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**TRANSACTION COSTS AND HOUSING MARKETS**

By

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## **I. Introduction**

The durability, fixity, and heterogeneity of dwellings imply that transactions costs are significant in the housing market. Certainly in comparison to financial markets, and in comparison to the markets for most consumer goods, housing transactions require costly search to uncover the prices and attributes of commodities. Transactions may require complex negotiation with financial institutions as well as bargaining among housing market participants. Moreover, active choice in the housing market is infrequent, so participants may find housing market options and choices more uncertain than those in other markets. In particular, bargaining itself may be costly to households given its infrequent occurrence.

Duncan MacLennan's well known 1982 book, a treatise and a widely-used text (MacLennan, 1982), recognizes the importance of these features of the housing market. Indeed, the expanded framework offered in chapter 3 of that book stands in stark contrast to that offered in conventional economic texts of the time. It is fair to say that one of the enduring contributions of the book is its emphasis on dynamic processes in the market for housing and the need to recognize these processes both in applied research and in economic policy.

This paper provides a review of the most important sources of transactions costs in the housing market and an assessment of the magnitude of these deviations from the simple model of frictionless competition by fully informed actors.

In Section II, below, we explore a taxonomy of costs associated with transactions in the housing market. These transactions costs are, of course, specific to the market institutions of Britain and North America, and most of the quantitative evidence presented on costs comes from the U.S. Section III presents a simple theoretical exercise to investigate the magnitude of

transactions costs relative to housing consumption measured in terms of rent or housing values. Section IV considers some selected implications of the analysis.

## **II. A Taxonomy**

As emphasized by MacLennan (1982: 59-75), “the” housing market is really not a single neoclassical exchange market, but is rather a set of overlapping submarkets differentiated by tenure, location, size and quality. There are markets in which the capital good, housing, is exchanged, and there are other markets in which the consumption good, housing services, is exchanged. The impediments which inhibit the adjustment of the market to a neoclassical equilibrium can be summarized in five broad categories: search costs; legal and administrative costs; adjustment costs; financial costs; and the costs of uncertainty. Each of those can be expressed in terms of identifiable components. Some of these components are quite hard to measure and quantify, but are nevertheless significant.

### **A. Search Costs**

The heterogeneity of housing and its unique spatial component suggest that it is costly to identify available dwellings. The essence of housing market choice is the tradeoff among size, quality, and locational considerations, together with price. Identifying and evaluating these attributes typically involves the physical inspection of dwellings at disparate locations. Some of these inspections can be made simply by driving past a property, and others can be made by examining photographs or newspaper advertisements. These are the inspections that lead to the elimination of properties from consideration. Any property that is a “serious” candidate for choice will no doubt be the object of physical inspection by a potential renter or purchaser.

There is little survey evidence on the number of dwellings inspected by households before making residential choices. Clark (1993) reports on studies of Canadian and U.S. housing markets that document that “a third of all homebuyers and half of all renters consider only one alternative.” Clark’s own research (1982) found that recent home buyers in Los Angeles searched for less than a month, within an area of about a three mile radius, and looked at 15 homes. Survey evidence from Glasgow suggested that renters spent only between 7 and 19 days searching and that a large fraction accepted the first available unit (See Wood and MacLennan, 1982). Some information is available on the “time spent searching” by low-income renters. This information, the average number of days spent searching for rental accommodations, was gathered as a part of the Experimental Housing Allowance Program (EHAP) in the U.S. (Weinberg, et al., 1981). In the two markets in which the experiment was conducted, the median household spent 61 days searching (in Pittsburgh), with a standard deviation of 19 days, and 37 days searching (in Phoenix), with a standard deviation of 18 days. If households spent merely five hours a week searching during these time intervals, they would have devoted the equivalent of between one half and one full work week to searching for housing. This is a substantial expenditure of effort.

