Maryland Shows decreased Out-Migration in 2014

Mobility continues to rebound from effects of the Great Recession

For the tenth time in the last 11 years, more Maryland residents moved out of state than residents of other states moved into Maryland, according to recently released data from the Internal Revenue Service.[1] From these movements, Maryland had a net outflow of just over 3,000 residents in 2014, the last year for which data is available. The net loss in 2014 was about three and half times less than the net outflow in 2013 (-10,968). Although 2012 and later data is not directly comparable with prior years because of a change in methodology, the net outflow in these years is substantially larger than in 2011 (-100) and fits the picture of a better national and local economy allowing for more mobility among residents, which in recent years has meant mostly net outflows for Maryland.[2] Maryland's net out-migration had peaked in 2007 at nearly -24,000, the largest outflow in the data series which dates back to 1981. The smaller net out-migration totals which followed in 2008, 2009, and 2011 and the small net in-migration of 2010, were due largely to the economic consequences of the Great Recession (and lack of a robust recovery), which severely impacted geographic mobility in Maryland and throughout the country. (See **Chart 1**.)

A. Intra U.S. Out-migration has a substantial decrease

The reported 3,099 net out-migrants from Maryland in 2014 include net loss of 150 from "federal citizens movements"- that is the movement of federal personnel to and from overseas assignments. Subtracting out these losses leaves Maryland with a net loss of 2,949 residents with the rest of the U.S., (or "intra-U.S." migration), a sharp decline from the -11,236 intra-U.S. loss in 2013, this sharp decline can directly be attributed to significant net in-migration (7,097) from Virginia. Maryland's peak net intra-U.S. out-migration occurred just before the Great Recession in 2007, with a net loss of 26,500 residents. (See **Table 1** and **Chart 2**.)

In "typical" years, the net gains and losses for Maryland through intra-U.S. migration are due in part to the relative strength of the State's economy compared to the U.S. When Maryland's economy is more robust than the national economy, it tends to gain through intra-U.S. migration, and when the State's economy is less dynamic than the nation's economy, it tends to lose through intra-U.S. migration.

A good example of the interaction between economic growth and net migration is what happened in the 2000s. Following the 2001 recession, Maryland had one of the strongest

[1] The source of the state-to-state migration data are geocoded tax returns matched on social security numbers of the main filer (and starting with the 2012 data other filers besides the primary filer), and ZIP Code address in consecutive years. If there is a change in state address from year one to year two, then there is a move, with the number of people associated with the move equal to the number of claimed exemptions.

[2] Beginning with the 2012 data, the IRS Statistics of Income Division (SOI) assumed responsibility for the migration tabulations from the U.S. Census Bureau, and introduced a number of procedures which increased the quality of the data, including: 1)using a full-year's worth of tax returns as opposed to a partial year (typically January to September), and 2) matching tax returns in consecutive years based on the tax identification numbers of primary, secondary and dependent filers instead of just the primary filer. These changes resulted in an increased number of matches between tax years. For a more complete explanation see SOI Migration Data: A New Approach

economies in a very weak national picture. Payroll (wage & salary) jobs grew by 0.8 percent in 2002 and 0.2 percent in 2003, ranking the State as sixth and 19th fastest, respectively, in job growth in the U.S, (see **Table 2**). This stronger local economy coincided with net migration gains to Maryland from other states. While job growth in Maryland improved over the next four years (peaking at 1.4% in 2006), the State's rank for job growth fell to 28th in the U.S. in 2006, and to 34th in 2007 (0.7%) as much of the rest of the U.S. was catching up to, or even exceeding, Maryland's growth rates. And, whereas the State's growth rates in 2002 and 2003 were well above (anemic) national rates, they were below the improving national rates in 2005 through 2007, leading to net out-migration from Maryland to other states.

