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Why Do House Prices Rise Faster in Some Cities?

Between 1950 and 2000, the price of housing grew by an inflation-adjusted annual rate of 2.2 to 3.5 percent in the ten U.S. metropolitan areas with the highest rates of growth, and by 0.5 to 1.1 percent in the ten U.S. metropolitan areas with the lowest rates of growth. Over the same time period, the number of families living in U.S. metropolitan areas doubled and the number of families with inflation-adjusted incomes above \$140,000 in 2000 dollars grew more than eight-fold.

In **Superstar Cities** (NBER Working Paper No. 12355), **Joseph Gyourko**, **Christopher Mayer**, and **Todd Sinai** suggest that the explosive growth in house prices in high-cost cities is fueled by three factors: the scarcity of housing units, the growing number of high income families in the United States, and the fact that high-income families have been willing to outbid lower-income families for scarce housing in preferred locations.

Superstar cities are those with an inelastic supply of housing (that is, cities where it is difficult to construct new housing because of geographical constraints or zoning) and an appeal to a broad clientele of potential residents. As households compete for the scarce locations, the ones with the highest willingness-to-pay—a function of a household's desire to live in a given city and how much money it has—bid up house prices. Using a simple method to roughly categorize cities as “superstars,” the authors find that in the 1960–80 period only San Francisco and Los Angeles clearly qualified.

Between 1970 and 2000, twenty more metropolitan areas, including New York and Boston, were added. Cities that have experienced explosive growth but remain outside the superstar category, like Las Vegas and Phoenix, are distinguished by their ability

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to build enough housing to moderate price increases.

As the U.S. population grows, both in absolute number and in income, the fraction of people who can reside in their preferred cities declines when those cities cannot add enough new residences. The process of bidding to live in high-demand, low-supply cities changes the composition of residents as rising house prices mean that lower-income families are crowded out of the hottest areas and replaced by higher-income households. For example, in San Francisco the share of families earning more than \$110,000 grew by 21 percent between 1970 and 2000. Nationwide, the average growth in that income group was 9 percent.

Overall, the fraction of high-income families in superstar cities is 43 percent higher than in average cities, and those cities' share of poor families is 11 percent lower. Recent movers into superstar cities are more likely to have high incomes and less likely to be poor, than recent movers into other cities. The higher share of rich and lower share of poor also holds true for superstar places, that is, desirable towns

with a relatively fixed housing stock within a metropolitan area.

With more relatively wealthy people bidding on a limited housing stock, the price of entry-level houses, and the price-to-rent ratio, accelerate when cities fill up and

approach superstar status. Entry-level prices and the price-to-rent ratio also increase at higher rates when the number of high-income families increases nationally.

In short, residence in superstar cities and towns has become a luxury good. The cities' increases in housing price appear to outstrip known productivity increases and the value of any additional amenities.

The authors note that the evolution of superstar cities has important implications for the future of urban areas. For example, it raises the question of whether a metropolitan area that becomes affordable only to the wealthy can maintain its cultural or economic vibrancy. It also raises the question of what optimal public policy should be—and whether it should lead to an outcome where lower income workers cannot afford to live in superstar markets. For example, existing superstar cities and towns could moderate their housing costs by allowing increased density, but have chosen not to.

— Linda Gorman

The Effects of Education on Health

There is a well known, large, and persistent association between education and health. This has been observed in many countries and time periods, and for a wide variety of health measures. The differences between the more and the less educated are significant: in 1999, the age-adjusted mortality rate of high school dropouts ages 25 to 64 was more than twice as large as the mortality rate of those with some college.

In Education and Health: Evaluating Theories and Evidence (NBER Working Paper No. 12352), authors **David Cutler** and **Adriana Lleras-Muney** review what we know about the relationship between education and health, in particular about the possible causal relationships between education and health and the mechanisms behind them. At the outset they note that this is a controversial topic, with previous studies offering contradictory conclusions.

