



**The Coming Storm: How Years of Economic
Underperformance are Catching up with
Montgomery County**

Submitted by:

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Submitted to:

Empower Montgomery

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The Coming Storm: How Years of Economic Underperformance are Catching up with Montgomery County

Executive Summary

Montgomery County, MD is one of America's most affluent and educated communities. It recently made headlines by being the only Maryland jurisdiction to make Amazon's finalist list of 20 for HQ2.

This would therefore not appear to be a community on the verge of peril. But a confluence of factors has produced an increasingly risky economic and fiscal environment in Montgomery County.

Economic Activity:

- Job growth has been extraordinarily soft in recent years. In 2016, the county was home to fewer jobs than in 2006 despite the addition of 11,603 public sector positions;
- Business establishment formation has been virtually nonexistent recently. Between 2011 and 2016, the county added just 6 net new establishments, about the population of businesses in a strip mall. During that same period, the number of business establishments in Maryland increased by nearly 6,300;
- From 2001 to 2004, Montgomery added 1,841 net new business establishments;
- Slow job growth has translated into elevated commercial vacancy rates, with the office vacancy rate at a stubbornly high 14 percent at year-end 2017. Vacancy is particularly high among older buildings;
- The County's circumstances are rendered all the more precarious by the immense local economic dependence on declining federal activity. As of the third quarter of 2017, Montgomery County's location quotient for federal employment was 5.33, meaning that federal employment is 433 percent more concentrated as a share of overall employment than nationally;
- Recent trends have been especially alarming, with office net absorption actually turning negative in 2017 despite the ongoing national and regional economic expansions;
- Residential activity has also been stymied, with home sales still well short of their pre-recession peak and sky-high development fees contributing to slow home construction;

Shifting Demographics. Shifting Needs:

- The population of elderly in the county is expanding, creating net new demand for a host of services. According to U.S. Census data, between 2000 and 2016, the population of Montgomery County residents who are at least 65 years old increased from approximately 98,200 to nearly 140,700, an increase of about 42,500 senior residents;

- At the same time, the county's student population is expanding. Montgomery County Public School enrollment is projected to increase by 9,238 students between 2017 and 2023;

Fiscal Implications:

- The result of these and other factors is a Montgomery County tax base that is expanding far too slowly to meet future needs;
- IRS data collected from 2014-15 tax returns indicate that during that tax year, the adjusted gross income of those leaving Montgomery County exceeded \$1.8 billion. Meanwhile, the adjusted gross income of newcomers totaled about \$1.4 billion. The result was a net loss of nearly \$440 million in adjusted gross income in just one year;
- To date, the County has used debt accumulation to help balance financial wherewithal with need. Debt service climbed at a 5.6 percent compound annual growth rate between FY2010 and FY2017 in real terms. From FY2016 to FY2017 it grew by \$31.6 million, the largest annual net increase in any of the last 7 years.

The study team concludes that Montgomery County has already entered a downward fiscal spiral in which debt service gobbles up an ever-growing share of the local budget, and that Montgomery County therefore desperately needs to step up efforts to expand its commercial tax base. Raising taxes to balance public needs with public resources would serve to further accelerate outmigration, slow business formation and impede tax base growth.

This should not be mistaken for an assertion that Montgomery County is anything other than the finest possible location for Amazon HQ2. It will be difficult for Amazon to identify an area that is as open to new ideas, offers such abundant human capital, is as saturated with transportation options, supports such high quality public education, is as institutionally rich, and is as committed to shared prosperity as Montgomery County, MD. Indeed, were HQ2 to arrive in Montgomery County, it would go a long way toward solving the fiscal issues facing the County.

However, in the absence of securing HQ2, Montgomery County will have to implement certain reforms to usher forth fiscal sustainability. These reforms include: 1) injecting a pro-business attitude throughout County government; 2) allowing for the development of housing stock that will help retain empty nesters while attracting young professionals and their families, including by significantly reducing the County's sky-high development impact fees; and 3) increasing support for a variety of economic development programs, including the Montgomery County Move Program.

I. A Statistical Depiction of the County

- Study Purpose

Empower Montgomery commissioned Sage Policy Group, Inc. (Sage) to analyze the rate of economic progress in Montgomery County, MD over time in both absolute and relative terms. This study is especially attentive to changes in the county's business, employment and tax bases in recent years. The study team also searched for evidence of any existing or prospective imbalances in Montgomery County's fiscal situation.

The performance of Montgomery County is important not only to its own residents and businesses, but also to other economic stakeholders, including the State of Maryland. As is well known, Montgomery County is Maryland's most populous jurisdiction. More than one in six Marylanders calls Montgomery County home.

- An Educated County . . .

Montgomery County is above all else a hotbed of intellectual capital. While other jurisdictions around the country are known for producing oil, natural gas, or auto parts, Montgomery County is principally about the deployment of PhDs and other highly educated professionals in medical research, federal contracting, higher education, government, healthcare delivery, management services, information technology, and other key economic segments. More than 31 percent of its residents over the age of 25 years hold a graduate or professional degree, rendering it the most educated large jurisdiction in the nation along that dimension.

That concentration of human capital neatly translates into elevated income levels. Montgomery County represents 24.2 percent of all personal income in Maryland.¹ Median household income in Montgomery County is in the range of \$100,000, rendering it one of the most affluent communities in the nation. Census data for 2016 indicate that Montgomery County ranked 14th among U.S. counties/cities in terms of median household income (\$100,352). However, Montgomery County is behind one Maryland jurisdiction (Howard County, # 4) and five communities in Virginia (Loudoun County: #1, \$125,672; Falls Church City, #2, Fairfax County, #3; Arlington County, #5; and Fairfax City, #9).²

Concentrations of human capital will continue to be a critical aspect of economic life in Montgomery County. This is not only because of the abundance of institutions that require

¹ U.S. Bureau of Economic Analysis, "CA1 Personal Income Summary: Personal Income, Population, Per Capita Personal Income". 2016 Data.

² U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates: Table B19013.

highly specialized, highly educated personnel, but also because Montgomery County is home to one of the nation's most prestigious public school systems.

Approximately 75 percent (74.8%; 2015) of Montgomery County students are enrolled at a college within 12 months of graduating high school, compared to 66.6 percent of students statewide. Almost 80 percent of Montgomery County students (79.3%) are enrolled at a college within 24 months of graduating from high school, compared to 70.9% statewide.³

In 2017, the U.S. Department of Education awarded the prestigious National Blue Ribbon School award to Farmland Elementary School and Ronald McNair Elementary School in Montgomery County. These represent the 38th and 39th MCPS schools to win that distinguished award. Only 342 schools across the country won the award in 2017.⁴

- . . . that is No Longer as Dynamic and Wealthy as it Once Was

Some have made the claim that Montgomery County, MD has been overlooking the business community and has not worked diligently enough in the area of economic development to sustain prosperity. That is consistent with an abundance of data characterizing the better part of two decades.

While the county is still affluent and remains a desirable place in which to raise a family, economic dynamism has become duller over time. Take, for instance, the county's shockingly lackluster employment growth over the past nearly two decades.

Between January 2001 (the beginning of the data series) to September 2017 (the most recent month for which data are available), Montgomery County added 26,459 jobs. That translates into 6.0 percent growth in the number of jobs supported by the county's economy.

Over that same period, Maryland's total employment expanded 12.2 percent and the nation added 10.7 percent to its job totals. In other words, despite representing approximately one-sixth of Maryland's population and a quarter of its household income, Montgomery County created fewer than 1 in 10 net new Maryland jobs between early-2001 and the fall 2017.

Comparisons with the balance of the Washington metropolitan area are also revealing. Between 2001 and 2016, total employment in the Washington metropolitan area expanded by 393,048 jobs or 14.6 percent. In percentage terms, Montgomery County ranked 20th

³ Maryland State Department of Education, *2017 Maryland Report Card*.

⁴ Montgomery County Public Schools. The Bulletin. "Two MCPS Schools Win National Blue Ribbon Award". November 15, 2017. <http://news.montgomeryschoolsmd.org/staff-bulletin/two-mcps-schools-win-national-blue-ribbon-award/>.

among 24 Washington metropolitan area jurisdictions in terms of job growth with employment expanding just 3.1 percent over 15 years.⁵

These dynamics are even more concerning when one considers the County’s especially lackluster private sector job growth in recent years. Between 2006 and 2016, Montgomery County lost 12,511 private sector jobs, of which more than 10,300 were in goods producing industries like manufacturing and construction. These positions are often attached to middle-income wages that offer health, retirement and other benefits. Public sector employment expanded by 11,603 net new positions during that period, rendering Montgomery County’s economy even more dependent on public sector outlays. Exhibit 1 supplies relevant statistical detail.

Exhibit 1. Montgomery County, MD Employment by Sector, Select Years

	Employment			Net Change		CAGR	
	2006	2011	2016	2006-2016	2011-2016	2006-2016	2011-2016
Total Employment	464,876	447,238	463,967	-909	16,729	0.0%	0.7%
<i>Public Sector Employment</i>	78,249	86,031	89,852	11,603	3,821	1.4%	0.9%
<i>Private Sector Employment</i>	386,626	361,207	374,115	-12,511	12,908	-0.3%	0.7%
Goods-Producing	45,943	35,851	35,583	-10,360	-268	-2.5%	-0.1%
Service-Producing	340,683	325,357	338,532	-2,151	13,175	-0.1%	0.8%

Source: 1. U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW) program; 2. Sage. Notes: Data are not seasonally adjusted (NSA). Yearly employment figures are annual averages.

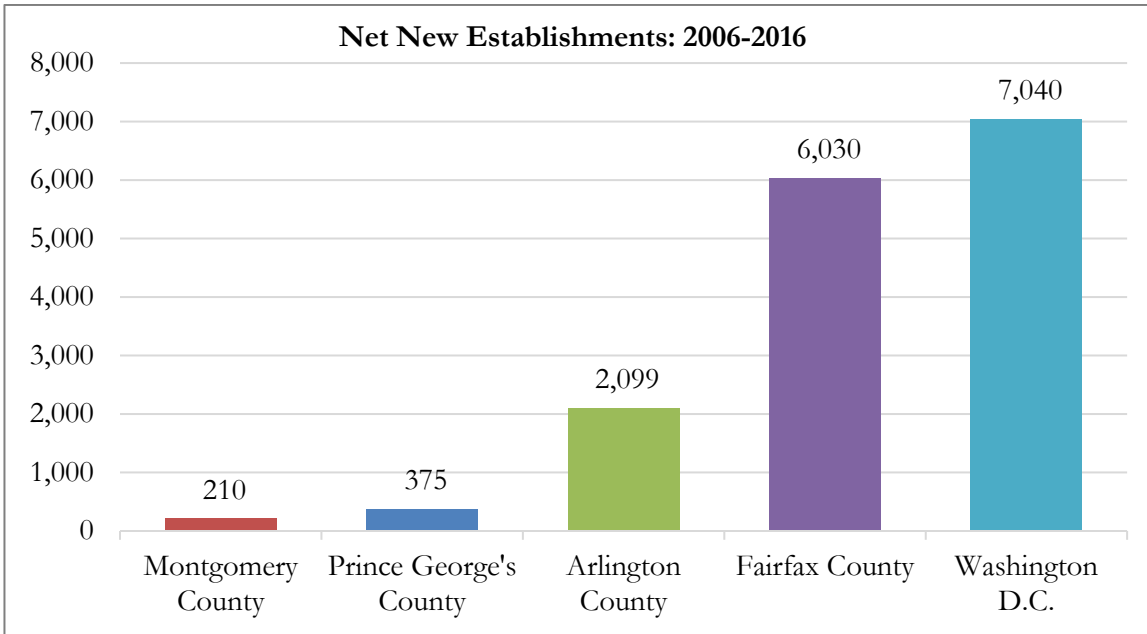
A more granular analysis reveals the significant underperformance of Montgomery County in terms of employment growth vis-à-vis the most dynamic communities in the Washington metropolitan area.

Between 2011 and 2016, Montgomery County added approximately 16,700 net new jobs or 3.7 percent to employment totals. That was actually a bit better than Fairfax County over that period (14,200; 2.4%), but fell well short of growth leaders like Loudoun and Prince William counties (16.2% and 16.8%, respectively). Moreover, employment growth has picked up more recently in Fairfax County.

This period of slow overall and private sector job growth coincides with virtually absent net new business formation. Between 2011 and 2016, the number of establishments in Montgomery County increased by 6, or roughly the population of businesses at a strip mall. Over that same period, the number of business establishments operating in Maryland expanded by nearly 6,300. Exhibit 2 shows how much slower net business formation from 2006 to 2016 was in Montgomery County compared to neighboring jurisdictions.

⁵ Seventh State, “Lessons Learned from the Giant Tax Hike, Part Three”, October 4, 2017. By Adam Pagnucco. <http://www.theseventhstate.com/?p=8636>.

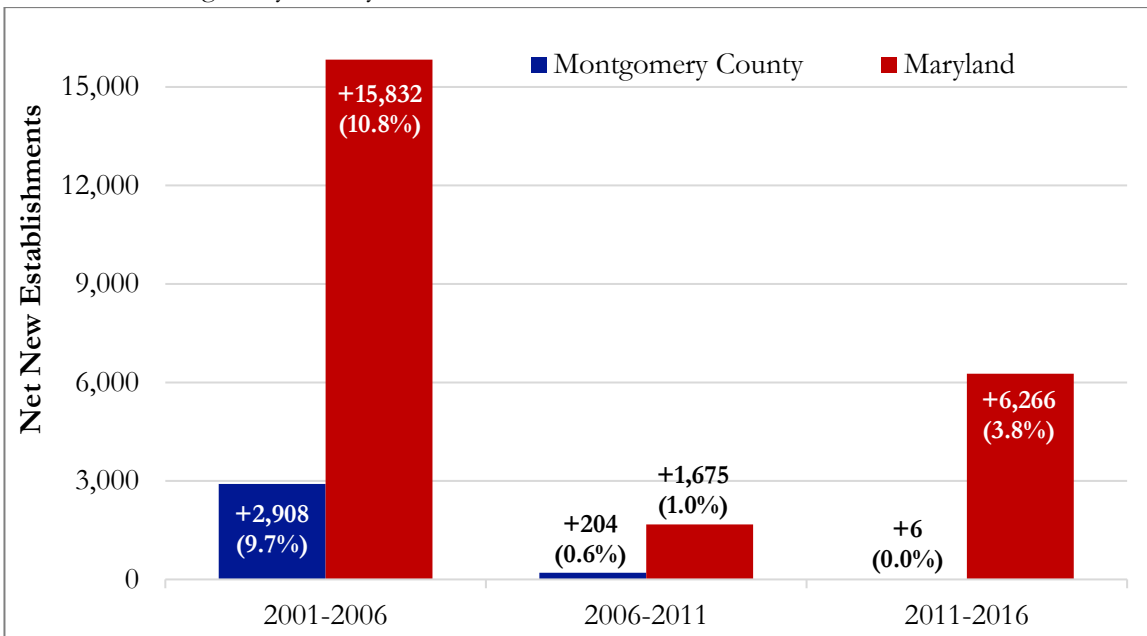
Exhibit 2. Net Business Establishment Growth, 2006 v. 2016, Select Geographies



Source: 1. U.S. Bureau of Labor Statistics; 2. Sage. Notes: Data are not seasonally adjusted (NSA).

The sluggishness in new business formation in Montgomery County has generally worsened with time. Between 2001 and 2004, the county added 1,841 net new establishments. Between 2005 and 2010, the county added 128 net new business establishments. Compared to Maryland, which added 9,855 net establishments from 2005 to 2016, Montgomery County’s 134 net new businesses is particularly disappointing. Exhibit 3 provides relevant statistical detail.