The impact of the Great Recession (officially from December 2007 to June 2009) on annual job growth began in 2008 with moderate payroll losses of 0.3 percent nationally and 0.4 percent in Maryland. The economies of both Maryland and the U.S. became progressively worse during 2009 and led to substantial losses both locally and nationally with the nation's 6.2 million payroll jobs loss (-4.3%) by far the largest decline in the 44-year history of the employment data series. And, unlike the 2001 recession, every single state experienced payroll declines in 2009. Maryland's 2.8 percent decline in jobs in 2009, while the sharpest loss since 1991, was actually the 10th smallest percentage loss in the nation but provided no real economic advantage over the rest of the U.S. The same could be said for 2010, with Maryland's 0.8 percent decline smaller than the 1.0 percent nationwide loss and was ranked 22nd, but there were four states with no job losses. (See **Table 2.** See also the **Statistical Evidence for Economic Migration** below, for a discussion on the relationship between the State's economy and migration).[3]

Playing a more prominent role in the larger net out-migration from Maryland in the middle part of the 2000s was the run up in housing costs in the State compared to bordering counties in neighboring states, but particularly to those counties in Pennsylvania. This net out-migration peaked in 2006 and has dropped steadily through 2012 as the Great Recession and the deflating housing bubble severely curtailed geographic mobility. In essence, those who wanted to move had the extra burden of trying to sell an existing home with few buyers, or those who wanted to purchase a new home in a new location had to deal with a very tight mortgage lending environment. All of these impediments to buying and selling homes were compounded by job losses everywhere in the U.S.

All in all, the Great Recession (and the anemic recovery which followed) reduced both in-migrants to Maryland and out-migrants from Maryland, but with the greater reduction to the latter. For instance, between 2006 and 2010, the flow of in-migrants to Maryland from other states dropped by just over 10,900 (-7.9%) while the number of Maryland residents moving to other states fell by three times as much (32,750, or -20.8%). Between 2010 and 2011 there was an uptick in flows for in-migrants (+2,140, or 1.7%) and out-migrants (+3,927, or 3.1%) as the economy improved.[4] (See **Chart 3** for in and out flows for Maryland over the 1997 to 2014 period.)

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[3] Economic net migration in a migration year is seen as being related to economic growth (e.g., as measured by job change) in the **prior year** (e.g. migration in 2009 is strongly influenced by job growth in 2008).

[4] The in-migrant totals to Maryland for 2012 (147,909) and 2013 (152,355) and the out-migrant totals from Maryland in 2012 (-152,235) and 2103 (-163,323) are all substantially higher than the in and out-migrant totals for

B. Regional Migration

Maryland experienced net in-migration from only one of the four major regions of the U.S. (Northeast) and out-migration from the other three regions (North Central, Southern and Western) in 2014. Although not directly comparable to years prior to 2012 because of a change in the processing of the tax return data, this pattern of regional migration in 2014 shows net outflows to more regions than is typical through much of the data series. (See **Table 3**.)

B.1 Only net gains from the Northeast Region

Maryland had a net gain of just over 7,400 residents from Northeast Region states in 2014, twice as many than in 2013. This was the sixth straight year of net gains to Maryland from this Region which followed three successive years of net out-migration (2006 to 2008). The net out-migration from Maryland during those three years, however, were the only time in the 34 years of the data series in which Maryland had net out-migration to this Region.

One of the main drivers of the net out-migration to the Northeast Region in the 2006 through 2008 period, as well as the return to net in-migration after those years, was the interaction between Maryland and Pennsylvania. Maryland has typically had a net outflow of residents to Pennsylvania but this outflow had been shrinking from the mid part of the last decade when it peaked at -8,849, through 2012 when the net outflow (-332), was less than five percent of the peak. In 2014, Maryland's net outflow to Pennsylvania (-950) decreased from 2013.

Maryland has now had net population losses to Pennsylvania for 26 straight years (since 1989) with the largest net outflows occurring between 2003 and 2008. (See **Chart 4**.) Much of the surge in losses to Pennsylvania after 2003 were due to Maryland residents seeking the relatively lower housing costs in the bordering Pennsylvania counties of York, Adams, Lancaster and Franklin, from Baltimore, Carroll, Harford and Frederick counties in Maryland. For example, according to the U.S. Census Bureau's 2008 American Community Survey, the median value of owner occupied housing units for York, Franklin, Adams and Lancaster counties in Pennsylvania were well below the median values in Washington, Baltimore, Harford, Carroll and Frederick counties in Maryland. (See **Chart 5.**) Moreover, the gain in value between 2000 and 2008 was smaller in the Pennsylvania counties than in the Maryland counties. (See **Chart 6.**)

The continued net out-migration from Maryland to Pennsylvania, particularly during the housing bubble period, has led many of these former Maryland residents to commute back into Maryland for work. For instance, between 2000 and the 2006-2010 period, the number of

2011 (133,634 and -133,735, respectively). However, due to a change in processing between the two years which resulted in a higher match rate for tax returns, the results for 2012 and 2013 are not comparable to data from prior years.

