The upsets and downs of rental housing markets have led policymakers, investors, and lenders to look for better ways to evaluate the risks and returns to investment in residential properties. To that end, real estate economists have drawn analogies from labor market theory to model the way prices adjust in the rental housing market. For example, labor economists have long sought to estimate the natural rate of unemployment, defined as that rate associated with long-run equilibrium in the labor market and a constant level of real wages. In a similar vein, real estate economists have defined the natural vacancy rate as that rate associated with rental market equilibrium and constant real rents. Rising real rents imply excess demand for housing and vacancy rates that are lower than their equilibrium levels, while falling real rents imply excess supply and vacancy rates that are higher than their equilibrium levels. These simple models do well in empirical studies [see, for example, Gabriel and Nothaft (1988)]; in recent years, observed vacancy rates have declined to near equilibrium levels in many metropolitan areas, suggesting higher rates of return to investors and reduced risks to multifamily lending and construction.

So far, however, researchers in real estate markets have yet to apply another useful development in the labor literature, namely, how labor market fluctuations are explained by decomposing the unemployment rate into its incidence and duration components. Indeed, the observed unemployment rate fails to indicate whether a sizable portion of the labor force experiences a short spell of unemployment (as in frictional unemployment) or whether a relatively small portion of the labor force bears a sizable portion of the unemployment burden by way of relatively long spells of (structural) unemployment. Clearly the appropriate policy response hinges importantly on the source of unemployment.
As in the case of unemployment rates, residential vacancy rates may be decomposed into their incidence and duration compo-
nents. Incidence of vacancy is the probability that a housing unit
becomes vacant; for particular types of rental property, the inci-
dence measure indicates the proportion of the stock that expe-
riences a spell of vacancy. The duration of vacancy measure indi-
cates how long a typical unit remains vacant. Any development
that makes the incidence of vacancy higher or the duration of
vacancy longer will lead to a higher vacancy rate.

Decomposition of vacancy rates into their incidence and vacancy
components accordingly yields new information as to the source
of vacancy duration. For example, incidence of vacancy dur-
ation of rental vacancies for major metropolitan areas (MSAs)
may be decomposed into their incidence and duration compo-
nents. Incidence of vacancy is the probability that a housing unit
becomes vacant; for particular types of rental property, the inci-
dence measure indicates the proportion of the stock that expe-
riences a spell of vacancy. The duration of vacancy measure indi-
cates how long a typical unit remains vacant. Any development
that makes the incidence of vacancy higher or the duration of
vacancy longer will lead to a higher vacancy rate.

## II. Incidence, Duration, and Equilibrium Vacancy Rates

Initial review of data from the BLS indicates sizable and significant
variation in the incidence and the duration of rental vacancies across
metropolitan areas and over the rental housing cycle. As evidenced in Table I, over the 1987–1994 period, New York City’s
rental housing markets were characterized by the lowest vacancy
rates, as well as the lowest incidence and duration of vacancy estimates. Vacancy rates, incidence, and duration trended downward
significantly in Houston during that period; nonetheless, that metropolitan area was at the high end of all three measures. For
cities in the sample, average duration estimates generally were
between 1.5 to 2 months. Further, the data suggests a great deal of
variability across cities: turnover over six-month intervals approximately 30 percent of rental units experienced a vacancy spell, or, in other words, 70 percent of units remained continuously occupied. Some metropolitan areas were more susceptible to vacancy spells, probably because of local economic and demographic characteristics, as well as characteristics of the
apartments themselves. Apartments that are removed from the rental stock have noticeably higher vacancy rates and duration, consistent with the notion that units withdrawn from the rental stock may be subpar and/or lack the physical or locational characteristics demanded by potential tenants.

