An Analysis of Delaware's Housing Market

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Edward C. Ratledge
Daniel T. Brown

TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

Page

LIST OF TABLES

LIST OF FIGURES

LIST OF FIGURES

LIST OF FIGURES (continued)

Executive Summary

The housing market in Delaware has undergone dramatic shifts over the past 20 years. As most other states, activity in the market increased sharply in the early part of the last decade and peaked between 2006 and 2007. Rosy speculation, easy credit, and quick profits convinced people that housing was a low risk, high reward investment. As dollars funneled their way into properties, the construction industry experienced an unprecedented boom requiring many jobs.

When the bubble burst, the construction sector in Delaware shed thousands of jobs, and many companies went out of business. Actual and perceived wealth dropped seemingly overnight, and banks were left with hundreds of billions of dollars' worth of toxic assets. It has been nearly five years since the housing market collapsed, and a meaningful recovery has yet to take place. However, recent indicators may be signaling that the market is beginning to turn around. Home prices have fallen, home sales in 2011 are higher than sales in 2010, and the stock of excess housing has had more time to get whittled down.

The Center for Applied Demography & Survey Research conducted a study to analyze the residential construction sector in Delaware. Many different topics are discussed in this study, including the history of the housing market in each county, demographic projections, potential future demand, recent market conditions, and the economic impact of residential construction. This executive summary emphasizes the main results of the study. Though the study has been funded by the Delaware Association of Realtors, the authors alone are responsible for the contents of the report.

Overview of Important Topics

Permits The first decade of the 21st century was a tumultuous one for real estate in Delaware. Each of the three counties experienced volatility in different ways. Following the dot.com boom, bust, and subsequent recession, all three counties experienced strong growth in building permits. By 2002, new permits were accelerating rapidly in both Kent and Sussex counties. New Castle initially experienced moderate growth in permits, but that peaked in 2002 and began a steady descent similar to that experienced in the 1990's. In contrast, permit activity in the other counties continued and peaked in 2004 at levels about twice as high as had been experienced in recent years. The downturn in permits occurred sharply and ended in 2008 at roughly the same levels as had been experienced before the bubble.

Migration The Kent County expansion was coupled with significant net in-migration at levels four times historical rates. That ended in 2009 and today is slightly higher than the historical rate. Undoubtedly, the land use policies in New Castle County, the presence of Delaware Route 1, and the dissatisfaction with property prices and taxes in New Jersey all played a role in this in-migration. Sussex County also experienced an initial increase in net in-migration, but that too had stabilized at lower levels by 2009. Net in-migration has been falling in New Castle County for most of the decade and has recently showed mild net out-migration mainly because of the weak labor market.

Prices During the acceleration phase from 2004 to 2007, housing prices increased by roughly 38% in Kent County. During that same period, prices in New Castle County increased 48%. Housing prices in Sussex County were already much higher than in either of the other counties, but new supplies were coming on line fast enough such that the average price increased only modestly. The price varied widely across divisions within Sussex County. However, by 2007 prices were falling to levels well below where they had been in 2004. The peak of the price expansion occurred in the 4th quarter of 2006 and has been falling ever since both nationally and in Delaware. Price increases in general were far less than those experienced in places such as Los Angeles, Las Vegas, and Miami. At this point, it appears that prices will continue to drift lower toward the historical real price.

Home Sales Sales of existing homes also experienced the "bubble" and reached a peak in the 4th quarter of 2006. Volume exceeded the previous peak reached in 1989, just prior to the last real estate bust. Current sales are at levels not seen since 1985. The majority of foreclosures here and nationwide still have not been resolved. Until they are resolved prices will continue to drift lower, and buyers will stay on the sidelines. Foreclosures here in Delaware had been rising steadily prior to the acceleration of prices in 2003. At that point they dropped from about 1.8% of mortgages outstanding to 1%. By late 2010 the rate had risen from 1% in 2007 to 4%. The rate is now beginning to drop slowly. However, it will likely take a number of years to return to historical levels barring another recession.

Consumers Consumer confidence levels remain at historical low levels, though they have recovered from the depths. Falling prices, anemic consumer confidence, and unemployment rates still twice as high as those experienced in Delaware over the past decade suggest something less than a vigorous recovery in the housing market. Population projections suggest that more units will be needed to house new households. How many will be needed will depend on the ability of individuals to obtain financing. There has clearly been a trend for more young adults to remain with or return to their parents' homes because of financial stress. This increases household size and reduces the demand for new housing. It is another key factor to watch.

Construction Finally, it is clear that the construction industry and those in it have been hurt badly by the financial and housing crisis. The employment in this sector also peaked at 30,000 in the 4th quarter of 2006. Since then it has lost 13,000 jobs and seems to be drifting lower. Housing and construction are important parts of Delaware's economy and will need to expand if Delaware's economy is to grow robustly.

Population Forecast

The last decade saw Delaware's population increase by 116,000, which was slightly less than in the previous decade. The 2008 to 2010 period saw reduced growth. Net in-migration alone was reduced by a third. Economic conditions across the nation, particularly in the housing market, prevented many people from relocating because of the inability to sell their existing homes without suffering unacceptable losses. Net in-migration accounts for about 63% of population growth statewide. The two major components of net in-migration, namely retirees moving into Sussex County and people moving into New Castle County to fill jobs, were both significantly reduced. For now, the forecast for the next decade is that Delaware will add 89,000 to the population. In general, growth is slowing as the population ages with relatively smaller numbers of births and larger numbers of deaths. The migration component is becoming more important but also more volatile.

In the last decade, Kent County experienced major growth and added 36,000 to its population, easily exceeding the previous decade's growth of 16,000. Since the natural increase component was relatively stable, the growth was almost entirely due to migration. Kent has become more accessible since Route 1 was opened and the journey to work has fallen noticeably for many. The cost of land in northern Kent County was favorable with respect to southern New Castle County, so housing in Kent was competitively advantageous in comparison to its alternatives. Looking ahead, Kent County is expected to grow by over 17,000 persons during this decade. This is well below the boom of the 2000's and more in line with historical trends. Net in-migration retreated from record highs in 2006 to historical levels in 2010, so this forecast is likely conservative. Much will depend on the labor market in New Castle County and tax policies of states in the region within commutable distances.

New Castle County grew relatively slowly in the past decade, adding only 37,000 to its population which is far less than the other two counties. In the 1990's New Castle County grew by 58,000 people, a rate significantly higher than what is currently the case. There are many reasons for the decline in growth, but perhaps the most important are the lack of buildable land in northern New Castle County and the two big shocks to the labor market which significantly impacted job opportunities, the major driver of net in-migration. The first was the recession following the 9/11 attacks and the second was the financial recession driven by the over investment in finance-related jobs in New Castle County. Employment, like the housing industry, will only recover in the long run 5 to 10 years. Looking ahead, the population is likely to grow by 34,000 in the next decade, similar to the growth it experienced over the past 10 years. In order for this to be fulfilled, net in-migration must resume and the job market must improve considerably. In addition, the housing market must resume some of its former vigor.

Sussex County continues to grow in population adding 41,000 during the past decade and nearly matching the growth of 44,000 in the 1990's. Sussex did see a drop in net in-migrants which accounts for more than 90% of overall population growth. Sussex County will not grow without an annual influx of retirees and workers necessary to support this new population. Net in-migration did fall during the recession of 2008-2010. If history repeats itself, then the real estate problems will be settled over the next few years and the boomers will continue to flow into the county. Over the next decade, Sussex will likely add another 38,000 to its population, continuing the slowing trend that is already occurring. The open questions are the desirability of new housing located miles from the beach area, the increasing density and accompanying transportation issues, and the adequacy of labor to service this population, particularly in regards to health care.

Household Formation and Ownership Rates

The household formation and homeownership rates are very important for understanding Delaware's housing market. Rates were calculated for by race and age. Data was obtained from the 1-year sample of the American Community Survey (2006 to 2010). Long run expectations of household formation rates (e.g. headship rates), were constructed using the March supplement of the Current Population Survey from 1977 to 2011.

The headship rate and homeownership rate increased sharply in the early 2000's for most demographic groups, reaching a peak in the middle of that decade, but then falling sharply. For persons less than 60 years old, the rate of household formations fell well below their long run average.[1] For persons at least 60 years of age, the historical trends show a persistent downward trend in the headship rates over the last 20 years instead of more volatile swings. The proportion of home ownership among these older cohorts, on the other hand, rose steadily between 1980 and 2000.

Had headship rates equaled their long run normal levels, Delaware would have 28,900 more households in 2010 than it actually did. Nearly 22,200 of these households would be headed by white heads of household, 5,300 would be headed by black heads of household, and 1,500 would be headed by a household head of some other race.

[1] For each age group less than 60 years of age, we assumed that the average headship rate and homeownership rate in the 1990's are the long run normal rates that should be expected from each demographic group. The long run normal rates were assumed to equal the average rate across all years since 2000 for persons 60 years old or older.

In terms of the rate of homeownership, white household heads and household heads of some other race had rates very close to their long term average. Black household heads, on the other hand, were substantially less likely to own a home in 2010 compared to the long run average rate of homeownership. We would have expected that 56.3% of black household heads would be home owners, but just 52.1% of them were in 2010. This implies that nearly 2,700 more black households were renting rather than owning their homes in 2010 than what historical rates would suggest. Overall, there are 3,900 Delaware households that are renting their homes when historical rates suggest that they should be homeowners.

We also evaluated the deviation in household formation and ownership rates by age groups. Using the same long run headship and homeownership rates as before, we find that there were nearly 10,100 fewer households started by 20 to 34 year olds in 2010 than expected. Similarly, 9,600 fewer households were started by persons between 35 and 59 years of age, and 9,300 fewer households were started by persons at least 60 years old.

In addition, approximately 1,100 household heads in the younger age cohorts were renting their homes when historical rates suggested that they would be home owners. Similarly, we find that 1,800 households headed by persons aged between 35 and 59 years of age and 1,000 households headed by persons at least 60 years of age rented their homes despite their long term rates suggesting that they would be owning those homes.

In summary, headship and ownership rates were well below their assumed long run normal, meaning far fewer households formed despite population growth. Households that did form were more likely to rent rather than own. Of course, if rates stop falling, population growth alone will eventually clear any surplus housing stock and draw on new residential construction. Should those rates return to their long run normal conditions, the current weakness of the market is actually masking a very large, pent-up demand for housing.

Forecast of Residential Construction

In order to understand how population growth will impact the housing market, we developed a model that predicts residential construction for the next decade. By using the demographic projections from the Delaware Population Consortium, the model implicitly accounted for the Baby Boomer's effect on Delaware's age distribution, the continued net migration out of northern Delaware and into southern Delaware, and changes in the state's racial distribution. For technical reasons, the model does not account for changes to the male to female ratio or changes in Delaware's Hispanic population.

The model was tailored to meet each county's specific housing situation. The variables that were customized include the current number of housing units, the age distribution of the housing stock, the types and normal levels of vacant housing, the number of mobile homes, minimum levels of construction, and projected changes in the type of housing stock due to anticipated migration. The model interacted long term demographic projections with current estimates of the headship and ownership rates to derive the long-run demand for housing.

Briefly, the model works as follows. First, headship and ownership rates were derived from the 2010 American Community Survey for each demographic group and held fixed into the future. Population projections interact with these rates to derive the demand for owner occupied and renter occupied housing. Then, an estimate of "excess" vacant housing was calculated for four categories (for sale, for rent, seasonal, and other) to determine the surplus housing stock. If any surplus housing existed, then it would be used to meet new demand coming from population growth, the scrappage of old homes, or shortages in other types of vacant housing. Once the county's surplus housing is used up, new construction above some minimum level fulfills any remaining demand.

We caution that this model makes forecasts based on long term demographic changes to each county, not based on any short term changes influenced by market prices, interest rates, credit availability, labor force participation, unemployment, etc. The model is inherently a long run model, and makes the short run to long run transition using a weighted moving average which may not accurately reflect the real transition.

We estimate that in 2010, Kent County had approximately 900 excess vacant housing units, with 450 of those for sale and 400 for rent. Extending the 2010 headship and ownership rates out into the future, the model predicts that the county's surplus housing will largely be used up in 2012, necessitating the demand for new construction. The impact of population growth will cause annual construction in Kent County to rise from about 650 units in 2012 to 810 in 2014. By 2016, annual construction will hit its peak at 880 units, before it begins a slow and gradual descent. Annual construction is forecasted to be 730 units in 2022 and 640 units in 2032.

In Sussex County, we estimate that there were 825 excess vacant housing units in 2010. The model also predicts that population growth would have consumed all of the surplus housing in 2011 and necessitate new construction. Construction in Sussex County is expected to hover between 1,650 and 1,750 over the next decade. Despite the anticipated growth in the level of occupied housing in Sussex, we assume that there will be a corresponding decline in seasonal homes due to the influx of retirees converting vacant seasonal homes to owner occupied homes and increasing space constraints pushing new construction inland from the coast.

In New Castle County, we find that there were more than 2,800 excess vacant housing units in 2010. If the long-run effects of demography dominate the short run negative economic conditions, the model predicts a large, pent-up demand for housing will clear this surplus by 2013. Annual construction is modeled to increase from 1,000 units in 2012 to 1,600 units in 2013. The rapid rise reaches a peak of 2,200 units in 2016, at which point annual construction begins to decline due to demographic trends. The model projects that 2,000 housing units will need to be built in 2022, falling to 1,700 new housing units in 2032.

One of the biggest assumptions in the model is the permanency of the 2010 headship and ownership rates. As indicated in the previous section, the negative conditions beginning in 2007 have caused unusually low rates of household formation and homeownership. If these rates were at their 1990's levels, there would be another 29,000 households in Delaware. It is possible that the rates will begin to revert to their long run normal levels and a recovery takes hold. If rates start to tick upwards, then even small improvements will cause rapid growth in new construction as these movements act in concert with a growing population. New Castle County in particular, would experience the greatest improvement if these rates began to reverse themselves. Of course it is also possible that the declining trend in household formation rates will continue if a second recession hits the economy.

Of course, there is no way of knowing for sure when, or if, household formation rates will improve, as much of the answer depends on the larger macroeconomic conditions discussed previously. Labor force participation, for example, is a critical indicator of household formation. Since 1990, the labor force participation rate has been increasing steadily for persons at least 55 years of age, but falling for persons less than 25 years of age (particularly recently). Until conditions in the job market improve, it is possible that many of these groups will not return to the rates of household formation and homeownership as in the past.

On the other hand, recent signs indicate that a recovery may be underway. Unemployment in Delaware has fallen from 8.8% in January 2010 to 7.4% in December 2011. In addition, private discussions with real estate experts in Delaware show that the housing market was better in 2011 than it was in 2010. Continued commitment by the Federal Reserve to keep interest rates near zero, falling home prices, and improvements in employment and gross domestic product may eventually convince people to get back into the market. Thus, we are hopeful that the recent improvements will be sustained, though there are clear risks that have yet to be eliminated.

The Economic Impact of Delaware's Residential Construction and Real Estate Sector

We used the REMI PI+ model to estimate the importance that Delaware's residential real estate sector has on the state's economy. Similar to a study conducted by the National Association of Realtors, we defined Delaware's residential real estate and construction sector as:

1. All new residential construction in Delaware.
2. Income going to the real estate sector for the sale of existing homes.
3. Government spending due to revenues from the real estate transfer tax.[2]
4. Income spent on residential remodeling due to a home purchase.

Collectively, these four areas injected $828 million into Delaware's economy in 2000. At the peak of the housing bubble (2005), the value of these four components was $1.8 billion. The values of these four components in Delaware fell to $713 million by 2010.

In 2000, new residential construction comprised 63% of this sector. This value reached a peak of 70% in 2002, and then declined gradually. The decline was primarily the result of a proportionally higher number of existing properties being bought and sold than new homes being built. As the number of existing property transactions increased due to the housing bubble, the effects on the real estate industry, government expenditure, and the residential remodelers increased significantly.

As these dollars flow throughout the state's economy, they stimulate additional economic activity by indirectly drawing on resources from each business's supply chain and by inducing households to spend more of their income. The REMI model allowed us to estimate the total macroeconomic impact in Delaware by simulating the direct, indirect, and induced effects.

[2] We assume that state and local government spending was reduced because of the decreased revenue from the real estate transfer tax. This assumption neglects the fact that federal stimulus dollars and increased debt partially offset the reduced revenues from the bursting of the housing market. Thus, the actual decline on public sector employees and government spending may be larger than what Delaware witnessed.

Using REMI, we measured the total economic impact that the residential real estate and construction sectors had on Delaware's economy from 2000 to 2010.[3] In terms of Delaware's employment, these four areas were responsible for 12,200 jobs in 2000, 25,700 jobs at the height of the housing bubble in 2005, and 7,600 jobs in 2010 in the depths of the recession. In other words, 18,100 jobs that existed in 2005 were removed from the economy in 2010 as a result of the downturn. Of these, 15,100 jobs were in the private sector. Approximately 9,800 of these lost jobs were estimated to have come from the construction sector, and 1,900 of the lost jobs came from the real estate sector.

The REMI model also indicated that as of 2005, the residential real estate and construction sectors were creating $1,402 million of gross regional product. However, their 2010 contribution was just $371 million. Similarly, the sectors contributed just $444 million to the state's disposable personal income, representing a decline of 50% since 2005. Consumption in Delaware was also significantly reduced as a result of these areas. In 2000, these two sectors were responsible for $260 million of statewide consumption. By 2005 and 2010, $632 million and $328 million (respectively) of statewide consumption could be credited to the residential real estate and construction sector.

[3] The size of the economic impact reflected in this executive summary has been revised from an earlier draft.

Introduction

The Delaware housing market has been exposed to significant forces during the last decade and will likely face significant challenges in this decade as well. The financial crisis and the ensuing recession are still affecting the housing market and will do so for some time to come. The changing demographics in Delaware will continue to be a dominant market factor. This report is designed to examine these major forces in play and describe their impact. With a better understanding of the recent past and the current situation in the housing market, it may be possible to design policies and/or strategies that will assist the recovery of this critical part of Delaware's economy. At the very least, the reader should have a better understanding of how the housing market performed in the past and how it is likely to perform in the future.

The first section of the report is dedicated to describing annual population growth, or lack thereof, and the sources underlying this growth. Changing populations increase the need for housing although the actual quantity varies according to a variety of factors. Understanding the rapidly changing pattern of building permits, especially in comparison to the housing bubble, is also critical and may point the way to recovery. Of course, prices matter and there have been both dramatically positive and negative housing price movements which continue to buffet the housing market. The financial decisions of households are critical and complex with respect to the own/rent decision, the decision to upgrade or downgrade their housing, and their financial condition. All of these issues are addressed in this section.

In the second section, we analyze the rates at which people form households and own their homes in Delaware. These two rates are of particular importance because they, along with population, describe the quantity of housing unit demanded and home ownership. The section indicates how deeply the current rates have diverged from their long run trends and what that implies about the recession's effect on Delaware's housing market.

The third section applies headship and homeownership rates to recent housing market information and demographic projections. By integrating county-level information into a model, we develop forecasts for residential construction that are driven predominantly by the long term population growth. The model suggests that if headship and homeownership rates are held constant at their depressed 2010 levels, population growth alone will likely draw down the surplus housing stock and necessitate new construction by 2013.

The fourth section estimates the residential housing market's economic impact in Delaware over the last decade. We employ a regional model of the Delaware economy, called REMI PI+, to understand how important this sector has been in the state. The model captures both the direct effects of this market, such as the number of realtors employed and increased property tax revenues, as well as the indirect effects, such as employment in the wholesale and retail industries that are part of residential housing construction's supply chain.

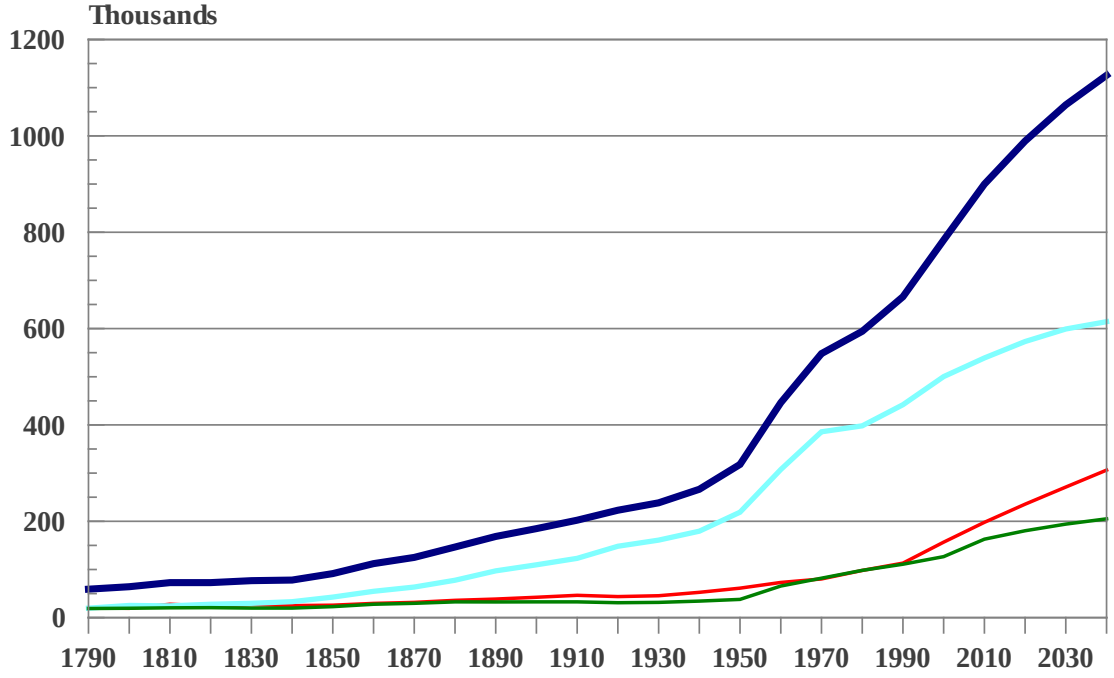
The final section offers some selected observations about the analysis that has been offered.

Background

Population Forecast

The Delaware Population Consortium, an organization with members from across the state and local government spectrum, produces detailed population projections for the state, the three counties, and the largest three municipalities namely Dover, Newark, and Wilmington. These forecasts are widely used by state and local agencies for a variety of purposes. The most recent forecast was approved in May of 2012. Those results are shown in Figure 1.

Figure 1
Delaware Population 1790-2040



Source: Center for Applied Demography & Survey Research, University of Delaware
Delaware Population Consortium Population Projections, May 2012
US Bureau of Census 1790-2010

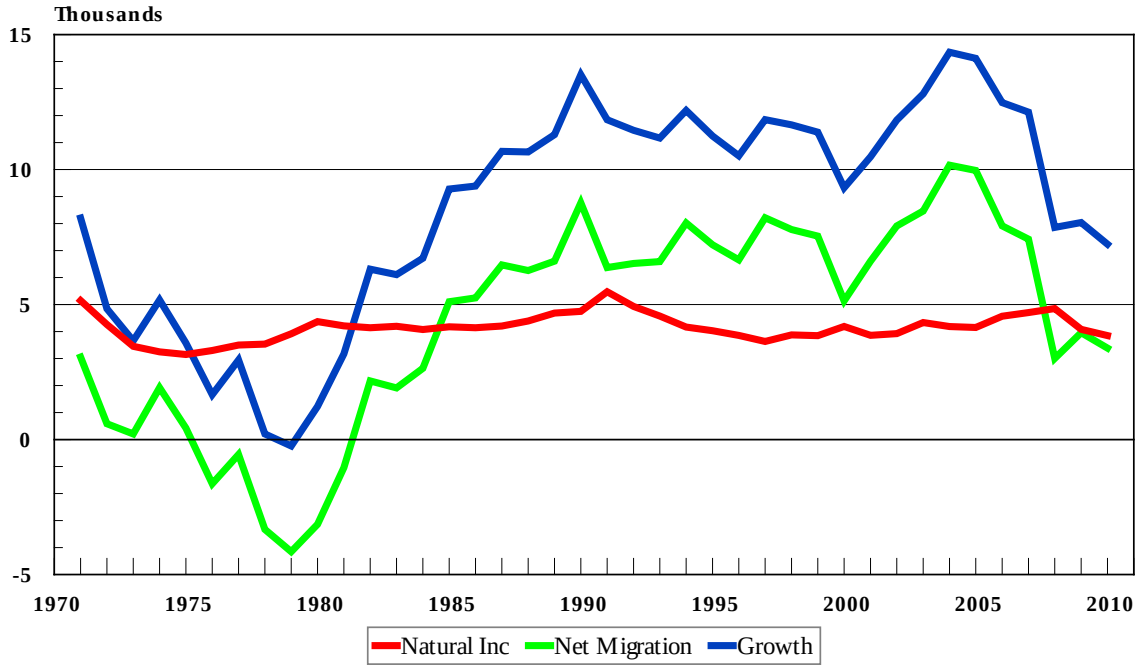
The last decade saw Delaware's population increase by 114,000, which was slightly less than that of the previous decade. While the numbers are only slightly smaller, they were derived from a larger base population. Thus, population growth rate in the first decade of the new century was in fact declining. This is evidenced in Figure 1, the total population is beginning to develop the shape of an exponential growth function in its maturing state. It is still growing but at a decreasing rate.

