



HUD'S HOUSING MARKET ANALYSIS: HISTORY AND CURRENT STATE

The federal government's analysis of local housing market conditions, which predates the establishment of the U.S. Department of Housing and Urban Development (HUD), has its roots in the Federal Housing Administration (FHA), which was created by Congress in 1934. FHA market analysts monitored local housing market conditions and derived forecasts of the expected future demand for housing units. When President Lyndon Johnson signed the Housing and Urban Development Act into law in 1965, the FHA market analysts became part of HUD, a new executive department of the federal government. Today, regional and field office economists within HUD's Office of Policy Development and Research, Economic and Market Analysis Division (EMAD), have assumed the role of the former FHA market analysts, as they continue the work of analyzing local housing market conditions.

Why does EMAD assess conditions in local markets? First, a statutory requirement mandates that HUD monitor local housing market conditions. Section 209 of the National Housing Act states the following:

The Secretary shall cause to be made such statistical surveys and legal and economic studies as he shall deem useful to guide the development of housing and the creation of a sound mortgage market in the United States, and shall publish from time to time the results of such surveys and studies. (National Housing Act, 1934, as amended)

EMAD's housing market analyses serve a variety of purposes. Sound analysis of housing markets is critical to HUD's own programs and missions, particularly in the Department's efforts to avoid adverse effects on existing supplies, promote affordable housing, and maintain stable housing and mortgage markets. Through its FHA mortgage insurance programs, HUD insures the mortgages of rental developments serving family and elderly households. HUD's field economists analyze market conditions and assess the demand for additional rental housing in specific housing market areas for every application for new construction and substantial rehabilitation project mortgage insurance. EMAD also conducts need assessments in support of the Section 202 Supportive Housing for the Elderly

Program. More recently, EMAD has analyzed local housing market conditions after natural disasters, such as Hurricanes Katrina, Rita, and Ike, to assist policy-makers with rebuilding efforts.

EMAD frequently provides market intelligence to other organizations within HUD, such as the HUD-FHA Single Family Housing Homeownership Center, Office of Public and Indian Housing, and Office of Community Planning and Development, and to the field office and regional office directors. EMAD assists other federal agencies, such as the Department of Agriculture's Rural Development Housing and Community Facilities Program and the Department of Defense's multifamily housing construction projects. Finally, HUD also publishes many of EMAD's housing studies and reports to provide information to builders, lenders, developers, planners, economic development officials, real estate professionals, local government officials, academics, and the general public. EMAD publishes the results of its housing analyses in the quarterly *U.S. Housing Market Conditions* report and the individual *Comprehensive Housing Market Analysis* reports (comprehensives), posted on the HUD USER website (<http://www.huduser.org>).

Background and Overview

Since 2002, HUD has published 136 comprehensives. Exhibit 1 lists the 18 comprehensives that were published in 2008, and Exhibit 2 lists the comprehensive studies that EMAD is currently conducting. In this article, we discuss the techniques that EMAD economists use in conducting comprehensive studies. These techniques are similar to those that the economists use in all EMAD housing studies.

The theoretical foundation for EMAD's housing market analysis techniques dates back to the days of the FHA market analysts and has been well documented in the *FHA Techniques of Housing Market Analysis* text. The techniques the economists use to conduct their analyses are grounded in a reconciliation-based framework. The FHA techniques text sums it up best with the following passage from the foreword:

The analysis of a housing market is not a precise process utilizing formulas to develop an unqualified and certain answer. It is limited by the accuracy of statistical data and derivations, the reliability of the estimates developed, the competency of the judgments which must be incorporated into the analytical process at every step, and the uncertainties of projections of future economic developments. (*FHA Techniques of Housing Market Analysis*, Foreword, Revised August 1970)

Exhibit 1. Comprehensive Housing Market Analysis Reports Published in 2008

Augusta, Georgia-South Carolina
Baltimore, Maryland
Baton Rouge, Louisiana
Boise-Nampa, Idaho
Camden, New Jersey
Casper, Wyoming
College Station-Bryan, Texas
Corpus Christi, Texas
Fort Worth, Texas
Gainesville, Florida
New Orleans-Metairie-Kenner, Louisiana
Olympia, Washington
Orange County, California
Rapid City, South Dakota
Reno, Nevada
Sebastian-Vero Beach, Florida
Tucson, Arizona
Wichita, Kansas

Although the techniques employed have been updated and refined over time in response to an increased understanding of market behavior or new sources of data, much of the core methodology has remained relatively consistent.

