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## How Do House Prices Affect Consumption?

**H**ousing is the dominant component of wealth for the typical household in the United States or the United Kingdom, with residential property accounting for about 25 percent of aggregate household wealth in the United States in the late 1990s and for 35 percent of aggregate household wealth in the United Kingdom in the mid-1990s.

Houses are risky assets with volatile prices. Much of this volatility is local, but a common component of house prices is visible in regional and even in national house-price indexes. National house-price volatility is particularly striking in the United Kingdom, a geographically compact country with a nationally integrated housing market. The magnitude and volatility of housing wealth have led many to suggest that house-price changes have significant effects on aggregate consumption.

It is tempting to attribute the correlation between house prices and consumption to a direct housing wealth effect: increasing house prices increase homeowners' wealth, which in turn increases consumption. There are, however, several reasons not to make this attribution without further analysis. First, the theoretical rationale for a large housing wealth effect is unclear. When house prices rise, homeowners can only increase their consumption if they reduce their consumption of housing services; homeowners who remain in their houses over the long term simply pay a higher implicit rental cost of housing. Second, there are alternative explana-

tions for the correlation between house prices and consumption. A house is an asset that can be used as collateral in a loan. An increase in house prices may allow borrowing constrained homeowners to smooth consumption over the life cycle. The correlation between house prices and consumption may also be

driven by an unobserved macroeconomic factor.

ling for economy-wide house prices and for regional income, regional house prices do influence regional consumption. This is a key result for policymakers and economists, showing that it is important to allow for regional heterogeneity when estimating the effects of house prices on consumption.

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“Aggregate consumption may become more responsive to house prices as older homeowners become an increasing fraction of the population.”

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driven by an unobserved macroeconomic factor.

In **How Do House Prices Affect Consumption? Evidence From Micro Data** (NBER Working Paper No. 11534), authors **John Campbell** and **João Cocco** use micro-level data from the U.K. Family Expenditure Survey to distinguish among these alternative explanations. Micro data can be helpful because they allow the authors to identify those households for which the direct wealth effect of house prices is particularly large or small. Older homeowners and younger renters represent households that are most likely to gain and lose from house price increases. Consistent with a direct wealth effect, the authors estimate a large positive effect of house prices on consumption for the cohort of old households who are homeowners, and an effect that is close to zero for the cohort of young households who are renters.

The authors also find that, control-

Finally, the authors find that consumption responds to predictable changes in house prices, consistent with the idea that an increase in house prices relaxes borrowing constraints. The consumption effects of predictable changes in house prices appear to be weaker for households that have unused borrowing capacity, but they affect both renters and homeowners. This suggests that U.K. house prices are related to the ease or difficulty of borrowing in the economy as a whole.

The findings of this study have macroeconomic implications because they suggest that aggregate consumption may become more responsive to house prices as older homeowners become an increasing fraction of the population. In recent years, both the United Kingdom and the United States have experienced rising property prices and strong private consumption, pointing to the relevance of the authors' estimates.

— Les Picker

## Do Women Shy Away From Competition?

The proportion of women in highly paid executive positions and in the professorial ranks of academic science and engineering is low relative to the proportion of women in the labor force. A number of explanations for this difference have been advanced. If women do not enjoy the kind of work involved in high profile managerial positions or scientific careers, or if the long working hours required in these careers conflict with the ability to raise children, then women may avoid them. Because women on the whole are less likely to be in the highest scoring group on tests of mathematical achievement, they also may be less likely as a group to be successful in competitive science and engineering positions that reward mathematical talent. Some also have argued that past discrimination has kept women from highly paid executive and academic positions, and that women subsequently avoided those careers simply to escape discrimination.

**In Do Women Shy Away From Competition? Do Men Compete Too Much?** (NBER Working Paper No. 11474), co-authors **Muriel Niederle** and **Lise Vesterlund** consider another possibility, that women as a group dislike competition more than men, even if they are of the same ability. If women seek to avoid competition, then they may be less successful in obtaining promotions and more lucrative jobs.

