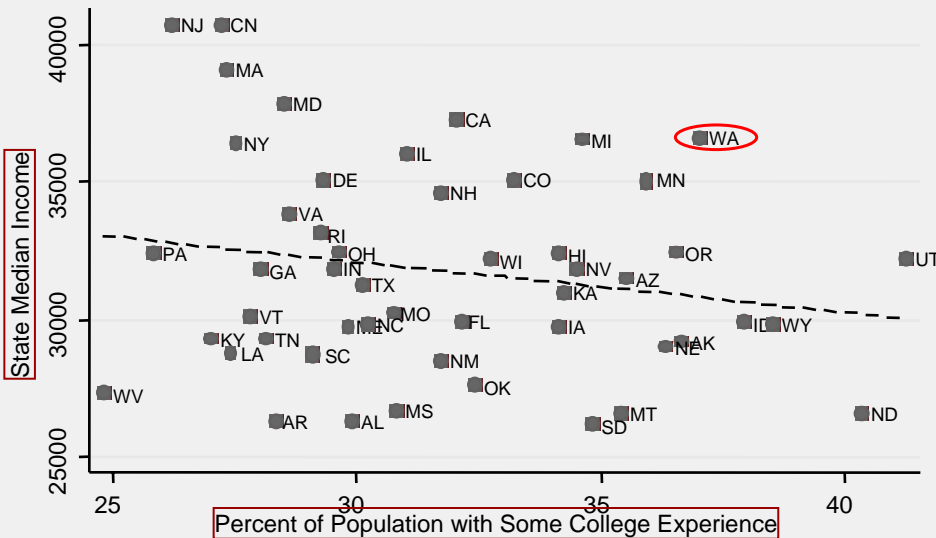
1% Increase In Workers with High School Degrees -\$436



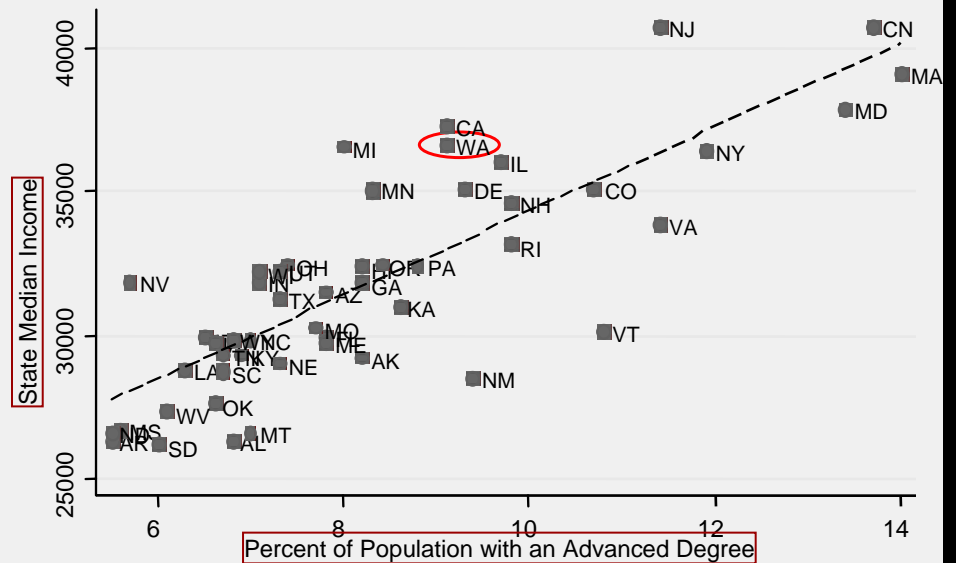
1% Increase In Workers with BA Degrees +\$823



1% Increase In Workers with Some College -\$182



1% Increase In Workers with Advanced Degrees +\$1456



Median Impact vs Segment Impact

Example: a 1% increase in BAs...