New Castle County's line (cyan) in the figure shows this effect in a more dramatic way since its population growth rate has been decreasing for some years, and by 2040 is still increasing but very slowly. Contrast this with Sussex County's population growth in the figure (red). At this stage in its development, the population growth rate is holding its own. That is, the growth rate is neither increasing nor decreasing at this stage. The steady arrival of retirees and the attraction of new jobs created by their new economic activity will guarantee the growth over the next 30 years.

Kent County's population experienced strong growth in the past decade, and in some years its growth rate exceeded even that observed in Sussex County. The combination of the opening of DE Route 1 made the commute to both Philadelphia and the employment centers of southern New Jersey tolerable. The attraction of reasonable home prices and much lower property taxes were central in the decisions of many of those households. However, the financial crisis essentially stopped this trend long before thousands of new housing units and communities were created. At this stage, it is possible that Kent County will return to its slow but steady rate of population growth.

To gain more insight into the way population grows over the centuries, the sources of growth are examined in more detail in the next section.

Figure 2
State of Delaware
Sources of Population Growth 1970-2011



Source: Center for Applied Demography & Survey Research, University of Delaware
US Bureau of Census, FSCPE 2012
Delaware Health Statistics Center, State of Delaware

Sources of Population Growth

Delaware growth is based on three factors: births, deaths, and net migration. For convenience, the number of births less the number of deaths in a given year is called the natural increase in the population. Net migration refers to the number of people moving into an area less the number of people leaving the state. These data are summarized for the State of Delaware in Figure 2.

The annual population growth in the State of Delaware is represented by the top line in the figure (blue). Over the 40 years represented in the figure, population growth annually has varied considerably. In 1979, the population actually declined by a small amount. This contrasts with 2005 when the annual increase in population approached 15,000. In the last year in the series, which examines growth from 7/1/2010 to 6/30/2011, the annual growth (7,237) has fallen to its lowest level since 1983 (6,715). That was the point where Delaware began its economic climb out of the recession of the early 1980's. The economic swings from the oil crisis in the early 1970's to the post 1990 recession all have an impact on state population growth. The recovery from the 2000 recession and the housing bubble which began to develop in 2003 are much in evidence in this figure as well. The bursting of the bubble which began in 2006 is obvious in the chart too.

The second line of interest in this figure is the natural increase in the population (red). In contrast to the volatility in the total annual increase in population, the natural increase component is relatively stable contributing roughly 4,500 persons per year. In the 1970's recession, natural increase was 3,151 people, an all time low. Only twice has natural increase in Delaware exceeded 5,000 once in 1971 (5,149) and in 1991 (5,473). In the most recent year it stands at 3,850 persons, the lowest in a decade. Over the next 30 years, natural increase will fall to 1,365 persons since births will manage a modest increase. But deaths, with an aging population, will increase significantly. Natural increase has tended to attenuate the year-to-year variation in total population growth. This will leave the state even more dependent on the other major component of growth, namely net migration.

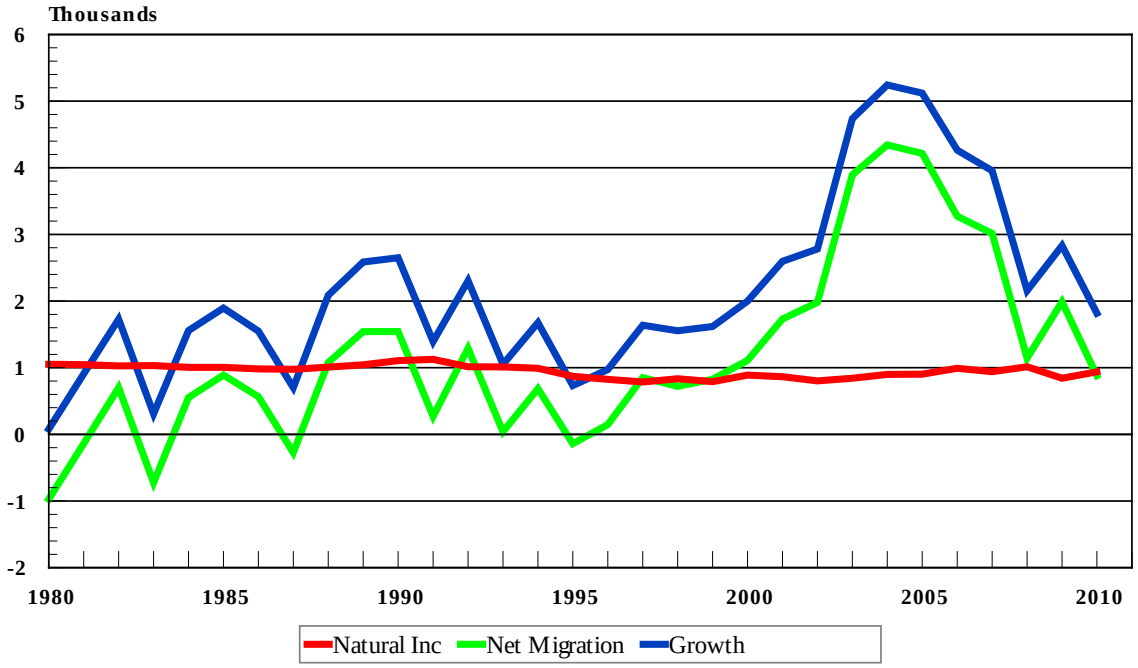
Net-migration is the wild card in Delaware's population calculus. It is the third line in the figure (green). It is easy to see that the shape of total population growth is largely dependent on the net-migration population growth or lack thereof. In the figure, net-migration has varied between a negative 4,154 in 1979 (more people migrating out of Delaware than moving into Delaware) to a positive 10,161 in 2004. Net-migration has actually been below natural increase since 2008. That last happened in 1984.

It is fairly clear that natural increase as a source of population growth will decline significantly in the future, and the demand for housing units to service that population will decline with it. What net-migration will be in the future is the real question. To better understand that issue, it is useful to examine the components of growth in each of the three counties.

Kent County

In the last decade, Kent County experienced major growth and added 32,619 to its population, easily exceeding the previous decade's growth of 16,000. Since the natural increase component was relatively stable, the growth was almost entirely due to net-migration. Kent has become more accessible since Route 1 was opened, and the journey to work has fallen noticeably for many. The cost of land in northern Kent County was favorable with respect to southern New Castle County, so housing in Kent was competitively advantageous in comparison to its alternatives. Looking ahead, Kent County is expected to grow by over 18,500 persons during this decade. This is well below the boom of the 2000's and more in line with historical trends. Net in-migration retreated from record highs in 2004 to traditional levels in 2010, so this forecast is likely conservative. Much will depend on the housing/labor markets in New Castle County and tax policies of states in the region within commutable distances. The components of growth for the last three decades are shown in Figure 3.

Figure 3
Kent County
Sources of Population Growth 1980-2011



Source: Center for Applied Demography & Survey Research, University of Delaware
US Bureau of Census, FSCPE 2012
Delaware Health Statistics Center, State of Delaware

Annual population growth varied between 79 persons and 2,781 persons from 1980-2002. As the housing bubble grew, that number reached 5,243 people in 2004. Since 2004 and the collapse of housing prices, net migration has treated to levels consistent with those observed before the onset of the housing bubble.

Natural increase varies little over the three decades contributing about 1,000 persons to population growth annually. Looking ahead, this component will decline slowly from current levels, reaching about 100 new persons annually by 2040. In other words, new growth will almost entirely depend on net-migration.

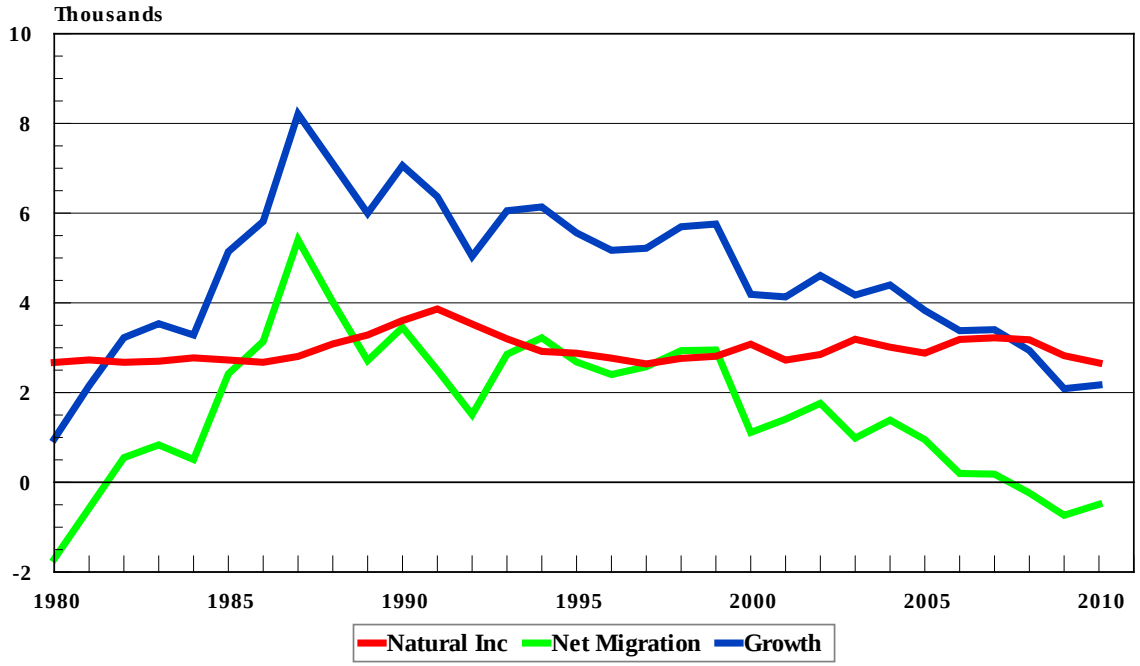
The Kent County population growth was coupled with significant net in-migration at levels four times historical rates as shown in Figure 3. That ended in 2009, and today is slightly higher than the historical rate.

Undoubtedly, the land use policies in New Castle County, the presence of DE Route 1, and the dissatisfaction with property prices and taxes in New Jersey all played a role in this in-migration. However, the land use policies have been in effect since 1997, the impact of DE Route 1 is a constant not a new factor, and any pent up demand related to housing prices and taxes has been deflated by the burst of the housing bubble. This would suggest a return to more normal levels that existed prior to the bubble. The two factors that have long driven net migration in Delaware are new employment opportunities and/or a change in retirement destinations. The data at this stage are unclear for Kent County.

New Castle County

In the past decade, New Castle County grew relatively slowly, adding only 33,716 to its population, which is far less than the growth rate in the other two counties. In the 1990's New Castle County grew by 59,910 people, a rate significantly higher than what is currently the case. There are many reasons for the decline in growth, but perhaps the most important are the lack of buildable land in northern New Castle County and the two big shocks to the labor market which significantly impacted job opportunities, the major driver of net in-migration. The first was the recession following the 9/11 attacks and the second was the financial recession driven by the over investment in finance-related jobs in New Castle County. Employment, like the housing industry, will only recover in the long run 5 to 10 years. Looking ahead, the population is likely to grow by 29,400 in the next decade, a lower growth path than it experienced over the past 20 years. In order for this to be fulfilled, net in-migration must resume and the job market must improve considerably. In addition, the housing market must resume some of its former vigor. The components of growth for the last three decades are shown in Figure 4.

Figure 4
New Castle County, Sources of Population Growth
1980-2011



Source: Center for Applied Demography & Survey Research, University of Delaware
US Bureau of Census, FSCPE 2012
Delaware Health Statistics Center, State of Delaware

The annual population growth (blue) in New Castle County shown in the figure is remarkably different from those for the state and Kent County. The growth varies between 967 in 1980 to a peak of 8,210 in 1987. Since the peak, annual population growth has been in a secular decline and is currently returned to levels not seen since 1981.

Natural increase in New Castle County exhibits the same stability over the long run as was already noted earlier for both the state and Kent County. The range is from 2,672 persons in 1980 to 4,019 persons in 1988. The expected natural increase in 2040 is 500 persons reflecting modest increases in births and significant increases in deaths.

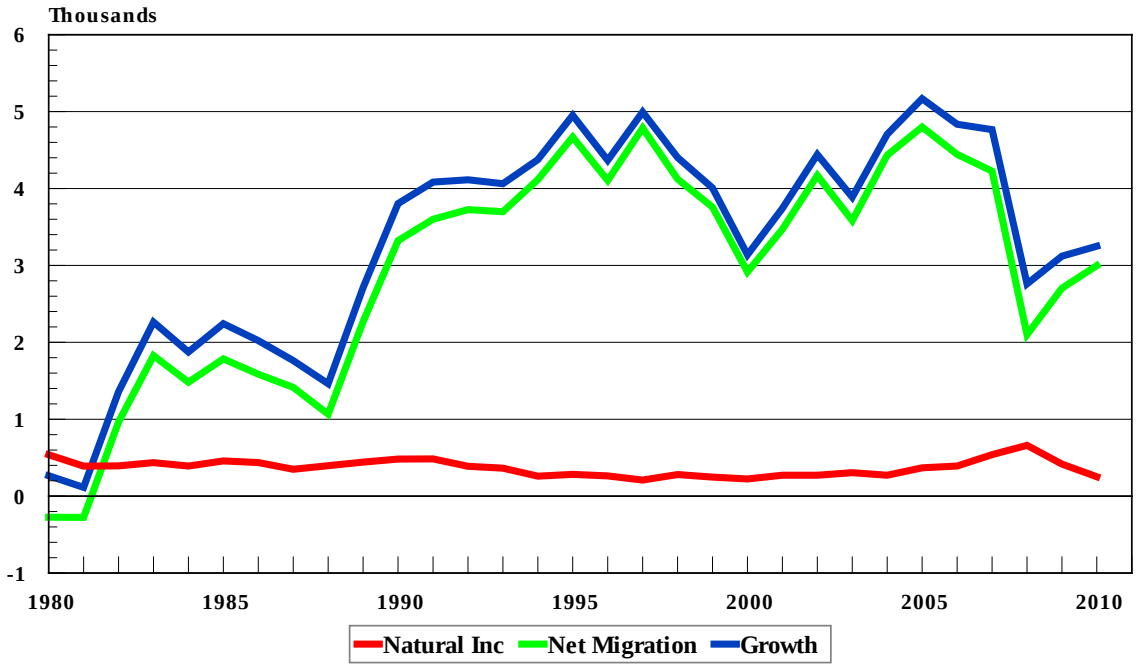
In contrast to the preceding figures, net in-migration (green) has been falling in New Castle County for more than two decades and has recently showed mild net out-migration mainly because of the weak labor market as shown in Figure 4.

For years growth in New Castle County has been governed by the availability of jobs or the net-migration of people here with the movement of firms to areas with more favorable business conditions. For New Castle County, that largely was confined at least initially to the financial and related sectors. The construction sector and related sectors like real estate services were driven by this job creation in the financial sector. When the housing bubble burst, the result was very negative for both the financial and the construction sector in the county with significant employment losses. At this point, the projections suggest an initial recovery within the five to ten year timeline to as many as 1,500 persons in net-migration annually and gradually falling back to the 500 level by 2040.

Sussex County

In the past decade, Sussex County continued to grow in population adding 38,700 during the past decade but less than growth of 44,000 in the 1990's. Sussex did see a drop in net in-migrants but still accounts for more than 90% of overall population growth. Sussex County will not grow without an annual influx of retirees and workers necessary to support this new population. Net in-migration did fall during the recession of 2008 to 2010. If history repeats itself, then the real estate problems will be settled over the next few years and the boomers will continue to flow into the county. Over the next decade, Sussex will likely add another 38,200 to its population, continuing the slowing trend that is already occurring. The open questions are the desirability of new housing located miles from the beach area, the increasing density and accompanying transportation issues, and the adequacy of labor to service this population, particularly in regards to health care. The components of growth for Sussex County are shown in Figure 5.

Figure 5
Sussex County
Sources of Population Growth 1980-2011



Source: Center for Applied Demography & Survey Research, University of Delaware
US Bureau of Census, FSCPE 2012
Delaware Health Statistics Center, State of Delaware

The annual population growth (blue) in Sussex County shown in the figure is distinctly different from those for the state and the other two counties. The growth varies between 114 in 1980 to a peak of 5,168 in 2005. Since the peak, annual population growth has slowed but has returned to the more normal levels that existed before the bubble.

Natural increase (red) in Sussex County exhibits the same stability over the long run and was already noted earlier for both the state and Kent County. The range is from 223 persons in 2000 to 660 persons in 2008. The expected natural increase in 2040 is 700 persons, reflecting increases in births and modest increases in deaths.

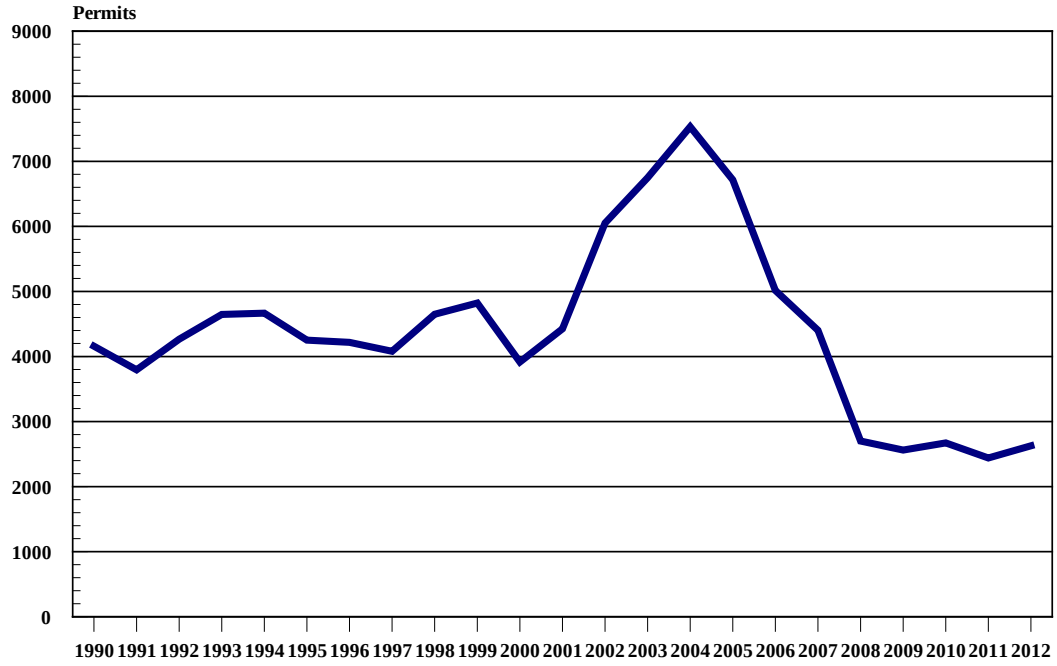
Net migration (green) is the major player in Sussex County. While there was a housing bubble in Sussex County, much of it appears to have focused on the second home market which is not included in the full-time resident population. The part-time population occupying these second homes account for in excess of 100,000 people. They, however, do impact the full-time and part-time employment which also impacts net migration. It appears that the increase in net migration that occurred prior to the bubble and the subsequent decrease are in similar magnitudes to those experienced in the 1990's. This would suggest a recovery in net migration from current levels to perhaps in the vicinity of 3,700 persons per year, then slowly declining to 2,700 by 2040.

The assumptions about net migration take into account the retiring baby boomers and their eventual deaths. It does not include actions the state might take with respect to property reassessment, changes in the pension exclusion, or other actions which would alter the attractiveness of Delaware compared to other retirement destinations.

Building Permits

The first decade of the 21st century was a tumultuous one for real estate in Delaware. Each of the three counties experienced volatility in different ways. Following the dot.com boom and bust as well as the recession that followed 9/11, all three counties experienced strong growth in building permits. Permits for single family homes in Delaware are shown in Figure 6.

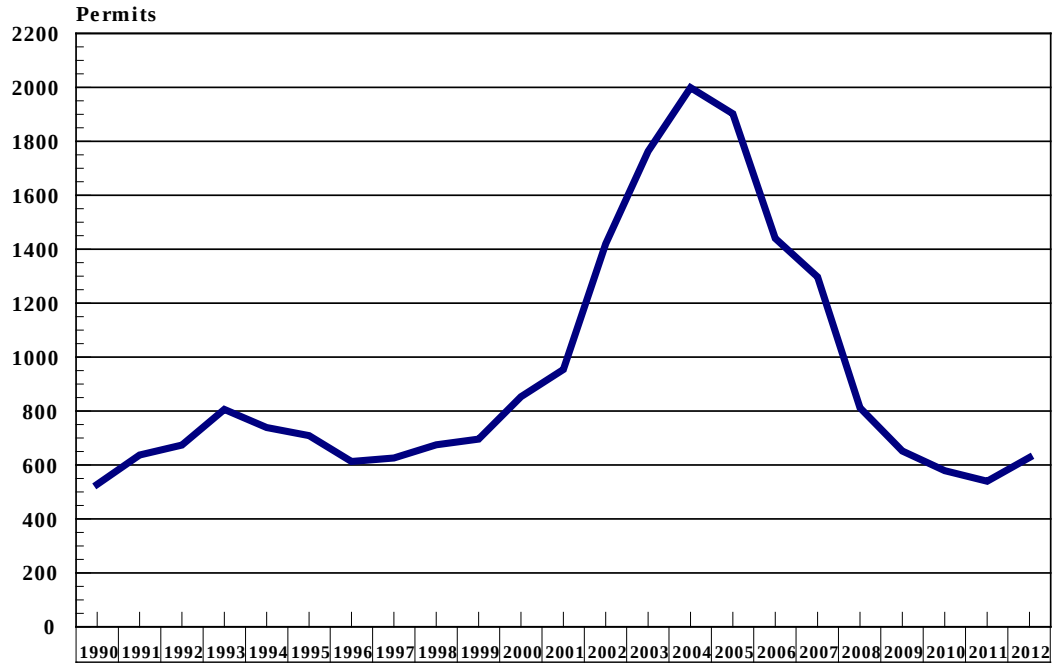
Figure 6
State of Delaware
New Privately Owned Single Family Housing Permits
1990-2012



Source: Center for Applied Demography & Survey Research, University of Delaware
US Bureau of Census, Building Permit Survey 1990-2012

From 1990 through the 2000 recession, building permits averaged about 4,500 per year. In 2001, the recovery began followed by rapidly accelerating permit issuance which peaked in 2004. From that point forward, building permit issuance declined although the numbers remained above traditional levels until 2007 when the financial crisis began. The number of permits then fell well below traditional levels stabilizing nearly 2,000 units below the normal level. Developers who were still in business had an oversupply of permits and appear to be working off the existing supply rather than applying for new permits. Some are undoubtedly held by developers who are no longer in business and others will lapse over time.

Figure 7
Kent County
New Privately Owned Single Family Housing Permits
1990-2012

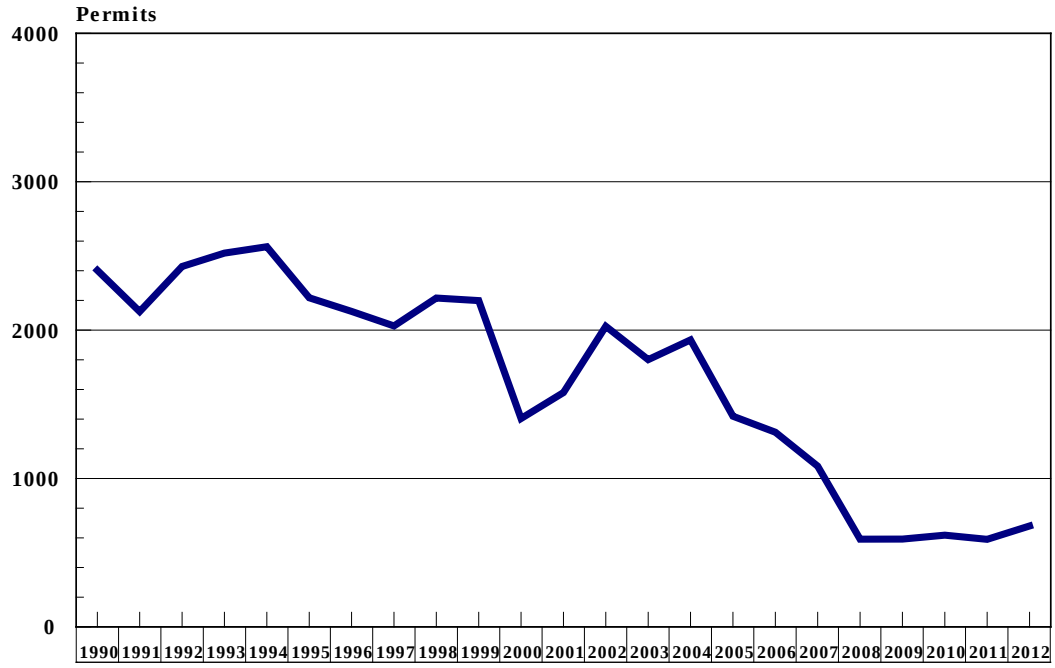


Source: Center for Applied Demography & Survey Research, University of Delaware
US Bureau of Census, Building Permit Survey 1990-2012

Kent County experienced a similar pattern with respect to building permit issuance. The bubble is readily apparent and peaked in 2004. It did not retreat to normal levels until 2008 and did not fall much below the activity observed in the previous decade. This is shown in Figure 7.

