

Individual income
and health.

Does income cause
health?

Does health cause
income?

Common causes of
income and health.

Income distribution
and health.

Income and health.

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Economics 317

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Correlation between income and health.

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Production of
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- ▶ It is well-established that higher income is **correlated** with better health. Within a country, higher income people tend to be healthier people, and countries with higher average incomes have higher average health.
- ▶ Why might income **cause** health?
- ▶ Does health **cause** income?
- ▶ (graph)
- ▶ Are there other variables which cause both health and income?



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- ▶ Higher income means more market inputs can be used to produce health (e.g., types of health care, information, gym memberships).
- ▶ Higher income may also allow people to buy better housing, food, and other health-affecting goods and services.
- ▶ We can't tell how large this effect is from the correlation between health and income.

How can we get evidence on the effect of income on health?

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- ▶ We would like to randomly assign income, which is not feasible.
- ▶ We can look for situations in which people's incomes change for reasons unrelated to their personal characteristics.
- ▶ e.g. compare the health of lottery players who win to the health of lottery players that lose. Result: little effect.

Evidence on effect of income on health cont.

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- ▶ Results: the causal effect of income on health appears to be fairly small.
- ▶ Changes in the tax structure or level of social support do not seem to cause large changes in health.
- ▶ The reasonably persuasive correlational evidence suggests that very low levels of income are bad for health.
- ▶ Hard to estimate the causal effect of incremental income at high levels of income.

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- ▶ Health is a form of human capital. Other things being equal, we would expect healthier people to be more productive, and more productive workers tend to earn higher wages and work more.
- ▶ Again, the correlation between health and income does not reveal the effect of income on health.
- ▶ We would like to randomly assign health to people to deduce the causal effect, but can't.

Evidence on the effect of health on income.

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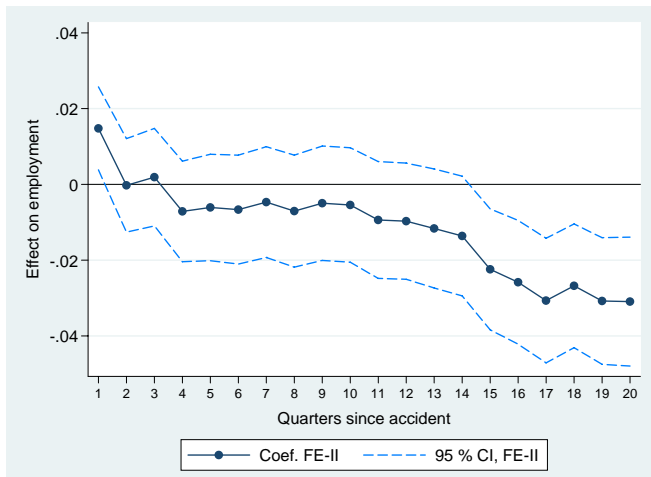
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- ▶ One way to try to get at the causal effect of health on income is to try to find situations in which health changes for essentially random reasons.
- ▶ eg. Halla and Zweimuller (2010) compare workers who get in an accident on the way to work with workers who don't (result: all workers wages are hurt by accidents, but particularly white collar workers).

Figure 2: The dynamic effects on employment of all workers



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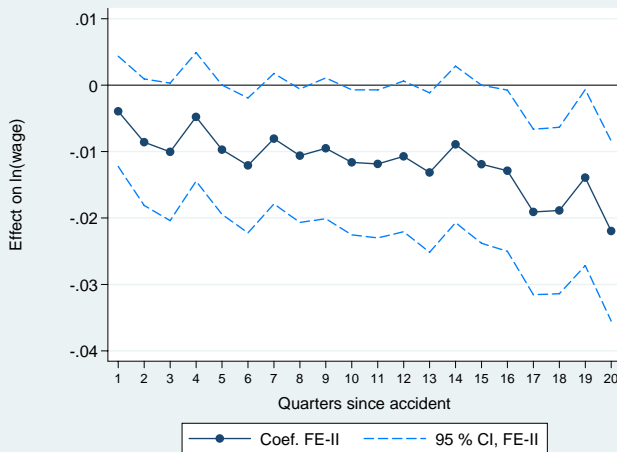
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Figure 3: The dynamic effects on earnings of all workers



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- ▶ Diagnosis with various conditions (e.g., diabetes, cancer) seems to reduce income.
- ▶ However, other evidence suggests these diagnoses are not as good as random, e.g., when we look at these people over time, we see income start to fall before the diagnosis.
- ▶ Upshot: a **wrong** way to try to estimate the effect of some health condition on income is to compare the income of people with the condition to those without.
- ▶ e.g., if diabetics earn on average 10% less than statistically comparable people without diabetes, we ought not conclude diabetes reduces earnings by 10%.