For renters, there are rather limited opportunities to employ brokers to reduce search costs. For home purchasers, whose other transactions costs are higher (see below), there is every reason to expect that the time devoted to search will be greater. However, for institutional reasons, there is more scope for the substitution of the services of brokers or other middlemen to assist in the search process. By custom in the U.S., brokerage commissions are split between buyer and seller brokers. On a given transaction, the buyer’s broker commission may be three percent of the selling price of a dwelling. DiPasquale and Wheaton (1996) assert that aggregate

realtor fees for housing transactions range from three to six percent in the U.S. A recent paper by Wood (1996) documents the regulated real estate commissions in Australian States. Average commissions range from over eight percent to two percent, and commissions are proportionately smaller on more expensive houses.

Technology has already begun to reduce some of these costs for homeowners. Online services (see, for example, homegain.com) provide richer opportunities to observe the qualitative and quantitative aspects of housing alternatives, at least in comparison to multiple listing services. It may be possible to “view” a large fraction of available housing alternatives using web-based technology in the near future. This has the potential to reduce buyers’ search costs, at least in markets characterized by multiple listing services rather than a tradition of exclusive listings by individual brokers.

Despite this potential, search costs in the housing market will remain high. Technology may help to eliminate inappropriate alternatives from consideration, but ultimately serious contenders will require physical inspection.

## **B. Legal and Administrative Costs**

Legal and administrative costs are considerably different for consumers who choose to be renters rather than owners. Rental contracts may specify the payment of security deposits, key fees, and other costs. These may amount to a couple of months rent, but under typical contracts (Jaffe, 1996), these fees are returned (sometimes with interest) at the time of lease termination. However, these fees may contribute to a cash flow problem, especially for low-income renters.

For home purchasers, the legal and administrative fees due at the time the contract is executed may be far larger. In many jurisdictions, ad valorem taxes are levied at the time of the

title transfer. These transaction taxes are widespread in continental Europe. Stamp duties, a form of ad valorem transfer fee, are levied in Australia as well as the U.K. and in many jurisdictions in the U. S.

In some jurisdictions in the U.S. and the U.K., lawyers are present at conveyance, and substantial legal fees are incurred. Recording and conveyance fees are levied by local governments. In the U.S., most lenders require a new title search at the time a transaction is completed, often involving substantial legal costs. Finally, there may be costs associated with opening or transferring accounts for public utilities and local services. Together these transactions costs for home purchase may reach several percent of the value of the house. DiPasquale and Wheaton (1996) estimate that closing costs are one to three percent of the purchase price.

Work by Chambers and Simonson (1989) suggested that the aggregate transactions costs of homeownership amount to 6-10 percent of house value. Cunningham and Hendershott (1984) argue that the value is roughly 12 percent of house value. Malatesta and Hess (1986) report survey evidence: average homeowner transactions costs were 12 percent of house values based upon a sample of 100 movers. These costs are quite substantial.

### **C. Adjustment Costs**

The adjustment costs of moving include both out-of-pocket and psychic costs. Out-of-pocket costs include the costs of moving possessions and, perhaps, the value of furnishings rendered unusable after the move. For low-income renters, estimates are available from EHAP. For Pittsburgh households, median out-of-pocket moving costs were 14 percent of monthly

income; for Phoenix households, the median was 4 percent of monthly income (Weinberg, et al., 1981: Table 1; and Friedman and Weinberg, 1981: Table 1).

These estimates seem quite low. However, they refer to the intra metropolitan moving costs of low-income renters. Presumably, short distance moves are cheaper than long distance moves, and poor households have fewer possessions. In contrast, it is reported by Allied Moving Co. that the average cost of an interstate household move in the U.S. was \$9,000 in 1998, roughly two and a half times monthly income.