Pennsylvania residents commuting to Maryland for work increased by nearly 18,000, or 43.8 percent.[5]

Since the late 1980s, the overwhelming bulk of the gains to Maryland from the Northeast Region have come from **New York** and **New Jersey.** This has remained true in the most recent year, with a net gain of 4,001 New York residents and 3,910 New Jersey residents. While not directly comparable to years prior to 2012, the 2014 net gain from New York was the largest in the last ten years but slightly below the 2004 peak of 4,047. Peak net gains from New York was strongest during the 2001 to 2005 period when Maryland averaged annual net gains of just over 3,850 residents, the highest annual average over any consecutive five-year period since the beginning of the data series in 1981. The strong gains from New York over the 2001 to 2005 period coincided with severe economic hardships in New York, which was characterized by three successive years of wage and salary (payroll) job losses in the 2001 to 2003 period. Migration gains to Maryland from New York moderated in 2006 and 2007 as New York's job growth became more robust.

The 2014 gain from **New Jersey** (3,910) was the highest gain since 1981. Although again not directly comparable to years prior to 2012, the increase in gains from New Jersey to Maryland from the 2010/2012 period was due to the completion of the movement of approximately 9,000 federal defense jobs from Ft. Monmouth, New Jersey to Aberdeen Proving Grounds in Harford County. The gains in 2010 (2,337), 2011 (2,957) and 2012 (2,057) were the third largest, the largest and fifth largest net gains, respectively, in the 33 years of the data series. The movement of these jobs was completed by the end of 2011, but the physical re-location of the workers from New Jersey is happening over a more extended period of time.

From the New England area, Maryland's largest net gain in 2014 came from **Connecticut** (490), up a bit from the 414 gain in 2013. Connecticut is one of the few states in which Maryland has always had a net gain in each of the last 34 years. These gains were strongest during the late 1980s and early 1990s, when Maryland averaged a net increase of 530 residents per year over the 1987 to 1993 period. In contrast, for 2008 and 2009, the worst of the Great Recession years when overall mobility was significantly impacted, the gains to Maryland averaged less than 200 per year.

Historically, the largest net gains to Maryland from a New England state came from **Massachusetts**. In 2014 there was a net gain (104) which followed a small gain of 28 in 2013. In general, the strongest net gains from Massachusetts came in the early 1990s with a net gain averaging 1,159 per year over the 1990-1992 period and in the 2003 through 2006 period when net gains averaged 633 per year.

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[5] Maryland Department of Planning analysis of 2006-2010 county-to-county commutation data from the American Community Survey. See: **2006-2010 American Community Survey County to County Commuting Data for Maryland.**

B.2 Net Inflows Continue from North Central Region

Maryland had a net loss of just under 400 residents from the North Central Region in 2014, almost twice the loss (-197) in 2013 and the second net loss in 15 years. (See **Table 3**.)

Over the last 34 years Maryland has had periods of gains and losses with the North Central Region that were highly correlated with the comparative economic health of the states in this Region and Maryland. For instance, Maryland averaged net gains of just under 3,500 per year over the 1981 to 1990 period from the North Central Region, a time when Maryland was growing very robustly (after 1983). In contrast, over the 1991 to 1999 period, when Maryland's economy lagged much of the U.S. for a good portion of this nine-year period, the State averaged a net loss of just under 1,100 residents to this Region.

In the 2000s, many of the manufacturing and agriculture-dependent states in the North Central Region were some of the first areas in the country to experience job losses that eventually evolved into the 2001 recession (officially lasting from March to November of 2001). In contrast, Maryland's economy was doing much better than most of the U.S., particularly in the early years of the 2000s which again led to migration gains to Maryland from this Region.

In more recent times, several of the East North Central states, particularly Michigan, were severely affected by the Great Recession and the subsequent slow recovery. This led to the most recent uptick in the 2009 through 2011 period when Maryland averaged a net gain of 2,425 per year from this Region, with much of it coming from Michigan (averaging 843 per year), Ohio (averaging 493 per year) and Illinois (averaging 455 per year). The 1,067 net inflow from Michigan in 2009 was the largest net gain from this state to Maryland in the 34 years of the data series and was tied to the significant wage & salary job losses in Michigan in 2008 (-2.6%) and 2009 (-7.0%).