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Other variables affecting health and income.

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- ▶ We have seen that there is some evidence suggesting health causes income and income causes health, but these effects don't seem to be large enough to explain the correlation between income and health.
- ▶ Many other variables, some of which are difficult or impossible to observe, may lead to both higher health and higher income.
- ▶ e.g., intelligence, conscientiousness.

Policy implications.

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- ▶ Health and the labor are deeply intertwined: we should expect to see substantial spillovers from health to incomes and employment, and vice versa.
- ▶ Policies which affect health will affect the labor market.
- ▶ Policies which affect the labor market will affect health.
- ▶ Income redistribution will affect health.
- ▶ Next: holding a given person's income constant, is their health affected by the incomes of people around them?

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- ▶ Some societies have more income inequality than others.
- ▶ Consider two societies which have the same average income, but one has more income dispersion. How should we expect health to differ in these societies?
- ▶ Sometimes this issue is (somewhat misleadingly) called "social determinants of health."

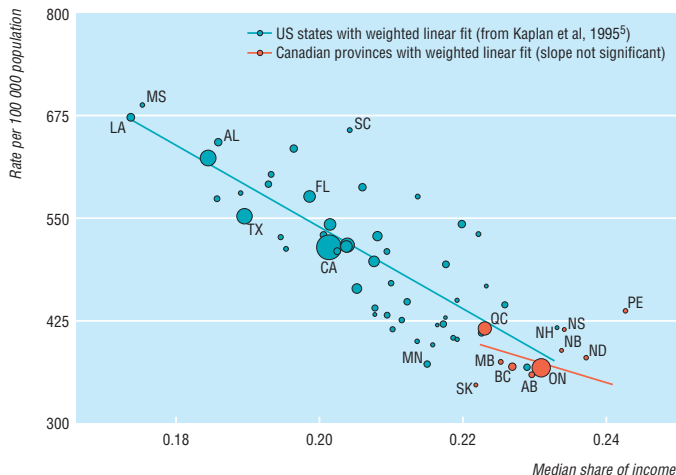


Fig 1 Mortality in working age men by proportion of income belonging to the less well off half of households, US states (1990) and Canadian provinces (1991). Mortality standardised to Canadian population in 1991. State abbreviations: LA-Louisiana; MS-Mississippi; AL-Alabama; SC-South Carolina; FL-Florida; TX-Texas; CA-California; AR-Arkansas; NH-New Hampshire; MN-Minnesota. Province abbreviations: QC-Quebec; NS-Nova Scotia; NB-New Brunswick; ND-Newfoundland; PE-Prince Edward Island; ON-Ontario; AB-Alberta; BC-British Columbia; MB-Manitoba; SK-Saskatchewan

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- ▶ Mechanical reason average health is related to income redistribution: if health increases with income but at a decreasing rate, taking a dollar from a rich person and giving it to a poor person increases the poor person's health more than it decreases the rich person's (the "concavity effect").
- ▶ (graph)
- ▶ This is a story about material deprivation.
- ▶ Policy implication: if we want to increase average health, we can do so with more income redistribution, provided redistribution is not too costly (doesn't decrease average wealth much).

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“Magic action at a distance.”

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- ▶ Now consider a different argument: holding constant a given person's income, will that person's health fall if the income of people around her rises?
- ▶ The “concavity effect” does not require this sort of mechanism (graph).
- ▶ Implies we could increase the health of poor people by impoverishing wealthier people, holding the incomes of the poor people constant!
- ▶ A story about *relative* income, not absolute income.

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- ▶ Why might relative income matter?
- ▶ Social hierarchies and stress (Marmot).
- ▶ Highly controversial, statistically difficult.

References on income and health.

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