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Editors' Summary

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Editors' Summary

Brookings-Wharton Papers on Urban Affairs presents new research on urban economics to a broad audience of interested policy analysts and researchers. The papers and comments contained in this volume, the ninth in the series, were presented at a conference held November 1–2, 2007, at the Brookings Institution. The papers examine a range of issues that are relevant to urban economics, including the implications of the Moving to Opportunity experiment for labor market outcomes, the effects of real estate agent collusion and commission structure on home sales, the impact of national shocks on local property markets, and the consequences of highway congestion charges on traffic flows, property markets, and traffic externalities, including pollution.

IN RECENT DECADES a large fraction of new jobs have been located near the outer ring of metropolitan areas. In explaining the persistence of poor labor market outcomes in inner-city neighborhoods, many observers point to the spatial mismatch theory, which suggests that the often long geographical distance between the residences of low-skilled minority adults and the location of jobs plays a major role in depressing minority employment rates. A sizable body of nonexperimental research has lent support to this theory. In “Neighborhoods, Economic Self-Sufficiency, and the MTO Program,” John M. Quigley and Steven Raphael consider the impact of neighborhood of residence on the success of low-income adults in finding a job. They consider this issue in light of recent findings from the Moving to Opportunity (MTO) experiment, which tested a policy intervention that tried to encourage low-income adults to move out of high-poverty neighborhoods.

The MTO experiments were conducted in the 1990s in low-income neighborhoods of five large U.S. cities. Families enrolled in the treatment group were offered the opportunity to move out of public assisted housing in those neighborhoods into housing in neighborhoods with moderate or low poverty rates.

Families accepting the offer were helped to find homes in better neighborhoods, and families that succeeded in finding qualified housing were provided special vouchers so that they could afford the rent. To remain eligible for the vouchers, relocated families had to remain outside of high-poverty neighborhoods for at least one year. To determine the impact of the policy, the experimenters also enrolled a randomly selected sample of families from the same neighborhoods in a control group, which was not offered the vouchers. By following the moving patterns of people enrolled in both the MTO voucher program and the control group, analysts found that the program had a noticeable effect on the neighborhood destinations of people enrolled in the treatment group. People provided with MTO vouchers moved to neighborhoods with significantly lower poverty rates. However, the MTO treatment had essentially no impact on the average employment rate of people who were offered the vouchers.¹ On its face, this finding appears to contradict the spatial mismatch hypothesis.

However, Quigley and Raphael argue that the MTO findings do not provide a clear refutation of the hypothesis. The main reason for their conclusion is that the experimentally induced impact on MTO participants' neighborhoods was comparatively small. To be sure, the MTO treatment induced a statistically significant percentage of treatment-group families to move from high-poverty neighborhoods to neighborhoods where the poverty rate was lower. However, the families did not move to neighborhoods where job opportunities were notably more plentiful. Many treatment-group families that took advantage of the constrained housing subsidies chose to relocate from neighborhoods that were extremely poor to neighborhoods that were moderately poor. On average, families moved from neighborhoods at the 96th percentile of the neighborhood poverty distribution to neighborhoods at the 88th percentile of the distribution. While the moves had many beneficial effects on the well-being of relocating families, including positive effects on physical and mental health, they did not have a large impact on movers' physical distance from jobs.

Quigley and Raphael conclude that even if neighborhood location has a significant effect on adult self-sufficiency, a high fraction of treatment-group families would have to move or a small fraction would have to move to very good neighborhoods in order for the tested treatment to have a meaningful effect on movers' employment rates. The spatial mismatch theory may well be true, but the modest impact of the MTO experiment on families' geographical location and the comparatively small size of the MTO sample mean that any effect

1. See Kristin Turney and others, "Neighborhood Effects on Barriers to Employment: Results from a Randomized Housing Mobility Experiment in Baltimore," *Brookings-Wharton Papers on Urban Affairs* (2006), pp. 137–88.

of geographical location on employment rates was impossible to detect in the experiment.

TECHNOLOGICAL INNOVATIONS HAVE substantially reduced the need for intermediary agents in many consumer service industries. Important examples are travel and insurance agencies as well as stock brokerages. A puzzling exception is the real estate sector. While employment dropped in other sectors, between 1997 and 2006 membership in the National Association of Realtors (NAR) nearly doubled. In “Antitrust Implications of Outcomes When Home Sellers Use Flat-Fee Real Estate Agents,” Steven D. Levitt and Chad Syverson analyze how collusion among traditional agents might explain that exception and examine the implications of collusion for the relative performance of traditional real estate agents and flat-fee agents. The fee structure used by traditional real estate agents appears to impose much higher transaction costs on home sellers than can be explained by the technical requirements of buying and selling a home.