In the most recent year, Maryland had modest net out-migration with four of the five East North Central states, with the largest outflows to **Ohio** (-372) and **Indiana** (-89). The net loss to Ohio was only the fourth time since 1999, while the net outflow to Indiana was for the third consecutive year. In addition, although a relatively small net loss occurred to **Michigan** (-50), this was Maryland's second loss to that state since 1999 and only the sixth time in the last 33 years.[6]

Maryland had modest net losses to three of the seven East North Central States, including North Dakota (-16). The loss to North Dakota was less than the 2013 net outflow (-25) but was only the fourth time since 2000 that there was a net loss to this state. Most likely the net losses to North Dakota over the last two years was influenced by the shale oil boom in that state which has led to an extraordinary strong economy (and the fastest rate of population increase in the nation).[7]

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[6] Payroll job growth in 2014 for Indiana (1.5%), Ohio (1.5%) and Michigan (2.0%) were all greater than in Maryland (1.0%).

[7] See, Population estimates for states through 2014, particularly **Table 1C**.

The only net gain to Maryland over 100 residents from the 12 North Central States was from **Illinois** (302). This gain is almost three times the net inflow in 2013 (112), but below gains realized in many of the prior years.

B.3 Loss to the Southern Region decreases

Net loss of Maryland residents to the Southern Region decreased significantly in 2014, a net loss of 6,897 residents in 2014 compared to a net loss of 12,412 in 2013, nearly half of what it was the previous year. In the mid to latter part of the last decade, 2005 to 2009, Maryland experienced net out-migration of 15,887 per year to this Region, including nearly 22,000 residents in 2007, the largest of the data series. Over the last 34 years Maryland has typically experienced net losses to the Southern Region, with the only gains coming in 2001 and 2002 and during the 1984 to 1990 period when Maryland had one of the strongest economies in the country.

The majority of the net outflow to the Southern Region from Maryland in 2014 was due largely to net out-migration to **Florida, Texas, North Carolina and South Carolina**.

The largest outflow between Maryland and an individual state in 2014 was to **Florida** (-5,626), about 1,600 more in 2013 and the largest net out-migration to this state since 2007. As recently as in 2009, Maryland's net outflow to Florida was at 928, a record low in the 34-year data series. The path to that record low in the years preceding 2009 was quite dramatic and clearly illustrates the effects of the Great Recession and the collapse of the housing bubble.

Maryland has always had net out-migration to Florida as that state is both a retirement and economic magnet for Maryland residents as well as for the rest of the country. The 153,098 total net out-migration from Maryland to Florida over the last 34 years is by far the largest from Maryland to any other state, nearly two and a half times the next largest outflow (to North Carolina at 62,281).

There has been some "ebb and flow" to the magnitude of the outflow to Florida over the years with most of this variation tied to the relative strength of Maryland's economy. For the most part, the lower outflows from Maryland have been during periods of relative local prosperity, such as the late 1980s (annual average of 4,387 over the 1986-1990 period when Maryland's economy was strong) compared to the five prior years (annual average of 5,165 over the 1981 to 1985 period when Maryland's economy was relatively weak). Another surge from Maryland occurred over the 2003 to 2006 period just before the Great Recession with net outflows to Florida averaging 6,200 per year and may well have had to do with Maryland no longer having one of the strongest economies in the country.

The reduction in net outflows from Maryland to Florida since the all-time peak of nearly 7,500 in 2005 was probably due, in part, to the three damaging hurricanes in Florida in 2005 and the corresponding rise in homeowner insurance rates. The rise in rates, along with one of the nation's most overheated housing markets due to rampant speculation, made re-locating to Florida more costly and therefore, less attractive. Later in the decade, the increased difficulty for perspective migrant homeowners to sell their current homes also contributed to the continued fall in net out-migration from Maryland to Florida. Additionally, by 2007 Florida began to experience payroll job declines for the first time since 1991 and in 2008 its 3.3 percent decline in payroll jobs was the worst in the nation while the 6.1 percent decline in 2009 was ranked 48th.