Exhibit 3. Montgomery County v. MD: Number of Business Establishments, Select Years

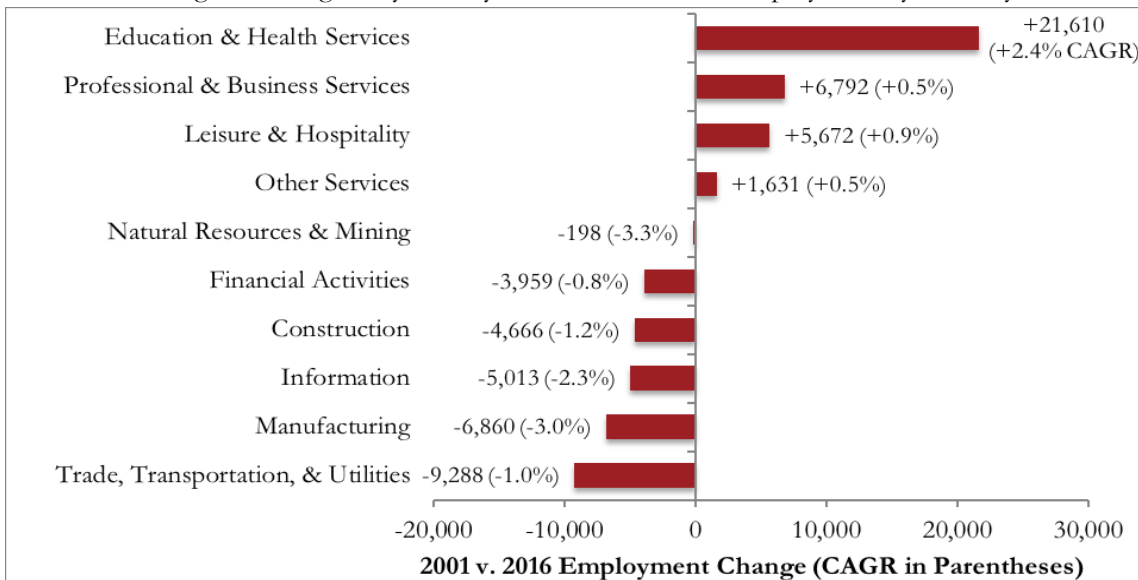


	Total # of Establishments			5-Year Growth		1-Year Growth	
	2011	2015	2016	Net	%	Net	%
Maryland	164,665	168,788	170,931	6,266	3.8%	2,143	1.3%
Montgomery County	32,956	32,862	32,962	6	0.0%	100	0.3%
Montgomery County v. Maryland: Historical Growth in Business Establishments							
	2001-2004		2005-2010		2011-2016		
	Net	%	Net	%	Net	%	
Maryland	8,266	5.6%	3,589	2.2%	6,266	3.8%	
Montgomery County	1,841	6.2%	128	0.4%	6	0.0%	

Source: 1. U.S. Bureau of Labor Statistics; 2. Maryland Department of Labor, Licensing and Regulation (DLLR), Maryland Quarterly Census of Employment and Wages (QCEW) program; 3. Sage. Notes: Data are not seasonally adjusted (NSA). Yearly figures are annual averages.

There are a handful of private industries in Montgomery County that have lost employment over time, including logistics (aka -- trade, transportation, and utilities), manufacturing, information, construction, and financial activities. Financial activities represents the industry offering the highest level of average compensation among all major industry groups. See Exhibit 4 for additional statistical detail.

Exhibit 4. Change in Montgomery County, MD Private Sector Employment by Industry, 2001 v. 2016



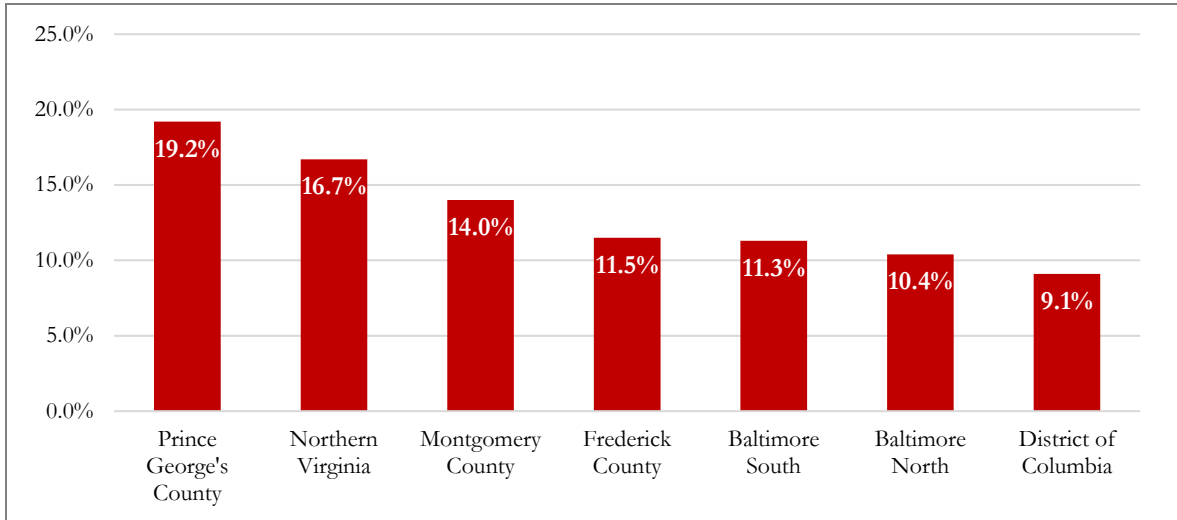
Source: 1. U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW) program; 2. Sage. Notes: Data are not seasonally adjusted (NSA). Yearly employment figures are annual averages.

There are many implications of soft employment growth, including for real estate. The U.S. economy is in the midst of its third longest expansion in history. Despite that, by the end of 2017, Montgomery County's office space vacancy rate stood at 14 percent (please see Exhibit 5).

Some will point out that other areas, including Northern Virginia have even higher vacancy rates. However, because there is more faith in the economic dynamism of various Northern Virginia communities, there is far more office space presently under construction there. In other words, investors are collectively indicating that they would rather develop new product in Northern Virginia, with its still high vacancy rates, than in Montgomery County, with its somewhat lower level of available inventory.

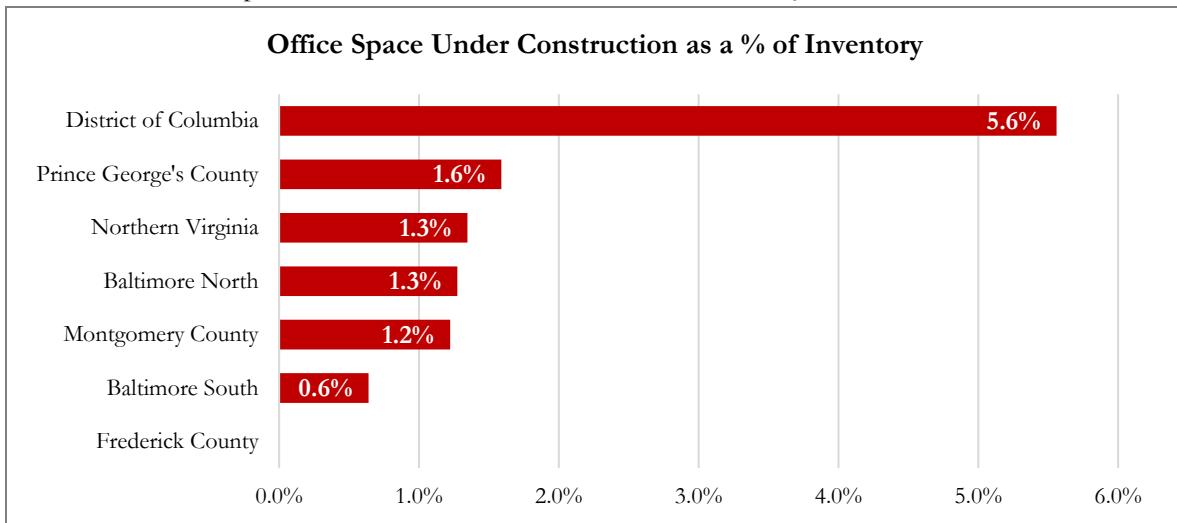
This makes sense given Northern Virginia’s superior performance in terms of business formation and job growth over time. However, this also ultimately translates into slower commercial tax base growth in Montgomery County, which in turn translates into fewer resources available to supply public services and support broadly shared quality of life.

Exhibit 5. Overall Office Vacancy in Select Areas, 2017Q4



Source: 1. Transwestern; 2. Sage. Note: Figures based on inventory of buildings 15,000 square feet RBA and greater.

Exhibit 6. Office Space Under Construction in Select Areas, 2017Q4



Area	SF Under Construction
District of Columbia	7,657,222
Northern Virginia	2,620,775
Baltimore North	991,503
Montgomery County	781,724
Prince George's County	344,100
Baltimore South	229,800
Frederick County	0

Source: 1. Transwestern; 2. Sage. Note: 1. Includes buildings 15,000 square feet RBA and greater.

There are certain sub-markets in the county where vacancy rates are especially elevated. Transwestern data for 2017Q4 indicate that in the Kensington/Wheaton area, the direct vacancy rate for all office buildings ended last year at 28 percent. In North Bethesda, vacancy ended last year at nearly 19 percent. North Rockville was associated with a direct office vacancy rate of nearly 16 percent.

Exhibit 7. Montgomery County Office Inventory, 2017Q4

Submarket	Inventory Square Feet (1)	Direct Vacancy (%)
Bethesda/Chevy Chase	11,504,840	6.8%
North Bethesda	10,765,098	18.7%
Rockville	8,483,331	12.4%
North Rockville	12,380,046	15.9%
Gaithersburg	6,386,461	12.6%
Germantown	2,730,085	15.3%
Kensington/Wheaton	1,333,234	28.0%
Silver Spring	6,849,072	10.5%
N. Silver Spring/Rt. 29	3,492,988	9.7%
Total Montgomery County	63,925,155	13.2%
<i>Total Excluding Bethesda/Chevy Chase</i>	<i>52,420,315</i>	<i>14.7%</i>

Source: 1. Transwestern; 2. Sage. Note: 1. Includes buildings 15,000 square feet RBA and greater.

This impacts communities in many ways, including in the form of truncated tax bases as buildings steadily lose value. Exhibit 8 shows how slowly the assessed value of office buildings has climbed in Montgomery County over time. From 2006 to 2016, assessed value climbed only 13.1 percent. Excluding the Bethesda/Chevy Chase submarket, assessed value in the county expanded by only 4.8 percent. The question is whether that performance helps County finances keep up with the growing demand for public services, a subject tackled later in this report.

Exhibit 8. Montgomery County Office Building Tax Values, 2006 v. 2016*

Submarket	Assessed Value (\$Millions)		2006 v. 2016		
	2006 Base	2016 Actual	Net Chg.	% Chg.	CAGR
Gaithersburg	\$5.30	\$5.87	\$0.57	10.8%	1.0%
North Bethesda/Potomac	\$23.93	\$21.70	-\$2.23	-9.3%	-1.0%
North Rockville	\$20.06	\$22.06	\$1.99	9.9%	1.0%
Rockville	\$10.49	\$12.36	\$1.87	17.8%	1.7%
Germantown	\$3.23	\$4.27	\$1.04	32.3%	2.8%
Bethesda/Chevy Chase	\$21.65	\$31.23	\$9.58	44.3%	3.7%
Silver Spring	\$12.21	\$11.09	-\$1.12	-9.2%	-1.0%
North Silver Spring/Rt 29	\$1.72	\$2.22	\$0.50	29.3%	2.6%
Kensington/Wheaton	\$0.97	\$0.96	-\$0.01	-0.8%	-0.1%
Outlying Montgomery County	\$3.35	\$4.59	\$1.24	37.0%	3.2%
Total Montgomery County	\$102.90	\$116.34	\$13.45	13.1%	1.2%
<i>Total Excluding Bethesda/Chevy Chase</i>	<i>\$81.25</i>	<i>\$85.11</i>	<i>\$3.86</i>	<i>4.8%</i>	<i>0.5%</i>

Source: 1. Transwestern; 2. Sage. Note: *306 properties sampled. Office buildings > 50,000 square feet; built prior to 2006.

Data presented in Exhibit 9 strongly suggest that the situation will deteriorate before improving (if it improves). Despite economic expansion globally, domestically, and in Maryland, net office space absorption was negative in Montgomery County last year, meaning that more space was vacated than occupied. Note that there is currently no office construction taking place outside of the beltway.

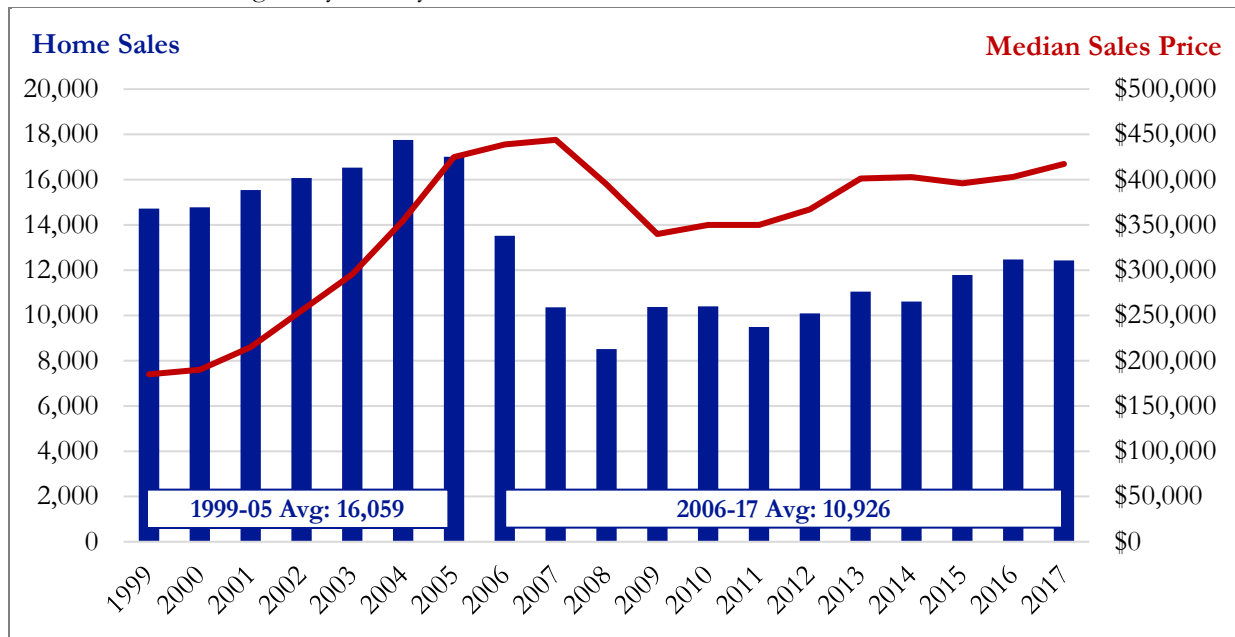
Exhibit 9. Montgomery County Office Market Statistics (All Buildings), 2017Q4

Submarket	Direct Vacancy	Asking Rent (PSF)	SF Under Const.	Net Absorption (SF)	
				2017Q4	Total 2017
Bethesda/Chevy Chase	6.8%	\$38.24	660,000	92,000	-151,000
North Bethesda	18.7%	\$28.32	0	22,000	-11,000
Rockville	12.4%	\$29.84	0	8,000	0
North Rockville	15.9%	\$27.35	0	50,000	-33,000
Gaithersburg	12.6%	\$22.28	0	-26,000	-18,000
Germantown	15.3%	\$24.77	0	-8,000	-3,000
Kensington/Wheaton	28.0%	\$24.78	0	-27,000	-16,000
Silver Spring	10.5%	\$28.06	121,724	-27,000	-33,000
N. Silver Spring/Rt. 29	9.7%	\$23.37	0	14,000	-31,000
Total Montgomery County	13.2%	\$28.99	781,724	98,000	-296,000

Source: 1. Transwestern; 2. Sage. Note: Figures based on inventory of buildings 15,000 square feet RBA and greater.

Naturally, residential real estate and construction activities are also impacted by soft economic growth. Last year, Montgomery County home sales remained well below the level characterizing the late-1990s. Median sales price has also not fully recovered, but it closer to achieving its mid-2000s peak than sales.