...raises wages of workers with		
No High School Degree	+ \$ 249	1.1%
High School Degree	+ \$ 479	1.6%
Some College Experience	+ \$ 547	1.6%
Advanced Degree	+ \$ 1245	2.4%
Median worker Income	+ \$823	2%

These figures are subject to all the above mentioned interdependence and control biases that haunt *all* estimate in the literature

The Geographic Dimension

“But we can import workers for the new economy to get all the social benefits...”

■ Geographic Component

- More Education is Better, but should we produce it (& pay for it)?
 - The Global Economy provides goods and migrants
 - Migrants harvest apples and code software (excess demand for highly skilled workers in the region is about 70000, Beyers 2004)

■ The Colorado Paradox:

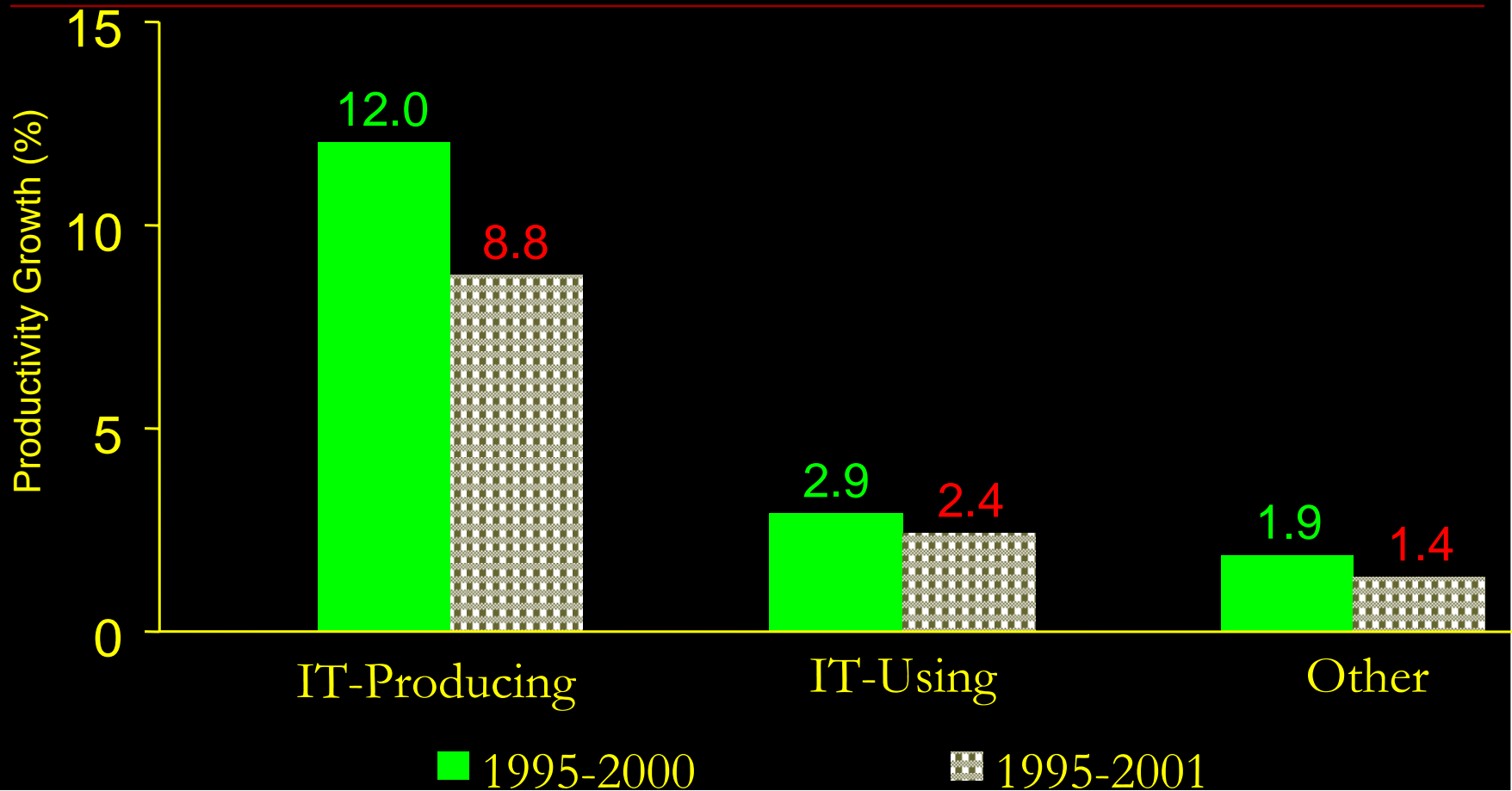
- A state with one of the nation's most educated populaces, has one of the worst records for sending its kids to college