The interesting point about Kent County with respect to building permit activity is that it actually tripled from the levels of the previous decade during the bubble in contrast to the state which was up just 80%. The fact that permits did not fall much below normal levels could mean that migration and population growth will resume traditional levels as well.

Figure 8
New Castle County
New Privately Owned Single Family Housing Permits
1990-2012

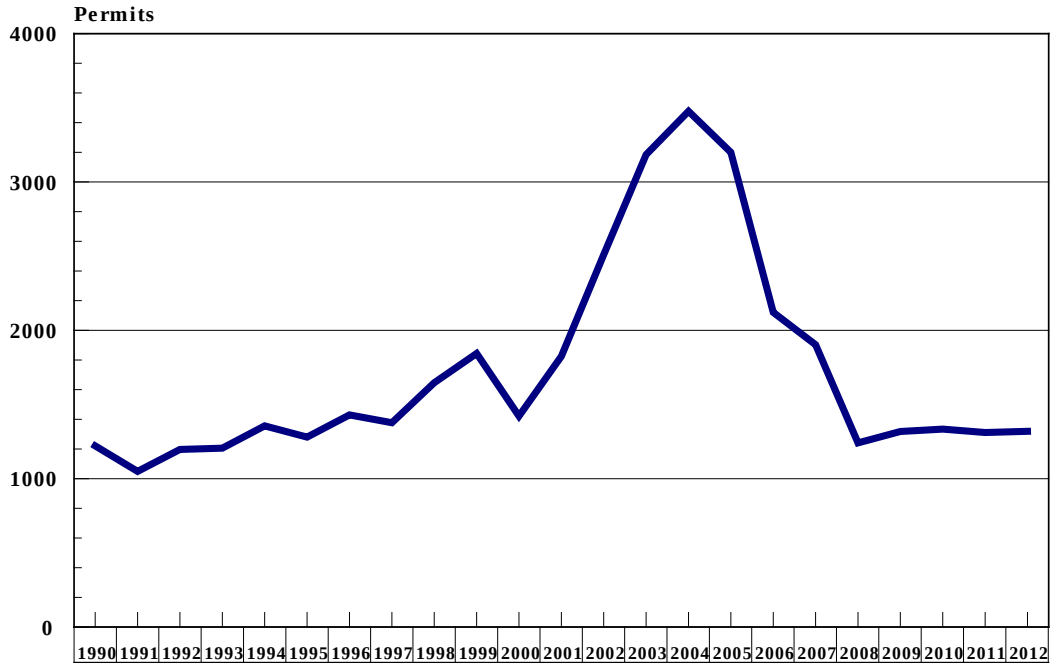


Source: Center for Applied Demography & Survey Research, University of Delaware
US Bureau of Census, Building Permit Survey 1990-2012

New Castle began the 1990's with some growth in permits, but that ended with the 2000 recession. The recovery began in 2001 and peaked in 2002 and then began a steady descent which ended the mini housing bubble in New Castle County. This is shown in Figure 8.

In contrast, permit activity in the other counties continued and peaked in 2004 at levels about twice as high as had been experienced in recent years. For those counties, the downturn in permits occurred sharply and ended in 2008 at roughly the same levels as had been experienced before the bubble. In New Castle County, the path has been straight downhill with current levels a fraction of those of the prior decade. This correlates well with the net migration findings for the county shown in Figure 4. In Sussex County, the building permit data largely mimic the results found in Kent County. These data are displayed in Figure 9.

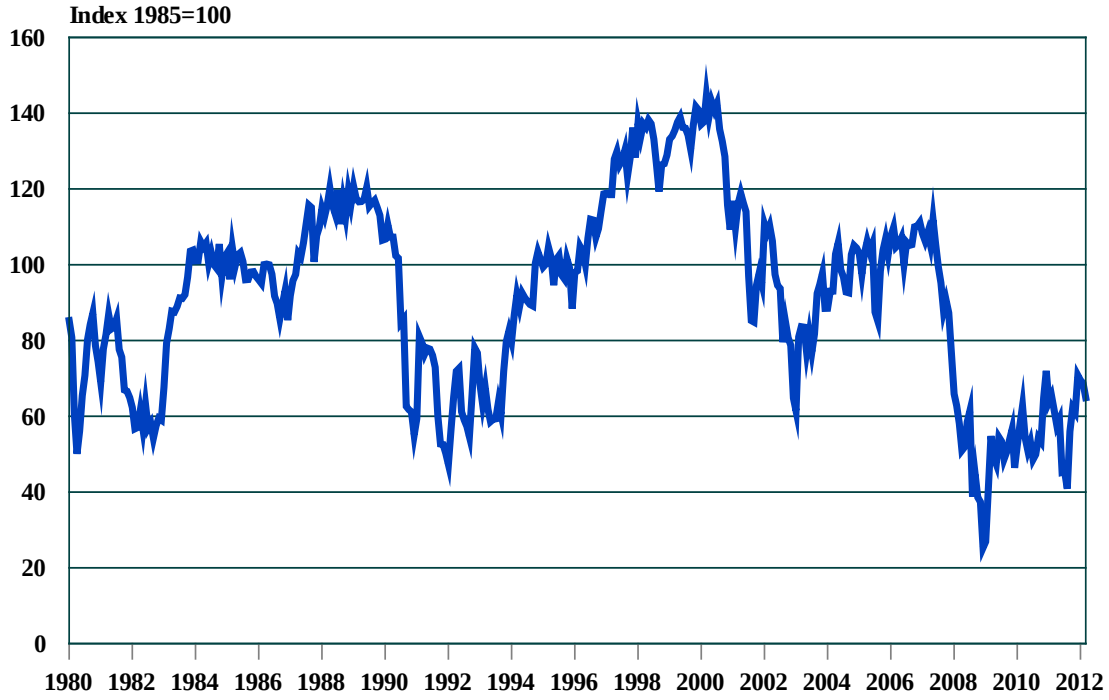
Figure 9
Sussex County
New Privately Owned Single Family Housing Permits
1990-2011



Source: Center for Applied Demography & Survey Research, University of Delaware
US Bureau of Census, Building Permit Survey 1990-2012

Building permits rose steadily for most of the 1990's through the dotcom boom. The market crash in 2000 and the terrorist attacks on 9/11 ended the expansion, only to launch a new and more impressive rise which tripled the number of permits issued annually by 2004. By 2008, permits began returning to levels seen in the mid 1990's. Since then, building permits issuance has stabilized at about one third of the peak rate observed in 2004. This pattern generally follows net migration from 2000 to 2008 (see Figure 5), however net-migration is more attenuated since it does not include the impact of second homes. When Sussex County goes through a major downturn in the realty market (there have been several), it recovers slowly over five years. Lower prices will help and the retirees will continue to come in increasing numbers as the boomers all retire and Sussex County continues to be attractive.

Figure 10
Consumer Confidence Index
1980-2012

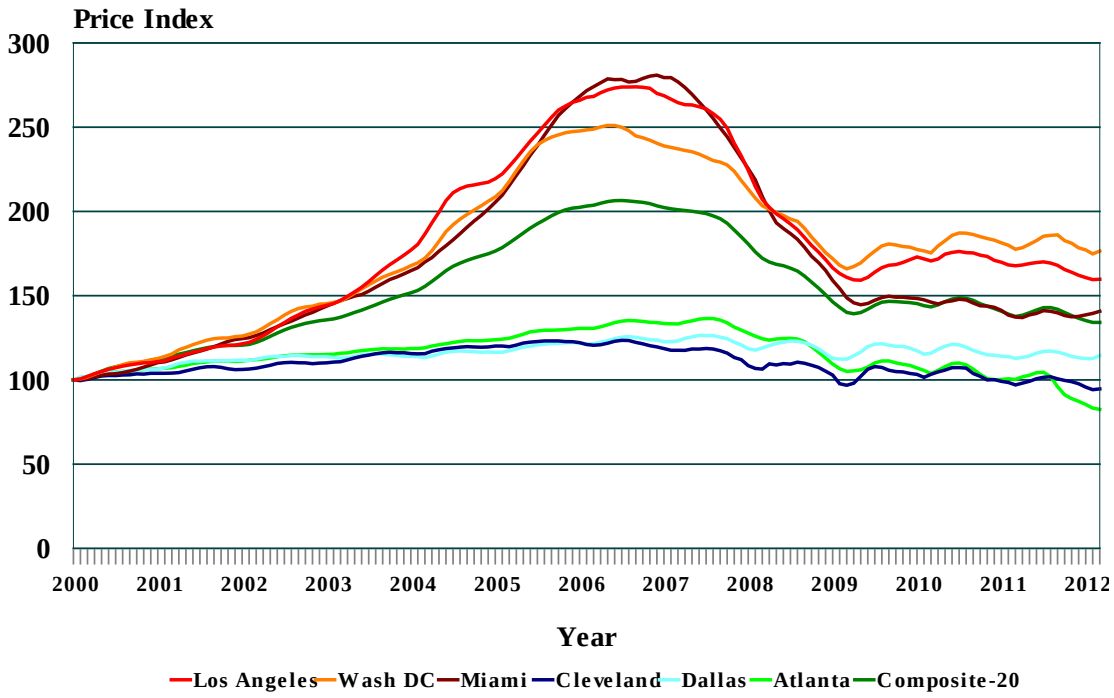


Source: Center for Applied Demography & Survey Research, University of Delaware
The Conference Board 1980-2012

Home Buyers

The purchase of a new residence or even a second home requires purchaser to make a number of financial calculations. They have to assess their current and future income. They need to evaluate their current debt load and how the purchase will affect their ability to service those obligations. The home buyer will need to consider the market value of their current home and its salability. These are just a few of a series of complex considerations will affect their willingness to enter into the decision process.

Figure 11
Case-Shiller Housing Price Index
2000-2012



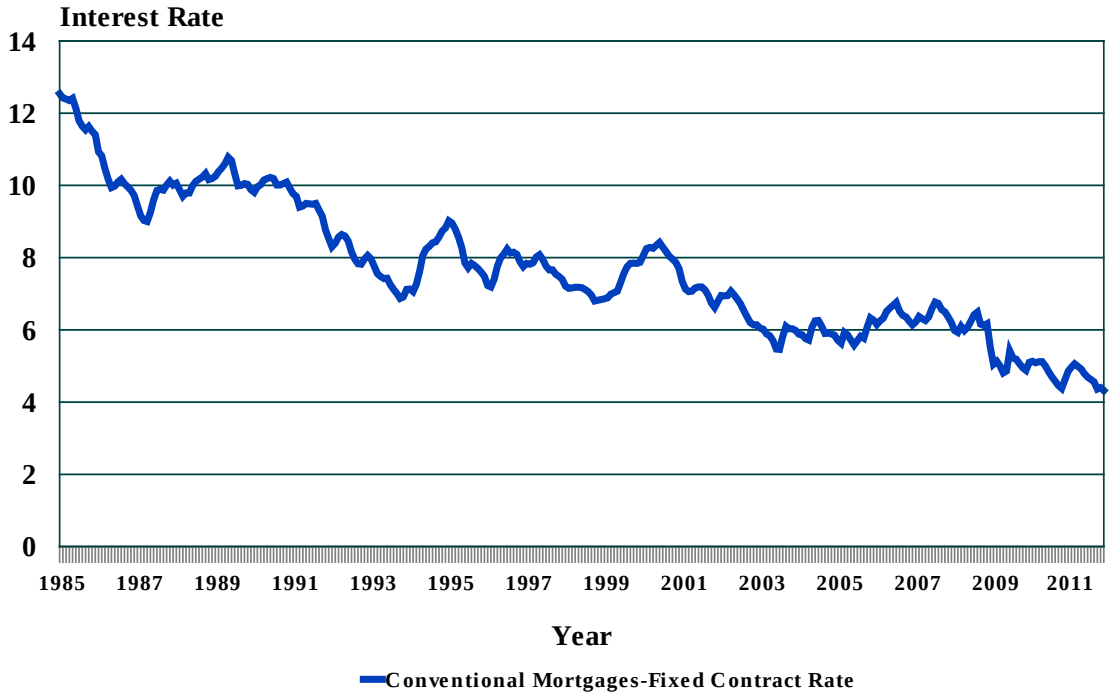
Source: Center for Applied Demography & Survey Research, University of Delaware
The S&P/Case-Shiller Home Price Indices 2000-2012

Prior to 2007, their confidence level was high, although not as high as prior to the dotcom expansion which ended in 2000 as shown in Figure 10. Housing prices were rising rapidly, so the new acquisition was seen as a wealth builder and a source of credit as equity rose quickly. Unfortunately, as 2008 arrived, prices were headed dramatically lower and with it consumer confidence. As homebuyers became less confident as they or their neighbors began to be threaten by the loss of jobs and the stagnation of incomes, the real estate market ground to a halt. Potential home buyers withdrew and those wishing to sell their current homes were left to watch its value decline even below the amount owed on their current mortgage. They were "underwater" and many decided to "toss the keys in the door" and walk away. The magnitude of this problem is shown in Figure 11.

The figure shows housing prices beginning to accelerate upward in most of the country between 2001 and 2002, after the 9/11 recession. That upward acceleration increased between 2004 and 2005. By 2006, prices were still at high levels but were beginning to moderate. Earlier in Figure 2 and Figure 6, it was shown that both net migration and building permits had peaked and were retreating by 2004-2005, nearly two years before prices peaked in 2006-2007.

As home prices continued to advance, more homebuyers became convinced that the sale of their current home at an excellent return and the reinvestment in a new or more expensive home made absolute sense. The economy was strong and unemployment rates in Delaware were under 4%. At the same time many renters and other first time homebuyers jumped into the market. In the beach areas of Sussex County some were willing to buy several homes with hopes of "flipping" them for a quick five figure profit in a matter of months. Many were fortunate to do that successfully. It should be remembered in every transaction in the housing market there is a buyer and a seller. Those that bet that prices would continue to rise and overbought provided a nice return for the sellers. Developers were able to sell their product at prices considerably above their costs as did those that sold their home at an inflated price and did not immediately invest all the profit in an even more expensive home. Much of this speculative behavior was made possible by fixed rate mortgage rates which were at decade lows. This is shown in Figure 12.

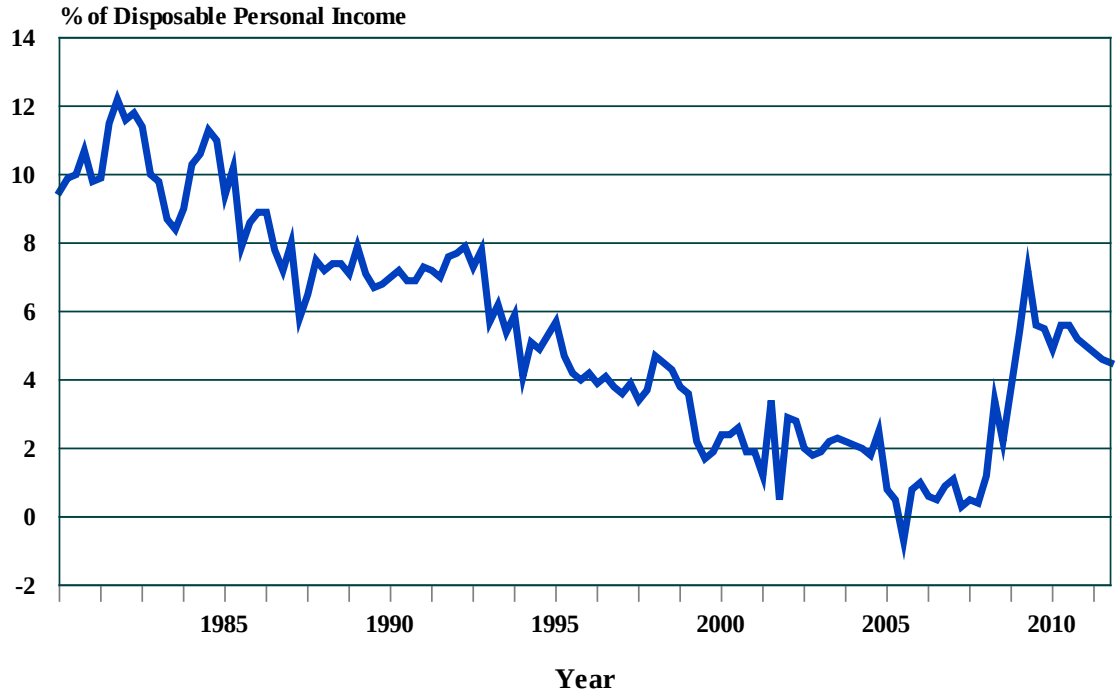
Figure 12
US 30-Year Fixed Rate Mortgage Rates
2000-2012



Source: Center for Applied Demography & Survey Research, University of Delaware
Federal Housing Finance Board 1985-2012

The figure shows a relative rapid drop in mortgage rates from 2000 through 2004 during which time housing prices accelerated the most. As rates began to rise in 2006-2007, housing prices began to fall and buyers became less aggressive. In 2008, even the falling rates could not help the housing market and rates are still trending down today. Referring back to Figure 10, at the point when housing prices and mortgage rates were falling, consumer confidence hit an all time low. Homebuyers and all consumers had a change in behavior driven by uncertainty of the future. This is reflected in the change in the savings rate shown in Figure 13.

Figure 13
US Personal Savings Rate
1980-2012

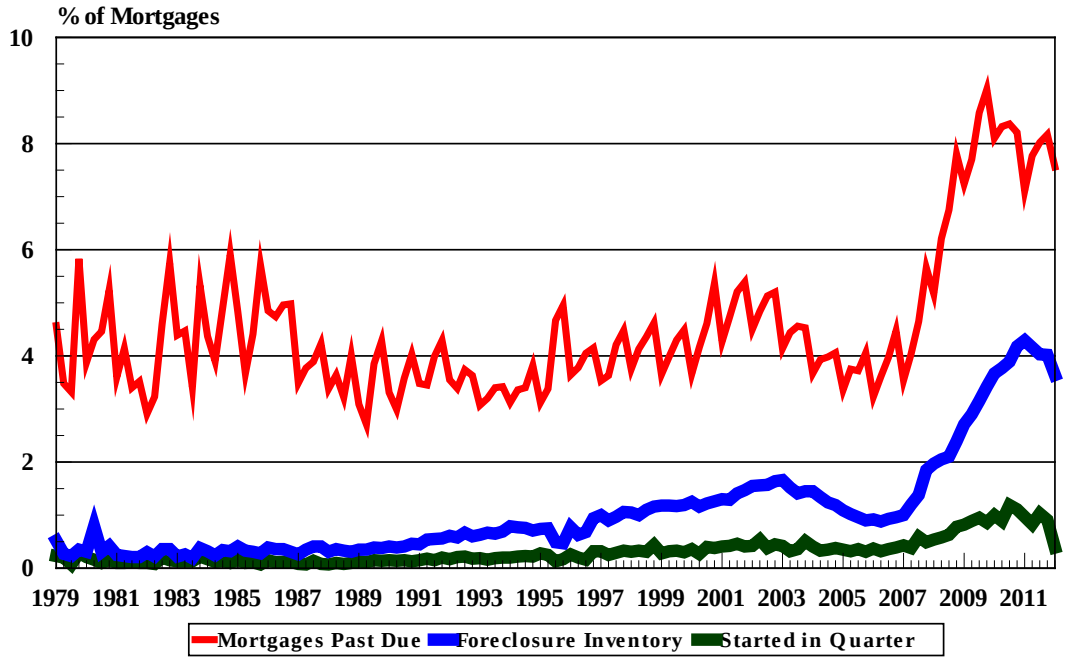


Source: Center for Applied Demography & Survey Research, University of Delaware
US Federal Reserve 1980-2012

As can be seen in the figure, personal savings was generally falling from 1982 until 2005. Instead of aggressively investing in housing, the end of the rapidly increasing housing prices prompted a move toward more conservative behavior and financial assets. By 2007, the impact was dramatic. The focus was on reducing debt and increasing savings. This behavior persists today although it peaked at the technical end of the recession in the 2nd quarter of 2009. The drop in consumption caused largely by the decrease in consumer spending has made the recovery very shallow. Reduction of debt and consumption is driving today's potential homebuyers.

The other area of concern is the financial fragility of many of those damaged in the collapse of housing prices, shown in the Case-Shiller Index in Figure 11. The foreclosures brought on by the collapse of the bubble continue at a high level at least with respect to the past. This is shown in Figure 14.

Figure 14
Mortgages Past Due and Foreclosure Rates in Delaware
1979-2012



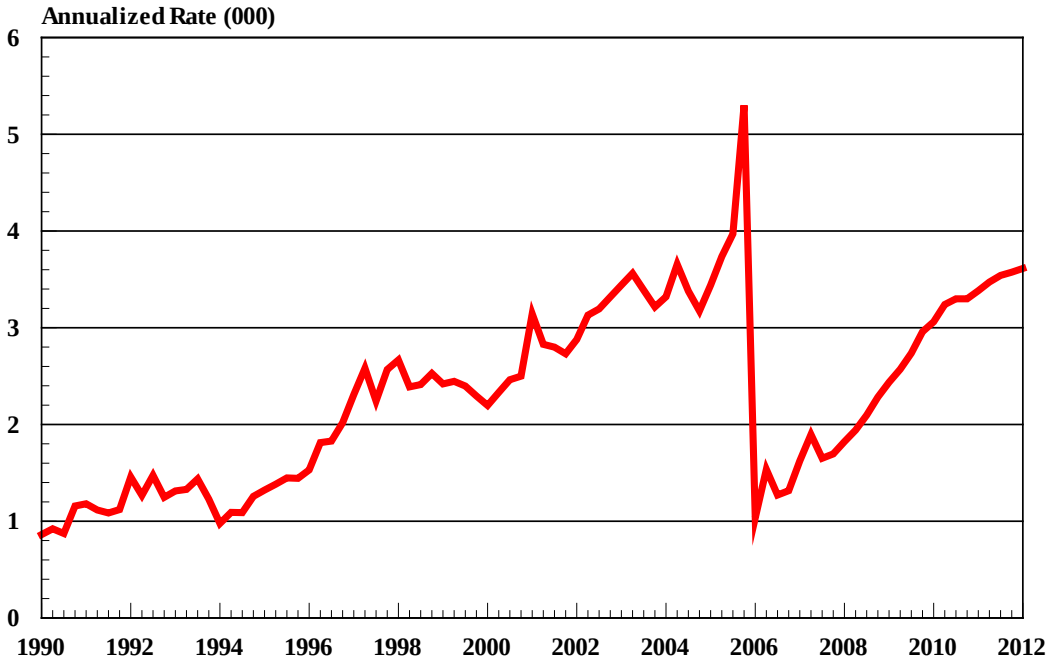
Source: Center for Applied Demography & Survey Research, University of Delaware
Mortgage Bankers Association 1979-2012

The severity of the financial crisis is quite evident in the figure. From 1979 to 2007 the percentage of mortgages in Delaware that were past due (red) never exceeded 6%. They were high during the severe recession in the early 1980's but never reached the levels seen as the financial crisis unfolded and the housing bubble collapsed. Even in the recession of the early 1990's the percentage of mortgages past due rarely exceed even half of current rates. The percentage of mortgages that were in foreclosure (blue) did rise steadily during the 1990's but reversed course and fell from 2003 to 2007.

Housing prices fell sharply from 2007 through the middle of 2009 when the recession officially ended and more homeowners were either "under water" or were unable to pay for economic reasons. The percentage of mortgages past due and the percentage of mortgages that was in foreclosure each increased dramatically. The percentage of mortgages that went into foreclosure in the particular quarter also rose steadily until the last quarter of 2010, more than a year after the recession ended. It was not until the first quarter of 2012 that there appeared to be improvement in this problem. Even with improvement in the foreclosure rate, it will probably take several years to resolve these properties and remove the downward pressure on prices. Downward pressure on prices will heighten the risk for those interested in buying a home and reduces the demand accordingly.

Since home mortgages are non-recourse loans, foreclosure in and of itself will not generally drive a person into bankruptcy. It will, however, affect one's credit rating for a number of years which will in all likelihood remove them from the ranks of homebuyers. The size of this group is shown in Figure 15.