Exhibit 10. Montgomery County, MD Home Sales, 1999-2017

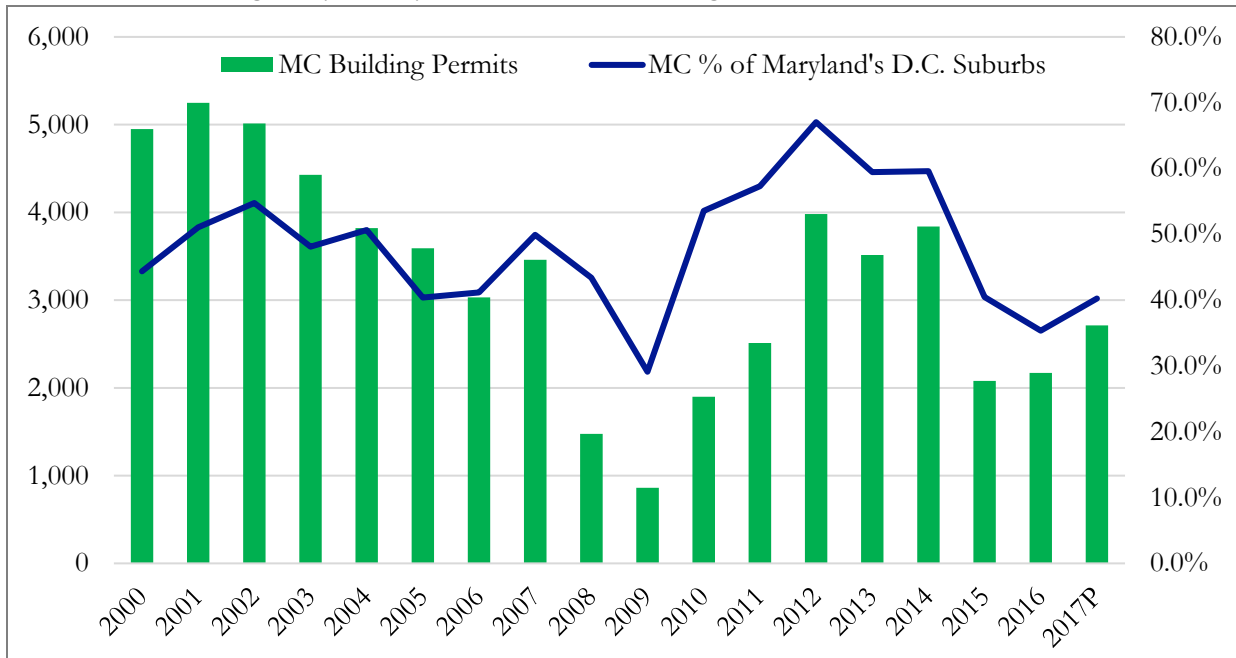


Source: 1. Maryland Association of Realtors (MAR); 2. Sage.

Much of the investment in residential development in recent years has been in the apartment market. Despite a significant amount of apartment construction, the number of residential building permits issued in Montgomery County has been soft by historic standards in recent years, with the county's share of permits issued in Maryland's D.C. suburbs generally in decline since 2012.

In part, the lack of construction of single-family housing is due to restrictive zoning, but it is also attributable to sky-high development impact fees that amount to between \$30,134-\$45,159 per single-family detached unit (see Exhibit A19 in Appendix for additional detail). The relative lack of single-family home construction has helped to push unsold inventory levels lower, creating growing scarcity and higher median sales prices in the process. According to the County's Comprehensive Annual Financial Report, the value of residential construction fell by nearly 19 percent in FY2017.⁶

Exhibit 11. Montgomery County, MD Residential Building Permits, 2000-2017



Source: 1. U. S. Bureau of the Census; Data tables prepared by Maryland Department of Planning; 2. Sage.
 Note: Maryland's D.C. Suburbs include Frederick County, Montgomery County, and Prince George's County.

One apparent impact of these housing market, business, and employment dynamics is a net outmigration of taxpayers. With the county's population aging and with more people retiring to the American South, the county needs to be able to attract a new generation of taxpayers. IRS data indicate that not enough of these taxpaying families are being attracted.

⁶ Montgomery County, Maryland. "Comprehensive Annual Financial Report, Fiscal Year 2017". Prepared by the Department of Finance. p. xi.

For instance, data collected from 2014-15 tax returns indicate that during that tax year, the adjusted gross income of those leaving Montgomery County exceeded \$1.84 billion. Meanwhile, the adjusted gross income of newcomers totaled about \$1.4 billion. The result was a net loss of nearly \$440 million in adjusted gross income in just one year. Moreover, based on tax return data, the average income of those moving out is higher than the average income of those moving into Montgomery County.

Exhibit 12. Montgomery County Net Migration—Adj. Gross Income (from IRS Tax Returns), 2014-2015

2014-15 Adj. Gross Income	
In-Migration Total	\$1,404,430,000
Outmigration Total	\$1,842,937,000
Net	-\$438,507,000
In-Migration Average Per Tax Return	\$69,869
Outmigration Average Per Tax Return	\$79,434

Source: 1. Governing.com; 2. IRS; 3. Sage. Notes: Figures represent tax exemptions, which approximate total persons in households. Total migration includes foreign migration.

In short, Montgomery County is not capturing a sufficient share of Washington area tax base and taxpayers. This is reflected in Exhibit 13, which shows population growth over time in Montgomery County and a number of other proximate communities.

Exhibit 13. Percentage Change in Population in Select Areas, 2000-2010 & 2010-2017

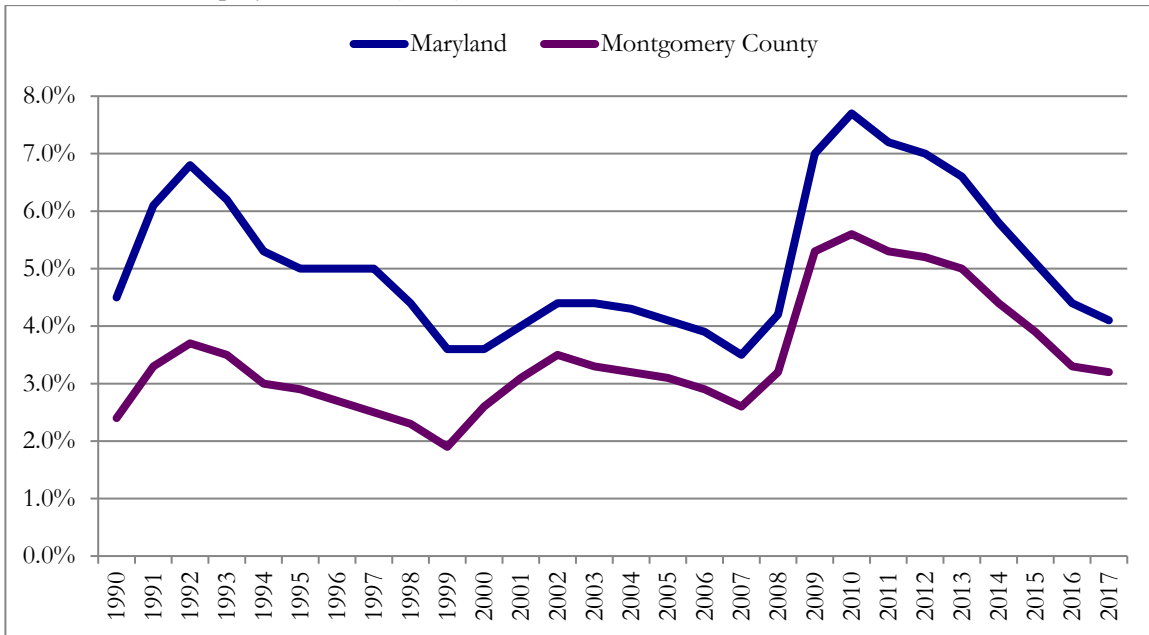
Geography	2000	2010	2017	% Change	
				2000-2010	2010-2017
United States	281.4 Mil.	308.8 Mil.	325.7 Mil.	9.7%	5.5%
Maryland	5,296,486	5,773,807	6,052,177	9.0%	4.8%
Howard County	247,842	287,129	321,113	15.9%	11.8%
Montgomery County	873,341	971,952	1,058,810	11.3%	8.9%
Prince George's County	801,515	863,379	912,756	7.7%	5.7%
District of Columbia	572,059	601,766	693,972	5.2%	15.3%
Virginia	7,078,515	8,001,043	8,470,020	13.0%	5.9%
Arlington County	189,453	207,684	234,965	9.6%	13.1%
Alexandria City	128,283	140,006	160,035	9.1%	14.3%
Fairfax County	969,749	1,081,682	1,148,433	11.5%	6.2%
Loudoun County	169,599	312,347	398,080	84.2%	27.4%
Prince William County	280,813	401,994	463,023	43.2%	15.2%

Source: 1. U.S. Census Bureau. 2000 Census: DP-1; 2017 Population Estimates: PEPANNRES. 2. Sage.

Some would suggest that this presents a somewhat too dire depiction of the county's circumstances. After all, there are a number of indicators that seem reasonably upbeat. Home prices are rising, a significant amount of office space is under construction in Bethesda/Chevy Chase, and countywide unemployment remains low.

Last year, Montgomery County unemployment averaged 3.2 percent, approximately a full percentage point below the statewide average. Exhibit 14 supplies data indicating that except for during the recession and its immediate aftermath, unemployment in Montgomery County has generally been below 5 percent.

Exhibit 14. Unemployment Rate (NSA), 1990-2017



Source: 1. U.S. Bureau of Labor Statistics, Local Area Unemployment Statistics (LAUS) program; 2. Sage. Notes: Data are not seasonally adjusted (NSA).

A low unemployment rate can be interpreted in various ways, however. Low unemployment may be symptomatic of rapid job growth. But that is not what has transpired in Montgomery County. Rather, unemployment is low in large measure due to slow labor force growth, which is in part due to the relatively faster in-migration to Northern Virginia and the District of Columbia. The growing lack of available talent renders it more likely than it would otherwise be that businesses will continue to generally choose other communities in which to expand, leaving Montgomery County with an abundance of vacant commercial space, including in older structures.

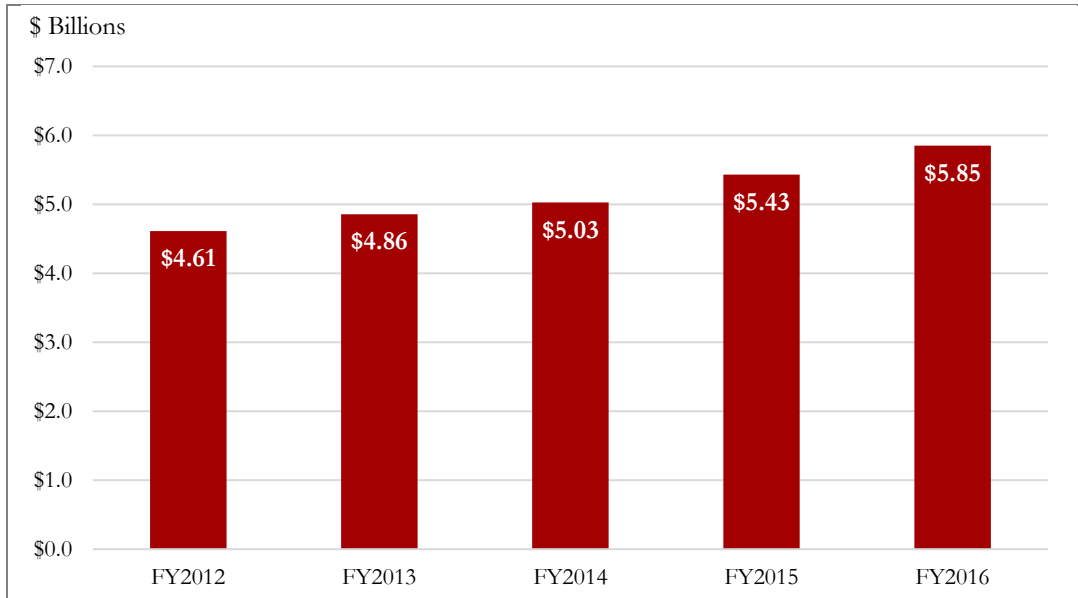
II. Fiscal Implications

- Headed Toward a Bad Place

Montgomery County is the largest borrower among all Maryland counties. That isn't altogether surprising given it represents Maryland's most populous jurisdiction. However, the expansion of the County's debt obligations could be viewed as alarming. According to the Department of Legislative Services (DLS), Montgomery County had tallied \$5.9 billion in outstanding debt by FY2016. The level of debt was up 6.1 percent on an average annual basis from FY2012-FY2016. That places Montgomery County 4th in terms of the fastest annual growth in debt among Maryland's counties over that time period (please see Exhibit 16).

On a per capita basis Montgomery County's debt amounts to \$5,647 per person, 58 percent higher than the statewide average of \$3,575. DLS further indicates that the ratio of Montgomery County debt to real and personal property assessable base has grown from 2.8 percent in FY2006 to 3.3 percent in FY2016. Montgomery County ranked 4th among all the counties in terms of the highest debt-to-assessable-base ratio in Maryland in FY2016.⁷

Exhibit 15. Montgomery County Debt, FY2012-FY2016



Source: 1. Maryland Department of Legislative Services, "Overview of Maryland Local Governments-Finances and Demographic Information", January 2018. 2. Sage. Note: The Washington Suburban Sanitary Commission's debt is allocated to both Montgomery and Prince George's counties on a 50/50 basis.

⁷ Maryland Department of Legislative Services, "Overview of Maryland Local Governments-Finances and Demographic Information", January 2018.

Exhibit 16. Growth in Maryland County Debt by County, FY2012-FY2016

Rank	County	FY2012-16 Avg. Annual Change	Rank	County	FY2012-16 Avg. Annual Change
1	Prince George's	9.1%	13	Caroline	1.5%
2	Garrett	7.2%	14	Washington	1.2%
3	Worcester	6.7%	15	Frederick	0.3%
4	Montgomery	6.1%	16	Harford	-0.3%
4	Anne Arundel	6.1%	17	Charles	-1.1%
6	St. Mary's	5.5%	18	Carroll	-1.2%
7	Cecil	5.1%	19	Allegany	-1.4%
8	Baltimore	4.3%	20	Somerset	-1.9%
9	Howard	4.0%	21	Talbot	-3.1%
10	Wicomico	3.7%	22	Dorchester	-5.0%
11	Queen Anne's	3.5%	23	Calvert	-5.7%
12	Baltimore City	3.3%	24	Kent	-11.2%

Source: 1. Maryland Department of Legislative Services, "Overview of Maryland Local Governments-Finances and Demographic Information", January 2018. 2. Sage. Note: The Washington Suburban Sanitary Commission's debt is allocated to both Montgomery and Prince George's counties on a 50/50 basis.

- **The Price of Dependence**

Striving to pay down this debt over time could prove enormously challenging for at least two reasons. First, though Montgomery County has continued to experience expanding income and property tax collections over time, there are macroeconomic forces that threaten the long-term performance of the county's economy. Arguably, the most serious of these is the local economy's dependence on federal government employment and spending.

Exhibit 17 supplies data regarding industry location quotients as of the third quarter of 2017, the last quarter for which these ratios can be computed. A location quotient of 1 indicates that a particular industry is as represented in Montgomery County as it is nationally. In other words, if an industry represents 15 percent of employment both in Montgomery County and nationally, the location quotient for that industry will equal 1. A location quotient of 2 means that a particular industry is 2 times as intensely represented as a fraction of total employment as it is nationally. Note that in Montgomery County, the most intense concentrations are in federal agency employment and in professional/business services, which frequently encompasses workers at federal government contractors.

With the U.S. government having amassed \$20 trillion in national debt, running an approximately \$1 trillion deficit per annum, and facing insolvency in both Medicare and Social Security trust funds over the next 10-15 years, there is a likelihood that at some point, federal support for Montgomery County's economy will erode. That is not promising for a county that is already heavily indebted.

Exhibit 17. Montgomery County, MD Industry Concentration (Location Quotients), 2017Q3

Industry	Employment Location Quotient
Federal Government	5.33
Professional & Business Services	1.58
Other Services	1.56
Information	1.21
Financial Activities	1.08
Construction	1.04
Education & Health Services	1.02
Local Government	0.94
Leisure & Hospitality	0.84
Trade, Transportation, & Utilities	0.64
Manufacturing	0.31
State Government	0.08
Natural Resources & Mining	0.05

Source: 1. U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW) program; 2. Sage. Notes: 1. Figures are for private employment except for Federal/State/Local government. 2. Location quotient is the percentage of employment in a given sector relative to the percentage of employment in this sector at the national level. Values above 1.0 reflect a concentration greater than the national average. Values below 1.0 reflect a lesser concentration. For example, Las Vegas will have a location quotient greater than 1 in the Leisure and Hospitality industry because this industry makes up a larger share of the Las Vegas employment total than it does for the country as a whole.

- **Shifting Demographics, Shifting Needs**

There is at least one additional concern regarding Montgomery County’s rising debt obligations – shifting demographics and an accompanying growing demand for public services. One scarcely knows where to initiate such as discussion, but perhaps the county’s aging population represents a useful starting point.

In 2010, the county’s population of residents ages 65 and older stood at an estimated 120,000. By 2040, this population is projected to be 244,000. Over this period, the population of seniors will rise from a 12 percent share of residents to 20 percent.⁸

The implication is clear. The next two decades will be associated with a rapid rise in the fraction of the population on fixed incomes. Some will move from the county, including in pursuit of warmer climates. Others may be induced to move away because of considerations pertaining to property taxes and living costs. But many others will stay.

One need not speculate upon this. According to U.S. Census data, between 2000 and 2016, the population of Montgomery County residents who are at least 65 years old increased from approximately 98,200 to nearly 140,700, an increase of about 42,500 senior residents.