The 1,768 net outflow to **North Carolina** in 2014 was about 400 fewer than in 2013 and was the first annual decrease in the last five years. Although out-migration from Maryland to North Carolina is slowing down, there have been historical periods with greater out migration. For instance, net losses to North Carolina averaged just under 2,400 per year during the 1992 to 1998 period when Maryland's job market was growing more slowly than the national rate. Post 1998, annual outflows declined substantially, reaching a low of just over 100 by 2001 when Maryland was doing substantially better than most of the rest of the U.S. and North Carolina was experiencing job losses. Since 2001, net outflows to North Carolina steadily increased through 2007 before the impact of the Great Recession was felt with a peak net loss of 6,719. Some of the net outflows to North Carolina over the last five years may also have had a retirement component, as North Carolina is one of the principal destinations of Maryland retirees.[8]

There was a net outflow of 1,539 Maryland residents to **South Carolina** in 2014, nearly the same as in 2012 (1,547). Net outflows from Maryland to South Carolina peaked in the years 2006 through 2008 averaging 2,180 in each year. South Carolina's economy was strong up until 2007 but in 2008 (-0.7%), 2009 (-5.4%) and 2010 (-.0.9), had payroll declines that exceeded Maryland's (-0.4% in 2008, -2.8% in 2009 and -0.8 in 2010). But like North Carolina, there also may be a growing retirement component of the migration to South Carolina in better times.

The 3,893 net outflow to **Texas** in 2014 was over 1,000 more than in 2013 and was the largest in the 34 years of the data series. Maryland has now had net out-migration to Texas in each of the last ten years.

Historically the interaction between Maryland and Texas has followed the path of the relative health of each state's economies. For instance, migration to Maryland from Texas was very high in the late 1980s as Maryland was near the top of the U.S. in total job creation, ranking as high as number two in 1987 compared to 30th for Texas (and 47th in 1986). This difference in economic vitality led to the net inflow of over 6,000 Texas residents to Maryland in 1987 and 1988. In contrast, in the 1990s, up through 1998, Maryland was consistently below national job growth rates while Texas was well above. As a result, from 1992 to 1998 Maryland had on average for each year a net outflow of nearly 1,100 residents to Texas. More recently, between 2005 and 2008, job growth in Texas was among the top ten nationally. This job growth was a factor in the 8,500 total net out-migration of Maryland residents to Texas over the 2006 to 2009 period (the year's most closely associated with job growth from 2005 to 2008) being the highest four-year total in the data series. In 2011, Texas had the second fastest rate of job growth in the nation and in 2012 through 2014 the fifth fastest, which may help explain the increasing net out-migration from Maryland to Texas in 2013 and 2014.

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[8] Table 7, Page 25, "**The Dynamics of Elderly and Retiree Migration Into and Out of Maryland, Task Force Report. 2006**."

B.3.1 Inflows from Virginia

Net in-migration to **Virginia** from Maryland was 7,097 in 2014, the first time Maryland had a net in-flow from Virginia in the last eleven years. For instance, although not directly comparable to prior years, out-migration from Maryland to Virginia averaged 3,264 per year over the 2007 to 2011 five-year period. As one of Maryland's bordering states, there have been substantial fluctuations in the net flows between Maryland and Virginia over the last 12 years, ranging from a net gain to Maryland of over 2,000 in 2002 to a net loss of just over 4,200 Maryland residents in 2008. These fluctuations are driven to a large extent by the interactions of very dynamic housing and job markets in the adjacent counties in Maryland and Northern Virginia, principally, Montgomery and Prince George's counties in Maryland and Alexandria City and Fairfax, Arlington, Prince Williams and Loudoun counties in Virginia. Since housing is generally more expensive in Northern Virginia compared to Maryland, it is most likely that economic factors (such as job growth) also play a major role. Like the interaction between Maryland and most states, the Great Recession and its aftermath has had a greater impact on reducing the out-migration from Maryland to Virginia than on reducing the in-migration flow to Virginia from Maryland. For example, between 2008 and 2011 the inflow to Maryland from Virginia was reduced by 355 while the outflow to Virginia from Maryland was reduced by 2,255.

B.3.2 Gains from Washington, D.C. Continue

Maryland had a net gain of 3,116 residents from **Washington, D.C**. in 2014, 1,092 more than in 2013, the largest gain in the last four years. In general, the net gains from Washington, D.C. to Maryland from 1999 forward have been much smaller than in prior years. For example, for the 12-year period between 1987 and 1998, Maryland averaged a net gain of 10,900 residents per year from Washington, D.C. From 1999 to 2010, that annual net gain was reduced to 6,496 per year, and over the last four years of comparable data (2009 through 2011), to 2,457 per year.