■ Colorado Responded with “*Student Access and Success*” WHY?

- 5 fastest growing job sectors require post-secondary training; the fastest shrinking job sectors do not.
- Provide good jobs for locals, rather than imports

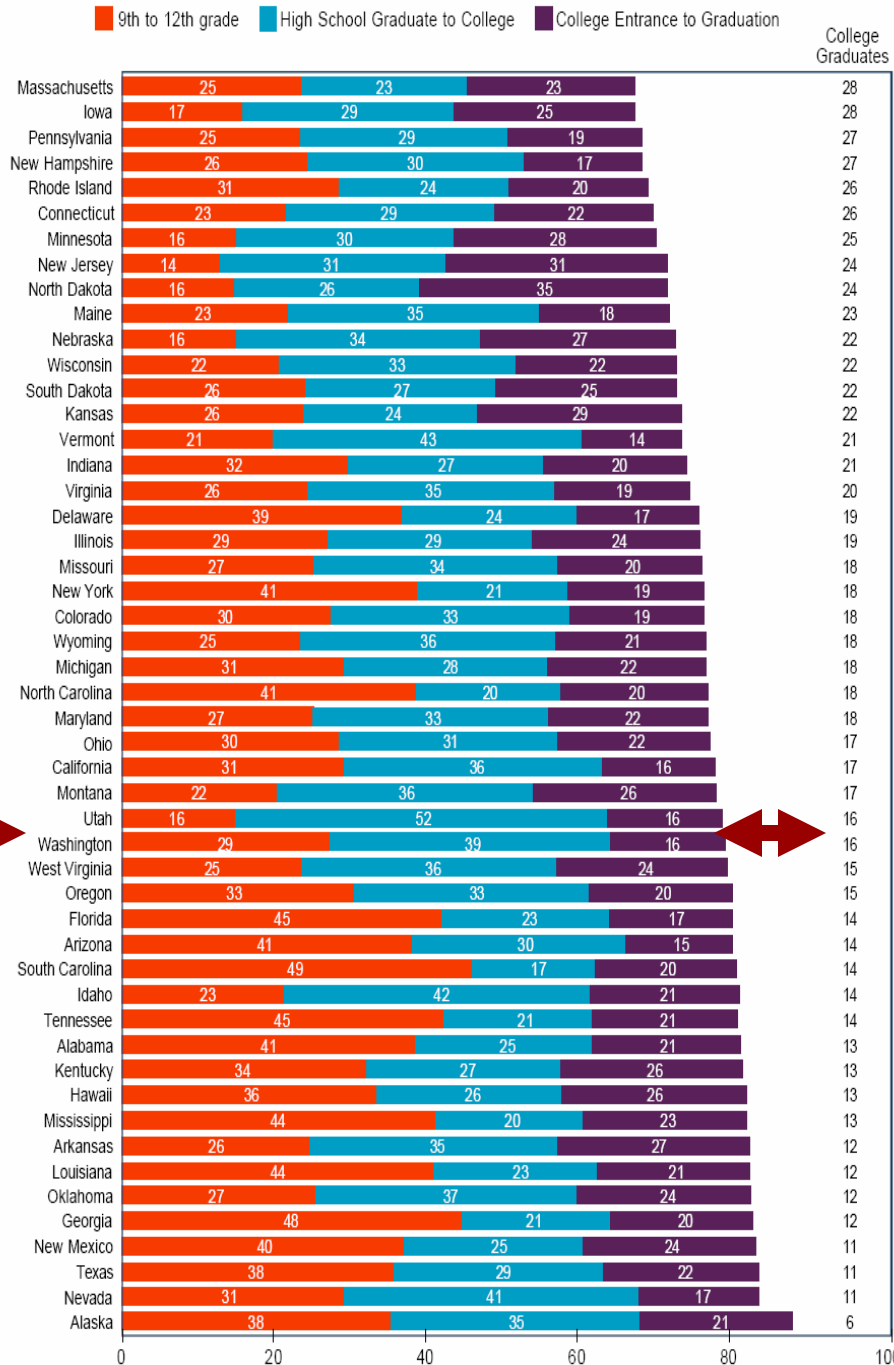
See eprc web site www.eprc.org.