⁸ Montgomery County, Maryland. “County Executive’s FY18-23 Fiscal Plan”. p. 12-1.

Exhibit 18. Montgomery County, MD Population by Age Group, 2000 v. 2016

Category	2000	% of the Population	2016	% of the Population
<15	186,678	21.4%	201,045	19.6%
15-24	95,219	10.9%	121,349	11.8%
25-44	282,275	32.3%	280,409	27.3%
45-64	211,012	24.2%	282,881	27.6%
65+	98,157	11.2%	140,687	13.7%
Total Population	873,341	100.0%	1,026,371	100.0%
Median Age	36.8	-	38.6	-

Source: 1. U.S. Census Bureau, 2000 Census: DP-1; 2012-2016 American Community Survey 5-Year Estimates: DP05.
2. Sage. Note: 2016 figures represent a 5-year average covering 2012-2016.

The relative lack of growth in the population of younger professionals has helped produce an aging base of Montgomery County taxpayers – one in which a growing share is quickly moving from peak earnings toward fixed incomes. According to data compiled by the Comptroller of Maryland, in 2001 about 43 percent of tax filers in Montgomery County were aged 35-54. In 2015, a bit more than 38 percent of tax filers was in that age group. At the same time, the share of tax filers aged 55-64 grew from 12.4 percent of all filers in 2001 to 17.7 percent of all filers in 2015. The share of filers aged 65 or older grew from 12.6 percent to 17.2 percent (see Exhibit A27 in the Appendix for additional summary detail).

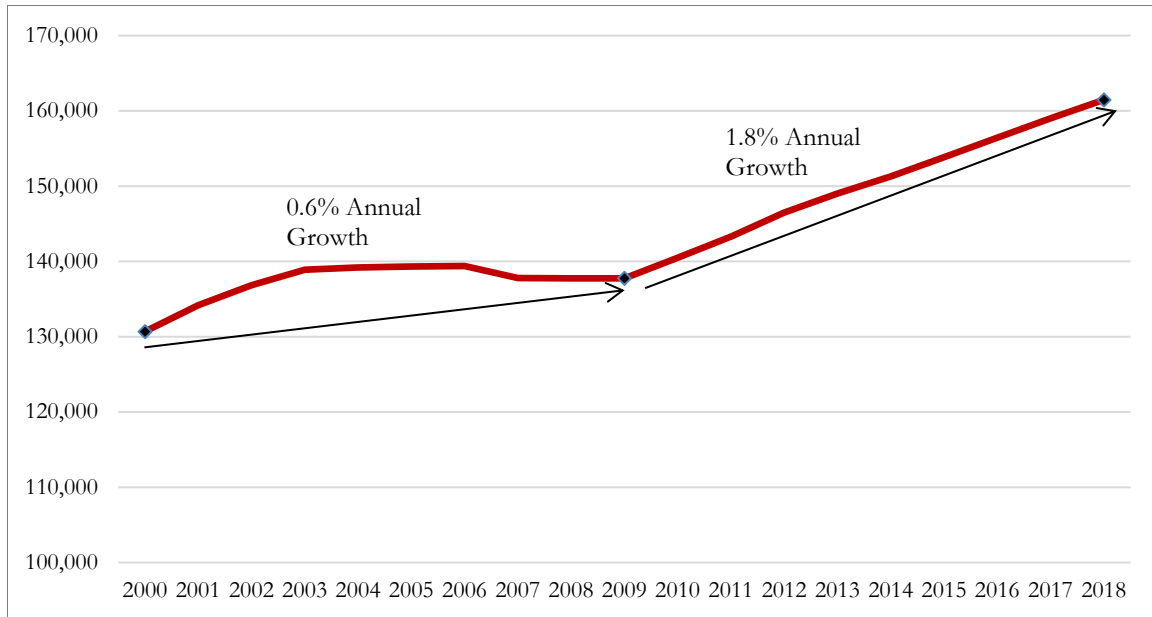
The same patterns are apparent when one considers adjusted gross income (AGI). In 2001, tax filers aged 35-54 accounted for 53 percent of AGI. By 2015, this proportion had declined to just under 44 percent. The share of AGI attributable to tax filers aged 55-64 jumped from 16.4 percent to almost 24 percent between 2001 and 2015. The share attributable to those aged 65 or older grew from just under 13 percent to more than 20 percent between 2001 to 2015 (see Exhibit A27 in the Appendix).

Even as the population of older residents expands briskly, there is also growing demand for public services emerging from younger families. This becomes particularly apparent when one analyzes demand for public education services.

According to information supplied by the County Executive’s FY18-23 Fiscal Plan, Montgomery County’s K-12 student population will continue to expand at a rate of more than 2,000 students per year. Among other things, this will challenge the school system’s ability to maintain class sizes and address a wide achievement gap. This would not represent as much of an issue were it not for the fact that “demands on other County services such as home health care, senior transportation, emergency response, libraries, and recreation also continue to increase.”⁹ As indicated by Exhibit 20 below, per pupil funding has already flat-lined even in the context of growing State of Maryland support.

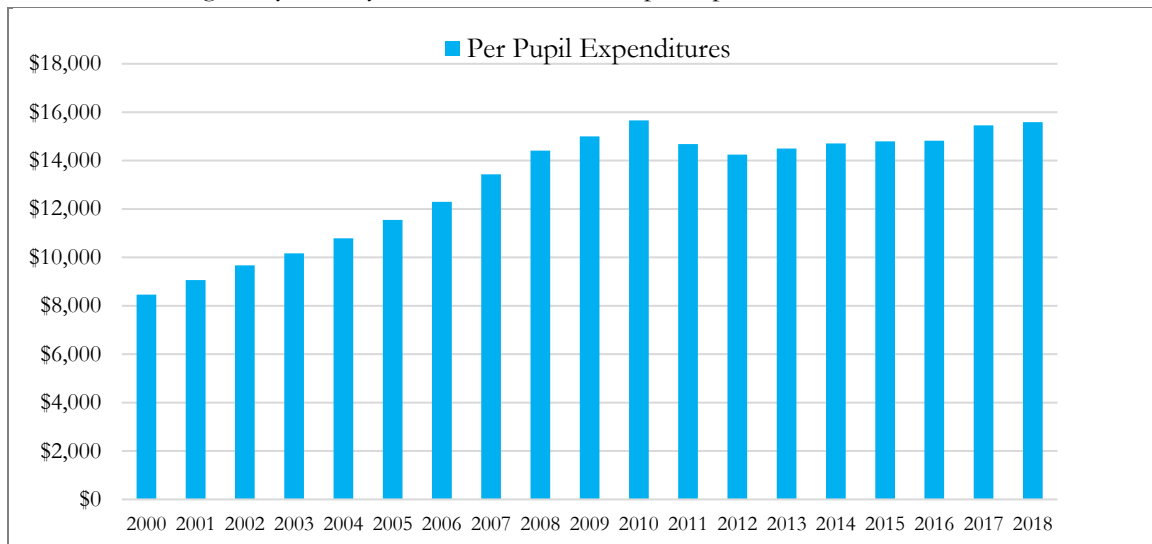
⁹ Montgomery County, Maryland. “County Executive's FY18-23 Fiscal Plan”. p. 1.

Exhibit 19. Montgomery County Public Schools: Enrollment, FY2000-FY2018



Source: 1. Montgomery County, “County Executive’s FY19 Recommended Operating Budget and FY19-24 Public Services Program”. p. 10-7. 2. Sage.

Exhibit 20. Montgomery County Public Schools: Per Pupil Expenditures, FY2000-FY2018



Source: 1. Montgomery County, “County Executive’s FY19 Recommended Operating Budget and FY19-24 Public Services Program”. p. 10-7. 2. Sage.

Conjecturing about whether or not county taxpayers will face growing demands to finance education is unnecessary – they will. Revenue projections of Montgomery County’s Operating Budget and Public Services Program (PSP) incorporate demographic assumptions based on Metropolitan Washington Council of Governments (COG) Round 9.0 estimates. They are also based on fiscal and economic data and analyses used or prepared by the Department of Finance. County births, which represent one key indicator of future elementary school populations and child daycare demand, are projected to gradually increase

from an estimated 13,150 in 2015 to 13,645 by 2023. Partially as a result, the County projects that Montgomery County Public School enrollment will increase by 9,238 students between FY17-FY23.

Montgomery College full-time equivalent student enrollments are also projected to increase, albeit only slightly from 19,911 in FY2017 to 19,964 in FY2022.¹⁰ While that implies only gradual growth in funding for the College, it also suggests that the number of entrants to the local labor force emerging from the College will not expand briskly.

Exhibit 21. Montgomery County Population Growth v. Growth in Select Operating Indicators

	2006	2016	CAGR 2006-2016
Montgomery County Population	932,131	1,043,863	1.1%
Select Operating Indicators			
Public Safety-Fire and Rescue:			
Number of responses to incidents	100,805	116,915	1.5%
Number of inspections completed	NA	16,439	-
Public Safety-Police:			
Number of arrests	13,221	20,045	4.2%
Number of warrants served	12,500	8,109	-4.2%
Transportation:			
Lane-miles of streets resurfaced	213	405	6.6%
Number of passengers transported by Ride On bus service	27,294,000	24,512,705	-1.1%
Health and Human Services:			
# of applicants approved for the Home Energy Program	5,140	7,822	4.3%
# of individuals served through the Crisis Center	59,175	47,191	-2.2%
# of licensed and registered child care slots in the County	33,224	40,292	1.9%
# of in-home aide service hours for seniors & people w/ disabilities	193,317	105,000	-5.9%
Library-Number of items circulated:	10,857,498	10,478,360	-0.4%
Recreation:			
# of community center visits/contacts	3,718,474	955,160	-12.7%
# of visits to County pools	1,590,683	1,570,434	-0.1%
# of persons registered for camps and classes	25,133	76,285	11.7%
Community Development and Housing:			
Number of housing rental licenses issued	80,245	100,379	2.3%
Number of housing code enforcement cases	7,451	8,250	1.0%
Education:			
Average # of pupils registered pre-K through 12	139,387	156,447	1.2%
College students - credit and non-credit	56,490	56,001	-0.1%
Business-Type Activities:			
Land development plans approved	4,674	6,048	2.6%
Refuse collected (tons)	77,596	71,767	-0.8%
Waste processed at the Resource Recovery Facility (tons)	621,822	620,505	0.0%

Source: 1. Montgomery County, Maryland. Comprehensive Annual Financial Reports, Fiscal Years 2015-2017. Prepared by the Department of Finance. Table 25. 2. Sage.

¹⁰ Montgomery County, Maryland. "County Executive's FY18-23 Fiscal Plan". p. 12-1.

Exhibit 21 supplies additional food for thought. Between 2006-2016, Montgomery County’s population expanded at a compound annual growth rate of 1.1 percent. At the same time, the number of responses to public safety events by emergency responders increased at a 1.5 percent compound annual growth rate, the number of applicants approved for the Home Energy Program increased 4.3 percent annually, and the number of arrests at a 4.2 percent rate, with arrests rising from 13,221 in 2006 to 20,045 a decade later. In short, the County faces growing socioeconomic pressures after a period of rapid debt accumulation.

In addition to expanding elderly and student populations, Montgomery County’s foreign-born population has also risen rapidly over time. Montgomery County is often labeled the international gateway to Maryland, and the data are consistent with that assertion.

Montgomery County’s foreign-born population increased from 293,071 in 2010 to 334,697 in 2016 (+41,626; +14.2%). The overall population increased 8.4 percent over that period.¹¹ This new population helps expand the size of the local labor force and demand for goods and services provided by local businesses. But it also generates new demands for public services, including those supplied by the county’s public schools.

There are features of the socioeconomic environment that are broadly shared by communities. One is the general increase in poverty rates over time. Between 1999 and 2016, the poverty rate for families in Montgomery County increased from 3.7 to 4.7 percent. Many communities would consider these low rates of poverty to be enviable. However, any increase in poverty is likely to translate into growing demand for a variety of public services, including free and reduced-price meals in schools.

Exhibit 22. Poverty Rates (Families) for Select Areas, 1999 v. 2016

Geography	1999	2016
United States	9.2%	11.0%
Maryland	6.1%	6.8%
Montgomery County	3.7%	4.7%
Prince George’s County	5.3%	6.9%
District of Columbia	16.7%	14.1%
Virginia	7.0%	8.1%
Arlington County	5.0%	5.9%
Alexandria City	6.8%	7.0%
Fairfax County	3.0%	4.0%
Loudoun County	1.7%	2.6%
Prince William County	3.3%	5.3%

Source: 1. U.S. Census Bureau, 2000 Census: DP-3; 2012-2016 American Community Survey 5-Year Estimates: S1702. 2. Sage. Note: 2016 figures represent a 5-year average covering 2012-2016.

¹¹ U.S. Census Bureau, 2012-2016 and 2006-2010 American Community Survey 5-Year Estimates: Table B05002.

There were indications of progress in 2017. That year, the number of in-home aide service hours for seniors and people with disabilities in Montgomery County increased after having been in decline for years. The number of visits to community pools and community centers increased in 2017 along with the number of persons registered for camps and classes.¹² It is hard to know whether these indications of progress are the result of improved fiscal circumstances after years of economic recovery or due to efforts to bolster constituent services prior to an election year.

- **Has the County Entered a Downward Fiscal Spiral?**

One of the greatest fears for Montgomery County stakeholders is that a combination of economic stagnation and growing debt will lead debt service to crowd out other public expenditure categories. There is evidence that this downward spiral has already begun.

Exhibit 23 indicates that County government expenditures expanded at a 1.3 percent compound annual growth rate between FY2010 and FY2017 in real terms (\$2010). Contributions to Montgomery County schools scarcely budged during that period, and the pace of funding growth slowed further in FY2018. Contributions to Montgomery College have also expanded slowly over time. County budgetary support for Montgomery-National Capital Park and Planning Commission (M-NCPPC) actually declined between FY2010 and FY2017 in real terms, though there was a pickup in support in FY2018.

Meanwhile, debt service climbed at a 5.6 percent compound annual growth rate between FY2010 and FY2017 in real terms. From FY2016 to FY2017 it grew by \$31.6 million, the largest annual net increase in the last 7 years.¹³

Exhibit 23. Montgomery County Operating Expenditures by Agency, Select Years

Fund	Expenditures (\$Millions; 2010 dollars)			FY2010- FY2017 CAGR
	FY2010	FY2017	FY2018 Approved	
County Government	\$1,620.3	\$1,774.2	\$1,814.2	1.3%
Moco. County Public Schools*	\$2,104.6	\$2,204.8	\$2,213.8	0.7%
Montgomery College*	\$247.0	\$263.6	\$276.2	0.9%
M-NCPPC*	\$123.7	\$122.7	\$130.4	-0.1%
Debt Service**	\$237.4	\$347.8	\$359.0	5.6%

Source: 1. Montgomery County, MD. "Schedule F1- Ten Year History of Expenditures in Current and Deflated Dollars". 2. Sage. Notes: M-NCPPC: Montgomery-National Capital Park and Planning Commission. *Includes tax supported and non-tax supported funds. **Includes add-back of State closed school revenues.

¹² Montgomery County, Maryland. Comprehensive Annual Financial Reports, Fiscal Years 2015-2017. Prepared by the Department of Finance. Table 25.

¹³ Montgomery County, MD. "Schedule F1- Ten Year History of Expenditures in Current and Deflated Dollars". <http://apps.montgomerycountymd.gov/BASISOPERATING/Common/Schedule.aspx?ID=HIST&SchedID=F1>.

While it is true that the County must balance its operating budget each fiscal year, there are other funds beyond the General Fund and there is the capital budget. This allows for net borrowing from year to year and debt accumulation when one considers all available funds. From an accounting perspective (uses and sources), one might conclude that the recent increase in funding for certain budget categories has largely been financed by more rapid County debt accumulation.

One can take this analysis further. Exhibit 24 supplies County financial data for FY2010 and FY2016-FY2017 in nominal terms. As indicated, annual debt service climbed from \$248 million to \$401 million between FY2010 and FY2017, a difference of \$152.6 million/year. In nominal terms, FY2017 debt service was more than 61 percent above its FY2010 level. On an annual basis, nominal debt service expanded at a rate exceeding 7 percent during that time period.

To put that into further context, the rate of inflation in the Washington-Baltimore region as measured by the consumer price index (CPI) was 1.6 percent on average from 2010-2017. This means that over a recent 7-year period, County debt service grew more than 4 times the rate of inflation. Rapid growth in debt service occurred despite slow growth in County financial support for education (CAGR 2.2%), health and human services (2.2%), public safety (1.8%), and culture and recreation (1.2%) for the period FY2010-FY2017.