In general, the smaller migration gains to Maryland from the District since 1999 may well be an indication that Washington, D.C. is now perceived as a more attractive place in which to live, particularly for the millennial generation.[9] For example, the Taxpayer Relief Act of 1997 gave first-time homebuyers a $5,000 tax credit for buying in Washington, D.C. Additionally, as evidence of the improving quality of life in the District, there was a 23.6 percent drop in the violent crime rate, a 19.5 percent drop in the property crime rate and a 65.7 percent drop in the murder rate per 100,000 inhabitants between 1999 and 2014.[10]

[9] In a different migration data set released by the IRS which details migration by age and income, the District of Columbia had the highest in-migration rate (per 1,000 filed tax returns) of primary tax filers below the age of 26 in 2012, and the second highest rate in 2013. Rates for the 26 to 34 age cohort were also high in 2012 (ranked third) and still strong in 2013 (ranked 23rd). See IRS Migration by Age and Income. Also see slides 13 through 16 in the PDF of maps and charts.

[10] Source: FBI, prepared by the Disaster Center.com (**www.disastercenter.com/crime/dccrime.htm**). Although there has been substantial reduction in per-capita crime between 1999 and 2014, violent crime rates bottomed out in 2011, property crime rates in 2005 and murder rates in 2012.

Even though net migration gains from Washington, D.C. are substantially less since 1999 compared to prior years, they still represent far and away the most important source of new domestic migrants into Maryland. Washington D.C.'s importance to Maryland's migration stream is made clear once the net inflows from the District are subtracted out of total intra-U.S. flows. In 2014, for example, Maryland had a net loss of 6,065 residents to the rest of the U.S., the 12th consecutive outflow in the data series. (See **Chart 7**.) Net outflows to the rest of the U.S. have been typical for Maryland over the last 34 years. Besides the 4,900 net intra U.S. gain (less Washington, D.C.) in 2002 and the 1,000 net gain in 2001, there were only six other years (1984 – 1989) in which Maryland had a net inflow of residents from the other 49 states combined. Those six years in the 1980s generally corresponded to a period when Maryland's economy was one of the strongest in the nation, as was the case in 2001 and 2002, although in this more recent time period Maryland's above average economic health was in a generally very sluggish national context.

B.3.3 Outflows Strong for West Virginia and Delaware

For **West Virginia**, the 1,321 net out-migration of Maryland residents to this State was 66 more than in 2013. Prior to 2011, Maryland had very significant out-migration to West Virginia, especially during the 2003 through 2009 period when it averaged a net outflow of 2,366 per year. Overall, Maryland has experienced net out-migration to West Virginia in all but one year (1986) since 1981. While there probably is some economic migration component in the ups and downs of the net out-migration flows over the last 34 years, more affordable housing (and even retirement migration) probably plays an equally important role. This is most likely the case over the period of the expanding housing bubble when net out-migration to West Virginia accelerated, influenced by the availability of more inexpensive housing in Berkley and Jefferson counties in West Virginia compared to Montgomery, Frederick and Washington counties in Maryland (the three Maryland counties which showed the largest increases in out migrants to West Virginia during the housing bubble expansion).

Maryland's net loss to **Delaware** in 2014 (-1,093) is about 400 lower than in 2013 (-1,501). As recently as 2007 the net outflow to Delaware hit a series peak of 2,130 and was particularly strong between 2005 and 2008 (with each year exceeding 1,500). These sustained large outflows from Maryland corresponded with the booming housing market and may well have been fueled in part by retirement or near-retirement migration. The sharp reduction in 2009 through 2011 (with an annual average of -824 per year) was primarily the result of the continued lackluster housing market. Most of the net out-migration to Delaware comes from the Baltimore and Washington regions (particularly Anne Arundel, Baltimore, Montgomery and Prince George's counties).

B.4 Outflow to California Leads to Net Out-Migration to the West Region

Maryland had a net outflow of nearly 3,100 residents to the Western Region in 2014, an increase of just over 850 from 2013 and the highest net out-migration in in the last 14 years and the fourth highest of the series, which includes data from the last 34 years. The 2014 net out-migration was the third consecutive year of net losses which followed two years of net gains to

Maryland from this Region. Historically, however, Maryland has experienced a net outflow to the Western Region.