People value health highly. As a result, the health returns to education can outweigh even the financial returns. Many estimates suggest that a year of education raises earnings by about 10 percent, or perhaps \$80,000 in present value over the course of a lifetime. Using data from the National Longitudinal Mortality Study (NLMS), the authors find that one more year of education increases life expectancy by 0.18 years, using a 3 percent discount rate, or by 0.6 years without any discounting. Assuming that a year of health is worth \$75,000 — a relatively conservative value — this translates into about \$13,500 to \$44,000 in present value. These rough calculations suggest that the health returns to education increase the total returns to education by at least 15 percent, and perhaps by as much as 55 percent.

The causal effects of education on health would call for education subsidies only to the extent that there is a market failure and that individuals are investing at sub-optimal levels; otherwise, individuals would be basing their education decisions on health benefits along with financial benefits. The possible rationales for education subsidies include the idea that individuals may be unaware of the health benefits of education when they make their education decisions, that they may be credit con-

strained, that some groups do not know about or are excluded from higher education, or that there are externalities to education and health beyond the individual affected.

Understanding the mechanism by which education affects health is therefore important for policy. It may be more cost effective to tap that mechanism than to increase educational attainment. For exam-

“An additional four years of education lowers five-year mortality by 1.8 percentage points; it also reduces the risk of heart disease by 2.16 percentage points, and the risk of diabetes by 1.3 percentage points.”

ple, if all of the education effect operated through income, and income improved health, then it might be cheaper to transfer income directly rather than to subsidize schooling. But, increasing educational attainment might be the correct policy response if, for example, there were no alternative (or cheaper) method for acquiring the skills that ultimately affect health.

In spite of these caveats, the authors point out that education policies have the potential to have a substantial effect on health. Assuming that the observed correlations between education and health are long-term causal effects from education to health, and that the relationship is linear and identical across gender, race, and other groups, the authors can do a rough calculation of the health returns of education policies. Prior research has found that offering \$1,000 (in 1998 dollars) in grant aid results in an increase in education of 0.16 years, which translates into 0.03-0.10 years of additional life (depending on discounting). This is roughly \$2,250–\$7,200 in present value. This is a very large rate of return.

The data that the authors present show that the more educated report having lower morbidity from the most common acute and chronic diseases (heart condition, stroke hypertension, cholesterol, emphysema, diabetes, asthma attacks, ulcer). More educated people are less likely to be hypertensive, or to suffer from emphysema or diabetes. Physical and mental functioning is also better for the better educated. The better educated are substan-

tially less likely to report that they are in poor health, and less likely to report anxiety or depression. Finally, better educated people report spending fewer days in bed or not at work because of disease, and they have fewer functional limitations.

The magnitude of the relationship between education and health varies across conditions, but is generally large. An additional four years of education lowers five-

year mortality by 1.8 percentage points; it also reduces the risk of heart disease by 2.16 percentage points, and the risk of diabetes by 1.3 percentage points. Four more years of schooling lowers the probability of reporting oneself in fair or poor health by 6 percentage points and reduces lost days of work to sickness by 2.3 each year. Although the effects of gender and race are not shown, the magnitude of four years of schooling is roughly comparable in size to being female or being African American. These are not trivial effects.

There are multiple reasons for these associations, although it is likely that these health differences are in part the result of differences in behavior across education groups. In terms of the relation between education and various health risk factors — smoking, drinking, diet/exercise, use of illegal drugs, household safety, use of preventive medical care, and care for hypertension and diabetes — overall the results suggest very strong gradients where the better educated have healthier behaviors along virtually every margin, although some of these behaviors may also reflect differential access to care. Those with more years of schooling are less likely to smoke, to drink heavily, to be overweight or obese, or to use illegal drugs. Interestingly, the better educated report having tried illegal drugs more frequently, but they gave them up more readily.