“New Economy” (“Brainu-Facturing”) Grows About 6 Times Faster Than The Manu-Facturing Economy



IT-using defined as = 1995 IT capital shares above the median US share (Stiroh 2002)

Of 100 9th Graders—Loss at Each Stage of Transition (2000)



Where to spend in WA?

- 16% of WA 9th graders finish College
 - 31st in the Nation
 - MA produces 75% more!
 - (MA spends 25% more)

Where to spend in WA?

- 16% of WA 9th graders finish College
- WA has the 4th lowest in College-College Grad drop out rate!
 - WA has 4th highest drop out rate between HS and BA
 - Few (32 of 100 9th graders) arrive, expect few drop outs
 - In high income, high education States 60 of 100 arrive
- Highlight need for Comprehensive Package:
 - Or Squander any Early Child Development success
- ACCESS *and* SUCCESS matter (“Prepare, Enroll, Graduate”)

Where to spend?

Access & Success

■ Access

- Provide BA slots (high drop out rates are paired with too few slots)
- Encourage BA slots in Brainu-facturing
- Optimize CC slots that lead to high productivity paths
- *University Centers* at the CC level must feature quality control

■ Success

- Start in K1 – International / High Tech High Schools
- Focus on effective principles and teachers
- Standards: Math, Science, Scores

■ CollegeInColorado.org

- College Opportunity Fund: transition funding for public higher education to a student stipend program