Much of the change in the direction of net migration between Maryland and the West Region is due to the interaction between Maryland and **California**. Maryland had a net outflow of 726 residents in 2012, the first net loss to this state in four years, which increased to 862 in 2013, and in 2014 the net loss was at 1,162, the largest since 1983. As recently as 2010 Maryland had a net gain of 833 California residents, the largest since 2003 and which led to a net gain from the West Region (1,272). Net gains in 2010 (and in 2011) corresponded to a weak California economy which saw a 5.5 percent decline in payroll jobs in 2009 (ranked 44th), followed by a 1.7 percent decline (ranked 48th) in 2010. Since then, the California economy has improved tremendously, and by 2012 it had wage and salary job growth of 4.1 percent, second best in the U.S.

Although the shift in the net flow with California was the most dramatic among the Western states, there were also other important interactions with the West Region, in particular **Colorado**, **Nevada** and **Arizona**. The collapse of the housing bubble and the substantial job losses last decade had been particularly devastating to Arizona and Nevada. For instance, Maryland had a nearly 800 outflow to Arizona in 2006, the second highest total for the data series and near the height of the housing bubble. By 2011, however, Maryland had a net gain of 132 residents from Arizona, the largest net inflow of the data series. By 2012, as the housing market and the economy were beginning to get back to better health, Maryland experienced a net outflow of 311 residents to the state which increased to 331 in 2014.

Similarly, for Nevada, the nearly 400 net loss of Maryland residents in 2007 (the second largest in the data series) declined in subsequent years as that state wrestled with one of the worst hit housing markets in the country from the Great Recession. This impact led to a reversal in its migration pattern with Maryland to a net inflow in both 2010 (37) and 2011 (135). Although not directly comparable, the data for 2012 (-26) 2013 (-151) and 2014 (-136) indicates that the trend back to net outflows may be starting to reoccur as the nation's housing market improves.

B.5 Net Federal Citizens Movement

The federal citizens movement category showed a net loss of 150 residents, a reversal of the net gain of 268 residents from Maryland in 2013. Although not directly comparable with prior years, unlike the net loss in 2014 the net gain in 2013 is more typical over the years, although gains are typically in the thousands, not in the hundreds. (See **Table 1** and **Chart 8.**) In Maryland, this component of migration primarily tracks the movement of Department of Defense personnel and their dependents to and from overseas assignments. In some IRS migration tables this category is referred to as "foreign." However, it should be emphasized that for the most part this category for Maryland does **not** track the movement of foreign immigration (although it may include migration to and from Puerto Rico, the U.S. Virgin Islands and other U.S. possessions).[11]

[11] Data for Puerto Rico or the U.S. Virgin Islands are not reported separately in the state-to-state migration data. No county-to-county migration data from Puerto Rico or the U.S. Virgin Islands was reported in 2014. It is possible,

In the beginning of the 1990s, the combination of the end of the Cold War and the need to shrink U.S. budget deficits resulted in overseas troop reductions that led to an average annual gain of 4,000 personnel to Maryland from 1991 to 1995. Net inflows in this category have also been relatively high over the 1999 to 2003 period, averaging close to 3,800 per year. Net gains declined to below 3,000 in 2008 and had a dramatic drop from 2,000 in 2009 to 200 in 2010 before turning negative in 2011 and 2012.

C. Statistical Evidence for Economic Migration

In the past there has been a fairly close correlation between the annual state-to-state IRS net migration inflows and outflows and the peaks and valleys of Maryland's economy. For example, net in-migration to Maryland was strongest in the mid-to-late 1980's when the State's rate of job and personal income growth was one of the fastest in the U.S. Conversely, when Maryland's economy was losing jobs at a faster rate than the U.S. as a whole, and as personal income was declining or growing substantially more slowly than the U.S. (as happened in the early 1990s), net migration tuned negative and continued to remain negative as the State's recovery lagged the rest of the U.S. It is only when Maryland's economy grew faster than the overall U.S. economy in 1999, did net intra-U.S. migration turn positive in 2000.

