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Analysis of the Allentown-Bethlehem-Easton, Pennsylvania Housing Market

As of April 1, 2003

ECONOMIC RESEARCH

U.S. Department of Housing and Urban Development

Foreword

This analysis has been prepared for the assistance and guidance of the U.S. Department of Housing and Urban Development (HUD) in its operations. The factual information, findings, and conclusions may be useful also to builders, mortgagees, and others concerned with local housing conditions and trends. The analysis does not purport to make determinations with respect to the acceptability of any particular mortgage insurance proposals that may be under consideration in a particular locality or the housing market area.

The factual framework for this analysis was developed by HUD’s Economic and Market Analysis Division as thoroughly as possible on the basis of information available on the “as-of” date from both local and national sources. As such, they may be modified by subsequent developments. We wish to express our appreciation to those industry sources and government officials who provided data and information on local economic and housing market conditions.

This analysis takes into consideration changes in the economic, demographic, and housing inventory characteristics of the market area during three periods: 1990 to 2000, 2000 to the as-of date of the analysis (“Current date”), and from the Current date to a “Forecast date.” The analysis presents counts and estimates of employment, population, households, and housing inventory as of the 1990 and 2000 Censuses, the Current date, and Forecast date. For the purposes of this analysis the forecast period is 24 months.

The prospective demand expressed in the analysis should not be construed as a forecast of building activity; rather, it presents the prospective housing production that would maintain a reasonable balance in demand-supply relationship given the market’s condition on the as-of date of the analysis. This analysis was prepared by Mr. Kevin P. Kane, one of the Division’s Field Economists in the Department’s Pennsylvania State Office in Philadelphia, based on fieldwork conducted in November and December 2002. If there are questions regarding the findings and conclusions of the analysis, he may be reached at (610) 656–0604, extension 3027 and at Kevin_P._Kane@hud.gov.

Housing Market Area

For the purpose of this analysis, the Housing Market Area (HMA) is coterminous with the Allentown-Bethlehem-Easton (ABE) Metropolitan Statistical Area. The HMA, comprised of Carbon, Lehigh, and Northampton Counties, is in eastern Pennsylvania, within a 2-hour driving distance from New York City, Philadelphia, and Harrisburg. Lehigh and Northampton Counties are the two largest counties in terms of population and economic activity and are collectively referred to as the Lehigh Valley. In this study, each of the three counties will be analyzed as separate submarkets.

Summary

Demand for housing will remain strong in the ABE HMA during the next 2 years. The majority of the demand will be in Northampton and Lehigh Counties. The lower cost of housing in the area, particularly compared to the New Jersey/New York City area, has resulted in a significant increase in in-migration.

The economy, once dominated by manufacturing, has become more diversified. Bethlehem Steel, once the largest manufacturer in the area, ceased to exist in 2003. Effective planning by local officials and industry leaders has enabled the ABE market area economy to grow. Gains in the service industries have more than offset the losses from manufacturing. The trade, transportation, and utilities sector and the education and health services sector have become the largest sources of employment in the HMA in recent years.

The rates of growth in population and households have increased in recent years as a result of greater in-migration primarily from the Northern New Jersey and New York City areas by households seeking affordable housing.

Residential construction has increased to keep pace with the higher demand. It is estimated that there will be demand in the HMA for approximately 4,250 units of new sales housing and 1,000 additional rental units over the 2-year forecast period. Much of this demand will be in Northampton and Lehigh Counties with a slightly higher number of units anticipated for Northampton County. Housing prices, which have been fueling the growth, will remain significantly lower than surrounding areas.

Economy of the Area

For much of its history the ABE HMA was driven by the steel industry. Founded in 1904, Bethlehem Steel dominated the local economy for much of the 20th century. At its highest level of production during World War II Bethlehem Steel employed 300,000 people at its facilities throughout the country. In April of 2003 the sale of Bethlehem Steel to International Steel Group for $1.5 billion was finalized, formally ending the steel maker’s presence in the HMA.

Despite the loss of Bethlehem Steel along with a continuing decline in the manufacturing sector in general, the economy of the ABE HMA was able to grow throughout the 1990s until the middle of 2001. Trends in labor force and employment since 1993 are presented in Table 1. Table 2 presents trends in nonfarm employment and industry level employment since 1993.