Summary

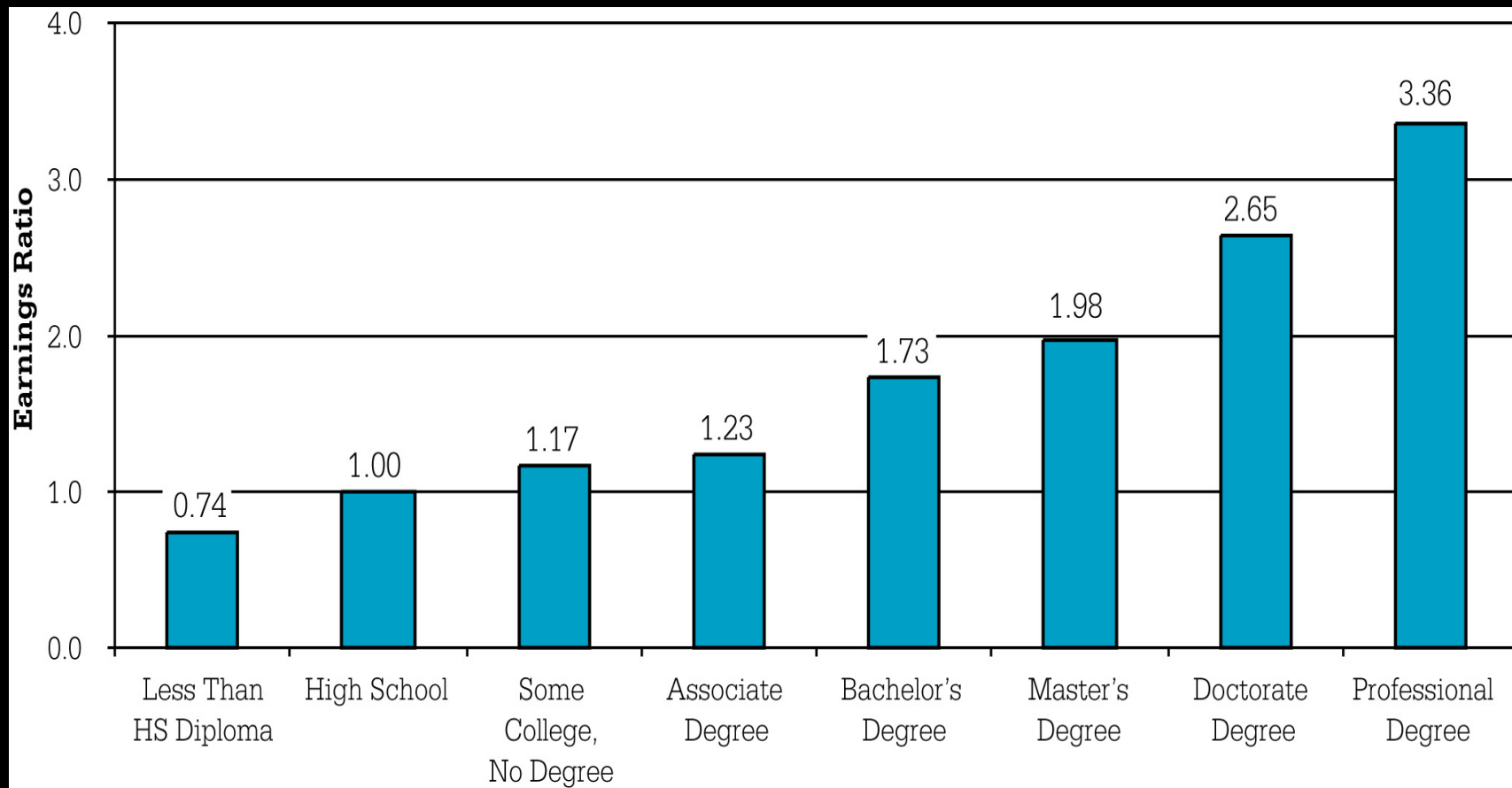
- Social Benefits exist in theory but are hard to prove in Statistics
- Refer to association rather than causation
- **Education is associated with strong wage gains for the average Washingtonian and for *each educational group***
- Easy Spending Rules: address glaring key shortcomings
- **The Future Economy does not look like today's**
 - Brainufacturing vs Manufacturing
- Upcoming structural change requires new skills/incentives
- Seek guidance from “what works” (no need to experiment, MA)

Addendum:

A quick examples of
private returns to education:

PRIVATE RETURNS - Earnings

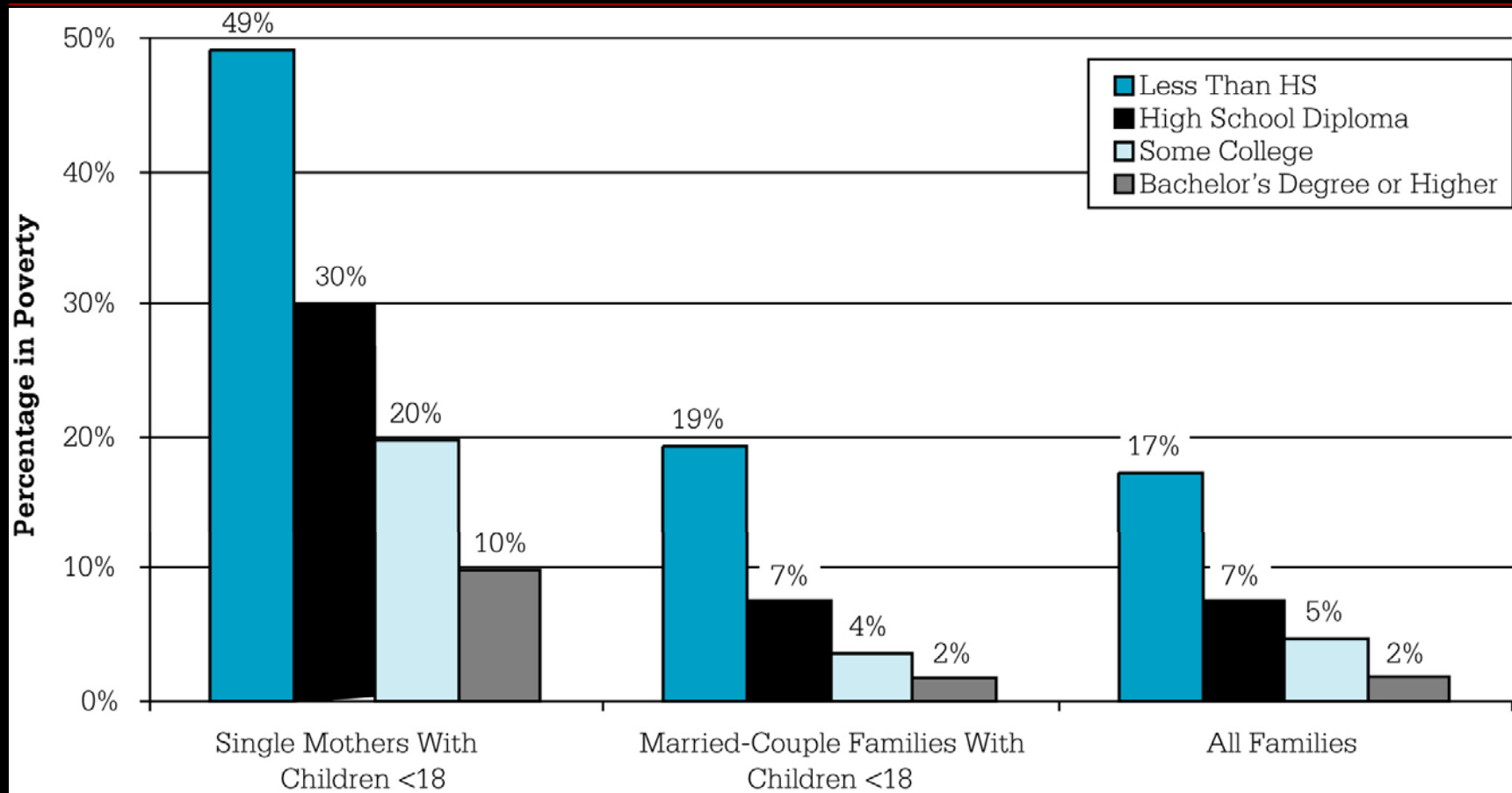
Expected Lifetime Earnings (Relative to High School Graduates, by Education)



Source: Day, G.C. and Newburger, E.C. (2002). *The Big Payoff: Educational Attainment and Synthetic Estimates of Work-Life Earnings*. P23-210. Current Population Reports. Census Bureau.