— Les Picker

Globalization and Poverty

Does globalization, as its advocates maintain, help spread the wealth? Or, as its critics charge, does globalization hurt the poor? In a new book titled *Globalization and Poverty*, edited by NBER Research Associate **Ann Harrison**, 15 economists consider these and other questions. In **Globalization and Poverty** (NBER Working Paper No. 12347), Harrison summarizes many of the findings in the book. Her central conclusion is that the poor will indeed benefit from globalization if the appropriate complementary policies and institutions are in place.

Harrison first notes that most of the evidence on the links between globalization and poverty is indirect. To be sure, as developing countries have become increasingly integrated into the world trading system over the past 20 years, world poverty rates have steadily fallen. Yet little evidence exists to show a clear-cut cause-and-effect relationship between these two phenomena.

Many of the studies in *Globalization and Poverty* in fact suggest that globalization has been associated with rising inequality, and that the poor do not always share in the gains from trade. Other themes emerge from the book. One is that the poor in countries with an abundance of unskilled labor do not always gain from trade reform. Another is that the poor are more likely to share in the gains from globalization when workers enjoy maximum mobility, especially from contracting economic sectors into expanding sectors (India and Colombia). Gains likewise arise when poor farmers have access to credit and technical know-how (Zambia), when poor farmers have such social safety nets as income support (Mexico), and when food aid is well targeted (Ethiopia).

The evidence strongly suggests that export growth and incoming foreign investment have

reduced poverty everywhere from Mexico to India to Poland. Yet at the same time currency crises can cripple the poor. In Indonesia, poverty rates increased by at least 50 percent after the 1997 currency crisis in that country, and the poor in Mexico have yet to recover from the pummeling of the peso in 1995.

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Without doubt, Harrison asserts, globalization produces both winners and losers among the poor. In Mexico, for example, small and medium corn growers saw their incomes halved in the 1990s, while larger corn growers prospered. In other countries, poor workers in exporting sectors or in sectors with foreign investment gained from trade and investment reforms, while poverty rates increased in previously protected areas that were exposed to import competition. Even within a country, a trade reform may hurt rural agricultural producers and benefit rural or urban consumers of those farmers' products.

The relationship between globalization and poverty is complex, Harrison acknowledges, yet she says that a number of persuasive conclusions may be drawn from the studies in *Globalization and Poverty*. One conclusion is that the relationship depends not just on trade or financial globalization but on the interaction of globalization with the rest of the economic environment: investments in human capital and infrastructure, promotion of credit and technical assistance to farmers, worthy institutions and governance, and macroeconomic stability, including flexible exchange rates. The existence of such conditions, Harrison writes, is emerging as a critical theme for multilateral institutions

like the World Bank.

Harrison adds that more research is needed to identify whether labor legislation protects only the rights of those few workers who typically account for the formal sector in developing economies, or whether such legislation softens short-term adjustment costs

and helps the labor force benefit from globalization. Anti-sweatshop activism suggests that selective interventions may be successful in this regard.

Harrison next notes that while many economists predicted that developing countries with great numbers of unskilled workers would benefit from globalization through increased demand for their unskilled-intensive goods, this view is too simple and often inconsistent with the facts. Cross-country studies document that globalization has been accompanied by increasing inequality within developing countries, suggesting an offset of some of the reductions in poverty.

Globalization and Poverty yields several implications. First, impediments to exports from developing countries worsen poverty in those countries. Second, careful targeting is necessary to address the poor in different countries who are likely to be hurt by globalization. Finally, the evidence suggests that relying on trade or foreign investment alone is not enough to alleviate poverty. The poor need education, improved infrastructure, access to credit, and the ability to relocate out of contracting sectors into expanding ones to take advantage of trade reforms.

— Matt Nesvisky

Cost Effects of Integrating Diagnosis and Treatment

Anyone who has consulted a doctor, plumber, or an auto mechanic has experienced the tradeoffs in consulting a single expert for both diagnosing and treating a problem. On the one hand, integrated diagnosticians—those who also sell treatments—may have an incentive to

give advice that is not in the buyer's best interests. Theoretically, because the buyer has imperfect information on the scope of the problem (if he did not, he would not have needed to consult a diagnostician in the first place), the diagnostician inevitably has the incentive to recommend treat-

ments that are more profitable, even if they are more costly, lower quality, or less appropriate. On the other hand, joint production of diagnosis and treatment may be more efficient. The diagnostician may have better information about how to treat the problem than he could (or would)

provide to an independent third party. Or, the diagnostician may be able to treat the problem himself less expensively or more effectively, under the adage that “half the cost is opening the engine block.”