The psychic costs of moving to a different residence are much harder to ascertain. Presumably, these psychic costs are larger for long distance moves than for short distance moves. In principle, the psychic and transactions costs are revealed by the maximum amount that a household of static socio-economic characteristics is willing to pay to continue residence in its current dwelling. An early paper by Dynarski (1986) drew attention to this concept. Papers by Venti and Wise (1984) and by Bartik, et al. (1992) provide estimates of this willingness to pay. Both estimates are derived from EHAP data. Thus, they are likely to be underestimates of the willingness pay of middle-income households, especially owners.

The estimates are quite large indeed. The Venti-Wise methodology suggests that the average household in the EHAP sample would require a 14 percent increase in monthly income (about \$60 in this sample) to make moving to another location as attractive as staying. The methodology employed by Bartik, *et al.*, suggests that the average low-income household in Phoenix (Pittsburgh) has moving costs, out-of-pocket plus psychic costs, of 17 percent (10 percent) of income. Households with longer periods of tenure have total moving costs that are larger still. Households whose heads are ten years older than the average have moving costs,

out-of-pocket plus psychic costs, that are estimated to be 34 percent of income in Phoenix and 14 percent in Pittsburgh.

#### **D. Expectations and Uncertainties**

Household uncertainty and expectations about the future can increase the transactions costs of moving. Expectations of declines in interest rates make homeowner mobility more expensive today if there are any costs to contracting (Quigley, 2002), even with variable rate mortgages. Expectations of falling house prices make homeowner mobility cheaper today (Chan, 2001). Expectations about tax changes affect the ex ante user cost of capital, and this affects the mobility decisions of households and their homeownership propensities (Rosen, et al., 1984). There are many similar instances in which uncertainty and expectations affect ex ante transactions costs and ultimately residential mobility. Quantitative estimates are hard to come by.

#### **E. Financing Costs**

Beyond the transactions costs of negotiating and recording contracts, securing title, and so forth, there may be purely financial costs associated with housing market transactions, and these costs may be quite large for some homeowners. For owner-occupants with fixed rate mortgage contracts, increases in market interest rates may increase the value of the mortgage contract itself. When rates increase, the right to make monthly payments at the contract interest rate may have quite a large present discounted value. Unless mortgages are completely assumable, this value would be completely dissipated by moving to another residence. This factor alone can greatly increase the transaction costs of changing residences. It has been

reported that the incidence of homeowner mobility declines substantially when interest rates rise (Quigley, 1987, 2002), and homeowners are more likely to invest in renovations and home improvements as an alternative to incurring large transactions costs (Potepan, 1989). Declines in house prices increase the costs of mobility which would force households to realize capital losses on their homes (Chan, 2001; Stein 1993). Transactions in a declining market are less numerous due to loss aversion by sellers (Genesove and Mayer, 2001). This also drives up search costs.

Other institutional aspects of the market for mortgage finance may increase the transactions costs of home purchase for some households or may shut households out of the market for owner-occupied housing entirely. For example, the inability to borrow against human capital interacts with the mechanics of the level payment mortgage to make it impossible for some younger households to enter the homeownership market at all, even though the actuarial risk of default is low.

### **III. A Simple Model of Transactions Costs**

As suggested in Section II, the extent of transactions costs in the housing market is large, and the sources of transactions costs are myriad. There is some survey evidence on the magnitude of these costs, at least for some households. But this evidence is noticeably incomplete. A full enumeration of the magnitude of these costs, especially as they affect different kinds of households, would be a formidable undertaking.

A simple model may help provide a benchmark for the magnitudes involved. For illustration, suppose the utility function of consumers is Cobb-Douglas in housing (H) and other goods (X). The unit price of housing is  $P_H$ ; the price of the numeraire is set to unity. Thus,

$$(1) \quad U = H^\alpha X^{1-\alpha} = H^\alpha (Y - P_H H)^{1-\alpha},$$

where  $Y$  is household income and  $\alpha$  is a parameter. This implies a demand function for housing