The basic assumption of the EMAD methodology is that changes in the economy of an area, or an adjacent area in the case of a bedroom community, are typically the basis for changes in the housing market conditions in an area. As jobs are created in an area, the population will likely grow and new households will be formed. These new households represent a key component of the demand for new housing units. It is important to note that EMAD's approach is to estimate the demand for new housing units rather than to focus on "how much" housing will be consumed. This latter concept in the literature focuses more on housing characteristics, such as size, amenities, and neighborhood qualities, and ultimately attempts to determine what level of housing consumption will satisfy an individual's utility function. The EMAD methodology focuses on how many housing units are needed in a particular area to maintain balanced housing market conditions while housing existing households, replacing units lost from the housing stock, and allowing for an acceptable level of vacant units. To assess the current state of supply and demand within a housing market area, EMAD monitors demographic, economic, and building trends. EMAD economists analyze these trends to determine their relationships with each other and to assess their impact on market conditions.

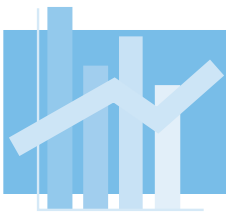
Exhibit 2. Forthcoming Comprehensive Housing Market Analysis Reports

Abilene, Texas
Albuquerque, New Mexico
Beaumont-Port Arthur, Texas
Chattanooga, Tennessee
Dallas, Texas
Des Moines, Iowa
Fort Lauderdale, Florida
Grand Junction, Colorado
Houston, Texas
Las Vegas, Nevada
Mobile, Alabama
Norfolk, Virginia
Sacramento, California
Salt Lake City, Utah
San Antonio, Texas
San Jose, California
Shreveport, Louisiana
Spartanburg, South Carolina
St. George, Utah
Tacoma, Washington
Tulsa, Oklahoma
Ventura, California

A comprehensive housing market analysis focuses on four key dates: the two most recent census periods (currently 1990 and 2000), the "current" or "as of" date of the study, and the "forecast" date, which is typically 3 years from the current date. More recently, American Community Survey (ACS) data have been incorporated into the EMAD analyses because this survey provides a more up-to-date benchmark. The economists analyze trends in certain key variables between the four dates.

Getting Started—The Importance of Good Fieldwork

Every housing market area is unique. Data availability and the quality of data, demographics, history of the market area, seasonal fluctuations, cyclical patterns, local contacts, state of the housing inventory, geography, and local politics all are factors that tend to differ from market to market. Although the techniques we discuss can be applied to study any housing market area, it is important to understand that it takes much time and study for someone to become an expert both in the process and on a particular housing market area.



A typical comprehensive takes several months to complete. First, the economist needs to determine the definition of the housing market area. In general, a housing market area is a geography within which housing units are competitive with one another. Oftentimes, the market area is defined as a metropolitan area. Within a metropolitan area, however, unique submarkets may exist and may need to be discussed separately. For example, a suburban county or a particular neighborhood in a city, such as Center City Philadelphia, may represent a distinct housing submarket within the metropolitan area.

An analysis begins with the collection of a variety of data on the housing market area. The collection includes, but may not be limited to, the following: Census Bureau data on population, households, and housing inventory; Bureau of Labor Statistics (BLS) data on labor force, resident employment, unemployment, and sector-level employment data; building permits; residential construction data; population estimates; data on home sales; rental market data; and vital statistics. After collecting the initial data, the economist analyzes trends in the data and begins to formulate the “story” of that unique housing market. During this process, the economist compiles a list of issues that require additional information in order to be addressed. For example, odd trends in the data may appear to not make sense from an analytical perspective or the data may appear to contain errors. To address these issues, the economist conducts fieldwork in the housing market area.

Fieldwork, which is the most important part of any housing market analysis, serves numerous purposes, including to (1) obtain data not available from other sources, (2) verify the data already obtained, (3) collect observations on characteristics and operations of the housing market, and (4) attempt to address the issues raised in the initial analysis of the data. For a published comprehensive report, an economist spends approximately 1 week traveling throughout the market area. Even for market studies completed only for HUD’s internal use, the economist conducts field research, although it may be “virtual” in nature and limited to phone calls. While conducting fieldwork, an economist talks with a variety of people and organizations, including local building permit officials, community planners, economic development officials, home builders associations, apartment associations, local housing authorities, REALTORS®, property managers, developers, college/university officials, the chamber of commerce, local labor market analysts, and military housing officers (in markets with a significant military installation). The expectations are that, through the fieldwork process, the answers to the questions raised will become apparent or that the economist will obtain data that enable him or her to make a reasoned judgment based on sound statistical analysis.

