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Housing Busts May Lower Household Mobility

Using two decades of American Housing Survey data from 1985–2005, researchers **Fernando Ferreira**, **Joseph Gyourko**, and **Joseph Tracy** estimate that negative home equity reduces homeowners' mobility. Indeed, mobility is almost 50 percent lower for owners with negative equity in their homes than for those with positive equity. In a weak housing market, it seems, households get "locked in" to their homes and are prevented from "moving up" to larger homes and better neighborhoods.

In **Housing Busts and Household Mobility** (NBER Working Paper No. 14310), the researchers conclude that this does not imply that current worries about defaults and owners having to move from their homes are entirely misplaced. However, history suggests that the lock-in effects of negative housing equity and high mortgage interest rates were dominant.

The biennial American Housing Survey covers metropolitan areas across the United States. The data allow the researchers to track residence histories and mobility patterns under a variety of housing market conditions. The authors maintain it is important to recognize that lower mobility can be observed only over time, so it will take some years to know how the

impact of negative equity will play out in this cycle. They also emphasize that housing market conditions are not the same over time. For example, the subprime market was much smaller over most of their sample

"In a weak housing market... households get 'locked in' to their homes and are prevented from 'moving up' to larger homes and better neighborhoods."

period, so the underlying riskiness of borrowers probably was lower in the past than today. In addition, their sample is restricted to owner-occupied homes and excludes investors and second homes, both of which may respond differently to negative equity situations.

Ferreira, Gyourko, and Tracy note that pronounced shifts have occurred over time in house values, leverage, and mobility rates. For example, 1985–97 saw a substantial boom and bust in California housing markets. The data show a peak in mean nominal house prices of \$253,617 in 1989, with an average loan-to-value (LTV) ratio of 67 percent, and a two-year mobility rate of just over 15 percent. Prices in California began to fall around 1991, but did not bottom out until 1997 when they reached \$201,693, with an average LTV of 78 percent, and a two-year mobility rate of only

11.7 percent. From peak to trough, nominal prices fell by just over 20 percent, with the mean loan-to-value ratio increasing by 16 percent. It was not until 1998–9 that mobility returned to the pre-1989 peak

levels, reaching 15.8 percent. Other housing markets that experienced sharp swings in prices and loan-to-value ratios over time also show similar mobility patterns.

The researchers focus on the role of negative equity because households' equity positions vary significantly over the cycle and help to characterize housing busts. To measure negative equity, they construct the homeowner's current LTV ratio using the value of the mortgage balance and the owner's self-reported current value of the house. They also factor in demographic information that influences mobility, including changes in family size, age, race, education, the sex of the household head, marital status, the change in marital status of the household head, and gains and losses in family income.

Ferreira, Gyourko, and Tracy report that being married is not a

statistically significant predictor of mobility, but divorce is. Household mobility also increases with the education of the household head. Whites are more likely to move than non-whites, and male-headed households are less likely to move than female-headed households. Each additional year of age reduces household mobility until the house-

hold head reaches the early fifties; after this point, aging raises the likelihood of a move. Finally, larger households tend to move less frequently. This is consistent with the hypothesis that children increase the transactions costs involved in moving.

The researchers conclude that reduced mobility has its own set of

consequences that have not been clearly identified or discussed in the debate about the current housing crisis. Lower household mobility may result in poorer labor market matches, diminished support for local public services and facilities, and lesser maintenance and reinvestment in the home.

—Matt Nesvisky

Total Compensation Reflects Growth in Productivity

The relation between wages and productivity is important because it is a key determinant of the standard of living of the employed population as well as of the distribution of income between labor and capital. If wages rise at the same pace as productivity, then labor's share of national income remains essentially unchanged. In **Did Wages Reflect Growth in Productivity?** (NBER Working Paper No. 13953), **Martin Feldstein** presents specific evidence that the share of national income going to employees is at approximately the same level now as it was in 1970.

Feldstein notes that the level of productivity doubled in the U.S. non-farm business sector between 1970 and 2006. Wages, or more accurately total compensation per hour, increased at approximately the same annual rate during that period—if nominal compensation is adjusted for inflation in the same way as the nominal output measure that is used to calculate productivity. The use of an incorrect inflation adjustment has confounded prior research, according to Feldstein, resulting in skewed findings showing a large and increasing gap between

productivity and wages.