In **Tradeoffs from Integrating Diagnosis and Treatment in Markets for Health Care** (NBER Working Paper No. 12623), authors **Christopher Afendulis** and **Daniel Kessler** examine an important special case of this problem: the costs and quality of care of a random sample of Medicare beneficiaries with coronary artery disease. They compare patients who were diagnosed by an “integrated” cardiologist—one who also provides surgical treatment—to patients who were diagnosed by a non-integrated cardiologist. Given soaring health costs, surprisingly little research has been done to date in this area.

The authors find that diagnosis by an interventional cardiologist leads to increases in health spending of approximately 10 percent, but not to better health outcomes. However, this aggregate effect masks several important, but opposing components. First is the unsurprising moral hazard effect: diagnosis by an interventional cardiologist leads to significantly more angioplasties, the surgical treatment that interventional cardiologists provide. However, because some angioplasty patients used to receive (much more costly) bypass surgery, the extra angioplasties lead to slightly lower health spending overall—approximately \$500, or around 2 percent—and to small but statistically significant increases in adverse health outcomes.

The effects due to interventional cardiologists’ relative efficiency in managing patients

with each type of treatment are more surprising. Interventional cardiologists do not manage angioplasty patients more efficiently; angioplasty patients diagnosed by an interventional cardiologist have higher spending and about the same health outcomes. The big advantage to diagnosis by an interventional cardiologist accrues to patients who are treated with bypass surgery by a cardiac surgeon. These patients have significantly higher health spending and dramatically lower

“There is an important inconsistency in Medicare reimbursement policy, and an important general problem in contracting in the presence of asymmetric information.”

mortality rates. This could be due to interventional cardiologists’ sorting patients into bypass surgery or allocating them to cardiac surgeons more effectively.

The big disadvantage to diagnosis by an interventional cardiologist, according to the authors, accrues to patients who are treated non-surgically; these patients have significantly higher mortality. This could be due to interventional cardiologists’ lack of ability or incentives to treat non-surgical patients effectively.

The authors’ results point out that there is an important inconsistency in Medicare reimbursement policy, and an important general problem in contracting in the presence of asymmetric information. Explicit “kickback” payments from treating to diagnosing doctors are banned by law (for public purchasers such as Medicare and Medicaid) and by contract (for private purchasers like insurance companies and large employers). However, the principle underlying this ban is not generally applied to doctors’ decisions to provide integrated diagnosis and treatment, even

though integration can have the same effects on incentives and behavior as kickbacks do. In addition, allowing integration but banning kickbacks effectively allows rent capture by integrated but not non-integrated doctors, which can distort treatment decisions even further.

The authors discuss how these incentive problems might be resolved. A blanket ban on the integration of diagnosis and treatment would be completely impractical. Every doctor provides

both diagnosis and therapeutic services; interventional cardiologists are only one example. The authors therefore conclude that paying integrated doctors differently, or allowing doctors more freedom to make and receive payments for referrals, could reduce cost and improve quality. For example, their results suggest that interventional cardiologists’ important strength may be more in the triaging of surgically treated patients than in the provision of angioplasty. If further research finds this to be true, then paying interventional cardiologists more for diagnosis and less for treatment could help reduce spending and improve outcomes.

The authors’ results also suggest that interventional cardiologists’ important weakness may be in the management of non-surgical patients. If further research shows this to be true, then paying interventional cardiologists to refer patients to non-interventional cardiologists for non-surgical treatment, or allowing non-interventional cardiologists to pay for referrals, could also improve productivity in health care.

— Les Picker

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