The authors consider and reject the existence of characteristics that might be thought to differentiate the real estate industry from other sectors—for example, greater barriers to entry or the absence of relevant technological resources, such as informative websites to which consumers have direct access. The authors also reject the idea that intermediate agents may be more needed in real estate because homes are such a big-ticket item. According to the authors’ main argument, if collusion exists in the real estate industry, it is largely attributable to the fact that most transactions require the cooperation of two agents—one for the buyer and another for the seller. Traditional agents appear to collude by withholding access to their Virtual Office Websites from flat-fee agents. Since those sites offer an alternative to in-person communication between agents and customers, collusion of traditional agents would put flat-fee agents at a considerable disadvantage. Traditional agents may also steer buyers away from flat-fee listings. Any such informal restrictions by traditional agents would be abetted by state laws, which often specify minimum standards for real estate agents or ban agents from offering rebates, further limiting the role of flat-fee agents.

Traditional economic theory predicts that competitive firms have an incentive to depart from collusive action, because by lowering prices a firm can raise short-term revenues. That is not the case in real estate, however. The authors point out that traditional agents may face significant long-term costs if they deviate from collusion. One result of deviation would be increased visibility for flat-fee agents, resulting in an increase in their future market share; that in

turn would place downward pressure on the commission rates of traditional agents. Moreover, cooperation with flat-fee agents can lead to retaliation by other traditional agents, whose collaboration is needed to initiate or complete many real estate transactions. Successful preservation of collusion would result from the fact that the short-term benefits of cooperating with flat-fee agents are outweighed by the retaliatory costs that can be imposed by other traditional agents.

The authors assess the implications of collusion by measuring the success of flat-fee agents in three areas: Cook County in Illinois and Santa Cruz County and Sacramento in California. Their analysis covers the period from January 2004 to March 2006. The analysis reveals a mixed pattern of results. Sellers who use flat-fee agents are somewhat less likely than sellers who use traditional agents to sell their home in Cook County and Sacramento. In Santa Cruz, however, flat-fee agents are slightly more successful than traditional agents in selling homes, although that result has only borderline statistical significance. Houses sold by flat-fee agents remain on the market longer in Sacramento but sell more quickly in Santa Cruz than houses sold by traditional agents. (The finding for Santa Cruz is not statistically significant.) Differences in the characteristics of houses listed by flat-fee agents and those listed by traditional agents might explain those findings. The authors find, however, that house characteristics are relatively similar whether the houses are sold by flat-fee or traditional agents. The authors also rule out the possibility that flat-fee agents initially price their properties too high or that homeowners represented by flat-fee agents are unwilling to accept offers that other sellers would accept. There appear to be no statistically significant differences between flat-fee and traditional agents in the sale price of a home, although there are differences in time to sale and likelihood of sale.

The authors conclude that their findings are consistent with the existence of collusion among traditional real estate agents. Since the MLS indicates whether a property is a flat-fee listing, traditional agents can easily steer buyers away from such properties, offering a possible explanation for the increased time that flat-fee agents' listings remain on the market.

To estimate the potential benefits of flat-fee agents for home sellers, the authors perform some simple calculations. On the cost side of the welfare calculation are four major items: real estate agent commissions, expected differences in home selling prices, imputed costs related to additional time on the market attributable to using a flat-fee agent, and additional marketing costs borne by an owner who uses flat-fee agents. The authors estimate that homeowners pay \$5,000 in increased costs when using a flat-fee agent but that they

save \$10,750 on commissions that would have been paid under the customary fee schedule to traditional agents. The difference yields sellers a net saving of \$5,750. Those estimates may be subject to selection bias. Homeowners who are more familiar with the real estate market or who are able to use information effectively may be more inclined to use flat-fee agents. If that is the case, the authors' welfare estimates may overstate the net benefits that home sellers derive from using a flat-fee agent.

A GROWING BODY OF research emphasizes the importance of local factors in explaining housing market dynamics. In contrast, Raven Saks argues that geographic disparities in residential construction and house prices do not necessarily imply that nationwide shocks have no effect on local housing markets. In "Reassessing the Role of National and Local Shocks in Metropolitan Area Housing Markets," Saks defines national shocks as changes in economic conditions experienced by a household regardless of the household's geographic location. Local shocks, in contrast, are changes in housing demand or supply that are specific to a given location, reflected in larger or smaller deviations from the national average.