Exhibit 24. Montgomery County Expenditures by Function (All Governmental Funds), Select Years

Fiscal Year	Expenditures (\$ Millions)			FY2010-2017 CAGR (%)
	FY2010	FY2016	FY2017	
Education	\$1,562.1	\$1,674.1	\$1,818.9	2.2%
Capital Projects	\$511.4	\$624.1	\$627.8	3.0%
Public Safety	\$551.9	\$654.5	\$623.6	1.8%
General Government	\$251.8	\$424.0	\$448.7	8.6%
Debt Service	\$248.1	\$359.2	\$400.7	7.1%
Health and Human Services	\$274.8	\$298.6	\$320.4	2.2%
Public Works and Transportation	\$209.7	\$210.8	\$195.1	-1.0%
Culture and Recreation	\$87.1	\$92.2	\$94.6	1.2%
Community Development and Housing	\$38.6	\$37.4	\$52.5	4.5%
Environment	\$12.7	\$23.4	\$27.7	11.9%
Total Expenditures	\$3,748.2	\$4,398.2	\$4,610.1	3.0%

Source: 1. Montgomery County, Maryland. "Comprehensive Annual Financial Report, Fiscal Year 2017". Prepared by the Department of Finance. 2. Sage. Note: Governmental fund information is reported on the modified accrual basis of accounting.

III. Conclusion

- Implications for the Future

Most communities envy Montgomery County. It is wealthy, highly educated, home to the National Institutes of Health, the Food & Drug Administration, one of the nation's largest biotech clusters, the headquarters of Lockheed Martin and Marriott, one of the finest public school systems in the nation, and highly attractive communities such as Bethesda, Silver Spring, Rockville, Gaithersburg, etc.

But underneath a gloss of prosperity lies a host of emerging challenges. Poverty is rising. The population is aging. Business formation has come to a virtual halt. Job growth is erratic, with private sector employment shrinking in recent years. The county also suffers negative domestic net migration in terms of both people and taxable income. Debt service is marching higher even as demands for public services expand, including those related to services for the elderly, public safety, and education.

The county is rendered all the more vulnerable by the dependence of the local government on declining federal outlays. Recently, Montgomery County has been able to bolster support for certain budgetary categories, but only in the context of growing debt and debt service.

- A Need to Accelerate Economic Development

In the final analysis, this is a county that desperately needs to accelerate the growth of its tax base. Job creation has been inordinately slow over the course of many years and there has been virtually no net business establishment formation over the past ten years. In fact, in 2016, Montgomery County was home to fewer jobs than in 2006 despite the addition of more than 11,600 public sector positions. Accordingly, growth in the assessable tax base has been slow, with the county pockmarked by high vacancy rates, particularly in older commercial structures.

The study team concludes that Montgomery County, MD is already in the midst of a downward fiscal spiral. Absent concerted efforts to improve the business climate, accelerate private sector growth and expand the commercial tax base, Montgomery County is poised to experience continued growth in the fraction of its budget comprised by debt service. This will occur during a period of rapidly expanding demand for County services.

The situation stands to become especially dire once the federal government begins tackling its \$20 trillion in national debt and pending insolvencies in Medicare and Social Security trust funds in earnest. Raising taxes, of course, represents a manner by which to generate additional revenues, but Montgomery County is already at the highest permissible level of income taxation (3.2%) and further increases in property taxes would likely accelerate taxpayer outmigration and further impede tax base growth.

- Potential Responses

1. Pro-Business Bureaucracy

Business growth represents the solution to Montgomery County’s challenges. Despite that, business, including in the form of real estate developers, is often viewed as a potential source of harm – one that needs to be regulated intensely and prevented from expanding too quickly. Rather than merely tolerating business, Montgomery County must embrace a business-friendly approach; one that for instance, matches Fairfax County, D.C., and other communities in terms of permitting speed and predictability. The attitude among government agencies should be a commitment to helping businesses solve problems rather than creating bureaucratic impediments.

2. Supporting a Taxpayer-Friendly Built Environment

Montgomery County must hold onto as much of its existing tax base as possible and attract new taxpayers. This implicates the built environment. The county is an expensive place in which to live. That helps keep young knowledge workers out and induces too many empty nesters to leave. Ultimately, that translates into both diminished property and income tax collections. There should be a concerted effort to supply more condominiums and townhomes targeting young families and empty nesters, particularly in the eastern part of the County. The siting of high quality, smaller units oriented toward homeownership would help both attract and retain tax base. This effort would require reducing both the County’s lofty impact fees on new development and the energy taxes that suppress new business activity.

3. Invest Additional Resources in Economic Development

Montgomery County supports a number of incentives for expanding businesses, including the Montgomery County Economic Development Grant and Loan Program, the Montgomery County Small Business Revolving Loan Program, and the Montgomery County Move Program. The Move Program supplies grants for businesses that are new to the county and lease up to 20,000 square feet of Class A or B space. According to the County, at present, “all available funds have been allocated”.¹⁴ The County should strongly consider expanding the Move Program with the goal of meaningfully accelerating the population of businesses in Montgomery County.

4. Win Amazon HQ2

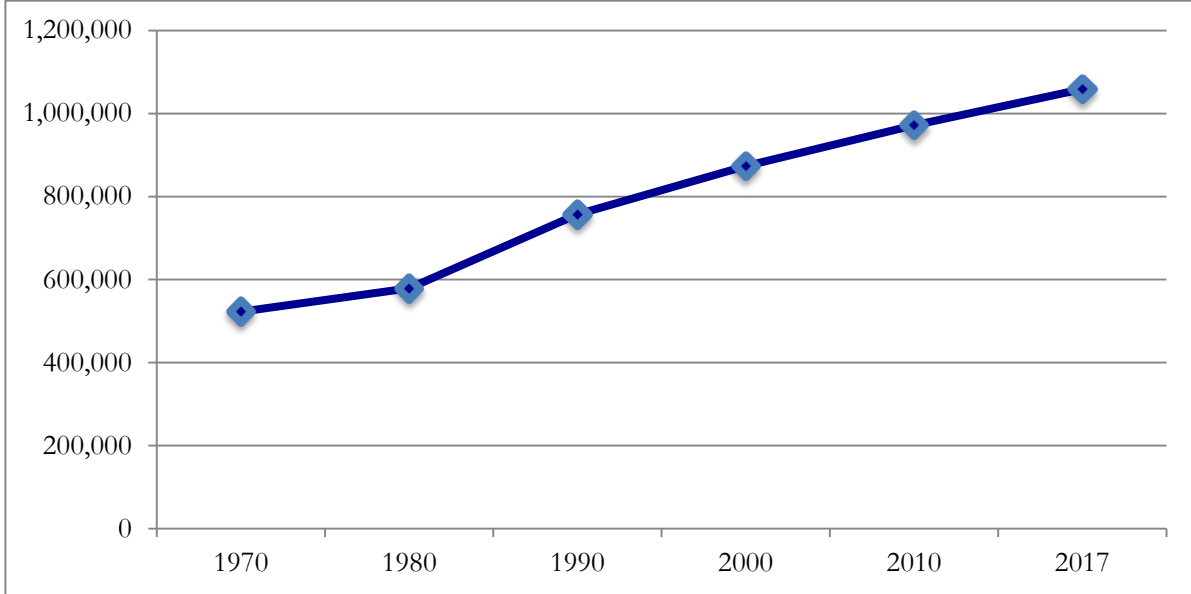
A separate Sage report concluded that the siting of Amazon HQ2 in Montgomery County would ultimately translate into 101,000 net new jobs in Maryland and annual impacts of nearly \$8 billion in employee compensation and approximately \$17 billion in expanded commerce statewide. Montgomery County would absorb much of this economic impact, resulting in surging tax collections.

¹⁴ Montgomery County Economic Development Corporation. <https://thinkmoco.com/choose/incentives-taxes/>.

Statistical Appendix

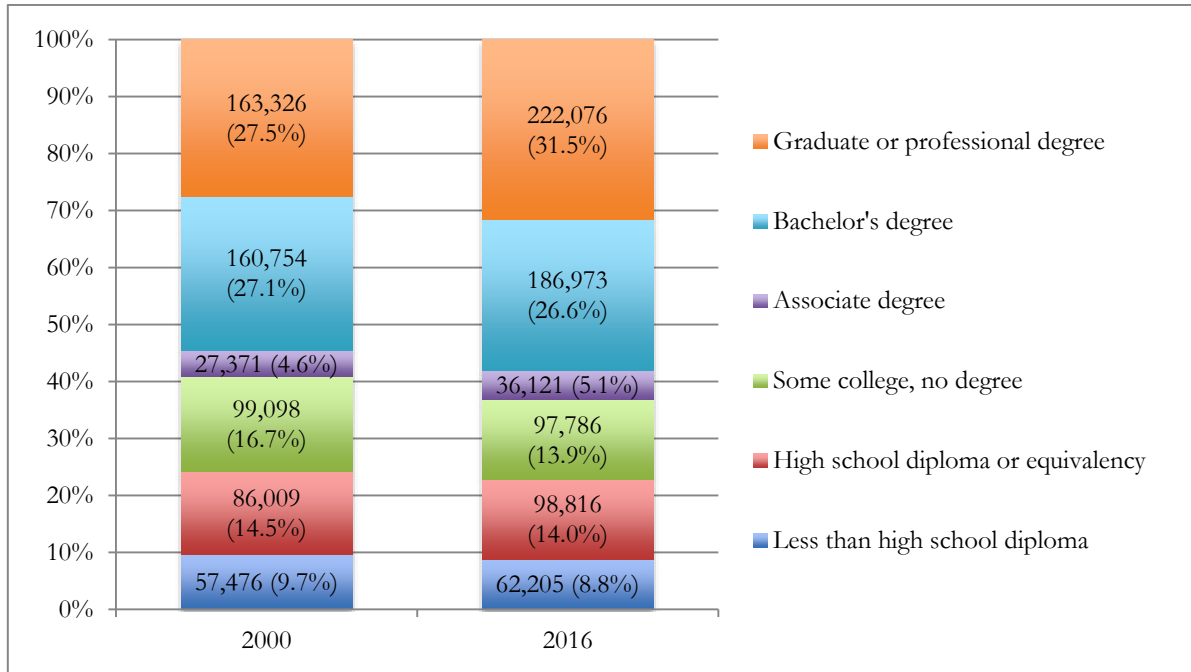
Population & Demographics

Exhibit A1. Montgomery County, MD Total Population 1970-2017



Source: 1. U.S. Census Bureau; 2. Maryland Department of Planning; 3. Sage.

Exhibit A2. Montgomery County, MD Population Aged 25+ by Educational Attainment, 2000 v. 2016



Source: 1. U.S. Census Bureau, 2000 Census: DP-2; 2012-2016 American Community Survey 5-Year Estimates: DP02. 2. Sage.
 Note: 2016 figures represent a 5-year average covering 2012-2016.

Labor Market Dynamics

Business Establishments

Exhibit A3. Montgomery County, MD, Private Sector Establishments by Size, 2015

Establishment Size	# of Establishments	% of Total Establishments
Micro (0-9 employees)	20,080	73.9%
Small (10-49 employees)	5,529	20.4%
Medium (50-99 employees)	862	3.2%
Large (100-499 employees)	635	2.3%
Largest (500+ employees)	54	0.2%
Total	27,160	100.0%

Source: 1. U.S. Census Bureau, County Business patterns; 2. Sage.

Employment & Labor Force

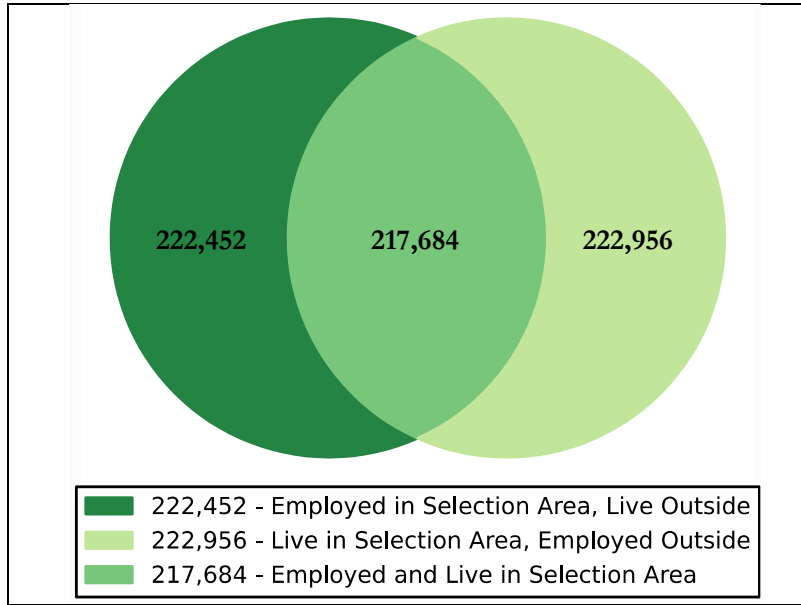
Exhibit A4. Montgomery County, MD: Private Sector Employment by Industry, 2015 (U.S. Census Bureau, On the Map)

Industry	Work Area		Home Area	
	Count	Share	Count	Share
Agriculture, Forestry, Fishing and Hunting	221	0.1%	323	0.1%
Mining, Quarrying, and Oil and Gas Extraction	46	0.0%	73	0.0%
Utilities	589	0.1%	725	0.2%
Construction	23,005	5.2%	18,611	4.2%
Manufacturing	12,015	2.7%	9,988	2.3%
Wholesale Trade	8,988	2.0%	9,596	2.2%
Retail Trade	42,207	9.6%	36,479	8.3%
Transportation and Warehousing	5,482	1.2%	8,207	1.9%
Information	13,909	3.2%	11,529	2.6%
Finance and Insurance	19,209	4.4%	17,619	4.0%
Real Estate and Rental and Leasing	10,964	2.5%	9,401	2.1%
Professional, Scientific, and Technical Services	69,555	15.8%	73,711	16.7%
Management of Companies and Enterprises	6,746	1.5%	5,919	1.3%
Administrative & Support and Waste Management & Remediation Services	28,941	6.6%	28,067	6.4%
Educational Services	38,813	8.8%	44,342	10.1%
Health Care and Social Assistance	49,765	11.3%	48,020	10.9%
Arts, Entertainment, and Recreation	5,878	1.3%	6,379	1.4%
Accommodation and Food Services	28,094	6.4%	33,381	7.6%
Other Services (excluding Public Administration)	20,864	4.7%	25,171	5.7%
Public Administration	54,845	12.5%	53,099	12.1%
Total	440,136	100.0%	440,640	100.0%

Source: 1. U.S. Census Bureau. Longitudinal-Employer Household Dynamics Program, OnTheMap Application; 2. Sage.

<http://onthemap.ces.census.gov/>. Notes: 1. Numbers represent *primary* jobs, not total jobs. Primary Jobs: Public and private-sector jobs, one job per worker. A primary job is the highest paying job for an individual worker.

Exhibit A5. Montgomery County Employment Inflow/Outflow, 2015



Source: 1. U.S. Census Bureau. Longitudinal-Employer Household Dynamics Program, OnTheMap Application. 2. Sage. Notes: 1. Numbers represent *primary* jobs, not total jobs. Primary Jobs: Public and private-sector jobs, one job per worker. A primary job is the highest paying job for an individual worker.

Exhibit A6. Montgomery County Inflow/Outflow Labor Market Details, 2015

Area Labor Market Size (Primary Jobs)	All Workers		Workers Aged 29 or Younger	
	Count	Share	Count	Share
Employed in Montgomery County	440,136	100.0%	82,799	100.0%
Living in Montgomery County	440,640	100.1%	79,573	96.1%
Net job inflow	-504	-	3,226	-
In-Area Labor Force Efficiency				
Living in Montgomery County	440,640	100.0%	79,573	100.0%
Living and employed in MC	217,684	49.4%	40,628	51.1%
Living in MC but employed outside the County	222,956	50.6%	38,945	48.9%
In-Area Employment Efficiency				
Employed in Montgomery County	440,136	100.0%	82,799	100.0%
Employed and living in MC	217,684	49.5%	43,854	53.0%
Employed in MC but living outside the County	222,452	50.5%	38,945	47.0%

Source: 1. U.S. Census Bureau. OnTheMap Application. Longitudinal-Employer Household Dynamics Program. 2. Sage. Notes: 1. Numbers represent *primary* jobs, not total jobs.