According to Feldstein, the doubling of productivity since 1970 represented a 1.9 percent annual rate of increase. Real compensation per hour rose at 1.7

“The share of national income going to employees is at approximately the same level now as it was in 1970.”

percent per year — when nominal compensation is deflated using the same non-farm business sector output price index. In the more recent period between 2000 and 2007, productivity rose at a much more rapid 2.9 percent a year and compensation per hour rose nearly as fast, at 2.5 percent a year.

Total employee compensation was 66 percent of national income in 1970 and 64 percent in 2006. This measure of the labor compensation share has been remarkably stable since the 1970s. It rose from an average of 62 percent in the 1960s to 66 percent in the 1970s and 1980s, and then declined to 65 percent in the 1990s where it has remained from 2000 until the end of 2007.

Feldstein concludes that two principal measurement mistakes have led some analysts to con-

clude that the rise in labor income has not kept up with the growth in productivity. The first is a focus on wages rather than total compensation: because of the rise in fringe benefits and other non-

cash payments, wages have not risen as rapidly as total compensation. Feldstein feels it is important to compare the productivity rise with the increase in total compensation rather than the increase in the narrower measure of just wages and salaries.

The second measurement problem that Feldstein addresses is the way in which nominal output and nominal compensation are converted to real values before making the comparison. Although any consistent deflation of the two series of nominal values will show similar movements of productivity and compensation, Feldstein concludes that it is misleading to use two different deflators, one for measuring productivity and the other for measuring real compensation.

—Lester Picker

The Federal Student Aid Process is not Efficient

In Complexity and Targeting in Federal Student Aid: A Quantitative Analysis (NBER Working Paper No. 13801), co-authors **Susan Dynarski** and **Judith Scott-Clayton** write that the complexity and uncertainty in the federal system of financial aid for college students — primarily Pell Grants and Stafford Loans — undermine its efficacy, while doing little to improve the targeting of loans and grants to those who need them most. They also suggest that targeting aid to the neediest students can be achieved with a much simpler process. The current system is so complicated that families cannot predict their aid (the authors refer to this as “uncertainty”) — for students from low-income families, this could mean not applying to college at all.

Ten million individuals annually seek federal aid for college. They are required to complete the Free Application for Federal Student Aid (FAFSA), which at five pages and 127 questions is slightly longer than the IRS Form 1040 (and substantially longer than the 1040EZ and 1040A) used for federal income tax returns. The authors estimate that it takes ten hours on average to complete the FAFSA: at \$17.50/hour (the current average hourly wage), that adds up to \$1.75 billion/year. Plus, colleges spend over \$2 billion/year on salaries for staff who administer federal financial aid, or other

aid based on the federal formula.

Colleges also are required by statute to audit at least 30 percent of these aid applications — at least 3 million such audits take place annu-

mula, the authors find. Adjusted Gross Income (or earnings, for those who don't file federal income tax forms), marital status, family size, and the number of family

“Nearly all of the variation in aid to students is generated by only a handful of the more than 70 data items used in the current aid formula.”

ally. Dynarski and Scott-Clayton estimate that the compliance costs faced by applicants and the administrative costs borne by the government and colleges total at least \$4 billion/year. The true social cost is even higher, they conjecture, because complexity and uncertainty may discourage the target population from applying for student aid.

Pell grants average \$2500/recipient, with a maximum value of \$4,050. They go almost exclusively to families with incomes below \$40,000. During the 2004–5 academic year, \$13.6 billion in Pell grants was delivered to over 5 million students. Another \$55 billion was disbursed via Stafford Loans, half of which are need-based (and the government pays the interest while the student is in college) and half “unsubsidized” so that the interest accrues during college.

Nearly all of the variation in aid to students is generated by only a handful of the more than 70 data items used in the current aid for-

members in college explain over three-quarters of the variation in federal grant aid. For 75 percent of applicants, using a simplified formula that includes only a subset of income items rather than the full list in the FAFSA produces grants within \$100 of those generated by the current formula. The same is true for loans (which also require the FAFSA form).