The extent or importance of the ABE HMA as a bedroom community can be seen in employment data from the 2000 Census. Data on worker commuting indicate that approximately 31,340 persons from outside the HMA commute here to work. At the same time 52,570 persons residing in the HMA commute to jobs outside the area, resulting in a net out-commutation of 21,230 people. With the economic recovery the number of out-commuting workers will continue to increase over the forecast period.

From 1993 through the current 12-month average ending in February 2003 average annual growth in the service providing sectors was approximately three and a half times greater than the average annual losses in the manufacturing sector. The largest service sector in the HMA is trade, transportation, and utilities, which employed an average of 57,000 persons during the 12-month period ending in February 2003, a 0.6 percent increase from the same time period 12 months earlier. The second largest sector is education and health services, which had an average employment of 48,700 for the period, a 2.8 percent increase. With increasing school enrollment resulting from incoming new families the presence of several smaller colleges and universities, including Lehigh University, Moravian College, and Lafayette College, and an aging population, this sector will continue to grow in importance. Manufacturing remains the third largest employment sector but will continue to lose jobs throughout the forecast period.

The HMA’s location has been a key factor in maintaining economic growth. The ABE market area is within 2 hours of New York City and Philadelphia. The area is an attractive location for companies serving clients in those areas or producers trying to maximize their market. Some of the more prominent companies in the HMA include Dun and Bradstreet, Day-Timers, Mack Trucks, Inc., and Rodale Inc. According to the Lehigh Valley Economic Development Corporation (LVEDC), the largest private sector employer in the HMA is the Lehigh Valley Hospital and Health Network, which employed approximately 6,200 people as of the end of 2001. Two of the other major employers as of the end of 2001 were Air Products and Chemicals, Inc., and Agere Systems, Inc., which employed 4,500 and 4,000 people, respectively. Recently, Agere has announced some major layoffs and its workforce will decline to approximately 2,300 by June 2003.

According to LVEDC, within the past 6 years approximately 300 technology companies ranging from electronic, computer, and communications to medical and biotechnology, have either been started in the area or have relocated to the HMA from other areas. The majority of these companies employ between 5 and 15 workers. Tourism continues to be an important source of employment in the economy of the HMA due to the area’s proximity to the Pocono Mountains. Employment in this sector averaged approximately 24,600 jobs throughout the most recent 12-month period, or a 4.6 percent increase over the 12-month period ending in February 2002.

Recently, the economy has begun to show some signs of weakness. The unemployment rate during the 12 months ending in February 2003 increased to 5.7 percent, its highest level since 1994, and one percentage point higher than the comparable period 12 months earlier.

Household Incomes

The 2000 Census reported median family incomes for Lehigh, Northampton, and Carbon Counties to be $53,147, $53,955, and $42,118, or an annual average increase of 3.7, 4.1, and 3.9 percent, since the 1990 Census. The HUD-estimated median family income for the entire ABE market area as of fiscal year 2002 is $59,700.

Population

From 1990 to 2000 population in the HMA increased by an average of 4,290 persons annually. Nearly all of the growth occurred in Lehigh and Northampton Counties, which registered average annual gains of 2,100 and 2,000 persons respectively. From 2000 to the Current date population growth for the HMA increased to 4,960 persons annually, with an average annual increase of 2,150 for Lehigh County and an average annual increase of 2,570 for Northampton County. The average annual population growth for the HMA is forecast to increase to approximately 5,025 persons during the next 2 years. Growth in Northampton is expected to continue to outpace that in Lehigh County. The trends in population and household changes from 1990 to the Forecast date for the HMA and the three submarkets are presented in Table 3.

Since 1990 the level of net natural increase in population (resident births minus resident deaths) has declined in all three counties. The numbers of births declined, particularly in the first half of the 1990s, as a result of significant out-migration of the younger population of 20- to 39-year-olds during the decade. The rate of natural change stabilized during the second half of the 1990s. From 2000 through the Current date net natural increase in the HMA is estimated to have averaged approximately 860 persons annually. The HMA continues to grow as a bedroom community for the Northern New Jersey and New York City employment centers with increasing numbers of younger families migrating to the HMA; the volume of net natural change is expected to increase during the 2-year forecast period. The positive change will occur only in Lehigh and Northampton Counties. Carbon County has registered a negative net natural change from 1990 through April 2003 and this is expected to continue throughout the forecast period.