To investigate the importance of national and local shocks on metropolitan area housing markets, Saks analyzes annual changes in metropolitan area housing stocks and house prices from 1981 to 2006. Starting with a simple decomposition of annual values of new construction and changes in house prices into a portion that is common across all MSAs in each year, a portion that is specific to an individual metropolitan area in all time periods, and a residual that reflects idiosyncratic changes in quantities and prices, Saks finds that year fixed effects explain only 5 percent of the total variation in construction and 15 percent of the total variation in changes in house prices. Metropolitan area fixed effects explain nearly two-thirds of the variation in construction. However, 80 percent of the variation in changes in house prices remains unexplained by either year-specific or MSA-specific fixed effects. It appears that the preliminary results show that national shocks have very little influence on local housing markets.

To investigate the possibility that national shocks influence local markets differently as a result of differences in the elasticity of local housing supply or demand, year fixed effects are interacted with metropolitan area characteristics. These interaction terms explain 16 percent of the variation in construction and 44 percent of the variation in changes in house prices. Saks concludes that housing market outcomes have been at least modestly correlated across metropolitan areas over the sample period.

Saks also investigates the question of what types of shocks drive housing market outcomes. She decomposes metropolitan area housing market changes into time-invariant differences across locations, (national shocks) and responses to time-varying local shocks. National shocks on the demand side might arise from changes in the 30-year fixed conventional mortgage rate, in real income per capita, in aggregate employment, and in the detrended employment-population ratio. On the supply side, Saks measures changes in the cost of housing, using changes in the real price of construction materials. Local shocks, defined relative to national averages, are changes in income per capita, the detrended employment-population ratio, and the weighted average of changes in national industry employment relative to the change in aggregate employment. When grouped, the national variables explain about as much of the total variance in construction as the local time-varying variables. In the case of house prices, the national variables account for even more of the variation in the dependent variable than do the local variables.

Saks acknowledges that the unexplained portion of the dependent variables may be due to excluded national and local time-varying factors. If all of the unexplained variation is due to excluded local factors, the importance of local shocks will be underestimated by her statistical analysis. To examine that possibility, Saks performs additional analysis that includes lagged values of local construction, changes in house prices, and the vacancy rate of existing homes in the regressions. She finds that local variables still explain less of the total variation in construction and changes in house prices than do the aggregate variables.

To validate her results, Saks predicts the value of construction and the change in house prices for each metropolitan area in each year, using information on national economic conditions, local economic conditions, and five factors derived from a factor analysis of MSA characteristics, so that each can be described by a linear combination of the factors, thereby reducing the entire set of characteristics into a smaller set of common components. In this analysis, the actual changes in house prices are matched more closely by predictions based on national economic conditions and initial MSA characteristics than by predictions based on local shocks. The same qualitative result holds for construction, although the realized distribution is much wider than predicted by either type of shock. That and the previous results of the paper support the hypothesis that geographic heterogeneity in residential construction and house prices since 1980 has been caused, in part, by different propagation of national shocks across diverse types of metropolitan areas.

MOST URBAN HIGHWAYS in the United States can be used free of charge. Like other public goods that are available without charge, urban roads tend to be over-used, especially during rush hour, when a large number of drivers want access to a limited number of streets and highways. One by-product of overuse is traffic congestion, which greatly reduces motorists' average speed. Road users suffer the inconvenience of commutes that are longer than they would be if users were charged a toll for the use of the road. Many economists argue that motorists should be charged for the right to use urban roads, particularly during peak commuting hours, in order to improve travel times and make more efficient use of public infrastructure. Past estimates of the costs and benefits of roadway congestion pricing have focused on the efficiency gains that motorists would enjoy as a result of lower congestion. However, those estimates have ignored the potential effects of congestion charges on urban real estate prices and land use.

In "Toward a Comprehensive Assessment of Road Pricing Accounting for Land Use," Ashley Langer and Clifford Winston attempt to quantify the effects of efficient road charges on urban land prices and neighborhood density. Standard analyses of the effects of congestion pricing usually assume that residents' and businesses' locations across a metropolitan region will remain fixed after toll charges are imposed. Langer and Winston recognize that in the long run, congestion charges may spur residents and businesses to relocate because of the direct and indirect effects of the charges on the cost of commuting to different destinations. Residents' relocation decisions can affect land prices in different parts of the metropolitan region, which in turn will affect the desirability of different neighborhoods and the density of development.