$$(2) \quad P_H H = R = \alpha Y,$$

where, in equilibrium, the household spends a fixed fraction of its income on rent ( $R$ ). Now consider a household observed to be consuming  $H_0$  or paying  $R_0$  in rent with income  $Y_0$ . (In general this rent payment need not be the equilibrium expenditure,  $\alpha Y_0$ .) The income ( $Y^*$ ) required to make the household as well off as if it incurred the transactions costs, associated with moving to consume its preferred housing bundle  $H^*$ , is the solution to

$$(3) \quad H_0^\alpha (Y^* - P_H H_0)^{1-\alpha} = H^{*\alpha} (Y_0 - P_H H^*)^{1-\alpha}.$$

In terms of rent,

$$(4) \quad Y^* = \left( \frac{R^*}{R_0} \right)^{\alpha/(1-\alpha)} [Y_0 - R^*] + R_0.$$

Thus, the income equivalent is

$$(5) \quad \tilde{Y} = Y^* - Y_0 = \left( \frac{\alpha Y_0}{R_0} \right)^{\alpha/(1-\alpha)} (1-\alpha) Y_0 + R_0 - Y_0.$$

Clearly, if the household is consuming its desired equilibrium level of housing services (i.e., if  $R_0 = \alpha Y_0$ ), the right hand side of (5) is zero. If the household is not consuming its desired equilibrium level of housing services, this is because the transactions costs in the housing market for this household are larger than the income equivalent of the gain in utility from changing dwellings. Thus, the income equivalent,  $\tilde{Y}$ , is a lower bound estimate of the transactions costs incurred in the housing market. For households with transactions costs lower

than  $\tilde{Y}$ , housing market adjustment will occur. For households who do not make market adjustments,  $\tilde{Y}$  must be less than the costs they would incur by being active participants in the market.

If the demand function for housing is known, say  $P_H = D(H, Y)$ , but not the utility function, then the difference in consumer surplus provides an approximation to the income equivalent

$$(6) \quad \tilde{Y} \approx \int_{H_0}^{H^*} D(H, Y) dR + R_0 - R^* .$$

For example, if the demand curve for housing services is log-linear,

$$(7) \quad \log H = \log Z + \alpha \log P + \beta \log Y ,$$

then substitution into (6) yields

$$(8) \quad \tilde{Y} \approx \int_{H_0}^{H^*} \left( \frac{H}{ZY^\beta} \right)^{1/\alpha} dH - R^* + R_0 ,$$

or, in terms of rent

$$(9) \quad \tilde{Y} \approx \left( \frac{\alpha}{\alpha + 1} \right) \left( R^* - R_0^{(\alpha+1)/\alpha} R^{*-1/\alpha} \right) - R^* + R_0 .$$

Again,  $\tilde{Y}$  is a lower bound estimate of the transactions costs associated with housing market transactions.

Of course, the model sketched out above is deceptively simple. In particular, it abstracts from issues of dynamic adjustments, as households' demands for housing change over time and over the life cycle. The model assumes a one-period time horizon and any calculations based on

it are certainly very crude.<sup>1</sup> Housing is a vector of attributes, not a scalar, and these attributes are priced jointly in some hedonic framework. The demand for these attributes varies for households of different characteristics. Estimation of such a model would not be straightforward. But the essential point, that discounted transactions costs in the housing market are at least as large as the discounted utility gains forgone by consumers' inertia, is an alternative to cumbersome surveys in quantifying these costs.

#### **IV. Some Implications**

The magnitude of transactions costs in the housing market raises at least two issues: first, the effect of large transactions costs on the rest of the economy; and second, the set of policies that might reduce these costs. We consider only a couple of examples.

First, it has been argued that the transactions costs inherent in homeownership affect the macro economy by leading to increases in unemployment rates. In particular, A.J. Oswald (1997, 1999) has argued that homeowners are less mobile than renters and are less willing to move to areas of job growth when they become unemployed. This is true, he argues, precisely because the transactions costs of the housing market are large for owners, relative to renters.