Figure 15
Delaware Personal Bankruptcies
1990-2012



Source: Center for Applied Demography & Survey Research, University of Delaware
Administrative Offices of the US District Courts 1990-2012

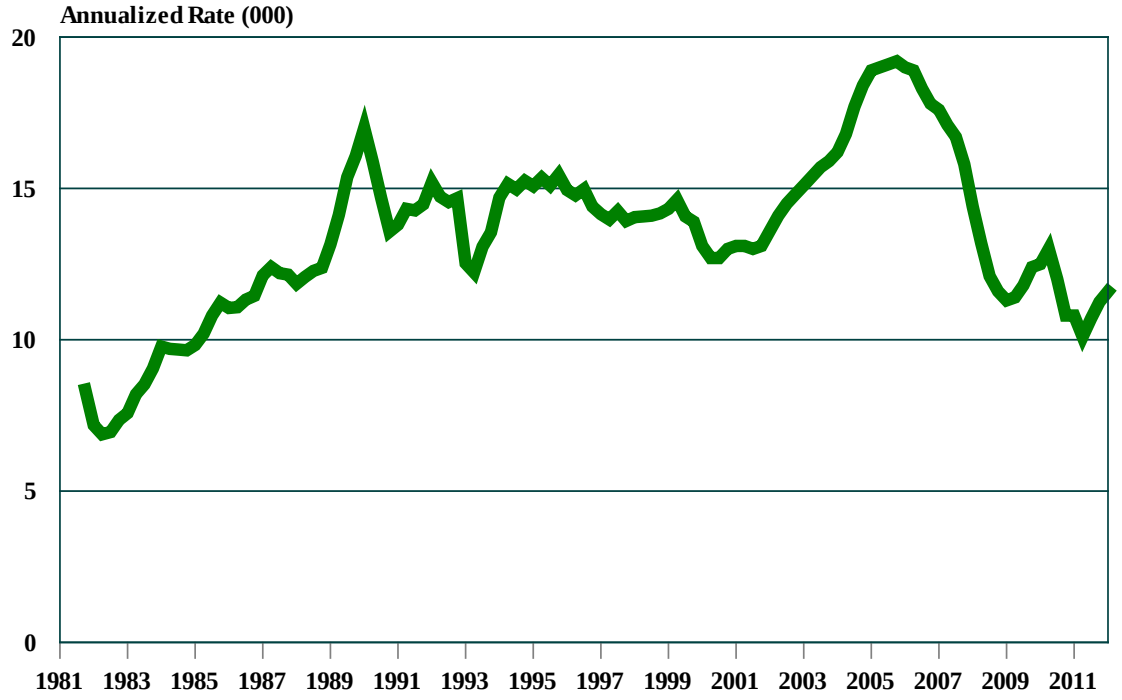
The figure clearly shows that bankruptcies increase largely independent of economic conditions. As the population increases, the number of bankruptcies will as well. With the aging of the population especially for that group under 65 years of age, medical bills are the principal reason for filing. In 2006, individuals could no longer apply for Chapter 11 bankruptcy and discharge their debts. The rate of increase post 2006 largely coincides with the financial crisis. There is clearly a sharp increase in the number of filings after 2007 when foreclosures rose rapidly. There is also a definite slowing in the numbers after 2011 which also corresponds to the falling of foreclosures and past due mortgages. While this is speculation, it is clearly a piece of the financial puzzle that is the housing market.

Home Sales

Figure 16 shows the annualized rate of existing home sales over the past three decades. It has been somewhat volatile even before the housing bubble developed. In the 1980's, home sales moved in a steady rate upward as the population of the state grew, aided significantly by net migration. In 1989, the state and the country experienced a mini housing bubble at least with respect to the current situation. That too collapsed in 1990-91 and was followed by a recession. Housing prices fell considerably as much as 30% here and elsewhere. Predictably a recovery occurred and sales stabilized at 15,000 units per year. Sales once again declined in the dotcom and 9/11 recession. The baseline of 15,000 units was recovered in 2003 and did anything but stabilize at that level again.

This was the beginning of the bubble for prices as well. Existing unit sales did not return to 15,000 annually until 2008 by which time the recession and the financial crisis was under way. The slide stopped at the end of the recession and recovered somewhat before falling to levels not seen since 1985. The last two quarters in 2011 and the first quarter of 2012 show some limited expansion but are still 3,000 units below the base of 15,000 sales per year.

Figure 16
Delaware Existing Home Sales
1990-2012 (Moving Average)

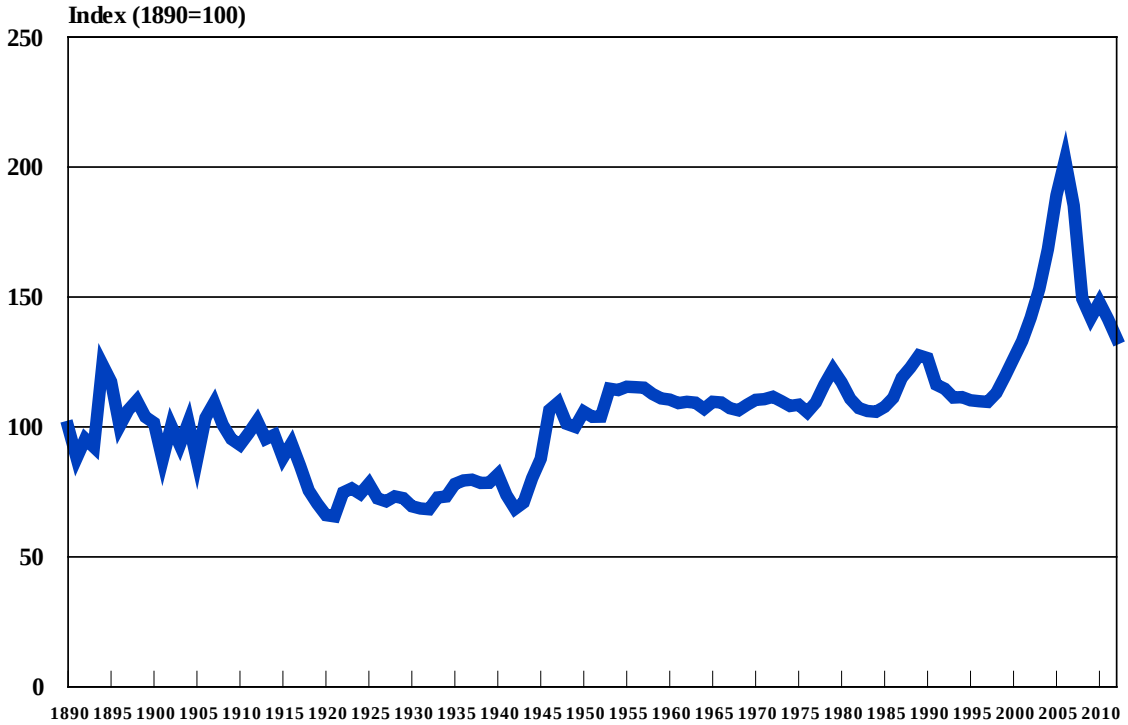


Source: Center for Applied Demography & Survey Research, University of Delaware
National Association of Realtors 1981-2011

Curiously, the 20% gap between today's existing home sales is very similar to the gap between today's statewide building permits and the rate that existed over the past decade or so. This suggests that a kind of gridlock exists which is preventing a normal level of existing sales and the construction of new units. Certainly the reduction in the annual growth of population from in the vicinity of 12,000 to 8,000 is not helpful. This is largely a lack of net migration into the state. Housing prices and jobs are both at work here.

In Figure 17, the real price of US housing since 1890 is displayed. Robert Shiller raised the question as to whether the current correction in housing prices may have more to go. The chart shows a base of roughly 110 over the past 120 years. Even the last two housing mini bubbles returned to near that level.

Figure 17
US Real Home Prices
1890-2012

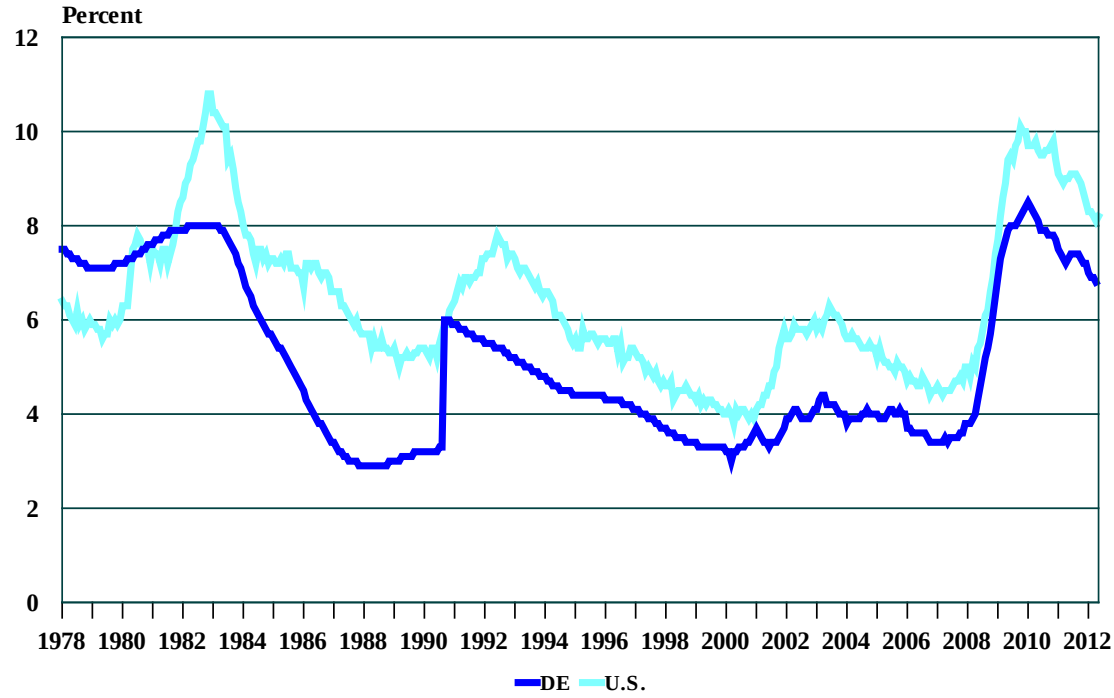


Source: Center for Applied Demography & Survey Research, University of Delaware
Robert J. Shiller, Irrational Exuberance 2nd. Edition, Princeton University Press
The S&P/Case-Shiller Home Price Indices 2000-2012

When Shiller offered this prospect, the index was at approximately 149 in 2008. Today it has fallen further to an estimated 134. It seems that there may be more to go. This will make potential buyers, who have a choice, more likely to delay the decision. In some places in the US prices have risen. However they are far more likely to be in those areas which were devastated by the bubble and had lost as much as 60% of their purchase price.

The overhang of foreclosures adds even further credence to the likelihood of further price declines. In Sussex County sales are taking place but they tend to be at least 30-40% below prices before the bubble. In recent months, nearly 25% of all sales that are taking place foreclosures and/or short sales. This tends to depress sales to say the least. It may take three or four more years for the foreclosure process to fully unwind.

Figure 18
Delaware and US Unemployment Rates
1978-2012

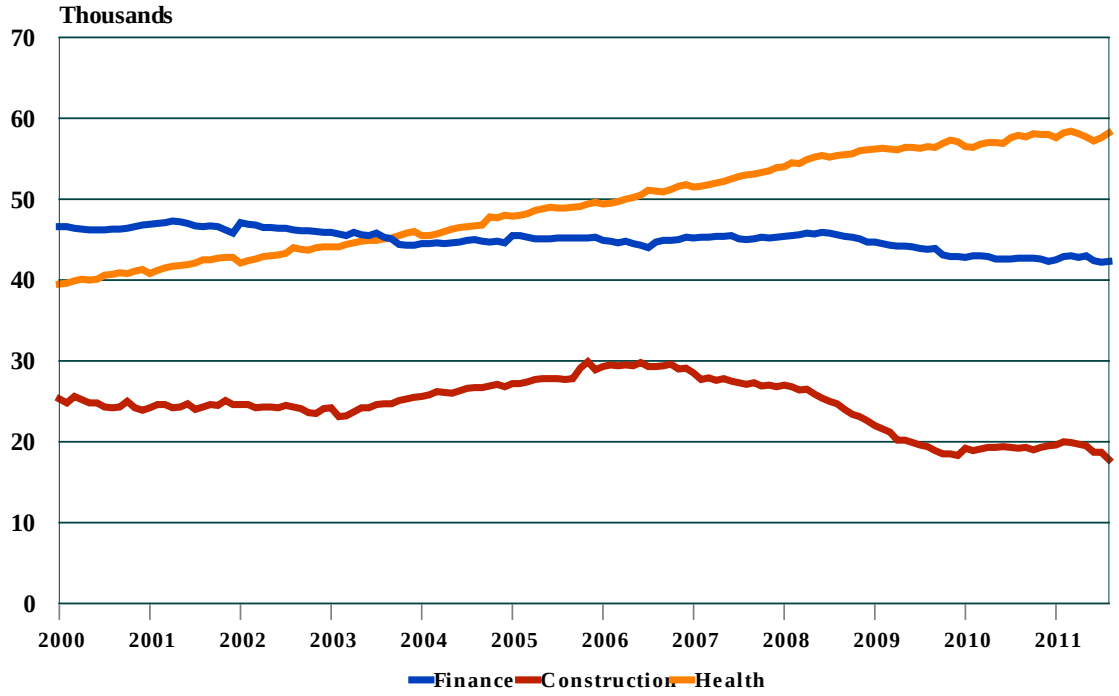


Source: Center for Applied Demography & Survey Research, University of Delaware
US Bureau of Labor Statistics, 1978-2012

The other issue is how long it will take the US and Delaware's economy to recover more normal levels of employment. This will be even more important for potential homebuyers since their employment prospects will affect their confidence as well as their net worth. The current unemployment rates are found in Figure 18.

The figure shows that Delaware has experienced 8% unemployment before and like this occasion the period was relatively short. The recovery which began in 1984 took 3 years to reach 4% which has tended to be full-employment in Delaware. In 1990, when the unemployment increased over 2% in one month, it took nearly six years to reach 4%. In both of the early periods the financial sector was expanding but this is no longer the case. This is shown in Figure 19.

Figure 19
Health, Finance, and Construction Employment in Delaware
2000-2012



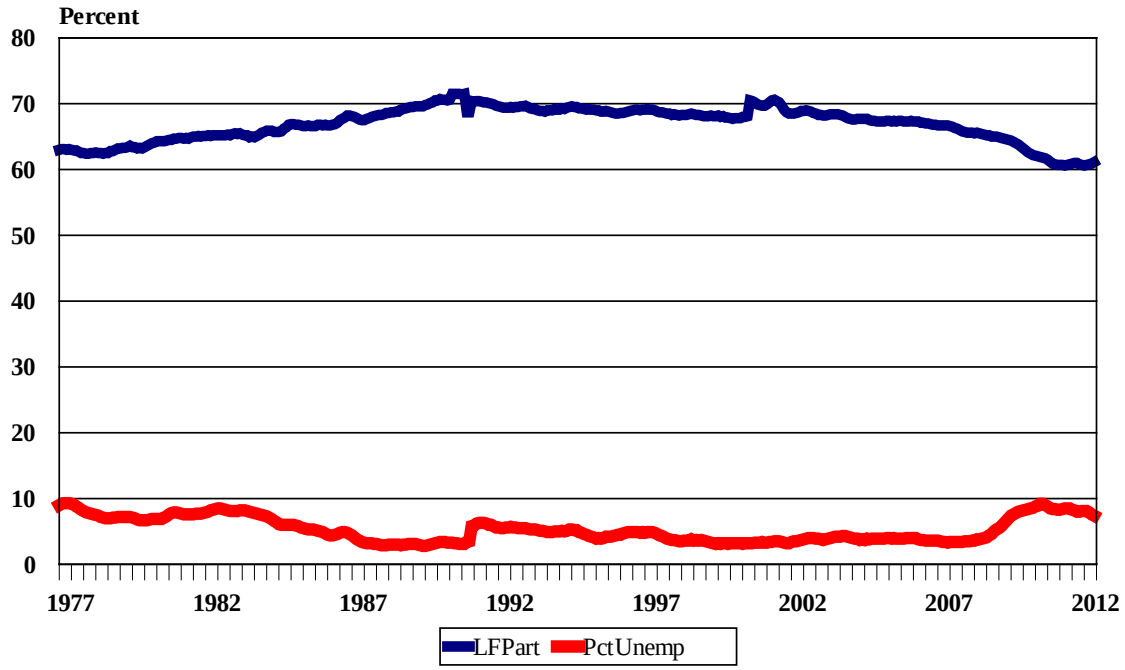
Source: Center for Applied Demography & Survey Research, University of Delaware
US Bureau of Labor Statistics, 2000-2012

The figure describes a very different profile for each industry. The Healthcare Industry is expanding rapidly in order to care for the aging baby boomers. It is largely dependent on labor rather than capital to perform many of the jobs. That may change as costs force the industry to become more productive. However this trend is likely to continue and contribute to reductions in unemployment.

The financial industry has been shrinking in terms of employment as they react to the changes in the regulatory framework, the reduction in credit risk, and the need to increase productivity. This is likely to continue with the developments in Europe and the Euro Zone in particular. Mergers and acquisitions have already affected Delaware and will continue to do so. In general, the financial sector also tended to pay higher wages than the healthcare sector.

The construction industry has been crushed by the housing bubble. Currently, their employment is a third lower than the peak and is even 20% lower than reported during the pre-bubble period. The loss of one third of the jobs in this sector not to mention the related sectors is also one third of those unemployed. It is hard to see employment in this sector increasing in a sustained way until the housing market begins to recover. On the other hand, it is difficult to see how the housing market recovers without substantially reducing unemployment.

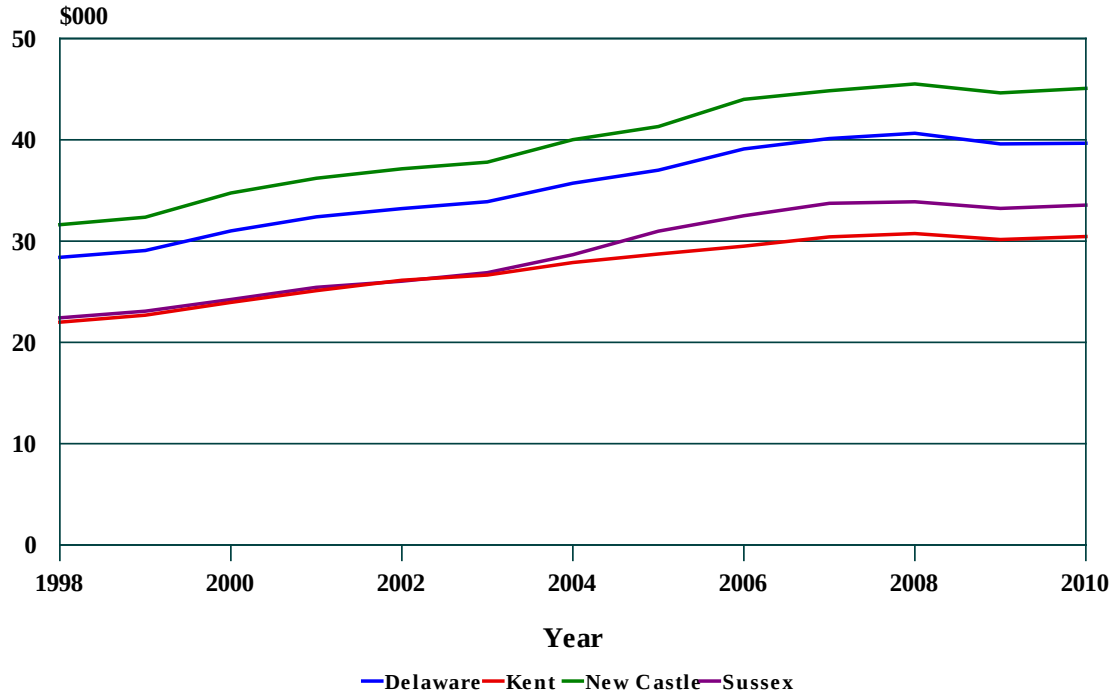
Figure 20
Delaware Labor Force Participation and Unemployment Rates
2000-2012



Source: Center for Applied Demography & Survey Research, University of Delaware
US Bureau of Labor Statistics, 2000-2012

Another point of concern about the labor market is the trend in the labor force participation rate. The trend is clearly visible in Figure 20. The labor force participation rate measures the percent of the 16-and-over population that is connected to the labor force with or without a job.The line at the top of the figure (blue) shows that the rate was rising in the late 1970's and 1980's particularly from women entering the workforce. That trend was stable at 70% for the 1990's. It then began declining even as the housing bubble was growing. By 2008 as the recession took hold the rate fell to about 60% and has remained there until the unemployment rate stabilized and began to trend down in 2010. The importance of this index is that it shows what part of the population is generating wage and salary income, the major source of household income. This income flow will largely determine whether people are able to enter into the home buying process.

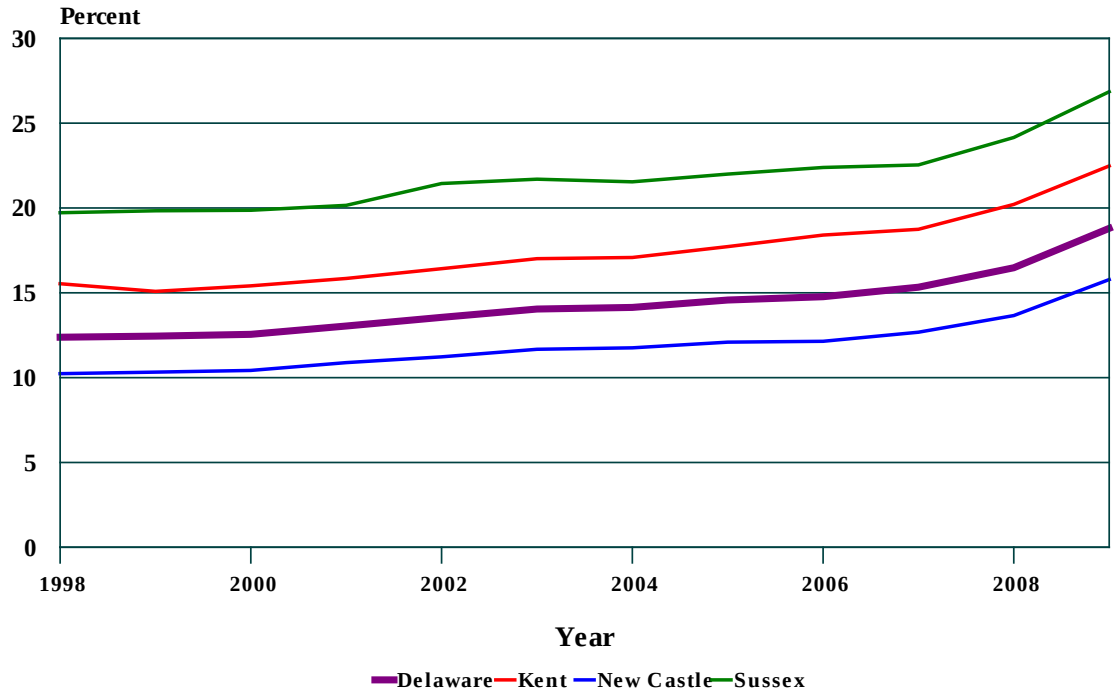
Figure 21
Delaware per Capita Personal Income
1998-2010



Source: Center for Applied Demography & Survey Research, University of Delaware
US Bureau of Economic Analysis, 1998-2010

Per capita personal income is one measure of the income of Delaware residents. It essentially measures total income from all sources e.g. wages and salaries, dividends and interest, pensions and social security, and any other payments from government. That is divided by the total population to obtain per capita income. Figure 21 shows the nominal per capita income of Delaware residents by county. From 1998 through 2007, per capita income was rising steadily. By 2008, per capita income was falling or flat at best for the next two years. Consider that this does not adjust for roughly 1.5% to 2% of inflation. In reality, incomes per capita income has been slowly falling. This affects household's ability to consume and to save. It also will impact their home buying behavior and their confidence in the future.

Figure 22
Delaware Transfer Payments – Percent of Personal Income
1998-2010



Source: Center for Applied Demography & Survey Research, University of Delaware
US Bureau of Economic Analysis, 1998-2010

Another factor, namely transfer payments, are also of concern. Transfer payments are part of personal income. Unlike wages and salaries they are "entitlements" provided by government such as social security, unemployment compensation, and government pensions.

Figure 22 shows the percentage of Delaware personal income that depends upon transfer payments by county and for the State of Delaware. The second line on the graph (thicker and purple) represents the state. Transfer payments as a percent of personal income have been slowly increasing until late 2007, when the housing bubble ended and the financial crisis began. Of course unemployment compensation influences these numbers, but labor force participation rates were also decreasing, and people were retiring if they qualified for social security. All of these factors caused transfer payments to accelerate as shown by the increasing slope of the curves.

Recently, the federal government stopped the extended unemployment benefits that had been raised to 99 weeks. This will certainly decrease the rate of increase in these curves, but that alone will not change the overall trend. More and more people (the boomers) will retire and the transfer will become a larger share of income. This will impact potential home buyers, particularly those who are in retirement and drawing down their savings. More importantly, the degree of dependency on transfer payments will begin to affect the government's ability to pay both at the federal and the state level.

In the next section, the discussion will shift to demographic factors that impact the Delaware housing market. While the issues of population growth, net migration, and building permits have been discussed here, there are still others that have considerable importance. Among those are household formation, age distribution, and tenure (own or rent).