This paper expands on earlier work by the authors, also directed at simplification, by including loans as well as grants and independent students (older than 24, or married, or with children). Those independent students now comprise 47 percent of undergraduates and receive 58 percent of Pell Grant funds and 56 percent of Stafford subsidized loan dollars. The authors use individual-level data from a 2003–4 National Postsecondary Student Aid Survey — their sample is 26,156 full-time undergraduates who attended the same institution for the full year.

— Donna Zerwitz

Hours Spent in Homemaking Have Changed Little This Century

In Time Spent in Home Production in the 20th Century: New Estimates from Old Data

(NBER Working Paper No. 13985), **Valerie Ramey** investigates how much time is spent on

“homemaking,” which includes food preparation, house cleaning, care of family members (and non-

household members, such as elderly parents), shopping, and managing the household. She develops new estimates of time in home production for 1900–65, based on thousands of time diaries. When these estimates are combined with government data and other nationally representative estimates for the years since 1965, they suggest that women between the ages of 18 and 64 spent 18 fewer hours on housework each week in 2005 than they did in 1900. However, men aged 18-to-64 took up much of the slack, spending about 13 more hours on housework in 2005 than in 1900. Ramey concludes that from 1900 to 1965, time spent by (non-employed) housewives in homemaking fell by about six hours per week, and “all of that change could be accounted for by the number and age of children and the increased education levels of housewives.” Surprisingly, while electricity, running water, and washing machines probably increased household output and reduced the drudgery of household tasks, they had little impact on the time spent on housework before 1965. After 1965, however, time spent by housewives fell by another seven hours, and virtually none of the additional decline could be explained by changes in household composition.

Ramey combines estimates of time spent by children and older people with the time spent by

those aged 18 to 64 to form a more complete picture of total time spent in home production. Once changes in household size are taken into account, it appears that the combined hours devoted to home production by all house-

“Women between the ages of 18 and 64 spent 18 fewer hours on housework each week in 2005 than they did in 1900. However, men aged 18-to-64 took up much of the slack, spending about 13 more hours on housework in 2005 than in 1900.”

hold members have remained relatively constant since 1900.

While the time spent has not changed, what it is spent on has. Ramey reports that in the 1960s, housewives “spent less time on food preparation and clothing care, but more time on care of others and much more time on purchasing, household management, and travel than farmwives and town housewives in the 1920s.” Changes in living situations have had a large effect on home production. From 1900 to 1930, single employed women spent an estimated seven hours a week on home production. Most of them lived in boarding houses or with their families and relied on mothers or boarding house keepers for their home production. By 1965, they were spending 17 hours per week in home production. By 2005, time spent had risen to 18.1 hours per week. Non-employed men also increased their

housework hours from 11.9 hours in 1900 to 21.2 hours in 2005.

The data also do not support the widespread belief that the time spent on home production falls as income rises. Ramey notes that in the past, lower-income families

lived in smaller quarters and often subsisted on monotonous diets of ready-made goods such as bakery breads, sausages, salted fish, and canned goods. Middle and upper-income households had servants that, in 1900, increased the housework hours per household by about ten hours per week. Lower-income families simply produced less household output with the result that “[h]aving clean clothes, clean dishes, a clean house, and well-cared for children was just another luxury the poor could not afford.” It is possible that time saving appliances merely replaced servant hours. It is also possible that “the public became aware of the importance of cleanliness and nutrition for families’ health as new appliances were appearing, with the result that the demand for housework rose as they were introduced.”

— Linda Gorman

How Costly is Diversity?

Despite decades of striving for gender equality, there are still large differences between men

and women in the labor market. Women are more likely to hold clerical or nurturing jobs while

men are more visible in manufacturing. Across fields, men are disproportionately found in pro-

fessional and managerial occupations. Even among graduates of top tier business schools, female MBAs are more likely to work in the non-profit sector, to work part time, or to drop out of the work force entirely. One theory suggests that women are under-represented in many high-profile jobs, and across entire professions, because of the way they respond to competition: men are eager to compete, while women often shy away from competitive environments.