Exhibit A7. Montgomery County Employment Inflow/Outflow, Characteristics of Workers, 2015

	Montgomery County Jobs Filled by Residents	MC Jobs Filled by Outside Workers	External Jobs Filled by MC Residents
<i>Number of Workers</i>	217,684	222,452	222,956
<i>Age</i>			
Age 29 or younger	17.9%	19.7%	18.2%
Age 30 to 54	55.4%	57.9%	56.5%
Age 55 or older	26.7%	22.4%	25.3%
<i>Earnings</i>			
\$1,250 per month or less	14.9%	13.1%	12.3%
\$1,251 to \$3,333 per month	26.0%	24.1%	21.9%
More than \$3,333 per month	59.1%	62.8%	65.8%

Source: 1. U.S. Census Bureau. OnTheMap Application. Longitudinal-Employer Household Dynamics Program.
2. Sage. Notes: 1. Numbers represent *primary* jobs, not total jobs.

Exhibit A8. Locations where Montgomery County Workers Live, 2015

	Count	Share
Total Workers	440,136	100.0%
Top 5 Counties		
1 Montgomery County, MD	217,684	49.5%
2 Prince George's County, MD	46,786	10.6%
3 Frederick County, MD	26,921	6.1%
4 District of Columbia, DC	22,117	5.0%
5 Fairfax County, VA	17,451	4.0%
All Other Locations	109,177	24.8%
Top 10 Places		
1 Germantown CDP, MD	25,354	5.8%
2 Washington city, DC	22,117	5.0%
3 Gaithersburg city, MD	16,609	3.8%
4 Rockville city, MD	15,032	3.4%
5 Silver Spring CDP, MD	11,570	2.6%
6 Aspen Hill CDP, MD	11,280	2.6%
7 North Bethesda CDP, MD	10,116	2.3%
8 Bethesda CDP, MD	9,800	2.2%
9 Wheaton CDP, MD	9,685	2.2%
10 Olney CDP, MD	9,647	2.2%

Source: 1. U.S. Census Bureau. OnTheMap Application. Longitudinal-Employer Household Dynamics Program. 2. Sage. Notes: 1. Numbers represent *primary* jobs, not total jobs.

Income & Earnings

Exhibit A9. Growth in Per Capita Personal Income in Select Areas

Geography	2000	2016	CAGR 2000-2016
United States	\$30,602	\$49,246	3.0%
Maryland	\$35,487	\$58,052	3.1%
Montgomery County	\$51,797	\$80,967	2.8%
Prince George's County	\$30,024	\$46,168	2.7%
Virginia	\$32,713	\$52,957	3.1%
Loudoun, VA	\$42,129	\$71,218	3.3%
Fairfax County + Fairfax City + Falls Church*	\$53,284	\$75,978	2.2%
Prince William County + Manassas + Manassas Park*	\$32,216	\$51,164	2.9%

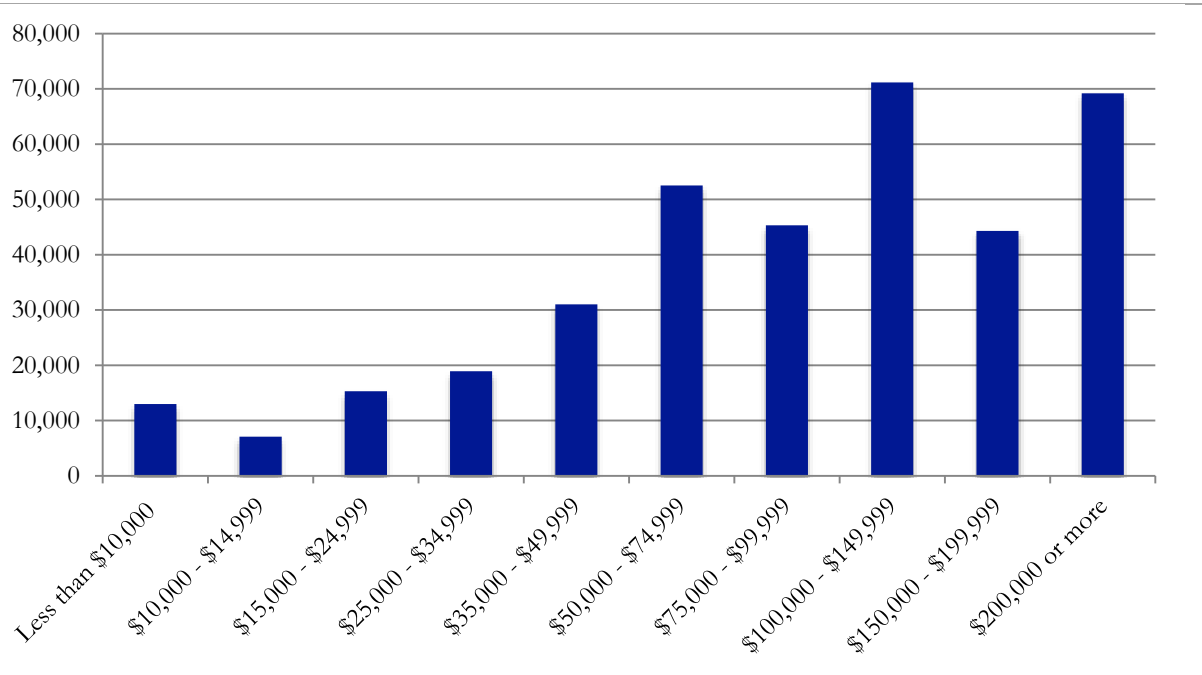
Source: 1. U.S. Bureau of Economic Analysis (BEA); 2. Sage. Notes: 1. All dollar estimates are in current dollars (not adjusted for inflation). * Virginia combination areas consist of one or two independent cities with 1980 populations of less than 100,000 combined with an adjacent county. The county name appears first, followed by the city name(s). Separate estimates for the jurisdictions making up the combination area are not available. Bedford County, VA includes the independent city of Bedford for all years.

Exhibit A10. Median Household Income in Select Areas, 1999 v. 2016

Geography	1999	2016	% Change	CAGR
United States	\$41,994	\$55,322	31.7%	1.6%
Maryland	\$52,868	\$76,067	43.9%	2.2%
Montgomery County	\$71,551	\$100,352	40.3%	2.0%
Prince George's County	\$55,256	\$75,925	37.4%	1.9%
Virginia	\$46,677	\$66,149	41.7%	2.1%
Fairfax County	\$81,050	\$114,329	41.1%	2.0%
Loudoun County	\$80,648	\$125,672	55.8%	2.6%
Prince William County	\$65,960	\$98,546	49.4%	2.4%

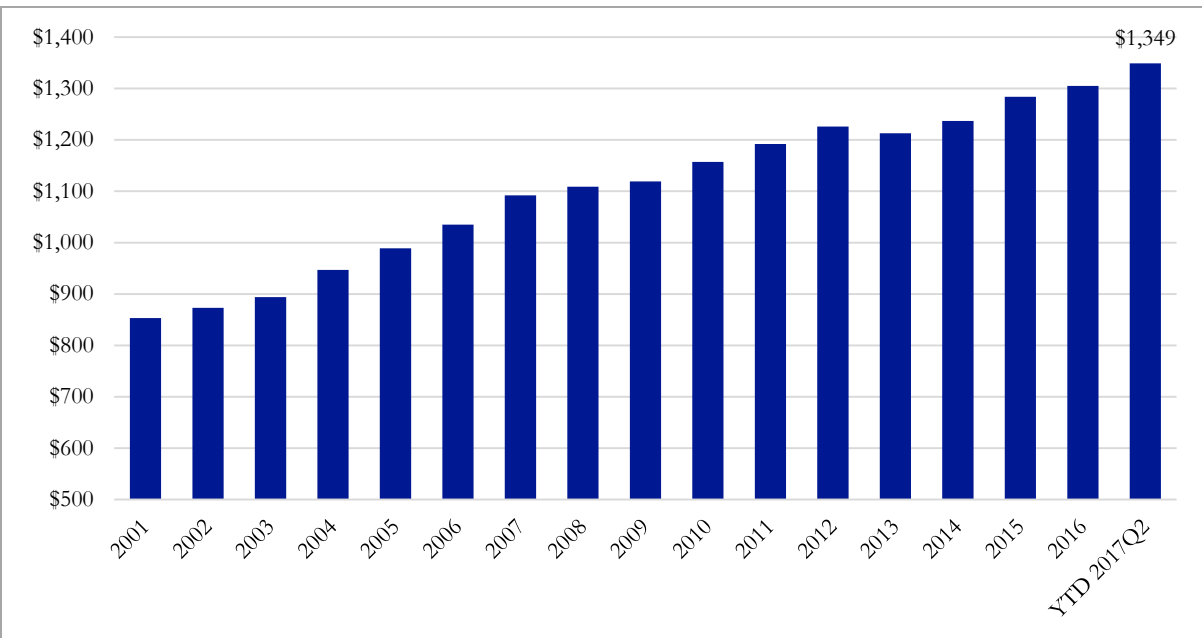
Source: 1. U.S. Census Bureau, 2000 Census: DP-3; 2012-2016 American Community Survey 5-Year Estimates: DP03. 2. Sage. Notes: 1. Not adjusted for inflation. 2. 2016 figures represent a 5-year average covering 2012-2016.

Exhibit A11. Montgomery County, MD Household Income Distribution, 2016



Source: 1. U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates: DP03. 2. Sage. Note: 2016 figures represent a 5-year average covering 2012-2016.

Exhibit A12. Montgomery County, MD: Average Weekly Wage for Private Sector Employees (NSA), 2001-2017

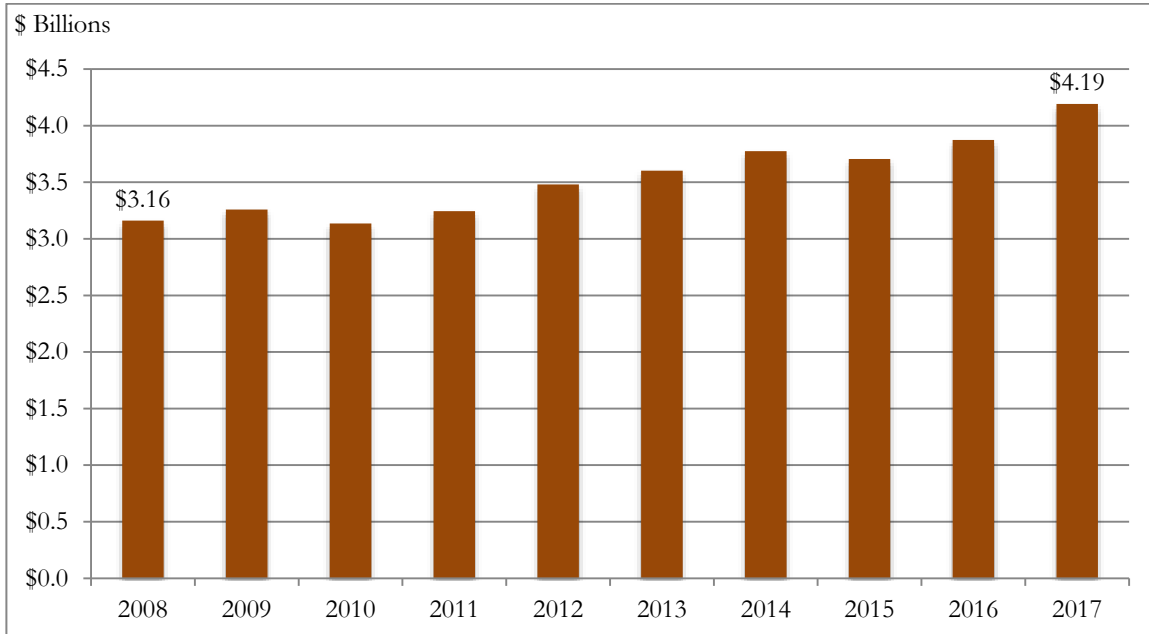


Source: 1. U.S. Bureau of Labor Statistics; 2. Maryland Department of Labor, Licensing and Regulation (DLIR), Maryland Quarterly Census of Employment and Wages (QCEW) program; 2. Sage. Notes: Data are not seasonally adjusted (NSA). Yearly figures are annual averages.

Revenues & Tax Base

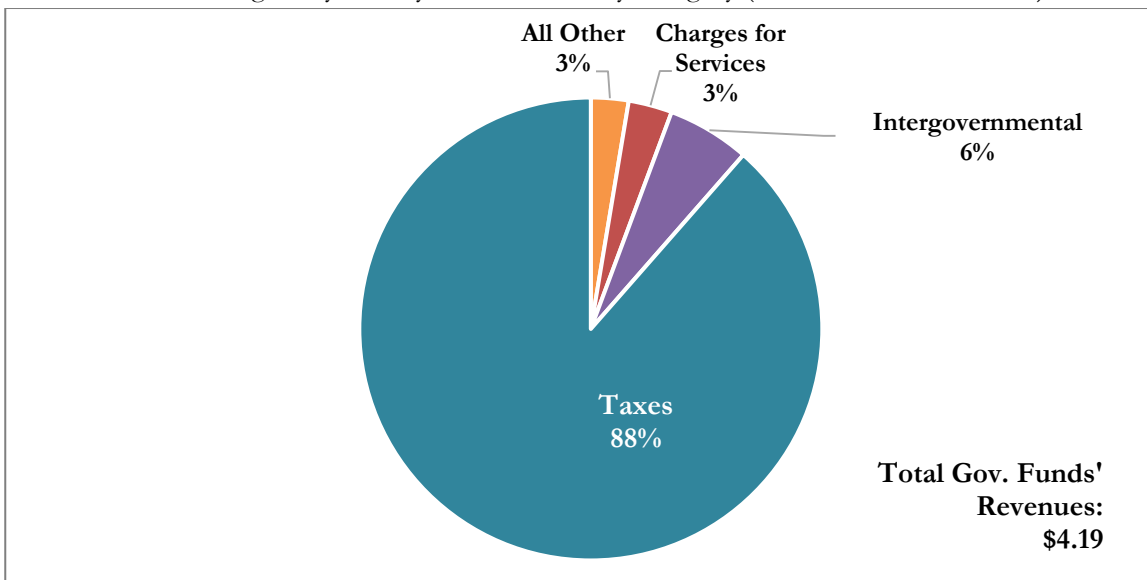
County Revenues

Exhibit A13. Montgomery County, MD Revenues (All Governmental Funds), FY2008-FY2017



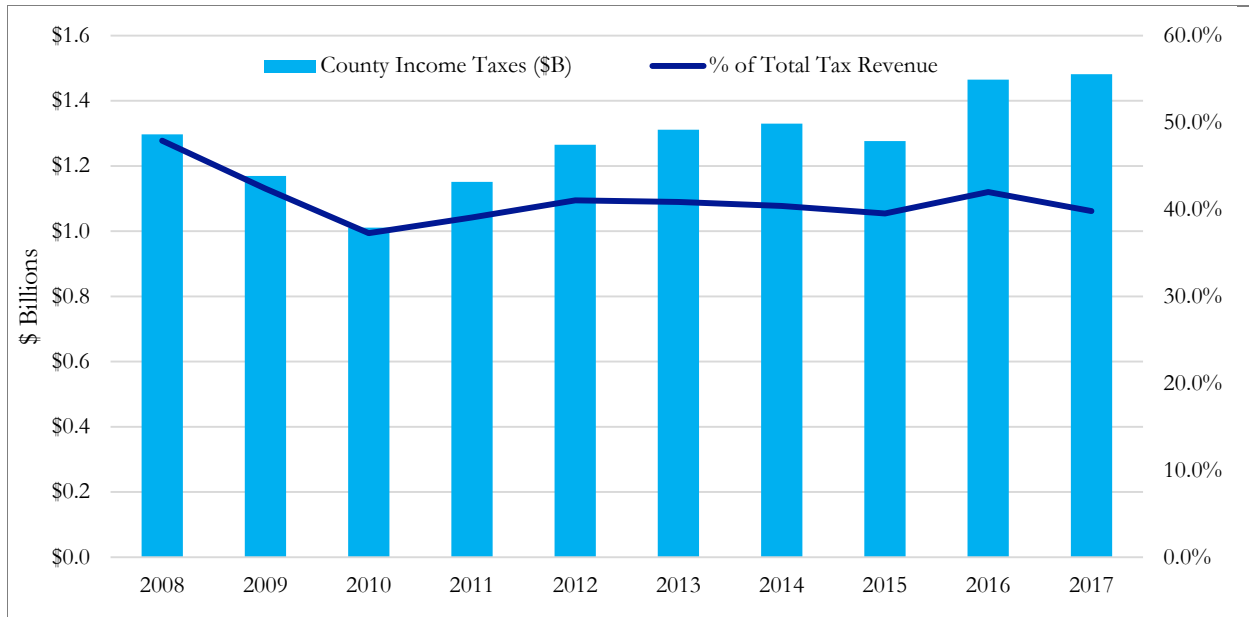
Source: 1. Montgomery County, Maryland. "Comprehensive Annual Financial Report, Fiscal Year 2017". Prepared by the Department of Finance. 2. Sage. Notes: 1. Governmental Funds include: General Fund, Housing Initiative, Grants, Debt Service, Capital Projects, and Nonmajor Governmental Funds. 2. Governmental fund information is reported on the modified accrual basis of accounting.