Household Formation and Ownership Rates

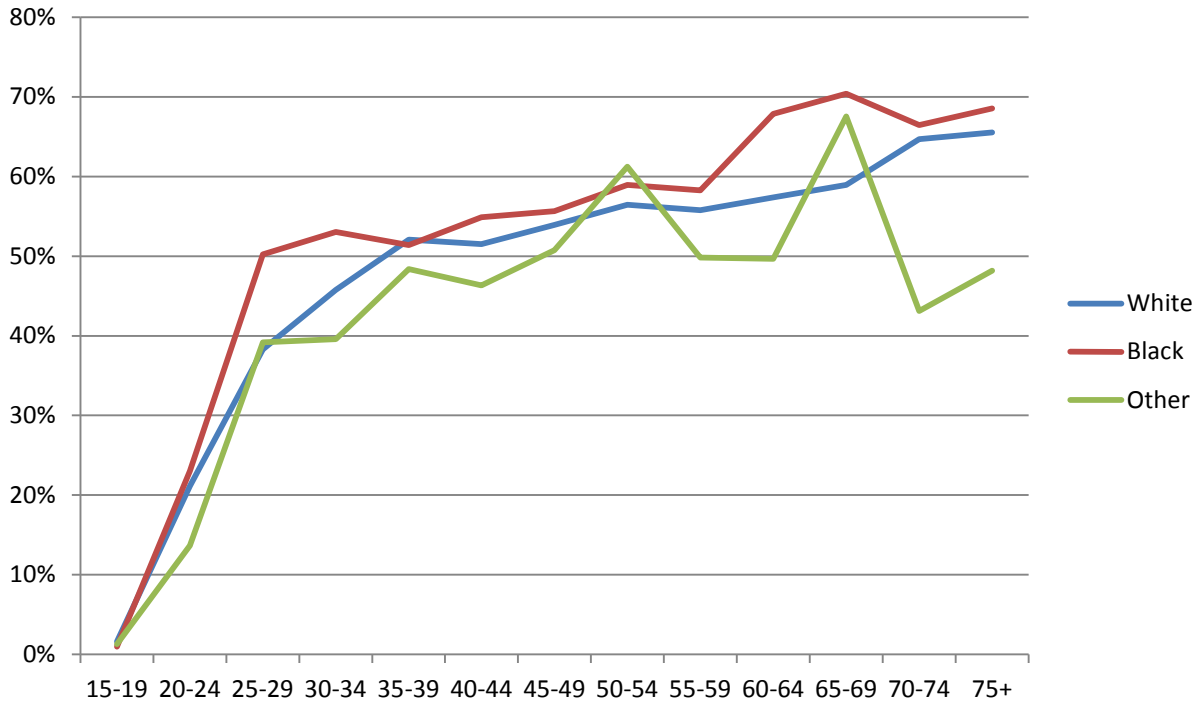
This section presents the historical trends in the rate of household formation and home ownership. Of course, the factors in the previous section influence these rates, but the rates are particularly important since they directly describe the population's demand for housing and ownership. By discussing the rates independently over time, a clearer picture can be made regarding the changing demand for Delaware housing. This information will be critically important when forecasting the demand for new residential construction.

Household Formation

The chance that a person in a particular demographic group becomes the head of a household is called the headship rate.[4] The headship rate is calculated by the total number of household heads in demographic group divided by the total number of persons in that demographic group not living in group quarters. Figure 23 shows the average headship rates for Delawareans between 2008 and 2010.

[4] For a person to be considered the household head, he or she must be "the household member living or staying [in a residential unit] in whose name the house or apartment is owned, being bought, or rented. If there is no such member, any household adult may be [designated as the household head]." By construction, there is only one household head per occupied housing unit.

Figure 23
Average Headship Rates in Delaware by Race
2008 to 2010



- Source: The Center's own calculation using microdata from the 3-year, 2010American Community Survey.

In general, headship rates increase with age, reaching a peak at 75 years of age. These peak rates are respectively 66%, 69%, and 48% for persons of white, black, and other race, all of whom are at least 75 years of age. If these rates stay constant, we can expect a large increase in the demand for HUs as the population ages. Table 1 presents detailed estimates of the state's headship rates by age and race groups for each year from 2006 through 2010.[5]

[5] A person is labeled "White" if they identify themselves as white, regardless of Hispanic origin. A person is labeled "Black" if they identify themselves as black, regardless of Hispanic origin. All other persons are designated as "Other race".

Table 1
Headship Rates for Delaware: by Race, Year, and Age Group
2006-2010

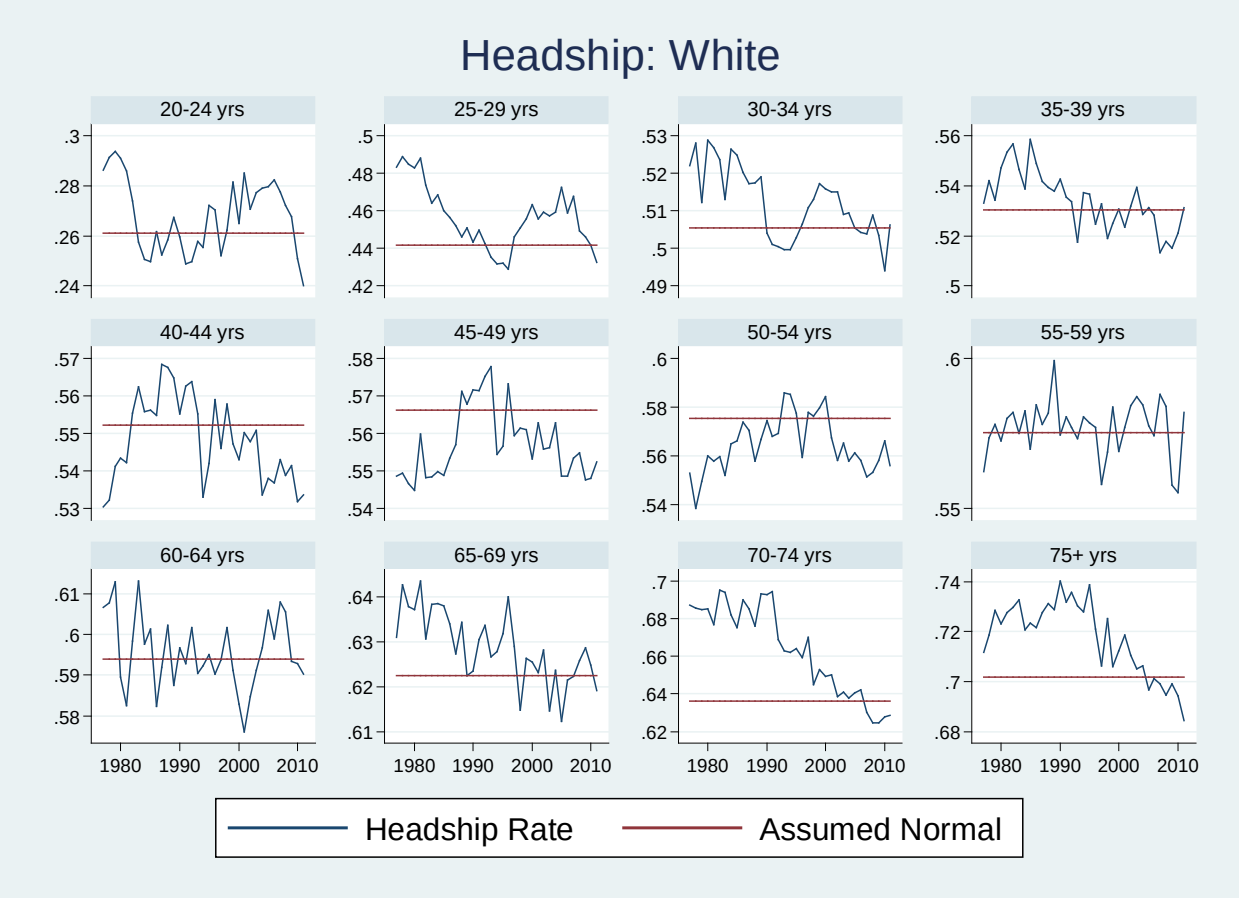
		Age Group												
Race	Year	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+
White	2006	1.3%	20.4%	45.1%	51.3%	54.2%	54.0%	53.5%	57.0%	57.0%	60.7%	59.6%	61.3%	60.8%
	2007	1.3%	19.1%	43.1%	47.7%	51.9%	55.5%	53.6%	56.1%	55.1%	54.2%	58.0%	60.1%	64.2%
	2008	2.8%	22.1%	38.1%	45.9%	50.3%	51.9%	53.9%	57.8%	55.8%	57.5%	60.7%	64.8%	58.7%
	2009	1.0%	15.1%	41.5%	47.3%	53.7%	51.1%	53.7%	51.7%	55.0%	59.9%	53.7%	63.2%	64.7%
	2010	0.9%	19.6%	36.8%	41.5%	50.4%	50.5%	52.3%	57.5%	54.7%	53.0%	59.3%	60.5%	59.9%
	2008-2010	1.6%	21.1%	38.3%	45.8%	52.1%	51.5%	53.9%	56.5%	55.8%	57.4%	59.0%	64.7%	65.5%
Black	2006	5.2%	18.3%	42.7%	50.6%	61.1%	49.4%	53.6%	47.2%	63.8%	59.5%	46.3%	64.6%	77.4%
	2007	0.2%	25.7%	50.8%	54.2%	66.4%	47.5%	58.7%	54.7%	61.6%	72.7%	46.7%	56.4%	56.4%
	2008	1.9%	24.6%	53.4%	45.7%	52.2%	54.7%	53.3%	55.9%	59.7%	66.1%	77.5%	62.0%	68.7%
	2009	0.8%	12.8%	42.6%	55.2%	38.5%	54.4%	55.6%	61.6%	59.7%	68.9%	72.5%	60.7%	56.7%
	2010	1.6%	23.9%	49.8%	46.0%	57.2%	48.3%	54.7%	53.3%	46.8%	65.8%	60.4%	59.3%	66.2%
	2008-2010	1.0%	23.0%	50.2%	53.0%	51.4%	54.9%	55.7%	58.9%	58.3%	67.9%	70.4%	66.4%	68.5%
Other	2006	8.0%	10.4%	44.0%	58.6%	43.5%	34.3%	43.8%	49.3%	63.3%	16.7%	50.6%	18.1%	39.8%
	2007	2.2%	16.4%	39.1%	55.9%	57.9%	50.8%	40.6%	60.7%	64.0%	33.4%	86.9%	27.3%	50.5%
	2008	1.4%	17.7%	45.1%	44.6%	51.0%	45.4%	59.9%	73.1%	40.7%	33.3%	67.1%	43.0%	30.7%
	2009	1.0%	15.8%	28.7%	39.4%	45.1%	36.6%	45.0%	49.5%	62.3%	47.5%	71.5%	32.9%	59.1%
	2010	1.3%	8.2%	41.4%	41.5%	58.0%	49.8%	48.6%	51.7%	56.5%	48.3%	59.6%	45.9%	47.9%
	2008-2010	1.3%	13.7%	39.2%	39.6%	48.4%	46.3%	50.8%	61.2%	49.8%	49.7%	67.5%	43.1%	48.2%

- Source: The Center's own calculation using public use microdata from the American Community Survey's 1-year estimates, 2006-2010,and from the 3-year estimates for 2010 (2008-2010). Estimates from the three year sample are more reliable than the single year estimates.

Of course, it is not clear that headship rates will remain constant in the future. Figure 23, Figure 24, and Figure 25 respectively show the annual change in headship rates for each age group for white persons, black persons, and persons of another race from 1977 to 2011. The figures clearly indicate that the headship rates change over time, even within the same age-race groups. Prior to 2008, headship rates had been rising for white and black persons in the three cohorts aged between 20 and 35 years old. The recent recession clearly affected these groups as evidenced by the abrupt contraction in the headship rate. The headship rates of white persons over the age of 65 have been falling fairly steadily since the 1990's, indicating that fewer proportion of older persons are independent.

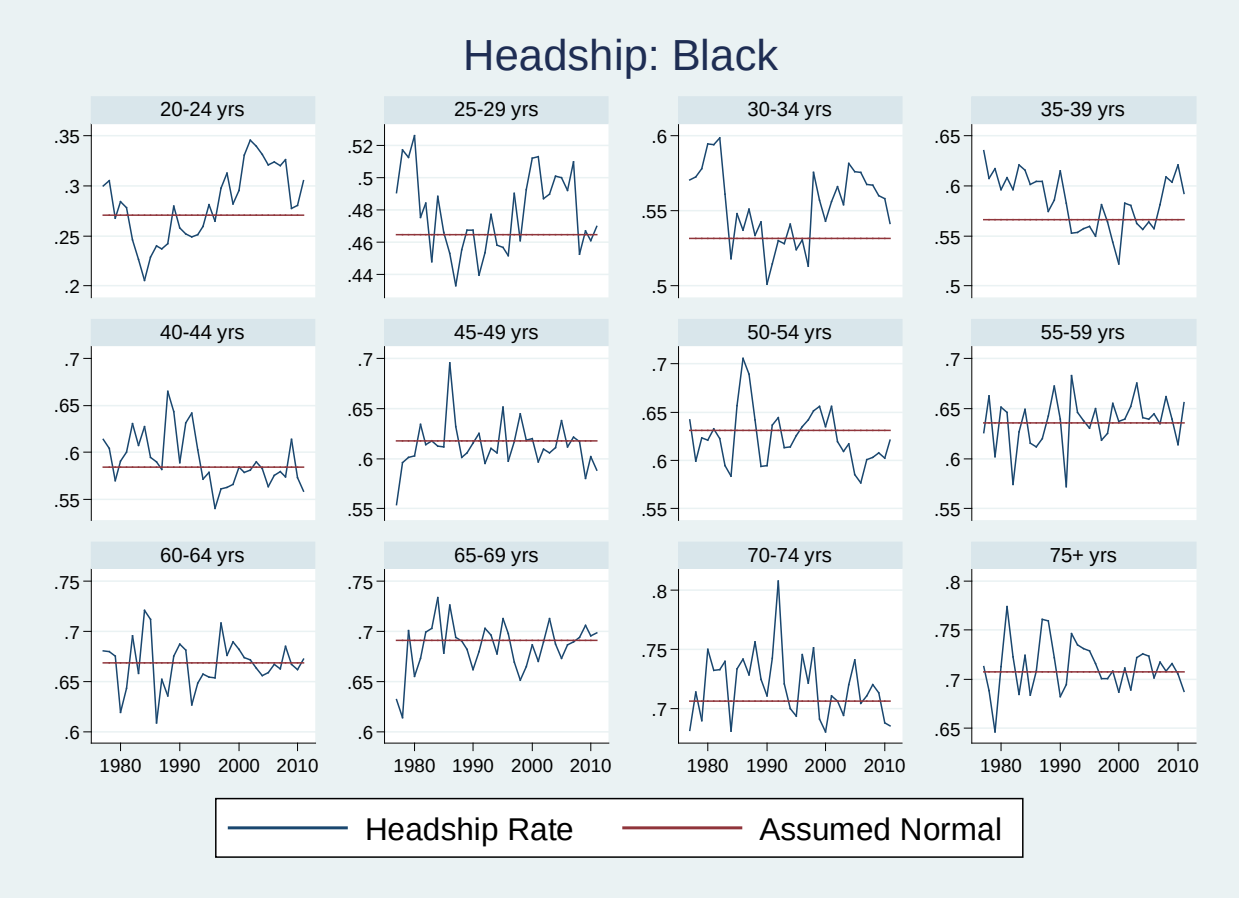
Although there are clear historical patterns in this rate, there is still a substantial uncertainty in making forecasts from this data. Even where a trend is clearly visible in the data, it is always possible that the trend simply does not continue in the future. For example, the most recent recession was unexpected and completely reversed the upward trend for the younger cohorts. Clearly, headship rates are interrelated with other important variables, such as the labor force participation rate, the unemployment rate, household income and expenses, marriage patterns, etc. The information presented in the first section of this report described many of those key variables.

Figure 24
U.S. Headship Rates: White Race by 5-year Age Cohorts
1977-2010



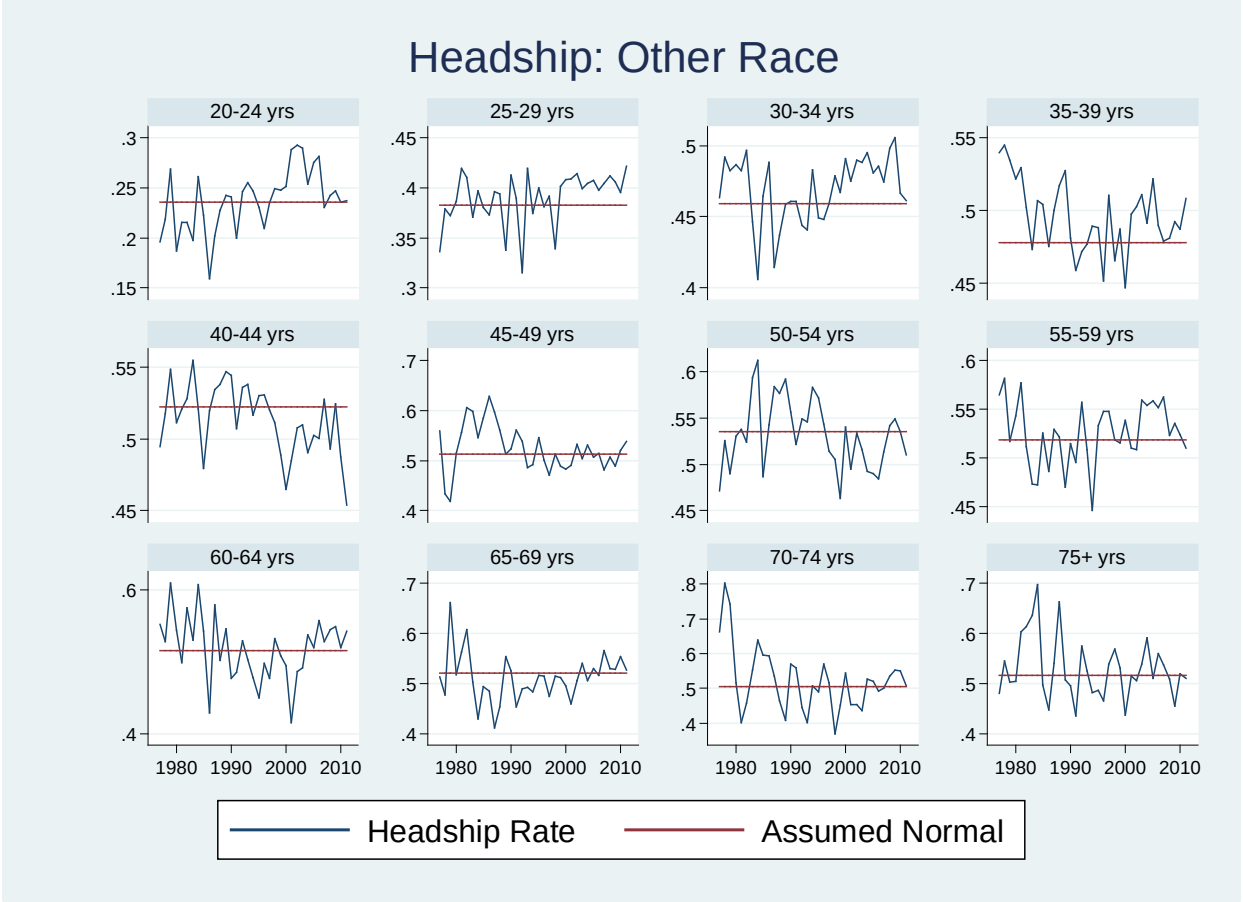
- Source: Current Population Survey, March Supplement. 1977-2011

Figure 25
U.S. Headship Rates: Black Race by 5-year Age Cohorts
1977-2011



- Source: Current Population Survey, March Supplement. 1977-2011

Figure 26
U.S. Headship Rates: Other Race by 5-year Age Cohorts
1977-2011



- Source: Current Population Survey, March Supplement. 1977-2011

To help identify the effect of the recession and describe the market demand for each demographic group, we contrast the current rates with what we assume are the long-run "normal" headship rates. Many of the youngest age groups show a large rise in household formation in the late 1990's and early 2000's. A combination of the collapse in easy credit, the increased unemployment rate, and the deterioration of job market skills erased much of these earlier gains in the headship rates.

For those demographic groups 60 years of age and older, it is not unreasonable to expect that headship and ownership rates have been permanently affected due to the trends in healthcare costs, longevity, and the ability to retire. Thus, all demographic groups at least 60 years old are assumed to have the average headship and ownership rates that have been observed since 2000. The red lines in Figure 24 though Figure 26 indicate what long run normal headship rates are assumed for each age-race group in the U.S.

Because the Delaware sample in the Current Population Survey (CPS) was small, the headship rates calculated directly for many demographic groups were extremely variable. Therefore, we first calculated the national headship rates for each of the 39 age/race cohorts in each year's CPS. Then we created a synthetic estimate of the national headship rate that was reweighted to reflect Delaware's racial profile for each age group.[6] Delaware's actual headship rate was then regressed by this synthetic national rate, a time trend, and age-related dummy variables.[7] The coefficients from this regression were then used to translate the assumed normal national rates into long run normal Delaware rates.

[6] For example, the 2010 US headship rates for white, black, and other race 20 to 24 year olds were respectively multiplied by the 2010 DE population proportions for persons of white, black, and other race who are also of the same age. Summing these three re-weighted headship rates is the synthetic headship rate.
[7] The table of econometric output for these regression estimates is listed in Table 2.

Table 2
OLS Regression of Delaware Headship and Ownership Rates on Synthetic US Rates
1977-2011

	Headship	Ownership
US Headship	0.578	-
	(0.002)	-
US Ownership	-	0.889
	-	(0.000)
20-24 yrs	-0.137	-0.047
	(0.016)	(0.444)
25-29 yrs	-0.039	-0.046
	(0.105)	(0.304)
30-34 yrs	-0.018	0.001
	(0.247)	(0.972)
35-39 yrs	-0.028	0.011
	(0.035)	(0.612)
40-44 yrs	-0.008	-0.001
	(0.499)	(0.977)
45-49 yrs	0.014	-0.017
	(0.237)	(0.283)
55-59 yrs	0.024	-0.016
	(0.048)	(0.301)
60-64 yrs	0.004	-0.013
	(0.735)	(0.423)
65-69 yrs	0.035	0.009
	(0.031)	(0.575)
70-74 yrs	0.024	-0.026
	(0.256)	(0.099)
75+ yrs	0.054	-0.033
	(0.060)	(0.034)
Constant	0.232	0.159
	(0.028)	(0.050)
R2	0.834	0.890
Adj. R2	0.829	0.887
Obs.	420	420
Age Cohort F-test (df1=11,df2=407)	2.46	2.34
p-value	(0.005)	(0.008)

- P-values in parentheses

Table 3
Assumed Long Run Normal Headship Rates in the US and in Delaware
2008-2010

	U.S. Control			DE Control			DE Actual (2008-2010)		
	White	Black	Other	White	Black	Other	White	Black	Other
20-24 yrs	26.1%	27.1%	23.6%	24.6%	25.1%	23.1%	21.1%	23.0%	13.7%
25-29 yrs	44.2%	46.5%	38.2%	44.8%	46.2%	41.4%	38.3%	50.2%	39.2%
30-34 yrs	50.6%	53.2%	45.9%	50.6%	52.1%	47.9%	45.8%	53.0%	39.6%
35-39 yrs	53.0%	56.6%	47.8%	51.1%	53.1%	48.0%	52.1%	51.4%	48.4%
40-44 yrs	55.2%	58.4%	52.2%	54.3%	56.1%	52.5%	51.5%	54.9%	46.3%
45-49 yrs	56.6%	61.8%	51.2%	57.3%	60.3%	54.2%	53.9%	55.7%	50.8%
50-54 yrs	57.5%	63.1%	53.5%	56.4%	59.7%	54.1%	56.5%	58.9%	61.2%
55-59 yrs	57.5%	63.6%	51.8%	58.8%	62.3%	55.5%	55.8%	58.3%	49.8%
60-64 yrs	59.4%	66.8%	51.6%	58.0%	62.3%	53.4%	57.4%	67.9%	49.7%
65-69 yrs	62.2%	69.1%	52.1%	62.7%	66.6%	56.8%	59.0%	70.4%	67.5%
70-74 yrs	63.6%	70.6%	50.6%	62.4%	66.4%	54.8%	64.7%	66.4%	43.1%
75+ yrs	70.2%	70.8%	51.5%	69.1%	69.5%	58.4%	65.5%	68.5%	48.2%

- Source: Center for Applied Demography & Survey Research

Table 3 presents our final assumptions regarding Delaware's long run normal headship rates. White and black cohorts are assumed to have headship rates that are slightly below the national rates. Delaware residents falling into the "other race" category, on the other hand, are expected to have homeownership rates slightly above the corresponding national rates. The table also indicates that the actual headship rates in Delaware for most demographic groups are well below the assumed long-run normal rate.