To test their hypothesis, the authors put 80 paid volunteers through a series of short tasks compensated either on a competitive winner-take-all or on a non-competitive piecework basis. In each trial, groups of four participants, always two women and two men, were given the job of finding the correct sum for as many sets of five two-digit numbers as they could in five minutes. The payment for the first task was awarded on a non-competitive basis by paying a piece rate of 50 cents for each cor-

rect answer. Payment for the second task was a competitive winner-take-all “tournament.” Losers received nothing and the person in each group with the largest number of correct answers was awarded \$2 per correct answer. For the third task, participants chose either piecework payment or the tournament compensation.

Men and women answered the same number of problems correctly under both compensation systems.

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“There are ‘large gender differences in the propensity to choose competitive environments’ and this needs to be taken into account in understanding why women are under-represented in many fields of work.”

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But when allowed to choose compensation rates for the third task, 75 percent of the men chose tournament compensation while only 35 percent of the women did so. When the authors compare men and women with the same performance in the second-task tournament, the women have about a 38 percent lower probability of entering the subsequent tournament than the men. This implies that among high performing participants — that is, participants who earn more money from the tournament than the piece rate — more men than women enter the tournament. Among low performing participants, it is the men who enter the tournament too much, and hence do not earn as much as they could.

In this experiment, large gender differences in tournament entry can be observed, even in a case where women are as good as men, where discrimination is absent, and where the time spent on each task is limited, so that time conflicts with raising children are not an issue. What can account for this gender difference?

One possibility why men enter a tournament so much more than women do is that men may feel more confident about their ability (even

though they are not actually better). While both men and women are overconfident about their relative performance in the second-task tournament, men are much more so. About 75 percent of the men believe that they won the second-task tournament of four participants. Naturally, most of them are wrong. However, even comparing men and women who have the same beliefs about their relative performance in the second-task tour-

namment (for example, only comparing men and women who thought that they won), the men decide to participate in the subsequent tournament at a much higher rate than the women. The gender difference for tournament entry remains about 30 percentage points.

Other possible explanations are that women may shy away from tournaments because they dislike facing the possibility of not being paid for their performance, that is they are more risk averse, or they dislike receiving feedback about their relative performance. A final and fourth task in this study shows that these are indeed factors that can contribute to women and men behaving differently. However, they cannot explain the majority of the gender differences in deciding whether or not to enter a tournament.

The authors conclude that there are “large gender differences in the propensity to choose competitive environments” and that this needs to be taken into account in understanding why women are under-represented in many fields of work.

— Linda Gorman

## Do Medicare Report Cards Tell Consumers Anything They Don't Already Know?

Consumer report cards are not a new phenomenon — many organizations evaluate the quality of products and services and publish such information for consumers. Governments too have invested substantial resources in developing and disseminating quality report cards in a variety of settings, ranging from achievement of public school students to restaurant cleanliness to airline on-time performance. Perhaps the most important laboratory for these government-reporting initiatives is the health insurance market, through which nearly 15 percent of GDP flows.

In **Do Report Cards Tell Consumers Anything They Don't Already Know? The Case of Medicare HMOs** (NBER Working Paper No. 11420), authors **Leemore Dafny** and **David Dranove** quantify the effect of the largest public report-card experiment to date, the release of Health Maintenance Organization (HMO) report cards in 1999 and 2000 to 40 million Medicare enrollees, on the subsequent health plan choices of enrollees. They compare the magnitude of the learning induced by those report cards to that of ongoing, market-based learning by consumers.

The Balanced Budget Act of 1997 required all managed care plans participating in the Medicare program to gather and disclose quality data. The plans must report a set of standardized performance measures, collectively called The Health Plan Employer Data and Information Set. Beginning in 1998, this data was supplemented by an independent annual survey of Medicare beneficiaries. Respondents are asked a series of questions designed to assess their satisfaction with various aspects of their healthcare, including the communication skills of their physicians and the ease of obtaining care. These measures are used to construct an annual report card for every Medicare HMO. Report cards for those HMOs operating in a beneficiary's market area were mailed to all beneficiaries in November 1999 and in November 2000 in *Medicare & You* handbooks — report cards were not included in subsequent

handbooks, which now refer interested seniors to a website and a toll-free helpline.