In **How Costly is Diversity? Affirmative Action in Light of Gender Differences in Competitiveness** (NBER Working Paper No. 13923), authors **Muriel Niederle**, **Carmit Segal**, and **Lise Vesterlund** devise a series of experiments to investigate how affirmative action might affect participants' willingness to compete, and at what cost. Specifically, they observe 42 men and 42 women at Harvard who competed in a timed tournament involving adding series of 5 two-digit numbers. The tournament rules under affirmative action required that out of two winners, at least one must be a woman. Niederle and her co-authors find that when women are

guaranteed equal representation among winners, as in this case, more women and fewer men enter competitions — and the response is even larger than one might predict given the changes in the

“Introducing affirmative action causes a substantial increase in the number of female competitors, and this supply effect reduces the cost of requiring equal representation of women.”

odds of winning. The response is explained by the affirmative action competition being more gender specific: for example, to win the competition a woman only needs to outperform the other women. Interestingly, both beliefs about relative performance and the willingness to compete will change in more gender-specific competitions.

The researchers then ask how costly it is to insure that women be represented equally among those who win competitions — in other words, what is the cost of affirmative action? In particular, how much lower will the performance threshold be for women? How many better-performing men will have to be passed by to hire a woman? To what extent will reverse discrimination arise?

The authors find that intro-

ducing affirmative action causes a substantial increase in the number of female competitors, and this supply effect reduces the cost of requiring equal representation of women. The costs of affirma-

tive action depend on how much lower the minimum performance threshold must be to secure gender parity, compared to performance of a group in which gender is not taken into account. If there were no change in male-female entry, then equal representation of women would result in lower minimum performance for women. However, the change in tournament entry implies that women are better represented among the set of entrants, and in particular that more high performing women are in the applicant pool. Thus, it becomes much less costly to achieve equal representation, and the resulting minimum performance threshold changes very little if at all under affirmative action.

— Lester Picker

Reforming Social Security With Progressive Personal Accounts

In **Reforming Social Security with Progressive Personal Accounts** (NBER Working Paper No. 13979), **John Geanakoplos** and **Stephen Zeldes** describe a new type of financial security, the Personal Annuitized Average Wage (PAAW) security, which could play

an integral role in future Social Security reforms. The authors observe that some participants in the Social Security policy debate want to retain a defined benefit type of Social Security program, similar to the current system, because they are attracted to its

redistributive features and the possibility of intergenerational risk sharing. Other participants in this debate prefer a defined contribution system of personal accounts, with individuals holding marketed assets, because the ready valuation of these accounts facilitates ratio-

nal retirement planning and because it is difficult for the Government to retract benefit commitments when individuals own the assets in their accounts. The authors suggest that PAAW securities offer a means to secure the objectives of both of these groups. "PAAWs define benefits and achieve risk sharing across generations, ... yet [they] can be held in personal accounts with market valuations." These securities are thus designed to satisfy both those who want a system that redistributes wealth and shares intergenerational risk, and those who want a self-balancing system that encourages individual ownership of retirement benefits that cannot be revoked by a future government.

A PAAW security would pay its holder one inflation-corrected dollar for every year of life after retirement age, multiplied by the economy-wide average wage at the time he or she retires. The authors suggest that PAAW securities could be issued in exchange for making Social Security tax payments. Individuals with low lifetime income to date could have

their tax payments augmented by a government match, while individuals with high lifetime incomes would receive smaller or negative matches. An increase in a worker's relative earnings, and the higher

would deliver a number of benefits that "notional account" Social Security systems do not offer. The market prices for PAAWs would help households to assess the value of retirement benefits earned under

"The Personal Annuitized Average Wage Security [would be] designed to satisfy both those who want a system that redistributes wealth and shares intergenerational risk, and those who want a self-balancing system that encourages individual ownership of retirement benefits that cannot be revoked by a future government."

tax payments that go with it, would generate more PAAW securities for this worker's account.

PAAW securities could, in principle, be pooled and then pool shares could be traded in financial markets. For example, every individual could be required to sell a fixed percentage (say 10 percent) of his newly accrued PAAWs into a pool. Limiting individuals to trading a small fraction of their PAAWs would prevent them from putting retirement savings at too great a risk.

Creating a market for PAAWs

social security. Well-defined property rights, combined with a liquid market for PAAWs, would clarify the financial status of the system, making it more difficult for the government to make stealth adjustments in promised payouts and enabling the government to more easily create a self-balancing system. Finally, tradable PAAW securities also might encourage the further development of annuity and reverse mortgage markets.

— Linda Gorman

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