Table 4
Estimated Levels of Reduced Household Formation by Age and Race
2010

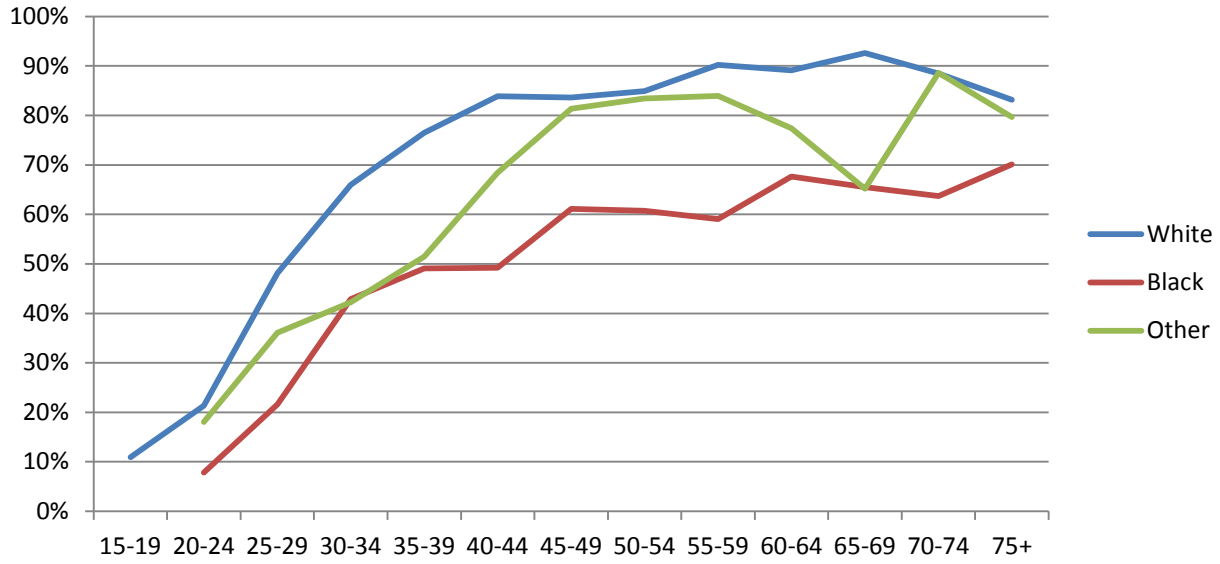
	White	Black	Other	Diff. from Expected Level	# of Delaware Households
20-34	-8,303	-523	-1,244	-10,070	58,872
35-59	-5,629	-4,115	149	-9,595	164,551
60 +	-8,257	-642	-369	-9,268	104,615
Diff. from Expected Level	-22,188	-5,281	-1,463	-28,933	
# of Delaware Households	243,094	63,945	20,999		328,038

- Source: Center for Applied Demography & Survey Research

Because it is difficult to translate the homeownership rates in Table 3 into something more meaningful, Table 4 contrasts the actual number of Delaware households with the hypothetical number of households that would exist had long run normal rates applied. The results are startling. Overall, there were nearly 28,900 fewer households formed in Delaware in 2010 from what we might expect given long-run normal levels.[8] Approximately 22,200 of these missing households come from white persons, 5,300 come from black persons, and 1,500 come from persons of another race. If the headship rates reverted to their long-run levels, Delaware would see an 8.8% increase in the number of households.

[8] Estimates derived from the American Community Survey are subject to higher rates of variability than estimates derived from other sources due to the increased levels of underlying sampling error.

Figure 27
Average Ownership Rates in Delaware by Race
2008 to 2010



- Source: The Center's own calculation using public use microdata from the American Community Survey's 2010 3-year sample.

Home Ownership

Another important factor that affects Delaware's housing market is the rate of home ownership. This rate, calculated as the percent of household heads who either own or are working to own their home, is plotted in Figure 27.[9] As before, the data was decomposed into 39 age/race categories. The plots clearly suggest that people are more likely to own their own home as they get older. In Delaware, white heads of household are more likely to own their home than household heads of some "other race". In general, black household heads are least likely to own homes. As was true with headship rates, the homeownership rates also vary over time.

[9] Table 5 details recent homeownership rates by age and race.

Table 5
Ownership Rates for Delaware: by Race, Year, and Age Group
2006-2010

		Age Group												
Race	Year	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+
White	2006	8.6%	34.8%	57.3%	77.6%	71.5%	82.6%	83.2%	90.8%	85.9%	91.3%	91.5%	88.2%	83.7%
	2007	12.7%	21.1%	66.3%	71.2%	68.2%	76.8%	83.0%	89.1%	89.9%	92.5%	85.2%	92.5%	78.5%
	2008	4.6%	25.8%	48.2%	65.4%	78.0%	85.6%	84.6%	84.9%	93.8%	89.7%	91.2%	85.6%	82.5%
	2009	8.6%	25.5%	47.4%	70.1%	71.5%	88.1%	85.4%	84.5%	88.9%	88.5%	94.6%	90.9%	82.5%
	2010	36.7%	15.9%	51.5%	62.5%	80.5%	78.2%	81.2%	84.7%	87.4%	89.3%	91.6%	89.4%	84.5%
	2008-2010	11.0%	21.3%	48.1%	65.9%	76.5%	83.8%	83.6%	84.9%	90.2%	89.1%	92.6%	88.5%	83.2%
Black	2006	28.8%	16.0%	16.1%	33.8%	50.4%	55.4%	65.5%	66.4%	72.3%	69.0%	72.9%	79.0%	66.4%
	2007	29.8%	10.4%	28.0%	32.5%	54.7%	43.0%	51.1%	72.2%	71.2%	60.1%	63.3%	69.5%	51.5%
	2008	29.8%	10.7%	7.3%	59.4%	41.6%	42.4%	49.5%	55.6%	56.1%	80.4%	79.4%	73.0%	52.5%
	2009	31.1%	9.6%	32.1%	34.5%	57.6%	48.3%	77.1%	58.3%	55.4%	55.1%	78.7%	64.3%	80.6%
	2010	22.2%	1.7%	33.2%	40.6%	47.6%	55.0%	56.6%	59.9%	69.3%	69.8%	55.0%	57.1%	73.5%
	2008-2010	36.2%	7.8%	21.6%	42.9%	49.1%	49.2%	61.1%	60.7%	59.0%	67.7%	65.5%	63.7%	70.1%
Other	2006	7.4%	47.7%	25.2%	43.2%	62.4%	87.9%	87.4%	70.5%	74.0%	54.6%	83.1%	90.2%	73.1%
	2007	4.8%	45.6%	43.2%	42.1%	58.3%	74.2%	83.8%	64.3%	81.0%	75.0%	60.6%	90.2%	74.9%
	2008	4.8%	30.2%	27.1%	56.5%	56.8%	55.1%	95.3%	83.9%	88.9%	75.0%	67.2%	69.9%	40.3%
	2009	4.8%	4.9%	52.8%	46.8%	38.2%	71.7%	72.6%	86.6%	86.8%	58.5%	41.9%	90.2%	61.4%
	2010	4.8%	25.3%	18.4%	26.1%	66.3%	85.3%	87.8%	86.1%	80.7%	90.9%	74.1%	89.3%	84.5%
	2008-2010		18.0%	36.1%	42.2%	51.5%	68.4%	81.4%	83.4%	83.9%	77.4%	65.2%	88.6%	79.7%

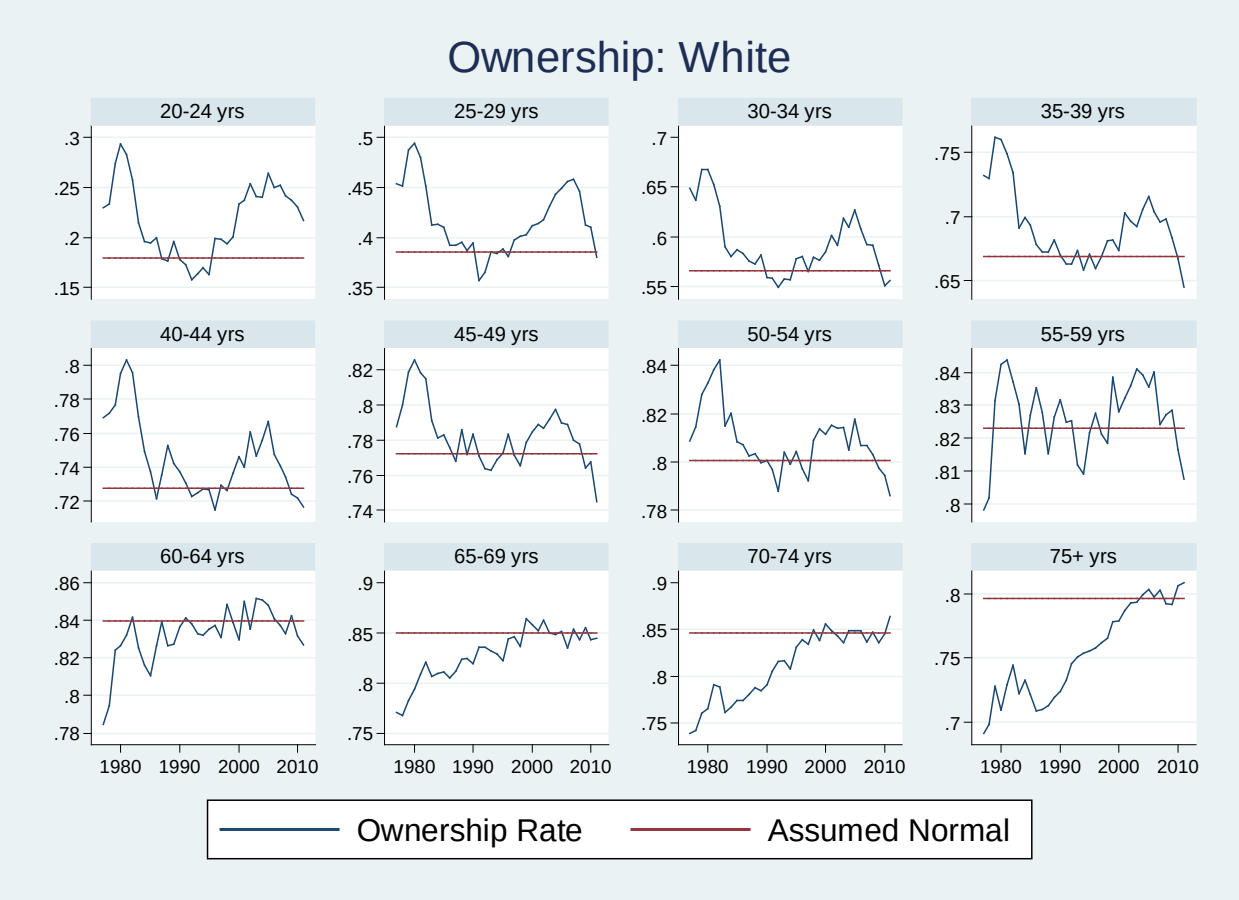
- Source: The Center's own calculation using public use microdata from the American Community Survey's 1-year estimates, 2006-2010.

Figure 28, Figure 29, and Figure 30 respectively show the historical changes to the homeownership rates for persons of white, black, and other race classification. Historically, the figures show that the surge in home ownership among the younger cohorts in the early part of the 2000's decade also occurred in the early 1980's. Older household heads are also increasingly likely to own their homes than they were in the past. This is curious given the fact that older seem to be increasingly less likely to head a household.

As was the case for headship rates, it is difficult to forecast the rate of homeownership in the future. Therefore, we apply the same assumption as before, namely that older demographic groups were at a "new normal" in the 2000's decade. For all other demographic groups less than 60 years old, we assume that the long-run normal rates of home ownership equal the average rates of each respective age group in the 1990's.

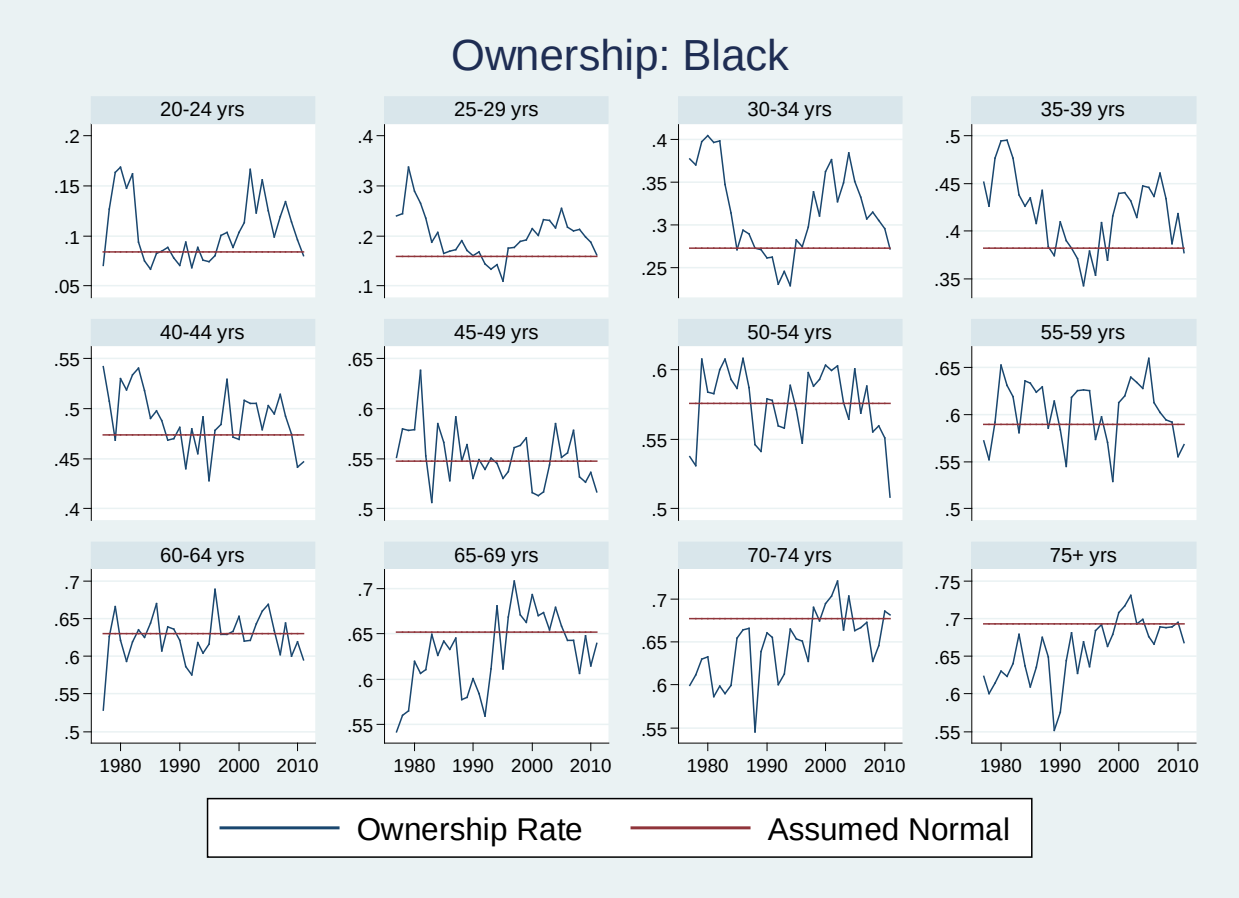
Similar to before, long run U.S. normal levels were translated to normal levels for Delaware using the same racial reweighting and regression procedure discussed previously (see Table 2 and the text on page 43). The procedure enabled us to form expectations regarding Delaware's normal rate of homeownership given the current demographic profile.

Figure 28
U.S. Ownership Rates: White Race by 5-year Age Cohorts
1977-2011



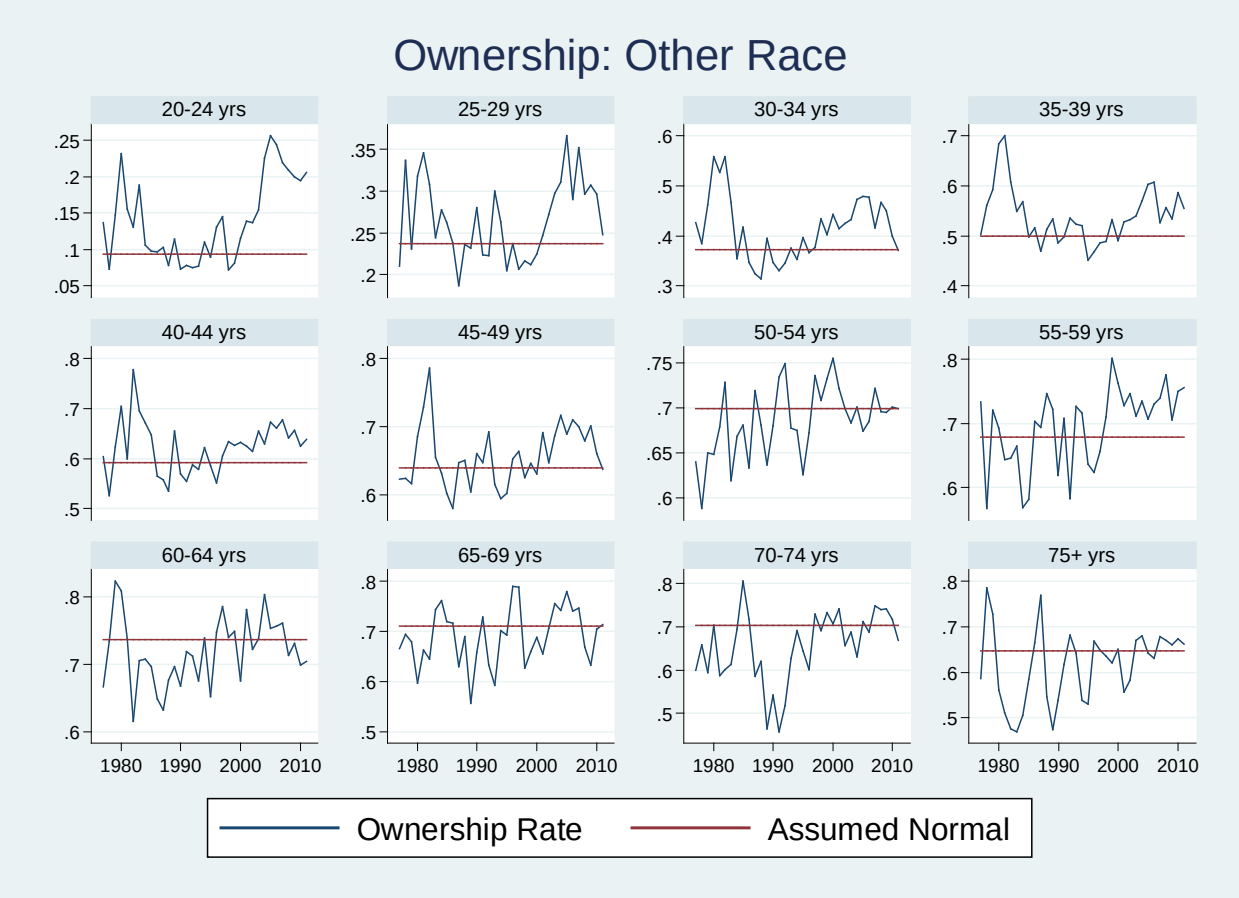
- Source: Current Population Survey, March Supplement. 1977-2011

Figure 29
U.S. Ownership Rates: Black Race by 5-year Age Cohorts
1977-2011



- Source: Current Population Survey, March Supplement. 1977-2011

Figure 30
U.S. Ownership Rates: Other Race by 5-year Age Cohorts
1977-2011



- Source: Current Population Survey, March Supplement. 1977-2011

Table 6
Assumed Long Run Normal Ownership Rates in the US and in Delaware
2008-2010

	U.S. Control			DE Control			DE Actual (2008-2010)		
	White	Black	Other	White	Black	Other	White	Black	Other
20-24 yrs	18.0%	8.4%	9.3%	27.2%	18.7%	19.5%	11.0%	n.a.	n.a.
25-29 yrs	38.6%	15.9%	23.7%	45.7%	25.5%	32.4%	21.3%	7.8%	18.0%
30-34 yrs	56.6%	27.3%	37.3%	66.4%	40.4%	49.2%	48.1%	21.6%	36.1%
35-39 yrs	66.9%	38.2%	49.9%	76.5%	51.0%	61.4%	65.9%	42.9%	42.2%
40-44 yrs	72.8%	47.4%	59.2%	80.6%	58.0%	68.5%	76.5%	49.1%	51.5%
45-49 yrs	77.2%	54.8%	64.0%	82.9%	63.0%	71.1%	83.8%	49.2%	68.4%
50-54 yrs	80.1%	57.6%	69.9%	87.1%	67.2%	78.1%	83.6%	61.1%	81.4%
55-59 yrs	82.3%	59.0%	67.8%	87.5%	66.8%	74.6%	84.9%	60.7%	83.4%
60-64 yrs	84.0%	63.0%	73.6%	89.4%	70.7%	80.1%	90.2%	59.0%	83.9%
65-69 yrs	85.0%	65.2%	71.1%	92.4%	74.8%	80.0%	89.1%	67.7%	77.4%
70-74 yrs	84.7%	67.7%	70.4%	88.7%	73.6%	75.9%	92.6%	65.5%	65.2%
75+ yrs	79.6%	69.4%	64.6%	83.4%	74.3%	70.1%	88.5%	63.7%	88.6%

- Source: Center for Applied Demography & Survey Research

Table 6 reports the assumed long run normal rate of homeownership for the US and for Delaware, and the actual homeownership rate in Delaware between 2008 and 2010. We find that Delaware normally has higher homeownership rates than the U.S. for each age-race group. Table 6 also indicates that the actual homeownership rates in Delaware between 2008 and 2010 were below long run averages, particularly for the younger age cohorts. In other words, not only are younger persons less likely to be a household head compared to the 1990's, but those that do start their own household are more likely be renters.

Table 7
Estimated Levels of Reduced Home Ownership: by Age and Race
2010

	White	Black	Other	Diff. from Expected Level	# of Delaware Homeowners
20-34	-657	-165	-1,248	-2,070	23,434
35-59	-907	-1,312	1,085	-1,135	126,935
60 +	255	-1,213	267	-691	88,827
Diff. from Expected Level	-1,308	-2,691	104	-3,895	
# of Delaware Homeowners	193,154	33,308	12,734		239,196

- Source: Center for Applied Demography & Survey Research

Table 7 indicates how many fewer householders owned their homes relative to what could be expected given the long run normal proportion of household heads who are homeowners. We find that 3,900 of Delaware households in 2010 would have owned their homes instead of renting them had long run rates applied. This was particularly prevalent among the youngest household heads (20 to 34 year olds) and among black household heads. White persons and persons of another race were not substantially different from their long run average of home ownership.

The fact that 28,900 people chose not to start their own household (Table 4) and those that did were much more likely to rent (Table 7) is evidence of the recession's toll in Delaware's housing market. On an optimistic note, however, if and when the rates of household formation and home ownership return to their normal levels, the low rates are masking an exceptionally large pent-up demand waiting in the background. The key criterion is whether the conditions in the housing market will someday rebound to their expected levels.

Of course, household formation and ownership rates may not stay constant or revert to their expected levels in the future, so our results forecasts depend largely on other macroeconomic conditions discussed in the first section. Labor force participation, for example, is a critical indicator of household formation. Since 1990, the labor force participation rate has been increasing steadily for persons at least 55 years of age, but falling for persons less than 25 years of age (particularly recently). There is also the possibility that the 'shadow inventory' of occupied HUs in foreclosure will continue to depress the headship and ownership rates in the future. Such an event would add to surplus stock, rather than reduce it.

On the other hand, recent signs indicate that a recovery may be underway. Unemployment in Delaware has fallen from 8.8% in January 2010 to 6.9% in February 2012. In addition, continued commitment by the Federal Reserve to keep interest rates near zero, falling home prices, and improvements in employment and gross domestic product may eventually raise demand in the housing market. Thus, we are hopeful that the recent improvements will be sustained, though there are still risks that have yet to be eliminated.

Given that there are so many considerations to the housing market and much depends on the macroeconomy, it is difficult to tell if the current rates do represent a new normal. If so, then demographic changes will be the sole driver of long-run demand. The next section of this report develops a model to help understand the demand for housing, the use of Delaware's housing stock, and the construction sector. The current rates of household formation and ownership are held fixed in that model, so that demographic changes are the primary factors influencing the housing market.

Forecasting New Residential Construction

In this section, we develop a model to predict how many new HUs will need to be added to the county to meet the demand coming from population growth. The model combines demographic projections with the current rates of household formation and homeownership to generate long-run demand. This demand interacts passively with Delaware's existing housing stock to draw down any surpluses before drawing upon new construction. The next section describes the type and supply of housing in each county and makes an estimate for that county's surplus HUs. Then, we detail the logic behind each step of the model and discuss the forecast's results.

Delaware's Housing Stock and Surplus Housing

Official statistics separate HUs into occupied and vacant units. According to the 2010 US Census, there were 343,300 occupied HUs in Delaware and 63,600 vacant HUs (Table 8). The bulk of HUs (59%) is in New Castle County, with Kent County (18%) having the least number of HUs, and Sussex County (23%) having just under a quarter of HUs in the state. A HU is considered vacant if there are no current residents in that unit.[10,11]

[10] "A person who is living or staying in a sample [housing unit] on interview day and whose actual or intended length of stay is more than 2 months is considered a current resident of the unit." – US Census. 2010 American Community Survey Design Methodology, Ch. 6. <http://www.census.gov/acs/www/Downloads/survey_methodology/acs_design_methodology_ch06.pdf>.