The authors conclude that during the study period, 1994-2002, the report cards and market-based learning played roughly equal roles in shifting Medicare HMO enrollees to higher-quality health plans. Over that period, Medicare enrollees were switching into higher-quality plans *independent* of the government report cards issued in 1999 and 2000. Market-based learning attenuated over time, and was strongest in markets in which *U.S. News & World Report* provided report cards, and in which migration and prior HMO experience were relatively low. These findings suggest that market learning is facilitated by the private release of report cards, “word of mouth” within communities, and personal experience with HMOs.

These results are consistent with a recent survey of Medicare beneficiaries, which found that the majority who

Given that public report cards are often justified on the grounds that individuals' subjective opinions are not good measures of true quality, the authors find it surprising that satisfaction scores were included in the report cards. Also, it is potentially disconcerting that consumers would ignore an alternative, objective measure of quality that also was provided. The authors report that enrollee satisfaction is uncorrelated with the mammography rate, for example, and with other measures that are believed to reflect best practices in disease screening and prevention. Instead, enrollee satisfaction can be related to features that are not instrumental to producing better health, such as large parking lots and nice waiting rooms. The strong response of enrollees to average satisfaction ratings also creates an incentive for plans to maximize these ratings by directing resources toward “average” enrollees and away from outliers with catastrophic or expensive chronic conditions, precisely the individ-

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“The report-card effect on choice of HMO plan is entirely attributable to beneficiaries' responses to enrollee satisfaction scores (based on such factors as large parking lots and nice waiting rooms). Other reported quality measures, such as the mammography rate, did not affect enrollment.”

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sought managed-care information used non-governmental sources. The evidence on market learning implies that prior estimates of the effects of report cards are likely biased upward, as these studies generally attribute all behavioral changes following a report card's release to the report card itself.

However, after controlling for market-based learning, Dafny and Dranove still find a significant response to the Medicare report cards. Over the entire 8-year study period, the report-card-induced enrollment changes are as large as the changes associated with market learning. But, the report-card effect is entirely attributable to beneficiaries' responses to enrollee *satisfaction* scores. Other reported quality measures, such as the mammography rate, did not affect enrollment.

uals for whom insurance is most valuable.

The authors further find that the report cards encouraged a substantial amount of switching among enrollees already in Medicare HMOs, but only drew a small fraction of enrollees in traditional Medicare into Medicare HMOs. This result is consistent with prior research in the private sector (using Preferred Provider Organizations as the outside option), and suggests that quality report cards alone will not be sufficient to convince Medicare enrollees to abandon traditional Medicare for the Medicare HMO program (currently known as Medicare Advantage).

— Les Picker

## Are Durable Goods Consumers Forward Looking?

According to economists' standard model of consumer behavior in durable goods markets, the rational consumer will be forward-looking, and possible future events will affect today's buying decisions. But recent research in behavioral economics suggests that consumers are myopic and that they have a difficult time evaluating future costs and benefits — they also are very impatient. Put differently, they have high short-run discount rates.

In **Are Durable Goods Consumers Forward Looking? Evidence from College Textbooks** (NBER Working Paper No. 11421), NBER researchers **Judith Chevalier** and **Austan Goolsbee** compare these two views by examining consumer purchasing behavior in the college textbook market. If the standard model accurately describes consumer behavior, then students buying a textbook should consider the likelihood that a new edition will come out while the student is trying to sell the book. Chevalier and Goolsbee find that this is the case: students are less likely to purchase a textbook when the probability of a new edition arriving before the end of the semester is at its peak. In periods in which a book will certainly not be revised, book sales are relatively insensitive to price: a one percent increase in price reduces sales by only 0.9 percent. In a period in which the probability of revision is 50 percent, a one percent increase in price reduces sales by 2.3 percent. These data suggest that students are as responsive to a 1 percent change in the sticker price of the book today as they are to a 1 percent change in the expected resale price at the end of the semester. Thus, the results suggest that students pay close attention to future resale value and have low discount rates, characteristics in accord with the model.