Any population losses from declines in the volume of net natural change and out-migration have been more than offset by large increases in in-migration. The people migrating to the ABE market area are primarily householders who work in the metropolitan areas of Northern New Jersey and New York City. To a lesser extent workers in the Philadelphia metropolitan area have also moved to the ABE area because of the lower cost of housing.

From 2000 through the Current date the nonhousehold population is estimated to have increased by approximately 550 persons with nearly all of this growth occurring in Northampton County. Lehigh University and Moravian College accounted for approximately 350 of the increase as a result of new dormitory construction and another 150 increase was due to the expanded prison population in Northampton County.

Households

In 2000 there were 247,148 households in the ABE HMA. It is estimated that as of the Current date there are approximately 254,800 households, an annual increase of 1 percent since the 2000 Census. The rate of increase is slightly greater than that during the 1990 to 2000 period. Paralleling the population growth, Northampton County has a greater portion of the growth than Lehigh County. Northampton County has averaged approximately 1,300 new households annually since 2000, compared with 1,050 households in Lehigh County. The current rate of household growth is expected to continue during the next 2 years. As of the end of the Forecast date it is estimated that there will be approximately 260,130 households in the area. Over the next 2 years the rate of household growth will decline slightly in Lehigh County. The rate of household growth in both Northampton and Carbon Counties is forecast to increase slightly compared with the most recent period. Table 3 includes data and estimates on households for the entire HMA as well as the three counties. The trends in population and household changes from 1990 to the Forecast date for the HMA and the three submarkets are presented in Table 3.

Housing Inventory

The housing inventory increased by an average of 2,510 units annually from 1990 to 2000. From 2000 to the Current date the inventory increased by 2,850 units annually, to 274,670 by the end of the period. Approximately 67 percent of the change in inventory since 2000 has been in sales housing, predominately in single-family homes. Between 1990 and 2000, 58 percent of the net additions to the inventory were for owner units. The recent and significant increase in owner housing is the result of two factors. Lower interest rates have made homeownership much more affordable. Secondly, most of the new households migrating to the HMA from other metropolitan areas in commuting distance are coming specifically because of the lower cost of homes and are looking to buy rather than rent. Table 4 presents the trends in housing inventory, housing occupancy, and vacancy rates for the HMA and each submarket as of 1990, 2000, and the Current date.

Production in the HMA has kept pace with the growth in households and demand. During the 1990s an average of 2,470 housing units were issued building permits annually. From 2000 to the Current date permit activity increased to an average of 3,310 units annually. While production has increased substantially, the proportion of the activity in single-family homes has remained relatively stable, averaging around 87 percent. Multifamily activity in the HMA since 1990 has been relatively low, averaging 350 units annually during the 1990s and 440 units annually from 2000 to the Current date.

Again, Lehigh and Northampton Counties have recorded most of the activity with growth in Northampton slightly higher than that of Lehigh. Within the last few years the communities of Upper Macungie, Lower Macungie, North Whitehall, and Upper Saucon have had some of the highest levels of permit activity in Lehigh County. In Northampton County, Bethlehem Township, Forks Township, Palmer Township, and Lower Saucon have had significant increases in activity in the past few years. Table 5 presents building permit data in the HMA and the submarkets since 1990.

Housing Vacancy

Vacancy rates for sales housing and rental housing for the ABE HMA increased slightly from 1990 to 2000 as additions to the housing stock outpaced household growth. The sales vacancy rate remained relatively stable increasing from 1.5 percent to 1.6 percent while the rental vacancy rate rose 0.5 percentage points to 6.7 percent. As of the Current date the sales vacancy rate is estimated to be 1.6 percent, unchanged since 2000, as production has kept pace with demand. However, as a result of the shift in demand toward homeownership, the rental vacancy rate has increased since 2000. It is estimated that as of the Current date the rental vacancy rate is 7.2 percent. Historically, rental vacancy rates have been somewhat higher in Lehigh County than Northampton County and this trend has continued to the Current date.