Apparently, the only evidence offered in support of the proposition is a series of cross tabulations and bivariate relationships. Across OECD countries, across U.S. states, and European regions, the simple correlation between homeownership rates and unemployment is positive.

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<sup>1</sup> For one simple example: Consider a 5-year time horizon, a household of \$40,000 income, and a structure of preferences in which households spend 25 percent of their income on housing in equilibrium. If we observed a household spending 30 percent of its income on housing, we could

Recently, the proposition has received some theoretical support. More precisely, logically consistent models have been developed which possess this property. For example, Haavio and Kauppi (2001) have developed an intertemporal multi-region model with stochastic business cycles in which owner-occupied and rental housing markets are imbedded. With permanent boom and bust towns, or with random uncorrelated cycles, owners suffer no capital losses and owner occupation is just as efficient as renting (in which case all capital effects are borne by absentee landlords). However, with any persistence in business cycles, some homeowners suffer repeated capital losses. With exogenous borrowing constraints, these households are unable to move to booming regions where employment opportunities are expanding. Stochastic capital losses represent a kind of transaction cost which arises from debt constraints, not risk aversion.

The general hypothesis that homeownership rates and unemployment rates are correlated has been investigated more systematically for the United States by Green and Hendershott (2001a). The authors investigate state level unemployment and homeownership rates. They abstract from fixed effects by analyzing first differences between 1970 and 1990. When the bivariate relationship is tested, weighting by population, any simple correlation vanishes (in fact, the estimated coefficient is negative).

In a series of regressions using age-specific measures of homeownership and unemployment, the coefficients of homeownership are again generally insignificant. Green and Hendershott compare the magnitude of the estimated effects for household heads and for secondary workers. They do find differences, leading them to conclude that “tenure seems to

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conclude (from equation 6, above) that the transactions costs in the housing market for that household were at least 10 percent of its monthly housing expenditures.

influence labor decisions of those for whom the transaction cost of owning is large relative to the cost of not finding a job immediately.”

Of course, households are not randomly assigned to the category of owner or renter, and this has important implications for the interpretation of these results. As documented in Section II, the transactions costs of homeownership are much larger than the transactions costs of renting, and many of these are fixed costs incurred at the time of the move. Presumably, households take this factor into account in choosing between homeownership and rental status. Thus, the observed and unobserved factors that cause households to expect to be long-term residents affect the probability that an “otherwise identical” household will choose homeownership over rental status. This selectivity bias surely leads to an overestimate of the effect of the transactions costs of homeownership on unemployment in the results reported by Green and Hendershott.<sup>2</sup>

Thus, it does not appear that the transactions costs associated with the housing market are of much consequence to the functioning of the labor market. At least, there is no credible evidence that the institution of homeownership “causes” higher unemployment levels in the economy.

This does not mean, however, that there is no cause for concern about the extent of transactions costs in the housing market. Many of these costs are incurred simply as a waste of resources (e.g., time spent searching). Others represent fees to market intermediaries (and thus appear as national income), but the resources may be better employed elsewhere. Government can assist in improving this allocation of resources. Government can play an active role in facilitating flows of information and public goods. Government can also provide a forum for the

development of standards which can make transactions simpler. The well functioning homeownership market in regions where solicitors and lawyers are not active participants suggests that standardization can reduce legal fees. Online property records can be extremely useful in many planning and financial activities of local government. However, these online records would also provide an external benefit to housing market participants by making title search instantaneous. Higher levels of government can efficiently finance this external benefit.

Property referrals for renters could economize on search costs for demanders and vacancy costs for suppliers. Some of these cost reductions will arise naturally as cheap information technology proliferates. But if these technologies are compartmentalized in parts of the market, through exclusive listings of various sorts, the advantage of cheaper information will not be fully realized. Governments and professional organizations can help in the production of these public goods.

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<sup>2</sup> This is clearly recognized by the authors. Indeed

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