It is popularly believed that publishers introduce new editions so that they can make more money by eliminating competition from used books. However, given that the authors' results show that "students are definitely forward-looking when they buy their textbooks" and that their behavior is consistent with very low discount rates, students will be less willing

to buy a book that they expect will be revised quickly. The authors use their results about student demand to calibrate the effects of changing publishers' revision-time policies. The authors conclude that, "publishers of both economics and biology introductory textbooks would lose revenues by speeding up their revision cycles."

Textbooks are a significant cost for college students; some estimates suggest that textbook costs average \$900 per year for students. However, students can defray some of these costs by purchasing used textbooks and/or by selling back their textbooks at the end of each semester. Some industry estimates suggest that the majority of students attempt to sell back most of their books every semester.

Using semester-by-semester data from 1698 college bookstores for 1997 to

fraction of non-buyers increases with the price of the assigned textbook, as expected, and differs by field and with other characteristics of the book and the students assigned to read it. Most importantly, Chevalier and Goolsbee estimate the extent to which student purchase behavior responds to a rational expected resale price of the books.

The expected resale price that a student can obtain for a book has two components. First, students have to consider the price that their college bookstore will pay for their books. Typically, college bookstores buy back used textbooks at 50 percent of the new book price, while selling used textbooks of 75 percent of the new book price. Second, students have to consider the probability that their college bookstore will accept the book for resale.

Publishers revise textbooks every

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"If the standard model accurately describes consumer behavior, then students buying a textbook should consider the likelihood that a new edition will come out while the student is trying to sell the book. Chevalier and Goolsbee find that this is the case: students are less likely to purchase a textbook when the probability of a new edition arriving before the end of the semester is at its peak. In periods in which a book will certainly not be revised, book sales are relatively insensitive to price."

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2001 in the fields of psychology, biology, and economics, Chevalier and Goolsbee ask whether consumer purchasing behavior is consistent with students fully assessing their sellback opportunities when buying a new book. Their dataset contains information on both the textbooks that professors assign to their students and college bookstore sales. (Despite the growth in on-line commerce, the vast majority of college textbook purchases over the studied time period take place in college bookstores.) The authors estimate the factors that influence whether a student buys the assigned textbook.

Most college professors will be disappointed to learn that a significant fraction of students do not buy required textbooks; industry estimates suggest that, on average, approximately 20 percent of students do not buy a required textbook. Chevalier and Goolsbee estimate that the

fraction of non-buyers increases with the price of the assigned textbook, as expected, and differs by field and with other characteristics of the book and the students assigned to read it. Most importantly, Chevalier and Goolsbee estimate the extent to which student purchase behavior responds to a rational expected resale price of the books. The expected resale price that a student can obtain for a book has two components. First, students have to consider the price that their college bookstore will pay for their books. Typically, college bookstores buy back used textbooks at 50 percent of the new book price, while selling used textbooks of 75 percent of the new book price. Second, students have to consider the probability that their college bookstore will accept the book for resale. Publishers revise textbooks every few years. Chevalier and Goolsbee show that introductory books have a shorter lifespan before revision on average than more advanced ones, and that economics books have a shorter lifespan than psychology or biology textbooks. They show that the probability that the new edition will be introduced is essentially zero early in the life of the book, peaks when a book has been available for three to four years (depending on the field and level of the book), then falls off after that. Once a new textbook edition is introduced, "almost no one in the college bookstore supply chain is willing to buy or sell a used book for an outdated edition beyond one transitional semester" and the "buyback price for students holding the obsolete book essentially falls to zero."