In addition to the normal inventory of vacant available units in the HMA there were as of the 2000 Census 11,019 “other vacant” units, or a 28 percent increase compared with 1990. The substantial rise in other vacant during the 1990s reflects the area’s increased popularity for affordable second homes and recreation. The majority of the other vacant units counted in the census are classified as “for seasonal, recreational, or occasional use.” More than 50 percent of these other vacant units were located in Carbon County, which is desirable for vacation or second homes because of its proximity to the Pocono Mountains. Because of the tourism and resort impact and the seasonal nature, Carbon County historically has had higher rental vacancy rates than Lehigh and Northampton.

Sales Market Conditions

Conditions in the sales market in the ABE area are balanced. Production has increased to meet the growing demand for new homes. Although the local economy is struggling with rising unemployment and a slowdown in job growth, housing demand is expected to remain relatively strong. Households will continue to move to the area because of the lower cost of housing. According to the Lehigh Valley Association of REALTORS® (LVAR), total sales (new and existing homes) in Lehigh and Northampton Counties increased 12 percent from 2001 to 2002 to a total of 7,572 homes. According to the LVAR, the median sales price for a home in 2002, including both new and existing units, was 5.8 percent higher than the median price in 2001. A representative of the Lehigh Valley Builder’s Association estimates that much of the new construction being done in these two counties is in the $200,000 to $250,000 range. As of the Current date the median price for new four-bedroom homes was approximately $255,000. The sales market is projected to remain robust throughout the forecast period.

Rental Market Conditions

Conditions in the rental market overall in the HMA are balanced. However, the rental vacancy rate has increased since 2000 as a result of some softening. The largest number of vacancies appears to be in newer luxury style apartments. These new upscale units have been the segment of the rental market most affected by the movement of renters to homeownership. The softness is temporary and given the current levels of production, conditions should tighten during the next 24 months. The current gross rents for one-, two-, and three-bedroom apartments in the region are $810, $930, and $1,160, respectively.

Federally Assisted Rental Housing

The market for assisted rental housing remains very tight. There are six housing authorities in the HMA, which in total have approximately 4,040 housing units of public housing and administer an estimated 4,830 units of Section 8 housing, including vouchers, certificates, and project-based assistance. Information provided from the housing authorities in April 2003 indicated long waiting lists for both programs. There are approximately 6,020 persons on waiting lists for Section 8 housing and 4,170 on waiting lists for public housing. It is not known how much of the waiting lists may be double counting since people may sign waiting lists at more than one housing authority. The largest waiting lists were reported in the city of Allentown and Lehigh County.

Forecast Housing Demand

It is estimated that there will be a demand for approximately 4,250 new sales units, in the HMA during the 2-year forecast period. Owner households are expected to continue to increase in the area as renters continue to move to homeownership and new households move to the area for affordable homes. The current situation in the local economy is not expected to have a major impact on any forecast demand for new sales housing. There will also be demand for approximately 1,000 additional rental units (500 per year) over the next 2 years. Table 6 presents an estimate of the annual qualitative rental demand for the HMA over the next 2 years, by bedroom size and rent range.

Table 1

Labor Force and Employment Trends

ABE HMA

1993 to April 1, 2003

Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Prior[a] 12 Mos.	Current[b] 12 Mos.
Labor Force	305,700	301,000	300,100	303,900	310,600	310,800	314,900	316,600	325,700	327,500	326,600	328,600
Employment	285,400	283,400	283,300	287,300	295,000	296,600	301,700	305,000	311,600	309,300	311,400	309,800
Unemployment	20,300	17,600	16,800	16,600	15,600	14,200	13,200	11,600	14,100	18,200	15,200	18,800
Rate (%)	6.6	5.8	5.6	5.5	5.0	4.6	4.2	3.7	4.3	5.6	4.7	5.7

[a]Ending February 2002.
[b]Ending February 2003.

Source: Bureau of Labor Statistics

Table 2

Total Nonfarm Employment by Industry (in thousands)