The Reconciliation Process

As previously mentioned, the methodology EMAD uses is a reconciliation-based approach that provides a series of checks and balances during the analytical process. Current estimates of both population and households are generated using two independent methods. A similar approach is used to generate the forecast estimates. One method of estimating population is through a demographic approach by looking at net natural change (NNC) and migration patterns:

$$\Delta Population = NNC + NetMigration.$$

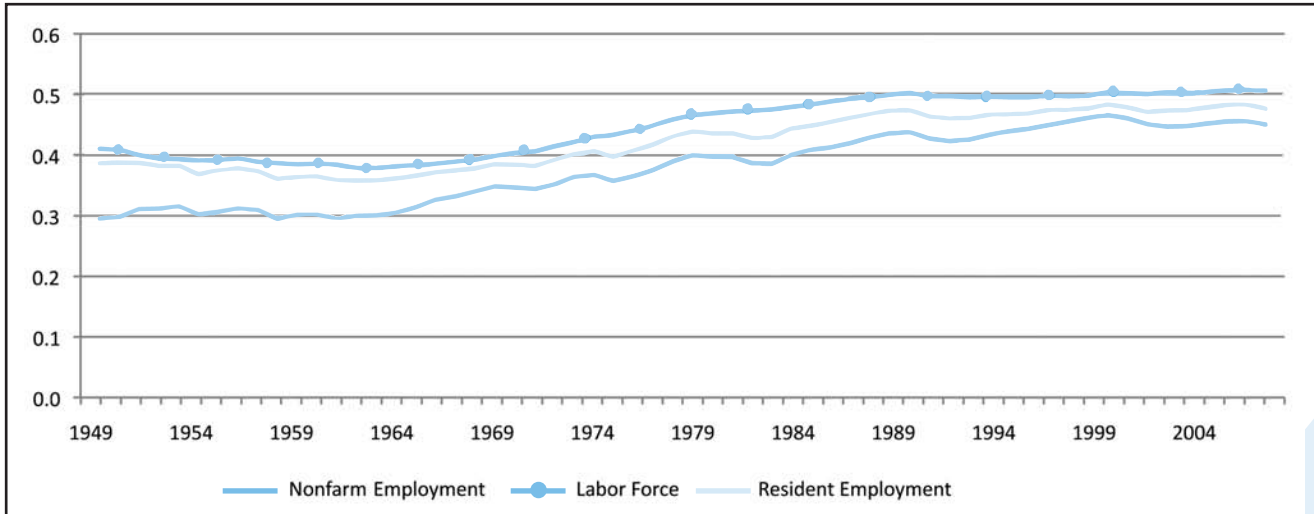
Vital statistics on resident births and deaths, which the economist collects from 1990 through the most recent month, provide a current record of the effect of NNC on population growth. The trends in NNC in general are stable over time. Because we know the total population at the two census dates, we can readily see the overall net-migration level during the decade; however, we can also examine annual population estimates from the Census Bureau, states, or other local agencies to develop annual trends for net migration. Annual population estimates enable the economist to examine net migration patterns in more recent years. An analysis of these patterns, information obtained during fieldwork, and a study of other key variables such as building permit activity enable the analyst to generate a current population estimate based on demographic factors.

A second method for estimating population is through the use of employment data. This method involves analyzing labor force, resident employment, and nonfarm payroll data and their respective participation rates. It is important to note that EMAD’s definition of a participation rate differs from that used by the BLS. The BLS examines only the 16-and-over, civilian, noninstitutionalized population to derive a participation rate. To simplify the analysis, EMAD looks at the total population, which implies the EMAD rate will be lower when compared with the BLS rate. The following equation highlights the relationship between population, resident employment, and the resident employment participation rate (the equations for labor force and nonfarm employment have an identical relationship):

$$Population = \frac{Employment}{Employment\ Participation\ Rate.}$$

Using annualized data from the BLS on nonfarm payrolls, labor force, and resident employment, as well as 1990 and 2000 population counts from the census and annual population estimates, the relevant participation rates can be calculated and annual trends analyzed. Exhibit 3 shows the participation rate trends for the

Exhibit 3. Participation Rate Trends, 1949 Through 2008



Sources: U.S. Census Bureau; U.S. Bureau of Labor Statistics

three variables for the United States from 1949 through 2008. Over time, the labor force participation rate appears to have the greatest stability. Although the trends in values and participation rates for all three variables are examined, resident employment is the primary variable of the three because it is based on where people live and need housing. From the BLS, the economist already has a current value for each of the three variables (EMAD typically uses the 12-month average through the preceding month of the “as of” date to avoid seasonal fluctuations). The economist estimates a current participation rate based on past trends, which in turn will develop a current population estimate.