PRIVATE RETURNS - Poverty

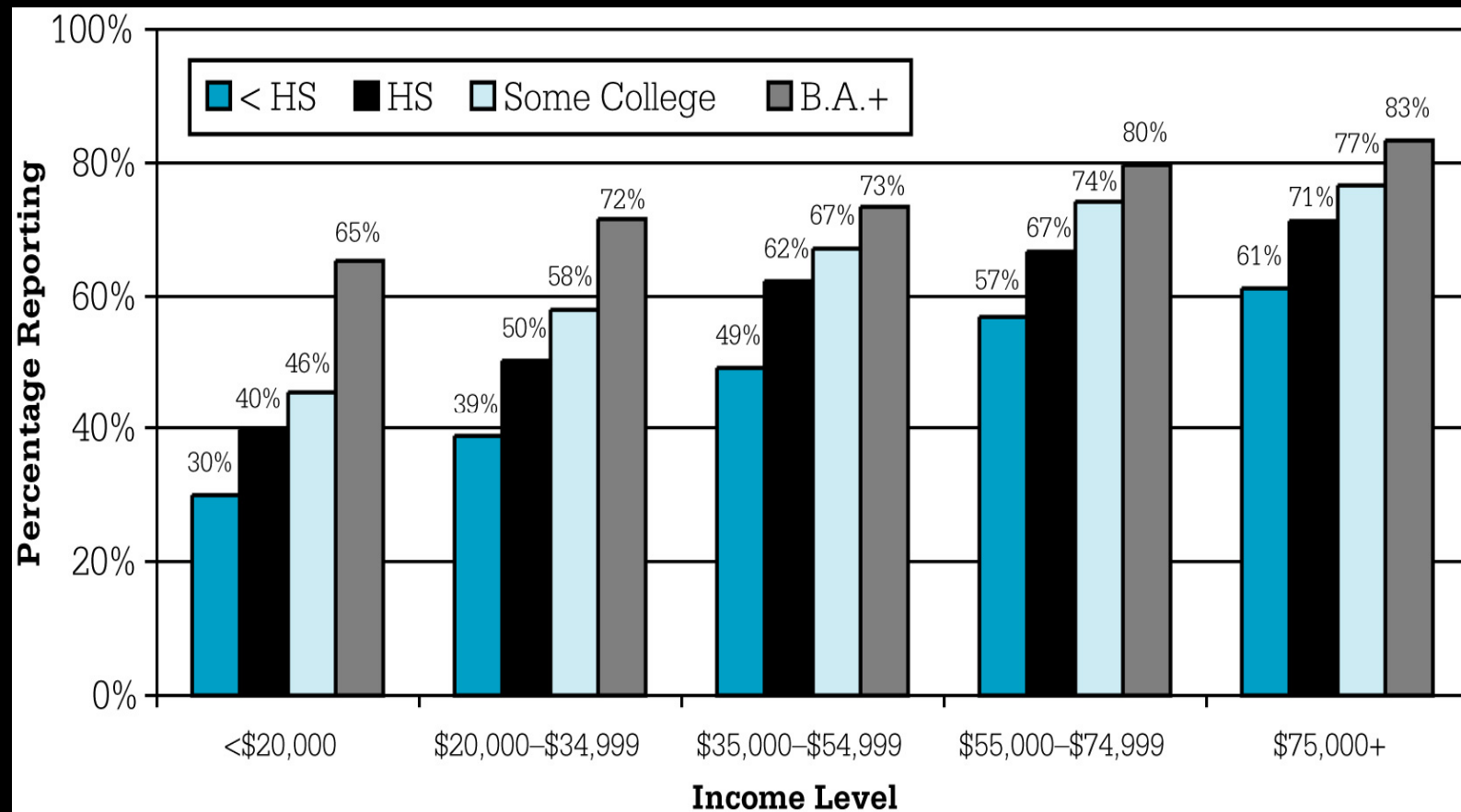
Poverty Rates by Household Type and Education



Source: U.S. Census Bureau. (2001). Current Population Survey, Annual Demographic Survey. P-60.

PRIVATE RETURN – HEALTH

Reporting Excellent or Very Good Health, by Income and Education



Source: National Center for Education Statistics. (2004). *The Condition of Education – for 2001*. U.S. Department of Education.