— Linda Gorman

## Mutual Fund Switching Lowers Investors' Returns

It is a common practice for individual investors to shift money from one mutual fund to another in pursuit of better returns. In regard to future stock prices, however, **Andrea Frazzini** and **Owen Lamont** declare that such practice is nothing short of foolish. In **Dumb Money: Mutual Fund Flows and the Cross-Section of Stock Returns** (NBER Working Paper No. 11526), the researchers demonstrate that “individual investors have a striking ability to do the wrong thing.” They assert that individual investors in fact perform so poorly that one could use their mutual fund reallocations to predict future stock returns.

Frazzini and Lamont estimate that in 1999 for example investors placed \$37 billion in Janus funds, which were heavy in high-flying tech stocks, but only \$16 billion in Fidelity funds. By 2001, however, investors pulled about \$12 billion out of Janus and added about \$31 billion to Fidelity. This shift caused losses to mutual fund investors as Janus and tech funds declined after 1999.

According to some theories, certain individual investors can identify skilled fund managers and accordingly place their investments with them. Thus, in contrast to the Janus experience, flows should be positively correlated with future returns. Indeed, the evidence indicates that short-term performance of funds with inflows is significantly better than those with outflows, which suggests that mutual fund investors have selection ability. But Frazzini and Lamont are interested in the long-term effect, and how on net investors are affected by fund flows.

To discern the patterns, the researchers calculate the mutual fund ownership of a stock attributable to reallocation decisions as reflected in fund flows. At the end of 1999, for example, 18 percent of the outstanding Cisco shares were owned by mutual funds. From their sample of funds, Frazzini and Lamont believe that 3 percent of these shares were attributable to

disproportionately high inflows over the previous three years. This means that if flows had occurred proportionately to asset value (instead of disproportionately to funds like Janus), the level of mutual fund ownership would have been only 15 percent. The 3 percent difference is the researchers' measure of investor sentiment, which they then test as a predictor of differential return on stocks.

As suggested by the Janus and Cisco examples in 1999, the researchers determine that on average from 1980 to 2003, retail investors put their money into funds that invested in stocks with low future

mutual fund inflows, the company increases the number of shares outstanding. This supports the view that individual investors are dumb while smart firms exploit their demand for shares.

By analyzing the relation between flows and mutual fund returns, Frazzini and Lamont find mixed evidence on a smart money effect of short-term flows positively predicting short-term returns. This could be because investors detect some short-term manager skills. Or it could be the result of mutual fund inflows actually boosting prices. Or it may merely be that by chasing past returns, investors are stum-

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“Individual investors in fact perform so poorly that one could use their mutual fund reallocations to predict future stock returns.”

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returns. But to gain high returns, it is best to do just the opposite. Frazzini and Lamont find that mutual fund investors experience total returns that are significantly lower because of their reallocations. Therefore, mutual fund investors are “dumb” in that their reallocations lose them money. Frazzini and Lamont call this predictability the “dumb money” effect.

This dumb money effect is related to the value effect. Money flows into mutual funds that own growth stocks and flows out of mutual funds that own value stocks, reflecting the fact that investors tend to favor mutual funds with high recent returns. This challenges risk-based theories of the value effect, which would need to explain why one class of investors is selling “high risk” value stocks and buying “low risk” growth stocks. Frazzini and Lamont add that while the dumb money effect is statistically distinct from the value/reversal effect, it is evident that these two effects are highly related.

Moreover, Frazzini and Lamont note a correlation between demand by individuals and supply from firms. When individuals buy more stock of a specific company via

bling onto a valuable momentum strategy. Whatever the explanation, the higher short-term returns clearly are not effectively accruing to individual investors, and as a whole investors harm themselves in the long run by their reallocations.

On the matter of issuers and flows, the researchers conclude that individual investors often trade poorly, largely because their trades are executed through their dynamic allocation across mutual funds via financial institutions. But it appears the financial institutions are not exploiting the individuals nearly as much as the non-financial institutions that issue and repurchase stock. As stocks go in and out of favor with individuals, firms exploit their sentiments by trading in the opposite direction, selling stock when individuals want to buy it. A fund manager may be skilled at stock picking, but this is swamped by such actions as retail investors switching their money across funds. What Frazzini and Lamont observe are financial institutions acting like “passive intermediaries who facilitate trade between dumb money, individuals, and smart money, firms.”