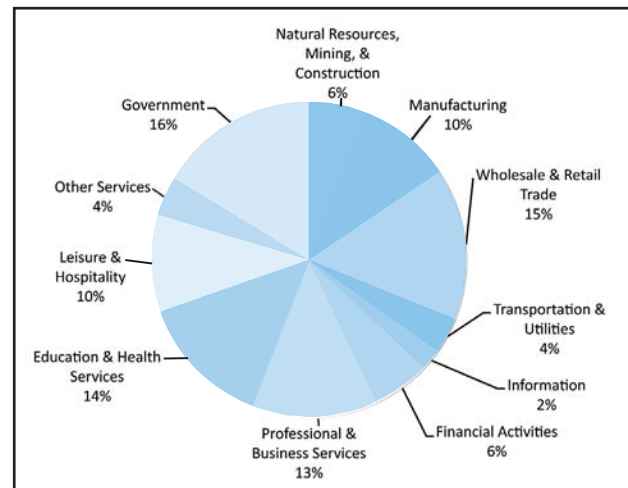
At this point in the analysis, the economist has two population estimates—demographic and economic, which must be reconciled. The economist returns to each methodology and reevaluates particular assumptions until the two estimates are similar and logically consistent. The final estimate derived is the current population estimate in the study.

EMAD uses a similar method to generate the forecast population estimate. With this method, however, the economist must also estimate future values for labor force, resident employment, and nonfarm employment. To assist in this process, annual data on nonfarm employment sectors is collected and analyzed in order to provide an overall understanding of the economy of the market area and help the economist estimate future economic growth. Exhibit 4 shows the typical BLS sectors that are analyzed in a study as a percentage of total nonfarm employment in the United States during 2008. In addition to using this method to generate the population estimate, the economist also finds

the information obtained during fieldwork as invaluable for generating these estimates.

After determining a current population estimate, the economist is ready to develop a current household estimate. Again, this determination involves two different methods and a reconciliation of the independent estimates. The first method uses the population estimate derived previously as the starting point. Because the economist is interested in the number of households, it is necessary to remove all people not living in a household (that is, nonhousehold population or group quarters). Exhibit 5 shows the components of group

Exhibit 4. U.S. Nonfarm Employment by Supersector for 2008

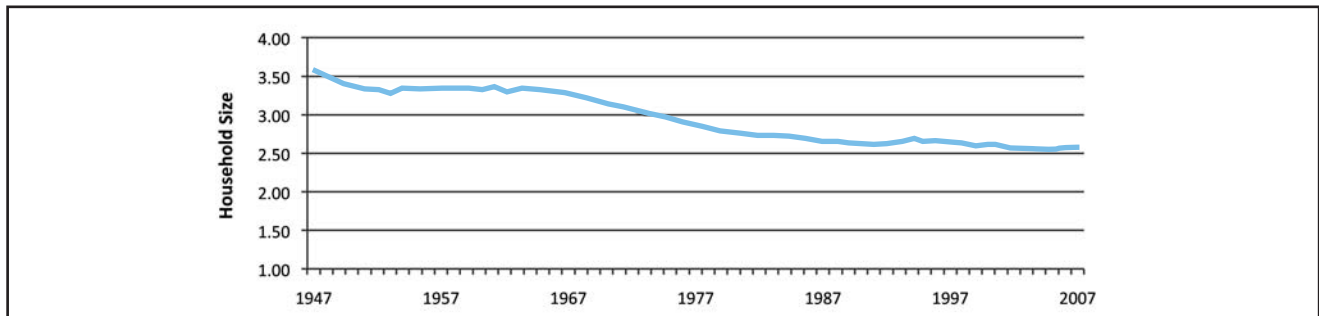


Source: U.S. Bureau of Labor Statistics



quarters for the United States in 2000. Through fieldwork and review of data published by the Census Bureau, the economist can verify much of the group quarters data. By subtracting the nonhousehold population from the population estimate, the economist obtains an estimate for household population. By applying an estimate of the current household size to that value, the economist generates an estimate of current households. Exhibit 6 shows trends for household size for the United States from 1947 through 2007. Household size has remained relatively stable in recent years on a national level but can vary significantly on a local level.