The analysis begins with the standard stock-flow model, where the stock of rental housing in a particular metropolitan area is assumed to have a fixed short run but then evolves over time in response to changes in the expected rate of return to invest-
ments in rental properties. The interaction of supply and de-
mand for rental housing services yields a level of apartment rents as well as the equilibrium rental vacancy rate. In the model, ex-
cess demand for units—due to factors that push the observed incidence or duration of rental vacancies below their long-run equilibrium levels—should result in vacancy rates which similarly fall below their equilibrium or “natural” levels and in so doing put upward pressure on rents. The upward movement in rents should work both to depress demand from existing renters and to prompt additions to the rental housing stock; both of these adjustments should in turn enable observed vacancy rates to move in the direction of equilibrium levels. Likewise, factors that move the observed incidence or duration of vacancy to levels above their equilibrium rates should result in downward pres-
sure on rents, diminished pace of new construction, and increased demand from existing renters. In other words, the rate of change in metropolitan rents is determined in part by the deviation in observed vacancy rates from their long-run or equili-

brium level. Several factors in a locality may push the observed incidence or duration of rental vacancies above or below their long-run equi-

librium levels. For example, unexpected fluctuations in the local business cycle may affect both incidence and duration. The fac-

tors influencing incidence specifically include rates of population mobility and population growth, metropolitan population age
structure and poverty status, presence of public housing, and the like. The factors influencing duration include those that affect the cost of or returns to rental apartment search and hence the chance of achieving a good match between potential renters and available units, such as diversity in the local rental market.

III. Model Estimation

In our analysis, equilibrium levels of vacancy duration reflect local rental market conditions. To the extent rental units are similar, potential tenants minimize search costs (and hence duration of vacancy) by taking the first available unit. We thus posit that the observed incidence of vacancy duration will be greater in metropolitan areas with greater diversity in the
rental housing stock. To empirically proxy for this diversity, we use indices of the age, size distribution, physical charac-
teristics, and intra-metropolitan location of the stock. Gen-

erally, we hypothesize that search costs and duration of va-
cancy vary directly with each measure of diversity.

Rent levels are represented by tenants’ median housing costs for each metropolitan area. The effects of rent levels on the equilibrium duration of vacancy are unclear: a priori, because of the potentially conflicting responses of the landlord and
the prospective tenant. If tenants try to minimize shelter costs per unit of housing quality, then higher rent levels sug-
gest shorter duration of vacancy. Conversely, if tenants are potential homeowners, then longer duration of vacancy thus lengthening the duration of vacancy. Landlords, on the other hand, try to maximize net rental income. The opportu-
tunity costs of vacant units rises with the prevailing level of rents. From the landlord perspective, one would expect some damping in duration of vacancy in high rent areas.

Factors affecting incidence of vacancy.

The equilibrium incidence of rental market vacancies largely depend on the matching process, together with changes in the size of renter populations and the avail-

ability of below-market rental units. To proxy for population mobility, we use the percentage of households that moved in the prior year. Additional controls include the eld-

erly and poverty-level percentage of all households. House-

hold move rates rise among the oldest age cohorts, possibly due to climatic, family, or health-related concerns. Overall, mobility should be lower among lower-income households.

Population growth as derived from indigenous sources and from interregional migration should affect the equilibrium in-
cidence of rental housing vacancy. While unanticipated popu-

lation increases lead to shorter-run vacancy rates, areas characterized by a higher rate of expected population growth may have a higher equilibrium incidence of rental vacancies stemming from higher rates of new construction. A priori, it is unclear which of these two effects dominate. We proxy for

the use the annual rate of population growth to control for this effect. Renter population and rental housing stock charac-

teristics were obtained from the American Housing Survey metropolitan area files.

Factors affecting duration of vacancy.

To control for deviations in nominal duration and incidence from equilibrium levels, we include MSA- and time-specific fixed effects as well as an indicator of generalized local eco-
nomic and real estate market weakness. In general, we ex-
pect that both the incidence and the duration of vacancy should move above-equilibrium levels during periods of damp-
ened demand for rental units. In the analysis, MSA-specific eco-
nomic cycles are proxied in the regression analysis by a cat-

ergorical variable indicating the occurrence and timing of a local economic downturn. We assign an inter-temporal variation in the incidence and duration of vacancy by way of annual fixed effects.

As anticipated, the nominal duration and incidence series vary systematically with a vector of proxies for equilibrium levels of those series. The results for the duration of vacancy indicate that: (1) duration is significantly boosted by measures of the diversity of the rental housing stock; (2) duration is significantly reduced in areas of higher median housing costs, consistent with the notion that the opportunity costs of holding units in vacant status increase with levels of apartment vacancy; (3) duration is significantly lowered in areas characterized by higher proportions of minority householders; Stratification of metropolitan housing markets by race may