Congestion pricing of urban roadways will affect motorists' travel time and out-of-pocket expenses, and those effects in turn should be reflected in property values. To measure the potential effects on property values, the authors develop a hedonic model of metro area housing prices that includes travel delays and unpriced congestion as critical determinants of house prices. A standard hedonic model of housing prices specifies home prices as a function of attributes of the housing stock and characteristics of the metropolitan area. After estimating a hedonic house price model and the determinants of land use, Langer and Winston then simulate how housing values would change if efficient traffic congestion tolls were set to internalize congestion costs. The authors model road pricing as having both a direct effect on housing prices and an indirect effect through its impact on land use.

The authors find that average traffic delay in a metropolitan area increases density and the failure to price congestion decreases density. When home prices in a metropolitan area are held constant, the failure to impose efficient high-

way tolls tends to contribute to sprawl, while the resulting delays reduce sprawl. The authors conclude that the absence of congestion charges contributes to an increase in sprawl.

Langer and Winston's results shed light on how traffic congestion and the failure to impose efficient tolls are capitalized in house prices across different parts of a metropolitan region. Households in neighborhoods that face the shortest and longest commuting times are most responsive to increases in travel delays and unpriced congestion. For residents of close-in neighborhoods, that result may reflect self-selection. People who suffer the greatest disutility from long travel times may choose to live in close-in neighborhoods where commuting times are lowest. Introducing efficient congestion charges will reduce rush hour congestion and thus reduce travel times to neighborhoods that are somewhat farther away from places of employment, increasing the attractiveness of those neighborhoods and hence the prices of houses in them. The authors find that efficient congestion charges would reduce house prices in the neighborhoods with the shortest and longest commute times and increase relative prices in many neighborhoods in between. On balance, the authors find that failure to charge efficient congestion tolls has boosted home prices. Imposing such charges would reduce them.

Imposing efficient congestion charges would, of course, also generate substantial revenues for municipalities and local governments. Langer and Winston estimate that efficient road tolls would generate \$120 billion in annual revenues in the ninety-eight large metropolitan areas included in their sample. That sum is much greater than the annualized value of home price declines that would follow the imposition of efficient charges. Metro area property owners would face annualized losses of \$80 billion in property values, about two-thirds of the extra revenue generated by the tolls. Since the revenues could be used to reduce property taxes and other local taxes, metro area residents on the whole would be substantially better off with tolls. Because previous studies of congestion pricing have failed to take account of improvements in land use, Langer and Winston argue that those studies have understated the full social benefits that would flow from imposing efficient tolls on urban roadways.

ALTHOUGH LONG FAVORED by academic economists, traffic congestion charges have only rarely been imposed in practice. In 2003, London became one of the first cities to do so, and Georgina Santos examines the city's experience in her paper "London Congestion Charging." She considers the reasons for adoption of the charges; policymakers' intentions and expectations when they first introduced the scheme; the operational details of collecting and enforcing the tolls; the sys-

tem's costs, revenues, and ancillary social benefits; and the impacts of the charges on London traffic, transit use, and property values.

As Santos points out, London's experience is interesting in part because it is so unusual. Of the very few charging schemes that have ever been adopted, even fewer have survived. In spite of the impressive advantages claimed for congestion charges, most policymakers are skeptical of their alleged benefits and motorists are hostile to paying for what is currently free. The political obstacles to congestion charges were overcome in London, and the current system seems likely to survive.

Although details about the charges and the geographical area covered by the congestion tolls have varied over time, London has relied on the same basic system since its inception in February 2003. When the program was introduced, nonexempt motorists were charged a flat daily fee of £5 for entering the charging zone between 7:00 a.m. and 6:30 p.m. Several kinds of vehicles, including two-wheelers, emergency vehicles, public buses, and taxis, were exempt from the fee, and vehicles registered to residents in the charging zone were eligible for a 90 percent discount when residents paid at least one week's worth of fees. Such exemptions reduced political opposition to the scheme. The original charging zone covered just 1.3 percent of the geographical area in Greater London, though the zone was extended to the west in early 2007. The daily entry fee to the zone was raised to £8 in the middle of 2005. The costs of administering and enforcing the charging system have consumed about one-half the revenues generated, which turned out to be lower than anticipated, in part because so many vehicles are exempt from the tolls. Broader social benefits flow from the congestion charges, of course, including time and fuel savings by motorists traveling in the congestion zone, less pollution, and a smaller number of traffic injuries, all resulting from reduced congestion in the charging zone. The total economic benefits of the scheme have been estimated by Transport for London at £200 million a year, far exceeding the operating costs of £88 million a year. Therefore, as predicted by economists, the net social benefits of the scheme are substantial and positive. Net revenues raised by the charges are earmarked for projects included in the mayor's transport strategy.