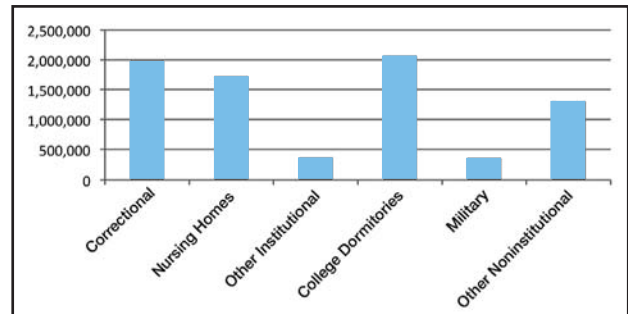
Exhibit 6. U.S. Household Size, 1947 Through 2007



Source: U.S. Census Bureau

The second method for estimating the current number of households is the inventory method. Every occupied housing unit is a household. Using data obtained through fieldwork, building permits, the ACS, and third parties, the economist obtains an estimate of the current housing stock by tenure. In addition, the economist must also consider the number of units added to the housing inventory without a building permit, units lost from the inventory, and the number of mobile homes added to the inventory. One of the more difficult components to analyze is the number of “other vacant” housing units. Exhibit 7 illustrates the four primary categories of other vacant housing and their levels in the United States as reported in the most recent ACS data. Because occupied units are the basis for deriving an estimate of the number of households, the other vacant units are subtracted from the overall housing inventory. The remainder is the number of housing units that either are occupied or could be occupied (available vacant). By analyzing past trends, third-party data, and fieldwork, the economist derives current estimates for sales and rental vacancy rates. Applying these rates, the economist can factor out the vacant housing and determine the level of occupied owner and rental housing, which totals the number of households.

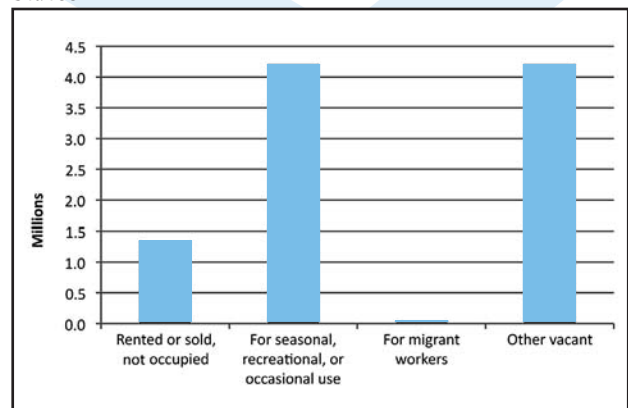
Exhibit 5. Group Quarters for the United States, 2000



Source: 2000 Census

Again, the two household estimates must be reconciled to derive one current household estimate. Deriving a forecast household estimate is a bit less complicated. The economist applies an estimated household size based on trends for that market area to the estimated forecast population to obtain the number of households in the forecast.

Exhibit 7. Other Vacant Housing Units in the United States



Source: 2005–07 American Community Survey 3-year estimates

Housing Demand

The forecasted change in households is the basis for EMAD's estimate of new housing demand. Gross housing demand is equal to the change in the number of households plus replacement of units expected to be lost from the housing stock. The economist estimates a rate of housing loss, based on past trends in that market area and applies this rate to the current estimate of housing inventory to estimate expected losses. In addition, the economist adjusts the household estimate to account for household tenure shifts and inventory tenure shifts. Households have a tendency to switch from owner status to renter status or renter status to owner status, depending on the condition of the economy and housing market. In addition, units change tenure status from owner to rental or rental to owner. Examining past trends in household and inventory tenure shifts enables economists to make estimates of these changes. Finally, economists must take current market conditions into account by examining the status of "excess" available vacant units. A certain vacancy level is needed in healthy markets, but, when this level becomes too high, the market becomes soft. In such markets, the excess units should be absorbed before recommending the construction of new units. After this adjustment is made, the economist has the final estimate of demand for additional sales and rental housing. These estimates indicate the number of units that should be built during the forecast period to maintain or achieve balanced market conditions.

The economist then breaks down these quantitative demand estimates for sales and rental housing on a qualitative basis. The sales demand estimate is illustrated by price range based on information obtained during fieldwork. Exhibit 8 provides an example of sales demand in a recent comprehensive report for Boise, Idaho. The economist breaks down rental demand by number of bedrooms and price range, using fieldwork and derived factors from census data. Exhibit 9 illustrates an example of rental demand from a recent comprehensive analysis of Baltimore, Maryland.