— Matt Nesvisky

## No Evidence that Aid Stimulates Growth

Challenging the simplistic but seductive view that increased assistance from rich

countries is likely to put many poor countries on the path to prosperity, a new study

on the impact of foreign aid finds “little evidence” that it ever has a positive effect

on economic growth. In **Aid and Growth: What Does the Cross-Country Evidence Really Show?** (NBER Working Paper No. 11513), co-authors **Raghuram Rajan** and **Arvind Subramanian** conclude that regardless of the situation — for example, in countries that have adopted sound economic policies or improved government institutions — or the type of assistance involved, aid does not appear to stimulate growth over the short or long term. They point out that their exhaustive analysis should not be taken as an argument that aid cannot ever help the growth of countries that receive it, only that there is “no discernible robust impact of aid on growth, positive or negative” in the past.

This work emerges at a particularly auspicious time. The world’s wealthy nations have committed to overhauling and significantly boosting aid to poor countries as part of the United Nations Millennium Development Goals (MDG), which aim to cut global poverty in half by 2015. A key assumption of the so-called MDG process is that rich countries can be particularly successful in the developing world by ramping up aid to countries where political and institutional reforms or other favorable conditions, such as geography, will allow the aid to rapidly spark growth. But Rajan and Subramanian report that they “find virtually no evidence that aid works better in better policy or institutional or geographical environments or that certain kinds of aid work better than others.”

The authors examine aid from a variety of angles. They consider the effect of aid over various 10, 20, 30, and 40-year time periods from 1960 to 2000. They also look

at the effect of different kinds of aid, such as aid intended as food assistance and aid targeted at economic or social sectors. And, they consider the source of the aid, including whether it was “bilateral” (from one country to another) or came from a multilateral entity, such as the World Bank.

For example, they note that “food aid should typically not be expected to affect long-run growth while economic and social sector aid should because they lead to an increase in physical and human capital.” Similarly, aid from multilateral institutions might be expected to have a greater chance of achieving growth than bilateral assistance because it is less likely to be influenced by a political agenda. But in all cases, the results were the same. “No sub-categories have any significant impact.”

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“... regardless of the situation — for example, in countries that have adopted sound economic policies or improved government institutions — or the type of assistance involved, aid does not appear to stimulate growth over the short or long term.”

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Rajan and Subramanian observe that there is a tendency in analyzing the impact of aid for economists to take sides and conclude that it is good or bad for growth. But the authors argue that neither assertion is valid because the data supporting either argument is so “fragile” that with only minor tweaks, it can yield the opposite result. For example, they take an analysis claiming to prove that economic aid works well when directed to countries with sound economic policies and show that with only subtle changes in the supporting data, the analysis argues the opposite, “signifying that economic aid works better in worse

policy environments.” “In our view, all that one can conclude is that it is difficult to discern the effects of aid,” they write.

Rajan and Subramanian caution that they are not advancing an argument that foreign aid has no role to play in helping poor countries escape from poverty. Rather, they believe that acknowledging the lack of evidence that aid can stimulate growth and thus help countries become more self-sufficient can help both providers and recipients make assistance more effective.

“It should be stressed that our findings, which relate to the past, do not imply that aid cannot be beneficial in the future,” they state. “But they do suggest that for aid to be effective in the future, the aid apparatus (in terms of how aid should be deliv-

ered, to whom, in what form, and under what conditions) will have to be rethought.”

In particular, Rajan and Subramanian believe their analysis should prompt a closer look at why they could not find situations where aid clearly emerges as having “indisputable growth enhancing effects.” That is, “what is it that offsets the transfers and subsidized credit inherent in aid and prevents it from having a robust positive effect on growth?” they ask. “Further research of this kind is essential to improve aid effectiveness.”

— Matthew Davis

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