ABE HMA

1993 to April 1, 2003

Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Prior[a] 12 Mos.	Current[b] 12 Mos.
Total	253.0	255.6	257.7	259.0	266.6	273.3	279.0	287.0	289.6	286.9	288.8	286.7
Construction	9.8	10.1	10.1	10.2	10.6	11.1	12.0	12.7	12.9	13.1	12.9	13.0
Manufacturing	57.1	55.8	54.2	52.0	51.8	51.2	50.7	51.2	50.1	45.9	49.3	45.4
Durables	27.6	27.3	27.0	25.9	25.3	24.7	24.8	26.3	26.6	23.7	26.1	23.3
Nondurables	29.5	28.5	27.2	26.1	26.5	26.5	25.9	24.9	23.5	22.2	23.2	22.1
Service Providing	186.1	189.7	193.4	196.8	204.2	211.0	216.4	223.1	226.7	227.8	226.7	228.2
Trade	46.9	47.2	48.0	48.7	51.0	51.3	53.3	55.6	56.6	56.8	56.6	57.0
Information	6.0	6.1	6.4	6.7	7.1	7.5	7.9	8.3	8.2	7.5	8.0	7.4
Financial	13.6	13.8	13.6	13.7	13.5	14.5	15.1	15.4	16.0	16.0	16.0	16.0
Prof. and Bus.	21.0	21.9	22.6	23.3	24.9	27.3	28.2	28.6	28.7	27.5	28.5	27.4
Ed. and Health	39.2	40.1	40.7	41.4	42.7	44.0	44.3	46.0	47.2	48.4	47.4	48.7
Leisure	20.2	20.2	20.4	20.8	22.0	22.8	23.0	23.7	23.5	24.5	23.6	24.6
Other Services	11.4	11.6	12.0	12.5	12.7	12.9	13.2	13.4	13.7	13.7	13.7	13.6
Government	28.0	28.7	29.6	30.0	30.4	30.8	31.4	32.2	32.7	33.5	32.9	33.5
Federal	2.3	2.6	3.0	3.0	2.9	2.9	2.9	3.0	2.8	2.9	2.8	2.9
State	2.8	2.7	2.7	2.7	2.7	2.6	2.5	2.6	2.6	2.7	2.6	2.7
Local	22.9	23.4	23.9	24.3	24.8	25.3	26.0	26.6	27.3	27.9	27.5	27.9

[1]Includes mining.
[2]Includes transportation and utilities.
[3]Includes hospitality.
[a]Ending February 2002.
[b]Ending February 2003.

Notes: Numbers may not add to totals due to rounding.
Pennsylvania Department of Labor and Industry is in the process rebenchmarking data. This was not complete at the time of the study.

Source: Bureau of Labor Statistics

Table 3

Population and Household Trends

ABE HMA

1990 to April 1, 2005

	April 1, 1990	April 1, 2000	As of Date[1]	Forecast Date[2]	Average Annual Change 1990 to 2000 Number	1990 to 2000 Rate (%)	2000 to Current Number	2000 to Current Rate (%)	Current to Forecast Number	Current to Forecast Rate (%)
Population										
ABE MSA	595,081	637,958	652,828	662,878	4,288	0.7	4,957	0.8	5,025	0.8
Lehigh County	291,130	312,090	318,550	322,900	2,096	0.7	2,153	0.7	2,175	0.7
Northampton County	247,105	267,066	274,766	279,976	1,996	0.8	2,567	0.9	2,605	0.9
Carbon County	56,846	58,802	59,512	60,002	196	0.3	237	0.4	245	0.4
Households										
ABE MSA	225,831	247,148	254,756	260,133	2,132	0.9	2,536	1.0	2,689	1.0
Lehigh County	112,887	121,906	125,069	127,164	902	0.8	1,054	0.9	1,048	0.8
Northampton County	90,955	101,541	105,436	108,232	1,059	1.1	1,298	1.3	1,398	1.3
Carbon County	21,989	23,701	24,251	24,737	171	0.7	183	0.8	243	1.0

[1]April 1, 2003.
[2]April 1, 2005.

Notes: Rates of change calculated on a compound basis; numbers have been rounded for comparison.

Sources: 1990 and 2000—U.S. Census Bureau
Current and Forecast—Estimates by Analyst