[11] There are exceptions to this definition, but they are not very relevant for our purposes.

Table 8
Type and Number of Housing Units in Delaware and Delaware Counties
2010

	Kent	New Castle	Sussex	Delaware
Total Housing Units	65,338	217,511	123,036	405,885

Occupied	Kent	New Castle	Sussex	Delaware
Owner-occupied	43,046	141,325	62,353	246,724
Renter-occupied	17,232	61,326	17,015	95,573
Total Occupied Housing Units	60,278	202,651	79,368	342,297

Vacant	Kent	New Castle	Sussex	Delaware
For sale only	1,168	2,386	2,431	5,985
For rent	1,572	6,744	3,083	11,399
For seasonal, recreational, or occasional use	457	712	34,770	35,939
Other use	1,863	5,018	3,384	10,265
Total Vacant Housing Units	5,060	14,860	43,668	63,588

- Source: 2010 US Census

A normal functioning market will always have a certain number of vacant homes for sale, rent, occasional use, or for another use. A critical assumption of this model is that the number of naturally vacant HUs equals a fixed proportion of occupied housing units (see Table 9). These proportions were derived by averaging across analogous ratios in the 1980, 1990, 2000, and 2010 Censuses. For example, for every 1,000 occupied housing units in New Castle County, we expect that the county would normally have three vacant HUs for seasonal use and 20 vacant HUs for other use. In Sussex, for every 1,000 renter-occupied homes, the model expects there will normally be 146 HUs that are vacant and for rent. Any vacant HUs in addition to those expectations are deemed surplus.

Table 9
Surplus Level Housing Unit Vacancies and Underlying Parameters
2010

	KNT	NCC	SSX
Ratio of Vacant For Sale HUs to Owner Occupied HUs	0.018	0.018	0.035
Ratio of Vacant For Rent HUs to Renter Occupied HUs	0.072	0.090	0.146
Ratio of Vacant Seasonal/Occasional Use HUs to Occupied HUs	0.011	0.003	n.a.
Ratio of Other Vacant HUs to Occupied HUs	0.030	0.020	0.044

	KNT	NCC	SSX	DE
Surplus of Vacant HUs for Sale	458	-135	307	630
Surplus of Vacant HUs for Rent	405	1,786	490	2,681
Surplus of Vacant Seasonal/Occasional Use HUs	184	99	n.a.	283
Surplus of Other Vacant HUs	-139	1,091	-72	880
Total Surplus HUs	908	2,841	725	4,474

- Source: Center's estimates using data from the 1980, 1990, 2000, 2010 US Censuses and the 2010 Delaware Population Consortium

Table 9 also reports the estimated level of Delaware's surplus housing in 2010, by county and type of HU. Overall, we find that New Castle County has the greatest absolute number of vacant HUs (2,841 units), the bulk of which was for rent or for some other use. Kent County was estimated to have a surplus of 908 vacant HUs in 2010. Sussex County had the least number of surplus vacancies (725 units), but this figure omits the potentially large source of surplus vacant HUs for seasonal use. Overall, this approach estimates that there were 4,474 surplus vacant HUs in Delaware. By holding market conditions fixed in the short run, our model allows long-run demographic changes to be the sole driver for the demand for housing as population growth gradually fills the surplus HUs.

Because of the unique nature of the beaches in Sussex, the county has an exceptionally large proportion of vacant seasonal HUs. In 1970 and 1980, there were respectively 194 and 206 vacant homes for seasonal use per 1,000 occupied HUs in Sussex County. Despite these large proportions, the construction of seasonal housing had been quite high over the last 3 decades. As of 2010, there were 438 vacant homes for seasonal use per 1,000 occupied HUs in Sussex.

We expect the proportion of vacant homes to occupied housing units will be substantially reduced in the future. First, much of the best suited land for seasonal HUs has already been developed, and so future construction projects would need to turn inland where the value of having a seasonal home is less. The second reason is that we expect baby-boomers, many of whom own seasonal HUs in Sussex, are likely to occupy these HUs permanently upon retirement. The combination of both factors would cause the ratio of seasonal homes to occupied housing units to fall in the future. The model assumes that in the next 30 years, the ratio of vacant seasonal homes to occupied housing will eventually return to its 1980 level.[12]

[12] The large concentration of vacant HUs in Sussex County for seasonal use (28% of housing in the county) is a very unique characteristic. Theoretically, vacation homes do not necessarily correspond to population growth in the same way as occupied HUs and vacant HUs that are for rent or sale. Thus, the demographic model applied in this section is sensitive to how vacation homes in Sussex County are handled.

Table 10
Age Profile of Delaware Housing Units Excluding Mobile Homes, by County

Age of Housing Unit	KNT	NCC	SSX	Scrappage Rate
0 - 4 year	8,564	9,887	9,502	0.00%
5 - 10 year	9,716	13,934	16,844	0.00%
10 - 19 year	9,790	31,394	19,497	0.03%
20 - 29 year	9,509	28,438	19,628	0.07%
30 - 39 year	8,148	24,660	14,158	0.11%
40 - 49 year	3,426	30,300	7,128	0.16%
50 - 59 year	3,343	32,452	3,857	0.24%
60 - 69 year	1,779	16,670	2,393	0.35%
70+ year	3,042	25,035	5,652	0.31%

- Source: US Census Bureau

The age of Delaware's housing stock is another important feature to consider, because older HUs are more likely to become uninhabitable than newer HUs. We assume that all demolished units are replaced with new units, and the rate at which this occurs is the "scrappage rate". Table 10 indicates the age profile in each county's housing stock, excluding mobile homes, and the assumed scrappage rate by the unit's age bracket. Mobile housing is omitted from this table, because the replacement of these units is not expected to draw upon new construction.

Not only does New Castle County have the majority of Delaware's housing stock, but that stock tends to be older than the HUs in the other two counties. Therefore, we expect that more HUs will need to be replaced in New Castle County (330 HUs per year) than in Sussex (90 HUs per year) or Kent (50 HUs per year).

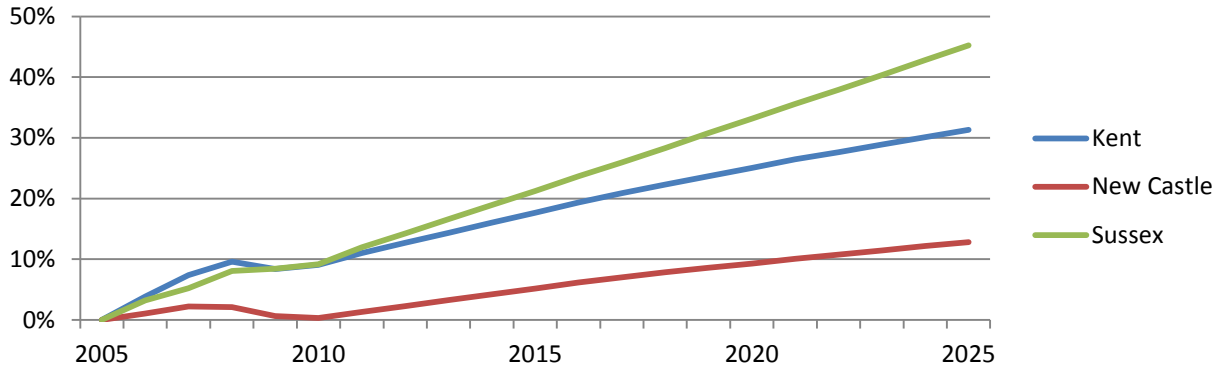
Now that the key characteristics of Delaware's housing stock are detailed, we describe how the housing stock interacts with population growth to determine the demand for new housing.

Forecasting Residential Construction

In this section, we forecast the demand for new construction based on meeting the needs of a growing population and replacing aging homes. Conceptually, the long run demand for housing interacts with the stock of occupied and vacant housing to determine surpluses or shortages. Influential factors, such as overall housing price, government incentives, number of foreclosures, investor speculation, etc. are all omitted from this model. Instead, the supply of new housing in this simplistic framework passively reacts to steadily increasing demand from forecasted population growth. The existing surplus is gradually used before the market draws upon any new construction. The point is to understand what the long term outlook is for housing.

The following logic was used to derive the future construction of new residences. First, the 2010 headship and ownership rates are fixed, implying that economic conditions neither improve nor deteriorate. Population projections interact with these rates to derive the growth in demand for occupied HUs, as shown in Figure 31. Using the proportions in Table 9, the forecasted level of occupied HUs implies a specific level of naturally vacant HUs for sale, for rent, for seasonal use, and for some other use. Before any construction takes place each year, a shortage or a surplus of housing is calculated based on the existing housing stock and the number of natural vacancies.

Figure 31
Forecasted Percent Difference from Delaware Households by County
2005



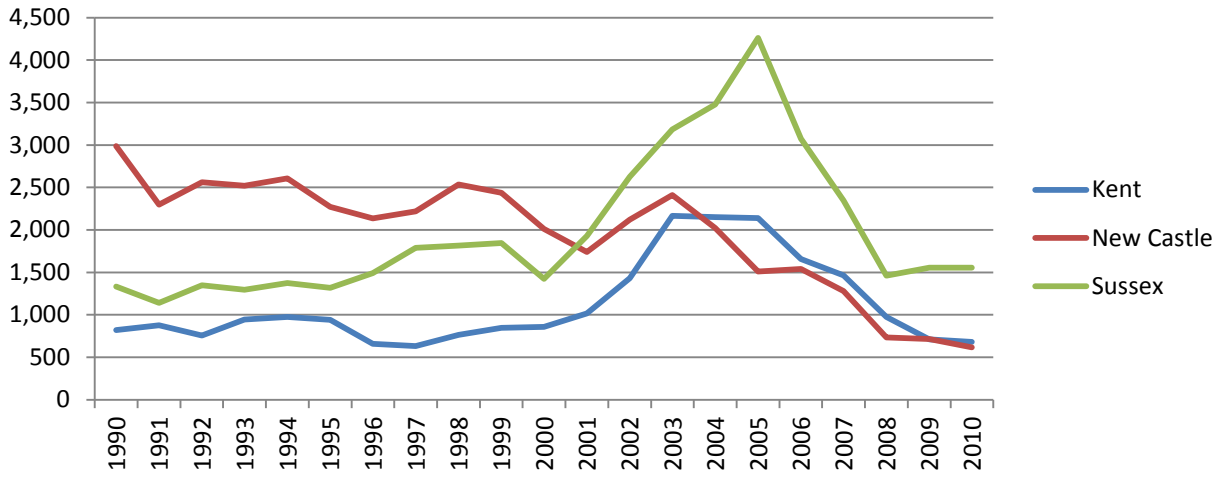
- Source: Center for Applied Demography & Survey Research

If a particular type of surplus housing exists in a given year, then the model allows that surplus to meet the demand coming from population growth and the scrappage of old HUs. This has the effect of gradually drawing down any existing surplus housing before any new construction can occur. However, surpluses in HUs for seasonal and other use are allowed to offset any temporary shortages for other types of housing (e.g. vacant HUs for rent or sale). This substitutability between certain housing types quickens the drawdown of surplus stock.

If a surplus exists across all HU categories in a certain year, then no new construction above the minimum will occur in that year. However, if that year's demand creates a shortage for any type of HU, then new construction may be required each year to eliminate those shortages. Minimum construction is spread proportionally over HUs with shortages first. If shortages still remain, then construction above that minimum level is generated.[13,14]

[13] If there are no remaining shortages before the minimum construction is exhausted, the remaining level of minimum construction is spread out proportionally over all types of HUs. We assume that the next few years of residential construction will be no worse than at any point over the last 20 years. This assumption effectively

Figure 32
Number of New Privately-Owned Residential Building Permits (Mobile HUs Excluded)



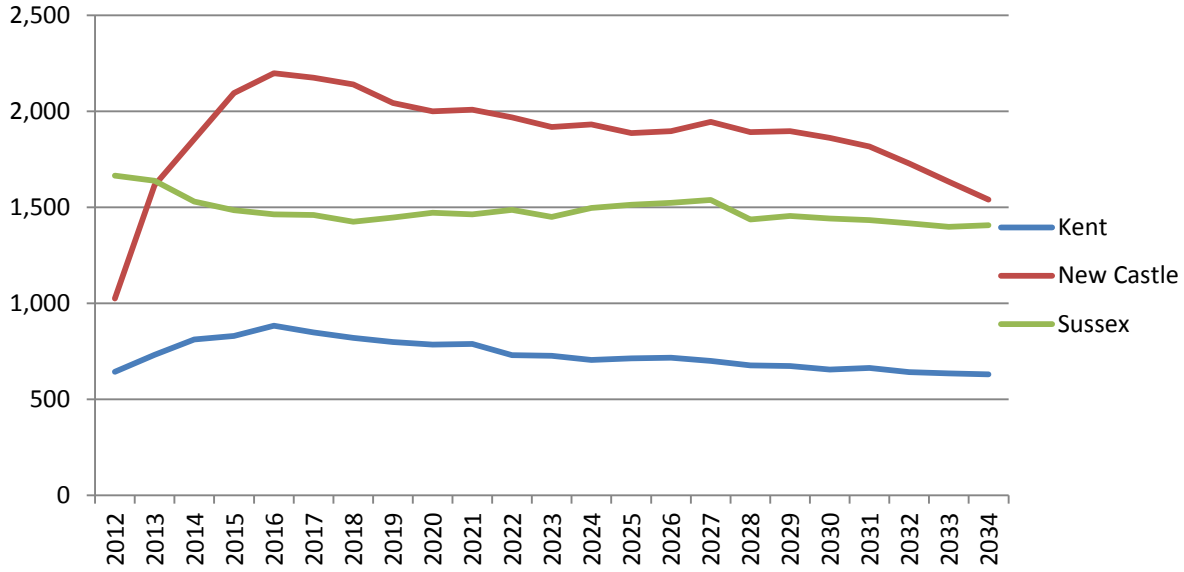
- Source: U.S. Bureau of the Census Building Permit Estimates - U.S., State, and Metropolitan Areas

Before we detail the results of the forecast, we quickly review the history of construction in each county in Figure 32. It is clear that a bubble of new housing construction began in Kent and Sussex counties around 2000 and burst in 2006. The peak of the bubble saw nearly 4,250 units being built in Sussex County, and 2,150 units built in Kent County. By 2010, most of the building permits had reached levels in line with conditions prior to the bubble; approximately 1,550 HUs were built in Sussex and 700 HUs were built in Kent. Construction in New Castle County, on the other hand, was declining steadily over the last 20 years, and the recent recession only compounded that trend. Just 600 HUs were built in New Castle County in 2010.

ensures that no fewer than 618, 632, and 1,140 non-mobile HUs will be built annually in New Castle County, Kent County, and Sussex County, respectively.

[14] We also put the forecasted levels of construction through a 3-year weighted moving average process to smooth out any sharp breaks in the data series.

Figure 33
Forecasted New Residential Construction in Delaware by County
2012-2034



- Source: Center for Applied Demography & Survey Research

Figure 33 shows the forecasted construction in each of the three Delaware counties. The biggest difference is the predicted rebound effect occurring in New Castle County, which is expected for two reasons. First, the model assumes that the surplus HUs that are vacant for "other reasons" are substitutable for shortages of owner occupied HUs and vacant HUs for sale. Given the population growth expected in 2011 and 2012, this surplus will be depleted in 2013. The second reason for the rebound is that we assume the headship rates remain constant. Of course, between 2007 and 2010 the rates were falling so sharply that the number of households *decreased* despite moderate population growth. By holding these rates constant, household growth begins to track population growth once again, as demography is allowed to be the primary influence underlying demand.

The number of HUs expected to be built in Sussex County are anticipated to hover around 1,500 per year over the next few decades, as the surplus stock of seasonal HUs meets the growing demand for occupied HUs and vacant HUs for sale or rent. Recall though that this conclusion is relatively sensitive to the way in which vacant seasonal homes are treated.

New residential construction in Kent County is forecasted to gradually increase and reach a peak in 2016 with nearly 900 new HUs being constructed that year. New construction then tapers off gradually in the later years of the forecast.

In summary, demographic projections imply that the construction in New Castle County is below its expected levels based on long run population growth. However, residential construction in Sussex County and Kent County in 2010 was relatively close to their expected levels of construction in the long run.

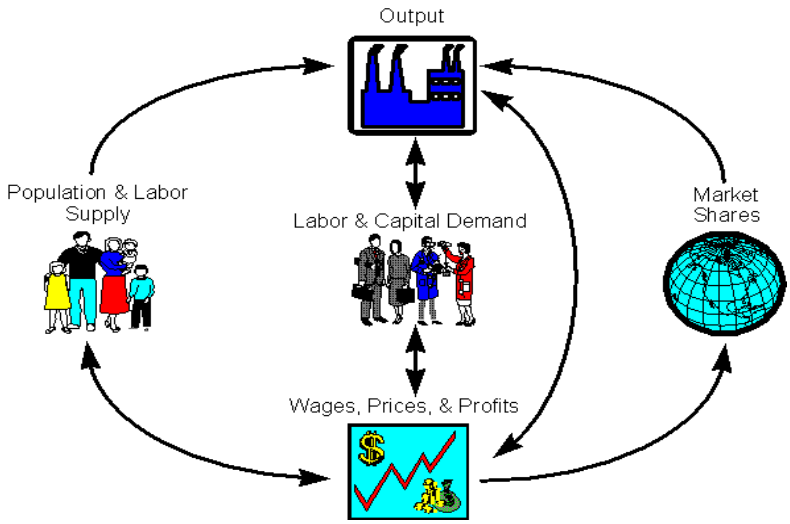
The Economic Impact of the Real Estate and New Residential Construction Sectors

In this section of the report, we estimate the total impact that the real estate and residential construction sectors have had on Delaware's economy from 2000 to 2010. We use a simulation of Delaware's economy, called the REMI PI+ model, as a tool to help us make this calculation. First, we review this model and explain how the economic impact is calculated. Next, we discuss the inputs used to simulate the real estate and residential construction sectors. Finally, we present and discuss the economic impact of these two sectors.

Overview of the REMI Model

The economy is a complex system of businesses, households, and government policies. Modeling tools help navigate the critical linkages in the economy by breaking the complex system down into a series of simplified mathematical equations. By thinking of the economy as a system of equations, we can model the effects of residential construction and the real estate sector by changing those equations in ways that resemble the sectors' direct contributions. This section describes the economic model that we use to estimate the larger macroeconomic impacts.

Figure 34
Illustration of the REMI PI+ Model



The REMI PI+ software is a dynamic and structural model of Delaware's economy that is capable of estimating causal relationships. It is a regionalized version of a benchmarked national model. Ten sub-regions are in the model, including each of the three counties in Delaware; Salem County, NJ; Burlington, Camden, and Gloucester counties in New Jersey (combined); Bucks, Montgomery and Philadelphia counties in Pennsylvania (combined); Delaware and Chester counties in Pennsylvania (combined); Cecil County, MD; Harford County, MD; and the combination of 10 counties in Maryland and Virginia that constitute the remainder of the Delmarva peninsula. Each sub-region is treated as an independent, fully functioning economy that interacts with every other sub-region specifically and with the nation in general.

The model is founded on conventional economic assumptions, such as households maximize utility and firms maximize profits. Hundreds of equations have been developed over the last 25 years to describe the economy's structure mathematically. These equations are organized into five major components: Output and Demand, Labor and Capital Demand, Population and Labor Force, Wages-Prices-Costs, and Market Shares. Figure 34 illustrates REMI's main structure.

The equations assume that businesses use labor, capital, and fuel as inputs to supply goods and services as output. Households (and some businesses) supply the inputs of production and generate the demand for goods and services. Wages, prices, and profits adjust to equilibrium conditions in each market, but the equilibrating process might take more than one year to achieve. High market shares can generate cluster effects that influence factor productivity and input prices.

REMI PI+ is a general equilibrium model with feedback. This means that the model describes the entire economy as it changes over time. For example, changes in population, demographics, and wages each influence the labor supply at any moment, but are themselves influenced in the future by changes in the labor supply. Adjustments happen gradually, so the economy does not statically jump from one equilibrium to another. This is a major advantage of using REMI versus other economic simulation models (RIMS II, IMPLAN).

The general equilibrium model can capture the multiplier effect due to the repeated interaction and eventual equilibration in other parts of the economy. In a sense, the multiplier effect is the cumulative impact of any single change to the economy. For example, as final demand generates intermediate demand, one dollar of retail sales will increase sales in construction 0.28¢, sales in fabricated metal product manufacturing 0.30¢, sales in utilities 1.1¢, etc. The total impact from these effects can be quite large.

Figure 35
Illustration of a Policy Forecast in REMI

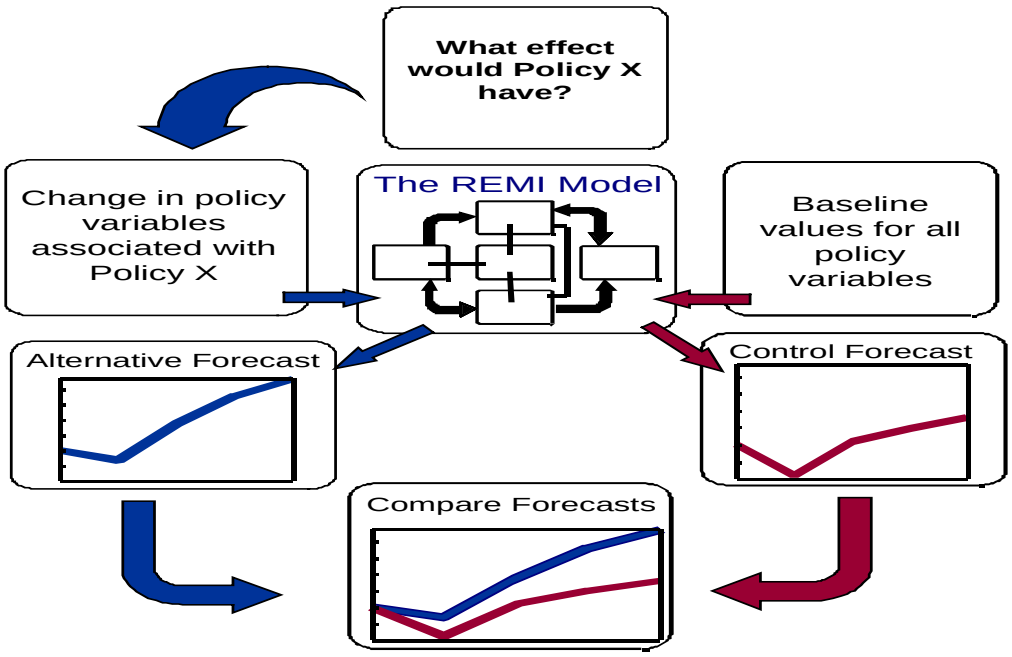


Figure 35 illustrates how REMI estimates the effects of a policy. First, the REMI model is calibrated and a standard future scenario is predicted. This is called the control forecast. Then a policy is proposed that changes the economy. An analyst adapts this change into REMI by selecting appropriate input to simulate the policy. This alternative forecast is compared to the control forecast, and differences between the two forecasts are attributed to the policy.

In the upcoming sections of this report, we employ the REMI PI+ model to understand the economic impact of new residential construction and the real estate sectors. Before proceeding, we should be clear that even though the REMI model is a model of the entire economy, it is most useful as tool to help us understand how elements within the economy affect other elements. In addition, since there are thousands of variables influenced in the PI+ model, we cannot detail the impact of each one. Instead, we restrict our attention to key macroeconomic variables.

Deriving Inputs for the REMI Model

We are ultimately interested in evaluating the total impact that Delaware's residential real estate and new residential construction sectors have on the state's economy. To accomplish this, we use the REMI PI+ model to simulate a hypothetical Delaware economy without these sectors. Differences between the hypothetical economy and the control scenario are then credited to these sectors. This section derives the inputs used to simulate the policy.

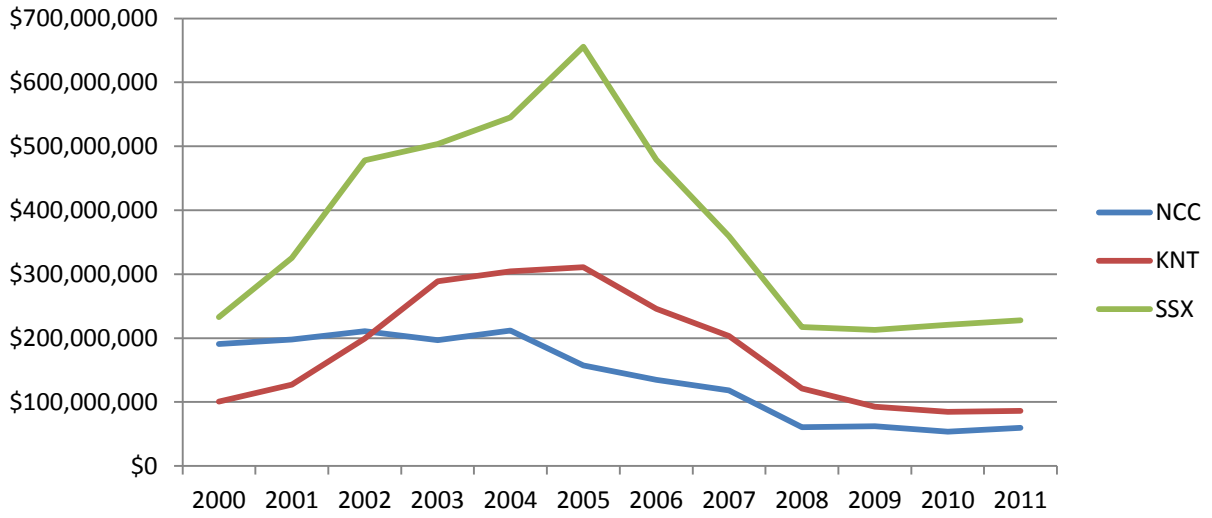
Similar to a study conducted by the National Association of Realtors,[15] we described the direct impact of Delaware's residential real estate and construction sector by entering the following values into the REMI model:

1. All new residential construction in Delaware
2. Income going to the real estate sector for the sale of existing homes
3. Government spending due to revenues collected from the real estate transfer tax on residential properties[16]
4. Residential remodeling expenditures from new home owners

[15] National Association of Realtors. *Economic Impact of an Existing Home Purchase* Online Document. <www.realtor.org/statsanddata/homeownership/economic_impact_purchase>.