Linear regression analysis lends support to this relationship between net interstate (or "intra U.S.") migration and relative economic vitality. Net interstate migration, the dependent variable, is represented by Maryland's net domestic migration *not including the flows to and from Washington, D.C.*[12] Economic vitality, the independent variable, is represented by the percentage point differential between Maryland and U.S. annual growth rates, *lagged one year from the net interstate migration year* for: i) total jobs by place of work and ii) total personal income.

The results of this relationship are very good from 1981 *through 2002*, with an adjusted R^2 of .887 and with all coefficients statistically significant at the 95 percent confidence interval.[13]

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however, that there was additional migration between these two locations and Maryland that was not reported at the county level because of confidentiality reasons (i.e., flows of less than 10 returns).

[12] Excluding the interaction from Washington, D.C. from the interstate totals (which produces a better fit) makes intuitive sense since the flows from Washington, D.C. to Maryland are not as strongly related to the business cycle as is the movement between Maryland and most other states. To a great extent, these two areas share the same labor market, making migration between the two to depend more on the locational preferences of individuals.

[13] For t = 1981 to 2002, net intra-U.S. migration not including Washington, D.C. in year t with percentage point growth differential between Maryland and U.S. for personal income and job growth for year (t-1):

$$\text{Net MigLessD.C.}_{(t)} = \underset{(-9.88)}{-8.10} + \underset{(5.62)}{556.88}*\text{PctPtDiff\_PI.Growth}_{(t-1)} + \underset{(5.11)}{499.15}*\text{PctPtDiff\_Job\_Growth}_{(t-1)}$$

adj R^2 = .888

Note: numbers in parenthesis are the t-statistics for the coefficients

C.1 Economic Relationship Weakens Over Last 10 Years

Chart 9 shows the personal income growth rate differential between Maryland and the U.S. and net intra U.S. migration less Washington, D.C. **Chart 10** substitutes the growth rate differential for jobs in place of personal income. From these charts it does appear that there may be less of a direct relationship after 2002, particularly through 2007, compared to some of the prior years, before the relationship levels off through 2010 and then weakens further in the last three years. That is, one would have expected there to be net interstate gains, or at least smaller net interstate losses for Maryland in some of the years between 2003 to 2007 given Maryland's job and personal income growth relative to the U.S.

The weakening statistical relationship between net migration and Maryland's relative job and personal income growth is evidenced by the lower R^2s after 2002. (See **Chart 11.**) For instance, the R^2 value declines from .888 for the 1981 thru 2002 period to .526 for the 1981 to 2014 period.[14]

A possible reason for the higher than expected out-migration from Maryland over the 2003-2007 period is that much of the significant increases in net out-migration to bordering states, like Pennsylvania and West Virginia, were due to the availability of more affordable housing compared to what was available in Maryland counties bordering these states. Moving to some of these counties just across the border from Maryland allowed these migrants to still remain in the same labor market but reside outside of Maryland. In fact, when Maryland's net migration with Pennsylvania and West Virginia are also taken out of State totals for the 2003 through 2007 period, a time of accelerating housing costs in Maryland, the explanatory power of the equation covering years 1981 through 2014 improves, with the adjusted R^2 increasing to .678 from .526 and with all coefficients statistically significant at the 95 percent confidence interval.[15]

For more information, contact Alfred Sundara, Maryland Department of Planning, at: **alfred.sundara@maryland.gov**

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[14] For t = 1981 to 2014

$$\text{Net MigLessD.C.}_{(t)} = \underset{(-7.33)}{-10.17} + \underset{(2.04)}{315.28}*\text{PctPtDiff\_PI.Growth}_{(t-1)} + \underset{(3.05)}{594.97}*\text{PctPtDiff\_Job\_Growth}_{(t-1)}$$

adj R^2 = .526

[15] For net intra-U.S. migration not including Washington, D.C. in year t AND not including Pennsylvania and West Virginia for years 2003 through 2007, with percentage point growth differential between Maryland and U.S. for personal income and job growth for year (t-1):

$$\text{Net MigW/O\_D.CPA\&WVA.}_{(t)} = \underset{(-8.69)}{-9.12} + \underset{(2.94)}{339.63}*\text{PctPtDiff\_PI.Growth}_{(t-1)} + \underset{(4.04)}{592.26}*\text{PctPtDiff\_Job\_Growth}_{(t-1)}$$

adjR^2 = .678

Note: numbers in parenthesis are the t-statistics for the coefficients