Table 4

Housing Inventory Tenure and Vacancy

ABE HMA

1990 to April 1, 2003

	ABE MSA			Lehigh County			Northampton County			Carbon County		
	1990	2000	Current	1990	2000	Current	1990	2000	Current	1990	2000	Current
Total housing inventory	241,060	266,112	274,667	118,335	128,910	132,533	95,345	106,710	110,921	27,380	30,492	31,213
Occupied units	225,831	247,148	254,756	112,887	121,906	125,069	90,955	101,541	105,436	21,989	23,701	24,251
Owners	162,283	176,842	182,597	78,248	83,849	86,056	66,907	74,464	77,565	17,128	18,529	18,976
%	71.9	71.6	71.7	69.3	68.8	68.8	73.6	73.3	73.6	77.9	78.2	78.2
Renters	63,548	70,306	72,159	34,639	38,057	39,013	24,048	27,077	27,871	4,861	5,172	5,275
%	28.1	28.4	28.3	30.7	31.2	31.2	26.4	26.7	26.4	22.1	21.8	21.8
Vacant units	15,229	18,964	19,911	5,448	7,004	7,464	4,390	5,169	5,485	5,391	6,791	6,962
Available units	6,623	7,945	8,574	3,614	3,995	4,372	2,441	2,895	3,119	568	1,055	1,083
For sale	2,445	2,911	2,950	1,140	1,288	1,298	981	1,155	1,181	324	468	471
Rate (%)	1.5	1.6	1.6	1.4	1.5	1.5	1.5	1.5	1.5	1.9	2.5	2.4
For rent	4,178	5,034	5,624	2,474	2,707	3,074	1,460	1,740	1,938	244	587	612
Rate (%)	6.2	6.7	7.2	6.7	6.6	7.3	5.7	6.0	6.5	4.8	10.2	10.4
Other vacant	8,606	11,019	11,337	1,834	3,009	3,092	1,949	2,274	2,366	4,823	5,736	5,879

Note: Numbers have been rounded for comparison.

Sources: 1990 and 2000—U.S. Census Bureau
Current—Estimates by Analyst

Table 5

Residential Building Permit Activity

ABE HMA

1990 to April 1, 2003

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002[a]	2003[b]
ABE MSA														
Total	1,924	2,321	2,754	2,650	2,282	2,260	2,465	2,365	2,608	3,114	2,863	3,374	3,686	439
Single-family	1,658	1,978	2,299	2,193	1,963	2,033	2,074	2,067	2,355	2,646	2,504	2,779	3,335	378
Multifamily	266	343	455	457	319	227	391	298	253	468	359	595	351	61
Lehigh County														
Total	782	883	1,200	1,203	860	1,046	1,176	1,072	1,194	1,690	1,344	1,452	1,159	200
Single-family	706	773	996	929	819	962	973	943	1,174	1,343	1,208	1,214	1,077	200
Multifamily	76	110	204	274	41	84	203	129	20	347	136	238	82	0
Northampton County														
Total	975	1,083	1,196	1,153	1,181	1,039	1,119	1,119	1,180	1,233	1,312	1,660	1,275	215
Single-family	785	850	949	977	903	896	931	950	981	1,112	1,091	1,335	1,067	154
Multifamily	190	233	247	176	278	143	188	169	199	121	221	325	208	61
Carbon County														
Total	167	355	358	294	241	175	170	174	234	191	207	262	176	24
Single-family	167	355	354	287	241	175	170	174	200	191	205	230	176	24
Multifamily	0	0	4	7	0	0	0	0	34	0	2	32	0	0

[a]Only includes jurisdictions reporting on a monthly basis for Lehigh, Northampton, and Carbon Counties.
[b]Only includes jurisdictions reporting on a monthly basis through March 2003.

Source: U.S. Census Bureau, C–40 Series

Table 6

Estimated Qualitative Annual Demand for
New Market Rate Rental Housing

ABE HMA

April 1, 2003 to April 1, 2005

One Bedroom		Two Bedrooms		Three Bedrooms	
Monthly Gross Rent ($)	Units of Demand	Monthly Gross Rent ($)	Units of Demand	Monthly Gross Rent ($)	Units of Demand
810	225	930	250	1,160	25
860	195	980	210	1,210	20
910	180	1,030	185	1,260	20
960	155	1,080	160	1,310	15
1,010	130	1,130	130	1,360	15
1,060	110	1,180	105	1,410	15
1,110	85	1,230	85	1,460	10
1,210	65	1,330	65	1,560	0
1,310	50	1,430	50	1,660	0
1,410	40	1,530	40	1,760	0
1,510	30	1,630	30	1,860	0
1,610	20	1,730	0	1,960	0
1,710	15	1,830	0	2,060	0
1,810 or more	0	1,930 or more	0	2,160 or more	0

Notes: Distribution above is noncumulative. Demand of fewer than 10 units is shown as 0.
Numbers have been rounded for comparison.

Source: Estimates by Analyst