[16] We assume that state and local government spending was reduced because of the decreased revenue from the real estate transfer tax. This assumption neglects the fact that federal stimulus dollars and increased debt partially offset the reduced revenues from the bursting of the housing market. Thus, the actual decline on public sector employees and government spending may be larger than what Delaware witnessed.

Figure 36
Value (2012 $) of New Residential Housing Unit Permits in Delaware
2000-2011

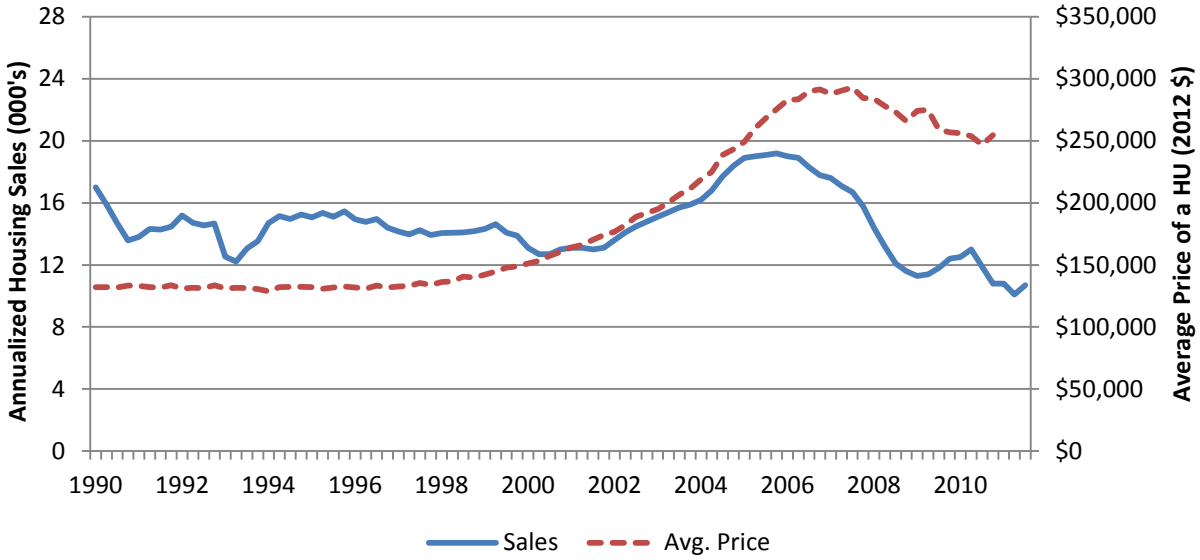


- Source: U.S. Bureau of the Census Building Permit Estimates - U.S., State, and Metropolitan Areas

The annual construction costs of privately-owned residential building permits, shown in Figure 36, were used to proxy for the direct impact on the construction sector.[17] The figure clearly shows that the majority of activity in this sector has been occurring in Sussex County, while New Castle County has had the least activity of residential construction. The figure clearly shows the burst in Delaware's housing bubble, two years of decline, and three years of economic stagnation.

[17] Building Permit Survey, U.S. Census Bureau. <http://censtats.census.gov/bldg/bldgprmt.shtml>.

Figure 37
Annualized Home Sales and Average Sales Price (2012 $) in Delaware
1990 Q1 - 2011 Q3



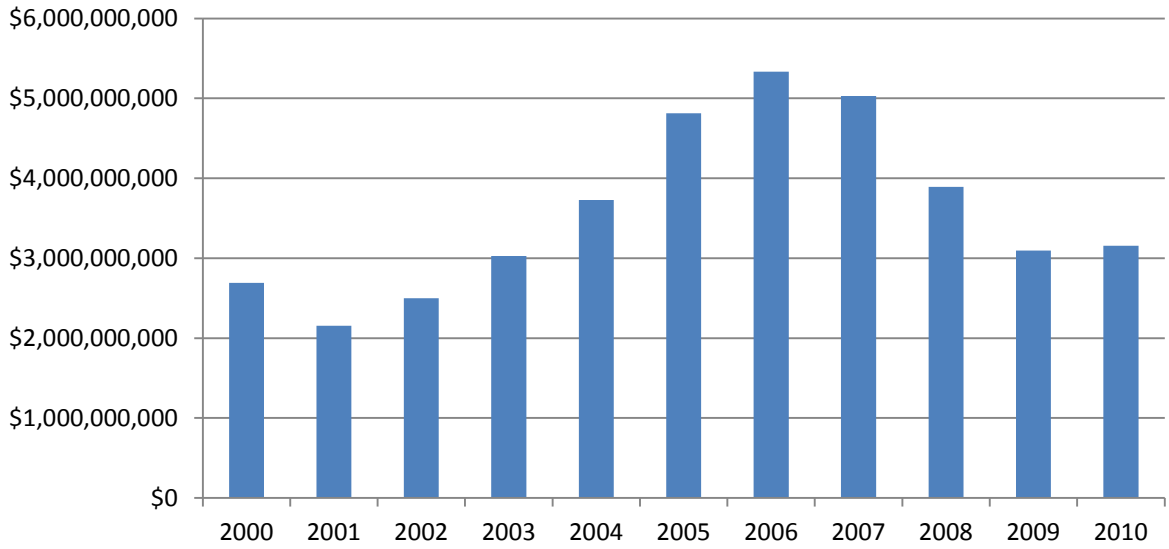
- Source: National Association of Realtors

Figure 37 plots the annualized home sales and average price in Delaware obtained from the National Association of Realtors.[18] We proxy for the value of the residential real estate sector by assuming its revenue equals 7% of the value of existing home sales. In addition, we allow for 3% of the value of existing home sales to equal the government spending that can exist in Delaware as a result of the real estate transfer tax.[19] Half of that government spending is assumed to go towards state-related purchases, and the other half goes towards local government purchases.

[18] The Price Index was converted to dollar values by assuming that the average price of a home sold in Delaware in 2009 Q2 was $265,922. This was derived from information from the Delaware State Housing Authority and Prudential Fox and Roach Realtors.
<http://www.destatehousing.com/FormsAndInformation/del_real_estate_data_09_quarter2.pdf>
< http://blog.prufoxroach.com/market-reports/year-end-2011/>.

[19] We assume that 1.5% of the value of existing home sales is spent by state government, and 1.5% of the value of existing home sales is spent by local governments and municipalities.

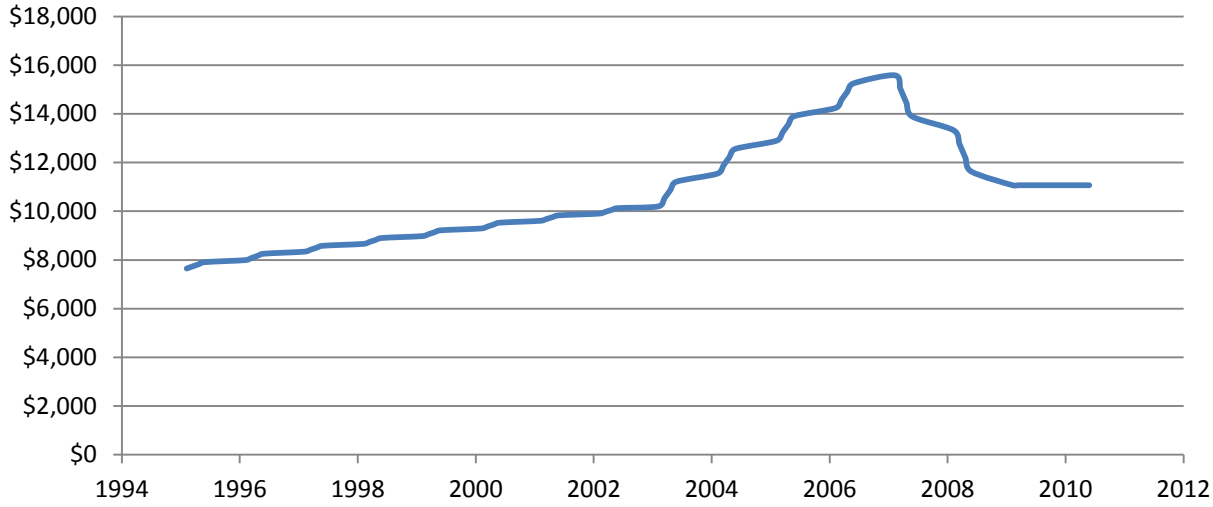
Figure 38
Value of Existing Home Sale Transactions (2012 $) in Delaware
2000-2010



- Source: Estimates derived from information provided by the National Association of Realtors

Figure 38 shows the estimated sum of the annual value of housing transactions in Delaware. In 2006, approximately $5.3 billion of existing homes were sold in the state. By 2010, that number was approximately $3.1 billion.

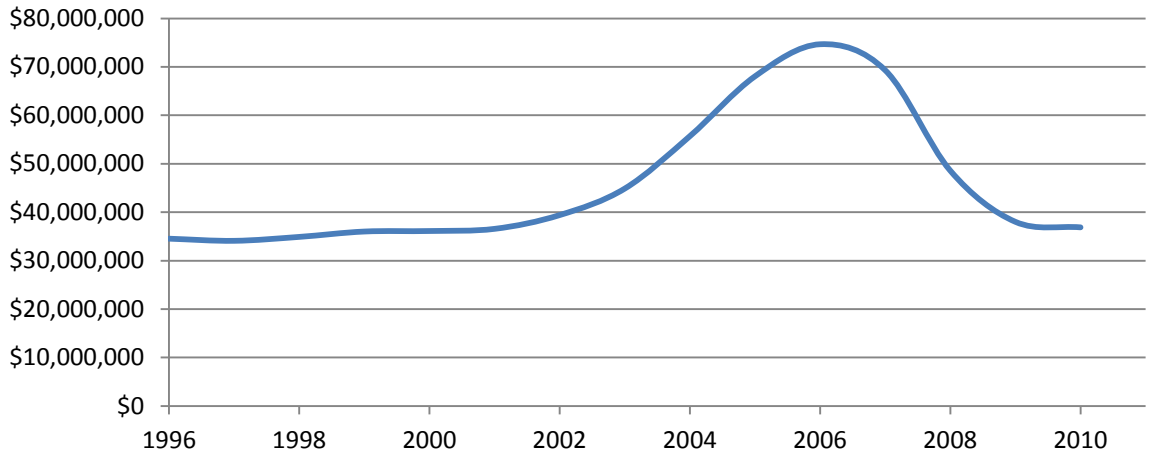
Figure 39
Average Expenditures (2012 $) on Home Residential Remodeling for Recent Home Owners 1995-2010



- Source: The Harvard Joint Center for Housing Studies

The final input into the REMI model is the amount of residential remodeling that occurs when a housing unit is sold. Figure 39 shows the average expenditure that new homeowners made on residential remodeling. The average cost of those projects had been rising steadily throughout the late 1990's and early 2000's, reaching nearly $10,200 in 2003. As the bubble in the housing market grew between 2003 and 2006, so did the level of remodeling expenditures of the typical new home owner. By 2006, the average new homeowner spent nearly $15,600. The bursting of the bubble brought expenditures down to nearly $11,000 by 2009.

Figure 40
Annual Residential Remodeling Expenditures (2012 $) for New Home Buyers
1996-2010



- Source: Center for Applied Demography & Survey Research

Figure 40 presents the estimated level of remodeling expenditures for recent Delaware homeowners. The bubble in the housing market again is clearly evident in the data. Prior to the bubble, we estimate that the residential remodeling industry obtained between $34 and $36 million each year. Nearly $75 million annually was spent on remodeling projects in Delaware at the peak of the bubble. By 2010, that annual spending had fallen back to $37 million.

Table 11
Inputs to Simulate Delaware's Real Estate and New Residential Construction Sectors
2000-2010

Value of New Construction

	NCC	KNT	SSX
2000	$190,917,493	$100,520,891	$233,037,727
2001	$197,837,436	$127,031,666	$325,273,776
2002	$210,567,651	$199,110,359	$478,060,606
2003	$196,650,800	$288,684,497	$503,610,036
2004	$211,859,983	$304,345,533	$544,920,861
2005	$157,344,522	$310,835,356	$655,635,355
2006	$134,987,035	$246,004,044	$478,967,029
2007	$118,030,644	$203,523,782	$359,499,112
2008	$60,794,049	$121,274,593	$217,264,421
2009	$61,994,036	$92,625,650	$213,031,998
2010	$53,612,289	$84,799,416	$220,984,278

Residential Remodeling Updated

	NCC	KNT	SSX
2000	$14,976,644	$4,076,105	$17,063,084
2001	$15,162,242	$4,126,618	$17,274,538
2002	$16,340,700	$4,447,352	$18,617,171
2003	$18,609,383	$5,064,806	$21,201,910
2004	$23,096,820	$6,286,125	$26,314,506
2005	$28,217,996	$7,679,925	$32,149,128
2006	$30,962,535	$8,426,890	$35,276,017
2007	$28,738,822	$7,821,675	$32,742,512
2008	$20,141,056	$5,481,672	$22,946,965
2009	$15,763,501	$4,290,259	$17,959,561
2010	$15,289,561	$4,161,269	$17,419,594

Real Estate Income

	NCC	KNT	SSX
2000	$77,766,395	$21,165,220	$88,600,260
2001	$83,374,805	$22,691,627	$94,989,994
2002	$97,613,073	$26,566,772	$111,211,836
2003	$114,626,880	$31,197,320	$130,595,886
2004	$139,672,000	$38,013,702	$159,130,115
2005	$168,345,521	$45,817,604	$191,798,229
2006	$171,330,444	$46,629,993	$195,198,990
2007	$153,648,925	$41,817,719	$175,054,207
2008	$108,216,042	$29,452,520	$123,291,935
2009	$95,685,358	$26,042,118	$109,015,565
2010	$91,737,585	$24,967,676	$104,517,816

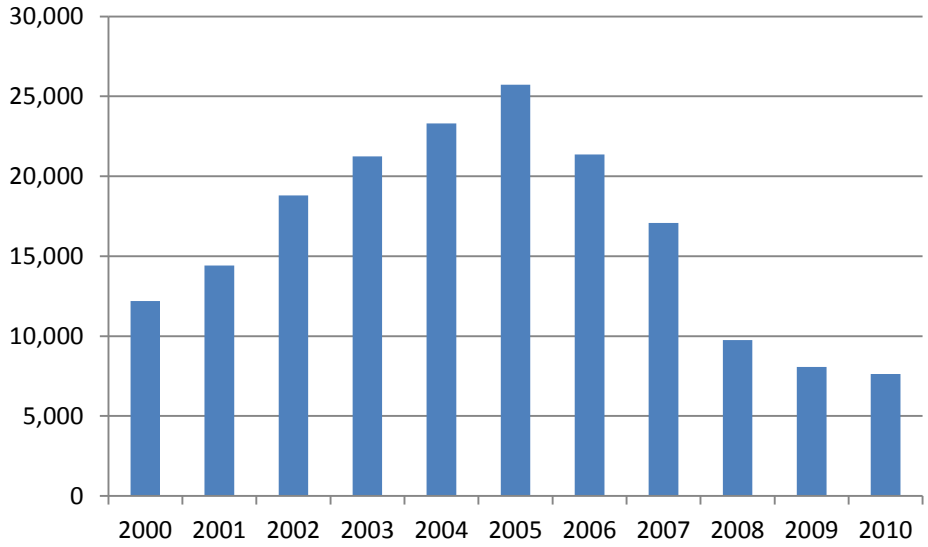
Realty Transfer Tax Revenue

	NCC	KNT	SSX
2000	$33,328,455	$9,070,808	$37,971,540
2001	$35,732,059	$9,724,983	$40,709,997
2002	$41,834,174	$11,385,760	$47,662,215
2003	$49,125,806	$13,370,280	$55,969,665
2004	$59,859,428	$16,291,586	$68,198,621
2005	$72,148,080	$19,636,116	$82,199,241
2006	$73,427,333	$19,984,283	$83,656,710
2007	$65,849,539	$17,921,879	$75,023,232
2008	$46,378,304	$12,622,508	$52,839,401
2009	$41,008,010	$11,160,908	$46,720,956
2010	$39,316,108	$10,700,432	$44,793,350

- Source: Center for Applied Demography & Survey Research
- All dollars are in 2012 prices.

Table 11 summarizes the inputs used to simulate the residential and real estate sectors in Delaware. Next, we present the total economic impact of these two sectors.

Figure 41
Number of Delaware Jobs Impacted by New Residential Construction and Real Estate
2000 – 2010

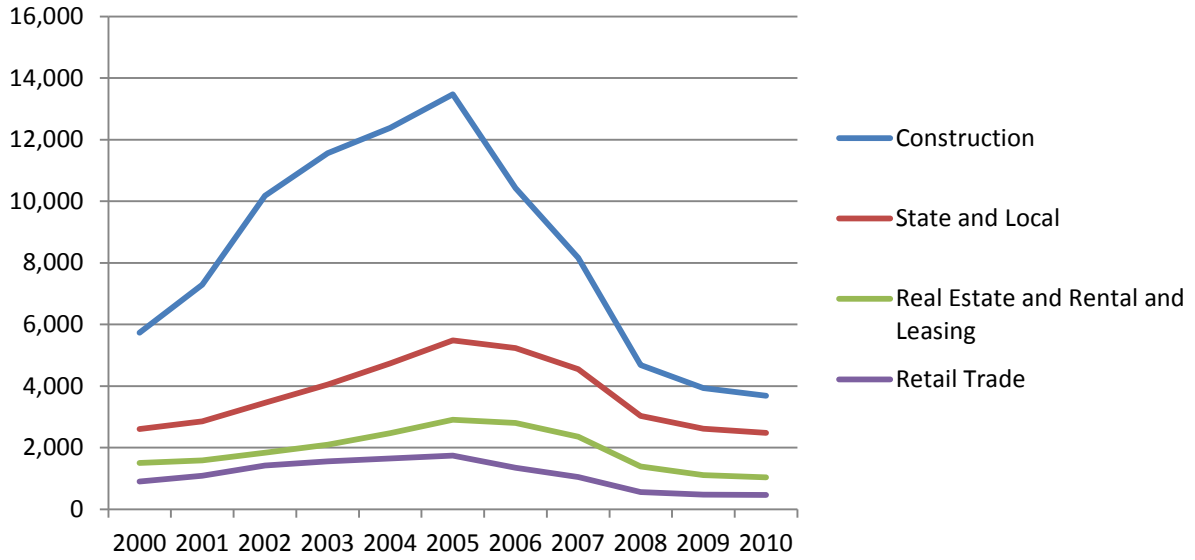


- Source: Center for Applied Demography & Survey Research

Measuring the Economic Impact

Using REMI, we measured the total economic impact that the residential real estate and construction sectors had on Delaware's economy from 2000 to 2010, and Figure 41 indicates the impact of these two sectors on jobs. The model estimates that these sectors were responsible for 12,200 jobs in the beginning of the last decade, 25,700 jobs at the height of the housing bubble, and just 7,600 jobs in the depths of the recession. In other words, the model estimates that 18,100 jobs that existed in 2005 were gone by 2010 as a result of the downturn. Of these lost jobs, 15,100 were in the private sector, 9,800 of which were in the construction sector and 1,900 of which were in the real estate sector.

Figure 42
Number of Delaware Jobs Affected by Residential Construction and Real Estate
2000-2010



- Source: Center for Applied Demography & Survey Research

The REMI model also indicated that at the peak in 2005, these two sectors were generating $2.6 billion in regional output. However, their 2010 contribution was just $699 million. Similarly, the sectors contributed just $444 million to the state's disposable personal income, a 50% decline since 2005. Consumption in Delaware was also significantly reduced as a result of these areas. In 2000, these two sectors were responsible for $260 million of statewide consumption. By 2005 and 2010, $632 million and $328 million (respectively) of statewide consumption could be credited to the residential real estate and construction sector. All the economic estimates are reported in Table 12.

Table 12
Economic Impact (mil's of 2012 $) of the Residential Real Estate and Construction Sector

	Output	GDP	Disposable Personal Income	Personal Consumption
2000	$1,313	$712	$343	$260
2001	$1,520	$813	$439	$322
2002	$1,930	$1,017	$583	$424
2003	$2,150	$1,137	$682	$490
2004	$2,370	$1,267	$789	$561
2005	$2,598	$1,402	$897	$632
2006	$2,170	$1,196	$831	$576
2007	$1,717	$950	$744	$512
2008	$923	$503	$545	$371
2009	$741	$396	$477	$339
2010	$699	$371	$444	$328

- Source: Center for Applied Demography & Survey Research

Table 13
Employment Impact of the Real Estate and New Residential Construction Sector

	Construction	State and Local Govt.	Real Estate	Retail Trade	Total
2000	5,728	2,601	1,502	907	12,191
2001	7,294	2,858	1,593	1,090	14,423
2002	10,177	3,460	1,839	1,423	18,800
2003	11,563	4,048	2,098	1,557	21,247
2004	12,382	4,735	2,474	1,654	23,311
2005	13,470	5,483	2,906	1,744	25,736
2006	10,427	5,238	2,809	1,353	21,367
2007	8,162	4,544	2,357	1,045	17,076
2008	4,687	3,034	1,386	563	9,748
2009	3,940	2,614	1,114	477	8,076
2010	3,685	2,486	1,036	461	7,640

Observations

- Population growth has slowed in Delaware primarily because of much lower net in-migration.
- The growth in all three counties has slowed, but most significantly in New Castle County.
- Sussex County will likely recover its growth rate as retirees continue to arrive. Kent County will return to its pre-bubble growth rate.
- Construction will not return to the bubble period levels in the foreseeable future. Sussex is more likely to return to robust growth while Kent and particularly New Castle counties, lag.
- Housing prices have not yet stabilized but will have to in order for the market to recover fully. Real housing prices are still historically high and will likely fall further.
- Mortgage rates continue to be offered at historically low rates and are not a barrier to home buying for qualified borrowers.
- Foreclosure rates remain historically high but began a slow decline in 2012. How quickly this situation can be resolved is uncertain.
- Home sales are currently at 1985 levels but have shown small recovery in 2012.
- Unemployment rates have been moving progressively lower but are still almost twice as high as existed prior to the financial crisis.
- Health care workers are in high demand while finance workers are slowly losing ground. Construction workers bore the brunt of the recession and are still declining in numbers.
- The labor force participation rate in Delaware continues to fall, albeit slowly. It is not clear if the labor force participation rate will rise as the unemployment rate improves.
- Household incomes in Delaware have been flat in nominal terms for the past four years and may have fallen in real terms.

- Delaware households have been more dependent on government transfer payments (social security, unemployment insurance, pensions) during recent years. Much of that income either is not taxable or is excludable from the state's tax base.
- Prospective home buyers will have to see better employment and financial stability on the horizon before they re-enter the housing market. Existing home sales will remain well below bubble levels for the near term.
- The rate at which young adults form their own household has fallen quite sharply as a result of the 2007-2009 recession, reversing the trends of the late 1990's and mid 2000's.
- For at least the last 40 years, older adults are increasingly less likely to form a household, at least in comparison to earlier years.
- Given the demographic composition of Delaware's 2010 population, there were 28,900 fewer households than what would be expected under normal conditions that existed in the 1990's.
- Approximately 3,900 households in 2010 rented their housing, when long term, normal conditions would have suggested that they would have been home owners.
- Excluding seasonal homes in Sussex County, there are approximately 4,500 surplus vacant HUs in Delaware, most of which are in New Castle County.
- Assuming that headship and ownership rates have not and will not change since 2010, population growth alone is predicted to clear out the surplus stock of housing by 2013.
- If conditions remain the same, then long-term demographic conditions are expected to make residential construction gradually decline in New Castle County and Kent County after rebounding from the effects of the recession.
- At its peak in 2005, the residential real estate sector and residential construction sectors added $1.4 billion to the state's GDP and created 25,700 direct, indirect, and induced jobs. More than half of these jobs were in construction.
- The residential real estate and residential construction sectors were hit particularly hard by the recession; employment credited to these sectors was 70% less in 2010 than it was at the height of the bubble, GDP linked to these sectors fell 74% since 2005, and real disposable income fell 50% since 2005.

Notes