After the economist completes the estimates and the subsequent comprehensive report, peers, supervisors, and headquarters staff review both the estimates and the report before HUD publishes it. All comprehensive reports are standard in terms of the structure of the report and the types of information presented, but each report is unique to its market area in content. Exhibit 10 lists the tables and figures included in each comprehensive report. In reports that contain submarkets, some of the tables and figures are repeated for each submarket.

As the United States has learned all too well during the past year, housing market conditions constantly change. As a result of these ever-changing conditions and the uniqueness of each market area and to promote stable market conditions and support HUD's missions, it is essential to have sound local housing market analyses based on common analytic principles.

Exhibit 8. Qualitative Sales Demand: Example From the Boise-Nampa, Idaho Comprehensive as of June 1, 2008

Table 4. Estimated Demand for New Market-Rate Sales Housing in the Boise-Nampa HMA, June 1, 2008 to June 1, 2011

Price Range (\$)		Units of Demand	Percent of Total
From	To		
70,000	119,999	125	0.9
120,000	159,999	800	6.1
160,000	199,999	2,250	17.1
200,000	249,999	3,700	28.1
250,000	299,999	2,300	17.5
300,000	349,999	1,200	9.1
350,000	399,999	1,050	8.0
400,000	449,999	525	4.0
450,000	499,999	475	3.6
500,000	and higher	750	5.7

Source: Estimates by analyst

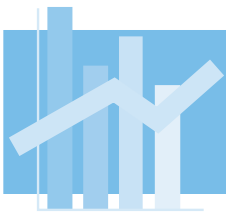


Exhibit 9. Qualitative Rental Demand: Table From the Baltimore, Maryland Comprehensive as of April 1, 2008

Table 7. Estimated Demand for New Market-Rate Rental Housing in the Northern Suburbs Submarket, April 1, 2008 to April 1, 2011

Zero Bedrooms		One Bedroom		Two Bedrooms		Three or More Bedrooms	
Monthly Gross Rent (\$)	Units of Demand	Monthly Gross Rent (\$)	Units of Demand	Monthly Gross Rent (\$)	Units of Demand	Monthly Gross Rent (\$)	Units of Demand
900	125	1,100	625	1,550	870	1,700	180
950	110	1,150	550	1,600	720	1,750	160
1,000	100	1,200	510	1,650	660	1,800	150
1,050	90	1,250	450	1,700	590	1,850	130
1,100	70	1,300	400	1,750	510	1,900	100
1,150	60	1,350	340	1,800	440	1,950	90
1,200	50	1,400	280	1,850	370	2,000	80
1,300	40	1,500	230	1,950	300	2,100	60
1,400	30	1,600	180	2,050	190	2,200	40
1,500	20	1,700	140	2,150	130	2,300	30
1,600	20	1,800	110	2,250	90	2,400	30
and higher		and higher		and higher		and higher	

Notes: Distribution above is noncumulative. Demand shown at any rent represents demand at that level and higher.

Source: Estimates by analyst

Exhibit 10. Figures and Tables in a Comprehensive Housing Market Analysis Report

- Table 1. Housing Demand in the HMA: 3-Year Forecast
- Table 2. Major Employers in the HMA
- Table 3. 12-Month Average Employment in the HMA, by Sector
- Table 4. Estimated Demand for New Market-Rate Sales Housing in the HMA, 3-Year Forecast
- Table 5. Estimated Demand for New Market-Rate Rental Housing in the HMA, 3-Year Forecast
- Figure 1. Trends in Labor Force, Resident Employment, and Unemployment Rate in the HMA Since 1990
- Figure 2. Current Employment in the HMA, by Sector
- Figure 3. Sector Growth in the HMA, Percentage Change, 1990 to Current
- Figure 4. Population and Household Growth in the HMA, 1990 to Forecast
- Figure 5. Components of Population Change in the HMA, 1990 to Forecast
- Figure 6. Number of Households by Tenure in the HMA, 1990 to Current
- Figure 7. Single-Family Building Permits Issued in the HMA, 1990 to Current
- Figure 8. Rental Vacancy Rates in the HMA, 1990 to Current
- Figure 9. Multifamily Building Permits Issued in the HMA, 1990 to Current
- Table DP-1. HMA Data Profile, 1990 to Current