Exhibit A14. Montgomery County, MD Revenue by Category (All Governmental Funds), FY2017



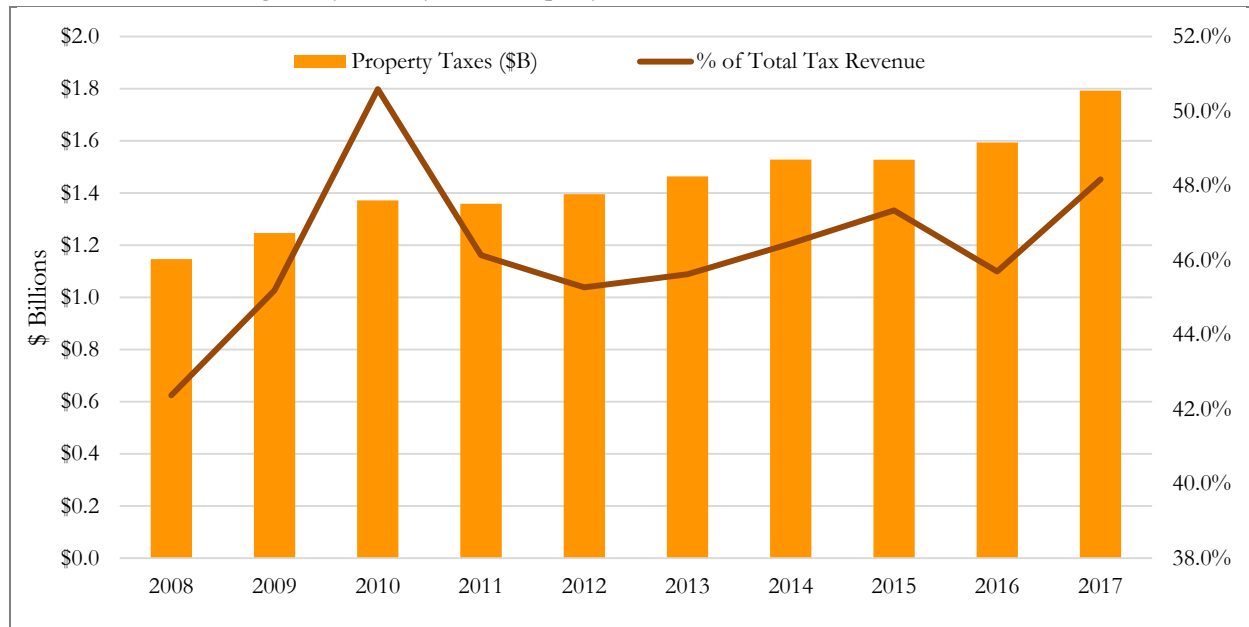
Source: 1. Montgomery County, Maryland. "Comprehensive Annual Financial Report, Fiscal Year 2017". Prepared by the Department of Finance. 2. Sage. Notes: 1. Governmental Funds include: General Fund, Housing Initiative, Grants, Debt Service, Capital Projects, and Nonmajor Governmental Funds. 2. Governmental fund information is reported on the modified accrual basis of accounting.

Exhibit A15. Montgomery County, MD Income Tax Revenue, FY2008-FY2017



Source: 1. Montgomery County, Maryland. "Comprehensive Annual Financial Report, Fiscal Year 2017". Prepared by the Department of Finance. 2. Sage. Note: Government-wide general tax revenue information is reported on the accrual basis of accounting.

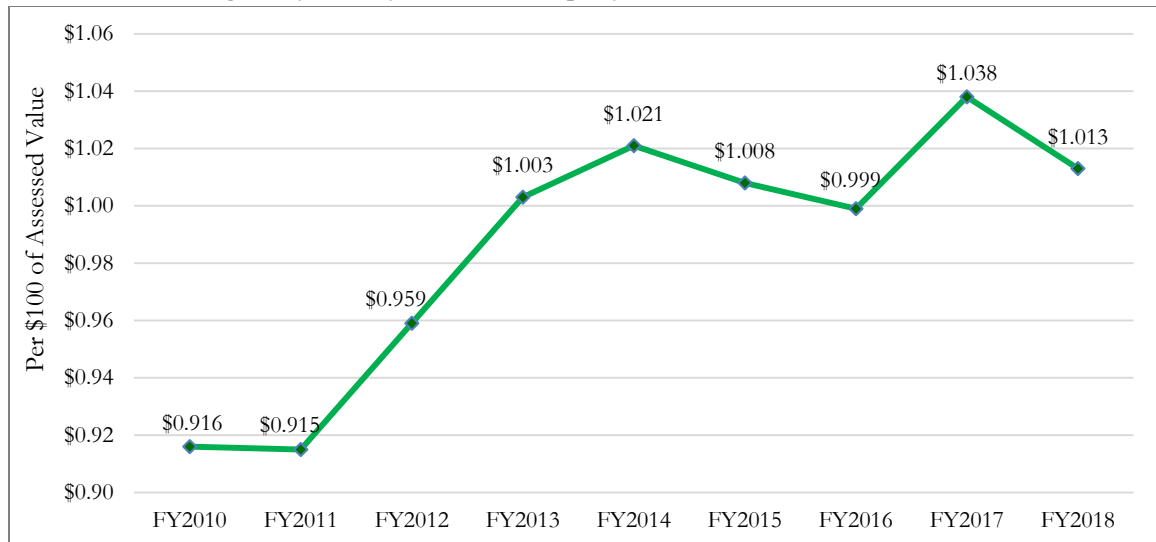
Exhibit A16. Montgomery County, MD Property Tax Revenue, FY2008-FY2017



Source: 1. Montgomery County, Maryland. "Comprehensive Annual Financial Report, Fiscal Year 2017". Prepared by the Department of Finance. 2. Sage. Note: Government-wide general tax revenue information is reported on the accrual basis of accounting.

County Taxes & Fees

Exhibit A17. Montgomery County, MD Real Property Tax Rates, FY2010-FY2018



Source: 1. Maryland Department of Legislative Services, “Overview of Maryland Local Governments-Finances and Demographic Information”, January 2018. 2. Sage. Note: The property tax rate in Montgomery County reflects special rates for services not funded from the general county property tax rate.

Exhibit A18. Maryland Counties-Property & Income Tax Rates

FY 2018 Property Tax Rates (Per \$100 of Assessment)			CY 2018 Income Tax Rates		
Rank	Jurisdiction	Rate	Rank	Jurisdiction	Rate
1	Baltimore City	\$2.248	1	Montgomery	3.20%
2	Prince George’s	\$1.374	1	Baltimore City	3.20%
3	Charles	\$1.205	1	Howard	3.20%
4	Howard	\$1.190	1	Prince George’s	3.20%
5	Baltimore	\$1.100	1	Queen Anne’s	3.20%
6	Frederick	\$1.060	1	Somerset	3.20%
7	Harford	\$1.042	1	Wicomico	3.20%
8	Cecil	\$1.041	8	Harford	3.06%
9	Kent	\$1.022	9	Allegany	3.05%
10	Carroll	\$1.018	10	Carroll	3.03%
11	Montgomery	\$1.013	10	Charles	3.03%
12	Somerset	\$1.000	12	Calvert	3.00%
13	Garrett	\$0.990	12	Cecil	3.00%
14	Caroline	\$0.980	12	St. Mary’s	3.00%
15	Allegany	\$0.976	15	Frederick	2.96%
16	Dorchester	\$0.974	16	Kent	2.85%
17	Calvert	\$0.952	17	Baltimore	2.83%
18	Washington	\$0.948	18	Washington	2.80%
19	Wicomico	\$0.940	19	Caroline	2.73%
20	Anne Arundel	\$0.907	20	Garrett	2.65%
21	St. Mary’s	\$0.848	21	Dorchester	2.62%
22	Queen Anne’s	\$0.847	22	Anne Arundel	2.50%
23	Worcester	\$0.835	23	Talbot	2.40%
24	Talbot	\$0.571	24	Worcester	1.75%

Source: 1. Maryland Department of Legislative Services, “Overview of Maryland Local Governments-Finances and Demographic Information”, January 2018. 2. Sage. Note: The property tax rates in Charles, Howard, Montgomery, and Prince George’s counties reflect special rates for services not funded from the general county property tax rate.

Exhibit A19. Maryland Counties: Development Impact Fees and Excise Tax Rates, Fiscal 2016-2018

County	Impact Fee/Rate (Per Dwelling Unit)		
	FY2016	FY2017	FY2018
Anne Arundel (2)	\$12,275	\$12,473	\$12,963
Calvert	\$12,950	\$12,950	\$12,950
Caroline (3)	\$5,000	\$5,000	\$5,000
Carroll	\$533	\$533	\$533
Charles	\$14,095	\$16,206	\$15,229
Dorchester (4)	\$0	\$0	\$0
Frederick (5)	\$14,208	\$14,881	\$15,515
Harford	\$6,000	\$6,000	\$6,000
Howard (6)	\$2.40/sq.ft	\$2.43/sq.ft	\$2.44/sq.ft
Montgomery (7)	\$40,793	\$40,793	\$45,159
Prince George's (8)	\$22,757	\$23,007	\$23,513
Queen Anne's	\$4.84/sq.ft	\$4.96/sq.ft	\$5.29/sq.ft
St. Mary's	\$4,500	\$4,500	\$5,500
Talbot (9)	\$6,967	\$7,176	\$7,427
Washington	\$1.00/sq.ft	\$1.00/sq.ft	\$1.00/sq.ft
Wicomico (10)	\$0	\$0	\$0

Source: 1. Maryland Department of Legislative Services, "Overview of Maryland Local Governments-Finances and Demographic Information", January 2018. 2. Sage.

Notes: 1. Fees/rates listed are generally those applicable to single-family detached dwellings and are per dwelling unless otherwise indicated.

2. Rates are for a 2,000-2,499 sq. ft. residential unit. Residential rates vary by the square footage of a unit.

3. A \$750 development excise tax for agricultural land preservation is also imposed on new lots created by subdivision in a "rural district."

4. The county development excise tax is suspended for a four-year period ending on June 30, 2018.

5. The rates shown reflect the public school and library impact fee total. A roads tax of \$0.10/sq. ft. or \$0.25/sq. ft. (depending on the square footage), with the first 700 sq. ft. not taxed, was reduced to \$0.00 effective in November 2011.

6. Fiscal 2016, 2017, and 2018 amounts represent the total of the roads tax amount (\$1.15/sq. ft., \$1.17/sq. ft., and \$1.18/sq. ft., respectively) and the school surcharge amount (\$1.25/sq. ft., \$1.26/sq. ft., and \$1.26/sq. ft., respectively).

7. Fiscal 2016 and 2017 amounts represent \$13,966 for transportation and \$26,827 for schools. Fiscal 2018 amount represents \$23,062 for schools and \$22,097 for transportation in the "yellow" and "green" zones in the county. The transportation rate is \$17,677 in the "orange" zone and \$7,072 in the "red" zone.

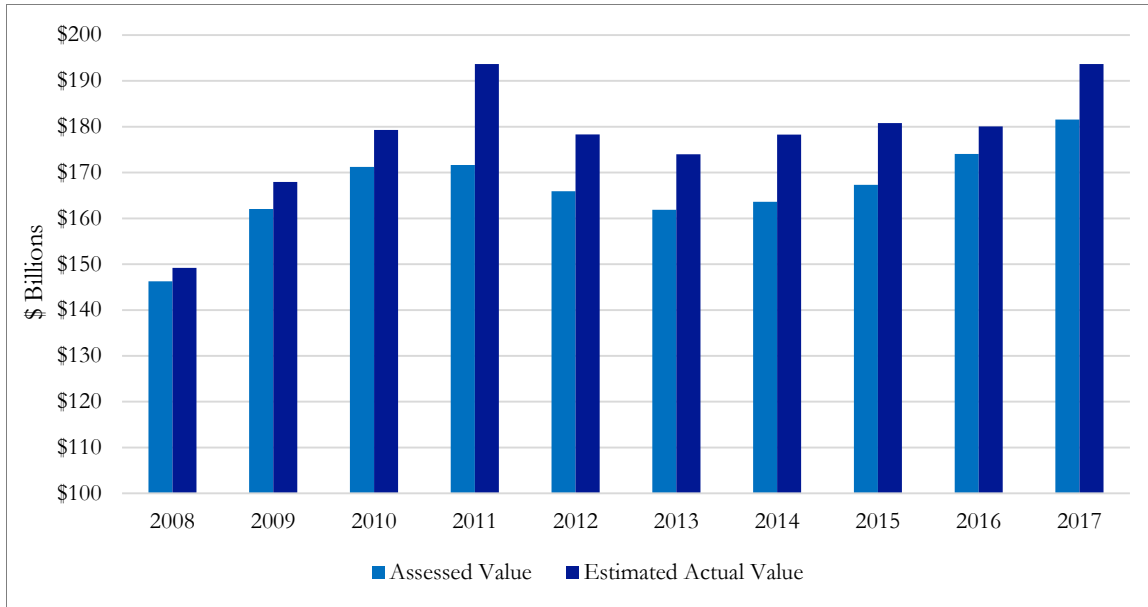
8. Fiscal 2018 amount represents \$15,972 for school facilities and \$7,541 for public safety. A lower school facilities rate (\$9,317 in fiscal 2018) applies inside the beltway and to certain development near mass transit and a lower public safety rate (\$2,515 in fiscal 2018) applies inside the "developed tier" as defined in the 2002 Prince George's County Approved General Plan and to certain development near mass transit.

9. A lower rate (\$6,416 in fiscal 2018) applies to development inside municipalities.

10. The County Council placed a moratorium on the imposition and collection of the Public School Impact Fee for all new residential dwelling units from April 23, 2015, to October 23, 2015. The council subsequently extended the moratorium from November 6, 2015, to December 31, 2016. On November 1, 2016, the council passed legislation permanently repealing the county's impact fee effective January 2, 2017.

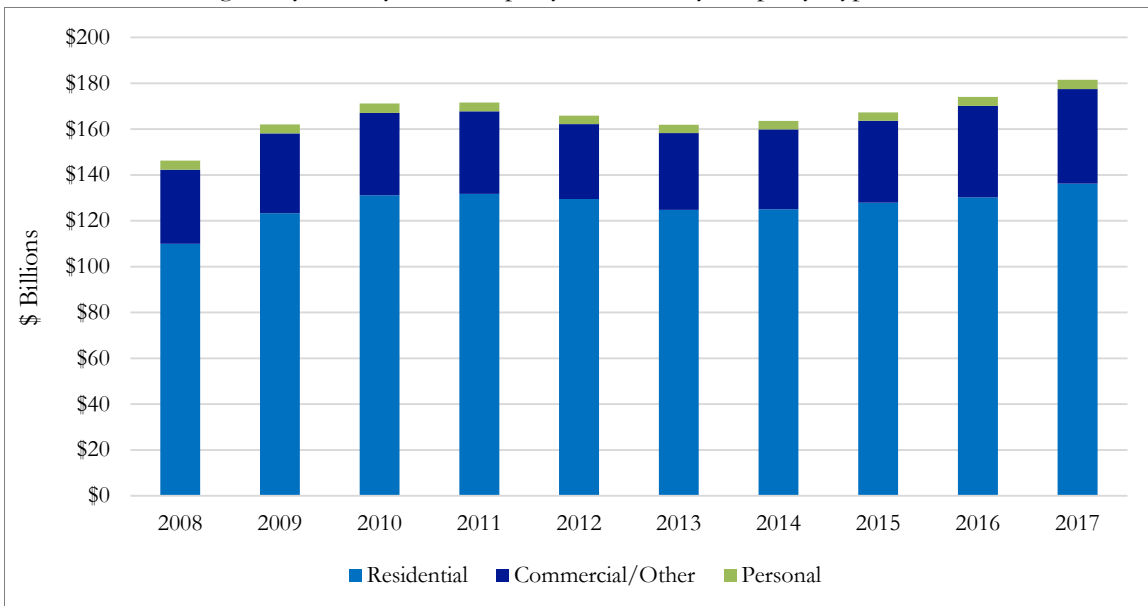
County Tax Base

Exhibit A20. Montgomery County, MD Real & Personal Property Tax Base, FY2008-FY2017



Source: 1. Montgomery County, Maryland. "Comprehensive Annual Financial Report, Fiscal Year 2017". Prepared by the Department of Finance. 2. State of Maryland, Department of Assessments and Taxation. 3. Sage. Notes: 1. Figures do not include exempt and nontaxable property. 2. Residential real property includes single-family homes, townhouses, and condominiums but excludes apartment dwellings which are included under the Commercial/Other category. 3. For personal property, the assessed value and estimated actual value are the same.