In his discussion of Santos's paper, Roger Noll asks whether the simple, flat-fee scheme adopted in London is the most sensible design that could have been feasibly implemented. He is skeptical that that is the case. The exemption provided to taxis induces substitution of taxi trips for private passenger car trips and probably adds to traffic congestion in the zone. An even bigger inefficiency occurs because the charging scheme gives vehicles that pay the daily fee unlimited use of central London's streets throughout the day. On the margin, motorists

who pay the daily fee do not have to pay for the extra congestion caused by their travel within the zone. A more efficient system would impose lower daily fees but impose marginal charges on vehicles for the time that they spend on the streets, with the marginal charges set to reflect congestion costs at different times of the day. Noll is not impressed by the technical arguments offered by the London authorities in defense of the daily flat-fee scheme. Because the current scheme relies on the purchase of daily passes and on license plate photos to collect and enforce traffic charges, the toll collection system is more costly than it needs to be. In addition, the system cannot align prices charged to motorists with the marginal congestion costs that they impose on other drivers in the zone. Noll observes that “the net benefits of the program—as well as the ease of implementing time-of-day cordon charges—would be substantially enhanced if the system made use of electronic road charging,” which, he points out, is practical, relatively inexpensive, and likely to become less expensive as cities grow more experienced in its use. He concludes that better economic analysis should have been used to guide London in its implementation of a practical and efficient traffic charging system.

TOLL ROADS IN CANADA cover a very small fraction of the existing Canadian network of roads. In “Prospects for Urban Road Pricing in Canada,” Robin Lindsey provides a detailed discussion of the experience with road pricing in Canada and in other countries and considers the potential for expansion of urban road pricing in Canada. The main part of the paper is an evaluation of proposals for urban road charges in Toronto, Montréal, and Vancouver, formulated to reduce congestion; the costs and benefits of other potential effects, such as pollution abatement, are not assessed.

A major obstacle to the introduction of road congestion fees in Canada is the country’s complex governance structure, in which different levels of government have jurisdiction over different parts of the network of roads and bridges. In addition, while a number of empirical studies have produced favorable assessments of potential tolling schemes, public attitudes toward tolling in Canada are mixed. Tolls would be more acceptable if they were dedicated to funding the tolled facility, if the facility would not otherwise be built, and if a free alternative remained available. There appears to be substantial opposition to introducing tolls on existing roads, so tolls are more frequently considered in the case of newly constructed roads.

Lindsey suggests two fundamental conditions that should be met before introduction or use of a new tolling system: the presence of severe traffic-related externalities and the availability of urban public transport as an alternative to

driving. The actual tolling plans that Lindsey considers are the product of close analysis of each metropolitan region's existing transportation network, topography, and plans for future transportation investments. The urban center of Montréal is located on an island. Seventeen bridges and one bridge-tunnel make the area highly suitable for a cordon toll system. The case for road pricing in the Greater Vancouver Regional District is similar to the case in Montréal. The degree of congestion is increasing in both cities, and both plan major new investments in road and public transit infrastructure. However, unlike Montréal, Vancouver does not have a natural cordon. Lindsey concludes that in Vancouver, tolls on major bridges and tunnels appear to be the best option.

Average commuting times in the Greater Toronto Area (GTA) are the highest in Canada. Unlike Montréal, Toronto does not have a natural boundary for a cordon or an area charge. Congestion is not concentrated in the downtown area, and there is not a set of bridges and tunnels that intercept most long-distance traffic flows. Lindsey proposes the conversion of high-occupancy vehicle (HOV) lanes to high-occupancy toll (HOT) lanes as the most feasible option for road pricing in the Toronto area in the near future. The proposed HOT lane network for Toronto is of a considerably smaller scale than the schemes proposed for Montréal and Vancouver. As a result, congestion relief, emissions reduction, and revenue generation would be lower than with the proposed tolling systems in the two other cities. The proposed Toronto HOT lane network has three principal merits. HOT lanes are relatively easy and quick to construct, most capacity will be new, and time savings from using HOT lanes are immediately apparent to motorists.

A study by Transport Canada has estimated the annual cost of congestion per capita to be C\$271 for Toronto, C\$260 for Vancouver, and C\$249 for Montréal. To estimate the economic benefits from a cordon toll in Montreal, Lindsey employs a static congestion-pricing model. Three results of his analysis stand out: the benefits from congestion relief would dominate the benefits from alleviating other external traffic costs; a cordon toll for Montréal would yield net benefits after deducting capital and operating costs; and the tolling system would generate significant net revenues. Lindsey does not perform similar calculations for Vancouver or Greater Toronto, but the likely benefits of tolling charges in those two cities would also be considerable.