Exhibit A21. Montgomery County, MD Property Tax Base by Property Type, FY2008-FY2017



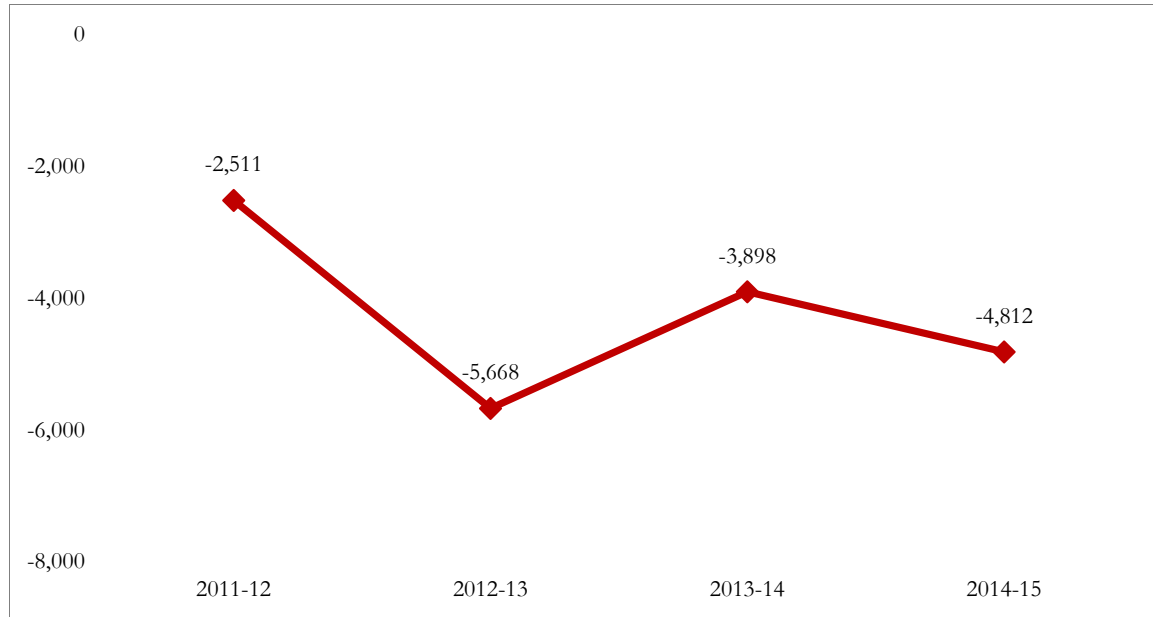
Source: 1. Montgomery County, Maryland. "Comprehensive Annual Financial Report, Fiscal Year 2017". Prepared by the Department of Finance. 2. State of Maryland, Department of Assessments and Taxation. 3. Sage. Notes: 1. Figures do not include exempt and nontaxable property. 2. Residential real property includes single-family homes, townhouses, and condominiums but excludes apartment dwellings, which are included under the Commercial/Other category.

Exhibit A22. Class A Office Properties Sold in Montgomery County in 2017: Sold Price v. 2008 Assessed Value

Building Name	City	Year Built	RBA	2008 Assessed Value	2017 Sale Value	2008 v. 2017 Value (CAGR)
Shady Grove Plaza	Rockville	1989	180,858	\$38,051,000	\$24,415,830	-4.8%
The Blackwell Building	Rockville	2001	101,000	\$20,320,400	\$25,048,000	2.4%
Silver Spring Centre	Silver Spring	1987	215,840	\$41,124,200	\$38,851,200	-0.6%
Quince Tree Executive Building	Gaithersburg	1995	134,933	\$25,120,000	\$21,994,079	-1.5%
Holy Cross Medical Pavilion	Silver Spring	2003	62,379	\$19,000,000	\$23,017,851	2.2%
77 Upper Rock	Rockville	2005	232,282	\$55,000,000	\$19,500,000	-10.9%
Two Rockledge Centre	Bethesda	1985	247,414	\$72,643,800	\$43,792,278	-5.5%
Montrose Metro I	N. Bethesda	1987	119,968	\$31,106,400	\$23,393,760	-3.1%
6116 Executive Blvd	Rockville	1989	217,733	\$79,906,600	\$9,797,985	-20.8%
Piedmont Point I	Bethesda	2007	189,499	\$29,237,100	\$37,899,800	2.9%
Piedmont Point II	Bethesda	2008	239,499	\$36,527,300	\$47,899,800	3.1%
Total			1,941,405	\$448,036,800	\$315,610,583	-3.8%

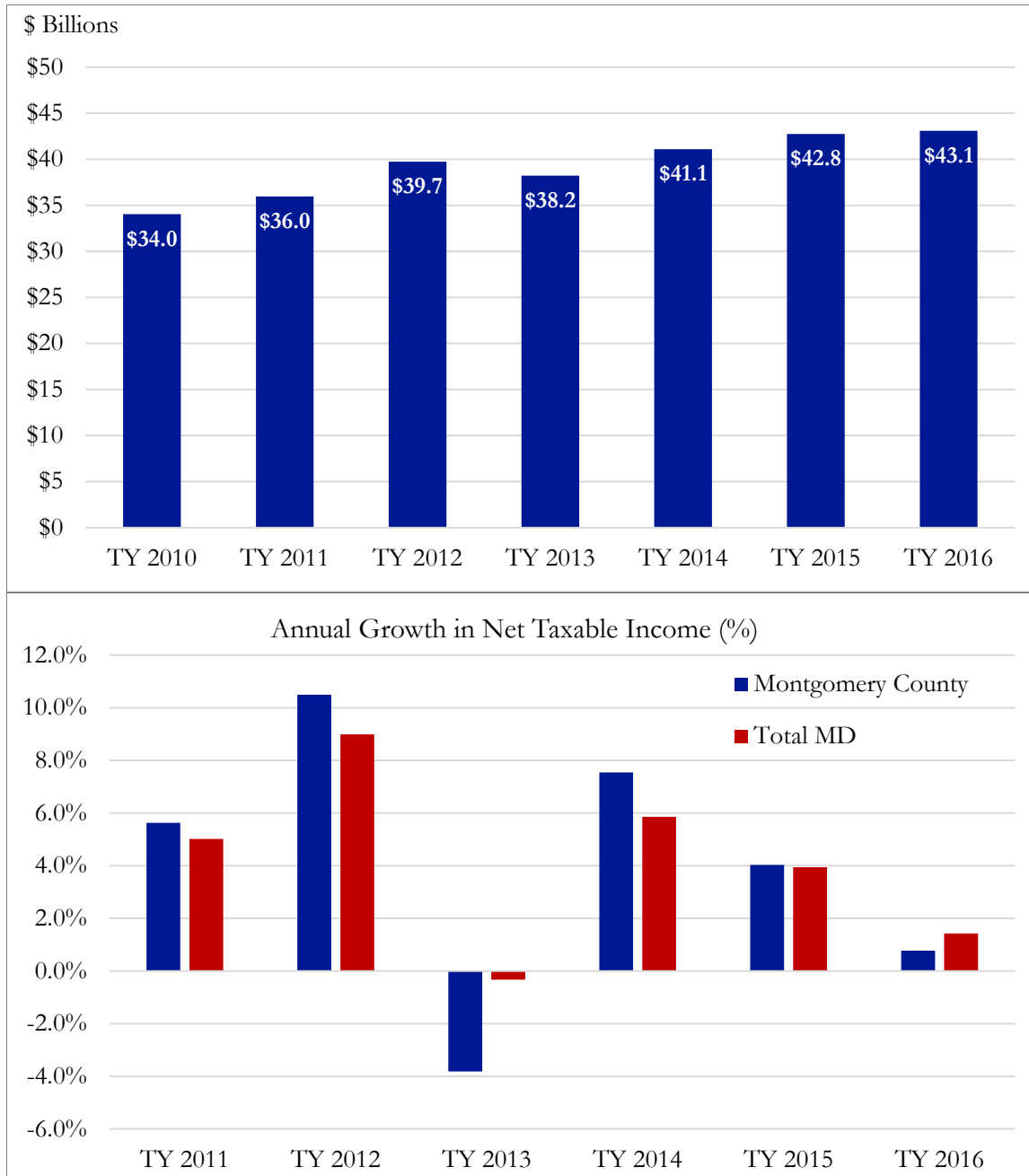
Source: 1. Washington Property Company; 2. Sage.

Exhibit A23. Montgomery County Annual Net Migration (# of IRS Tax Exemptions), 2011-2015



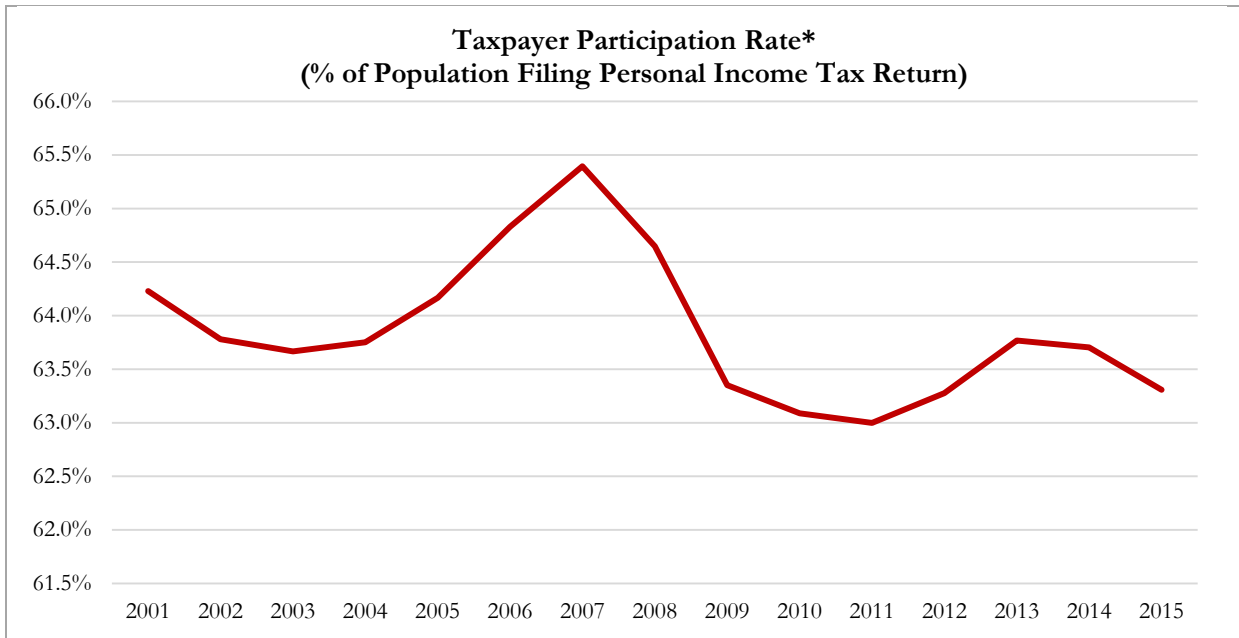
Source: 1. Governing.com; 2. IRS; 3. Sage. Notes: Figures represent tax exemptions, which approximate total persons in households. Total migration includes foreign migration (not shown).

Exhibit A24. Montgomery County, MD Net Taxable Income, Tax Year 2010-2016



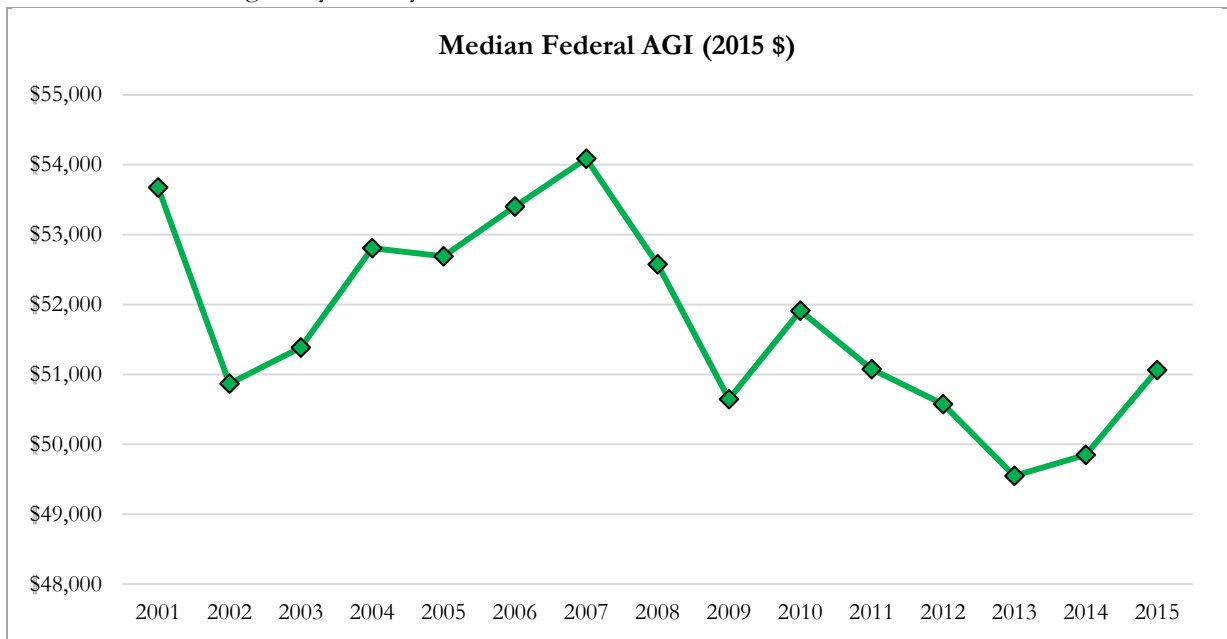
Source: 1. Maryland Department of Legislative Services, “Overview of Maryland Local Governments- Finances and Demographic Information”, January 2018. 2. Sage.

Exhibit A25. Montgomery County Taxpayer Participation Rate*, 2001-2015



Source: 1. Comptroller of Maryland, Bureau of Revenue Estimates. “The Impact of Age Demographics on Maryland’s Economic and Tax Revenue Outlook”, 2018. 2. Sage. Note: *Taxpayer Participation Rate (TPR) – The percentage of the population, or population of an age cohort, that files a personal income tax return. In order to get consistent individual level data, the incomes of joint filers are evenly divided between both filers, who are then counted separately. It is important to note that “taxpayer participation” means filing a personal income tax return. Those who do not file but still work in the formal sector pay taxes on their wages through withholding of income. All residents of the State pay some amount of tax either directly (such as Sales Tax on consumption) or indirectly (such as rent to a landlord who pays property taxes). Because it is typically in the interest of those who work in the formal sector to file (in order to get refunds), this indicator is a measure of labor utilization in the formal sector.

Exhibit A26. Montgomery County Tax Filers’ Median Federal AGI, 2001-2015



Source: 1. Comptroller of Maryland, Bureau of Revenue Estimates. “The Impact of Age Demographics on Maryland’s Economic and Tax Revenue Outlook”, 2018. 2. Sage. Note: Adjusted Gross Income (AGI) – Gross income of a taxpayer after deductions and subtractions, equal to Federal Adjusted Gross Income.

Exhibit A27. Montgomery County Tax Filers & Federal AGI by Age Group, 2001 v. 2015

Age Group	% of Filers		% of Federal AGI*	
	2001	2015	2001	2015
Under 24	10.8%	9.0%	2.4%	1.7%
25 to 34	16.7%	17.1%	11.7%	9.6%
35 to 54	42.9%	38.1%	52.6%	43.8%
55 to 64	12.4%	17.7%	16.4%	23.9%
65 or older	12.6%	17.2%	12.8%	20.2%
Age is Null	4.7%	0.9%	4.1%	0.7%
Total Filers/AGI (2015 \$)	572,773	656,014	-	-
Total AGI (Billions of 2015 \$)	-	-	\$45.27	\$52.37

Source: 1. Comptroller of Maryland, Bureau of Revenue Estimates. “The Impact of Age Demographics on Maryland’s Economic and Tax Revenue Outlook”, 2018. 2. Sage. Note: Adjusted Gross Income (AGI) – Gross income of a taxpayer after deductions and subtractions, equal to Federal Adjusted Gross Income.