MAINE STRATEGIC PLANNING: ECONOMIC AND DEMOGRAPHIC TRENDS

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Creating a Vision for Maine's Economy

June 14, 2019

OVERVIEW

- Trends:
  - Human capital
  - Macroeconomic
  - Economic sectors and clusters
  - Innovation and entrepreneurship
  - Governance and business climate
  - Physical and virtual environment

- SWOT Analysis

MEGC

Maine Economic Growth Council

MEASURES OF GROWTH

Performance Measures and Benchmarks to Achieve a Vibrant and Sustainable Economy for Maine 2019

mdf | CONNECTING PEOPLE & STRATEGIES TO DRIVE MAINE'S ECONOMY

VISION

A HIGH QUALITY OF LIFE FOR ALL MAINE PEOPLE

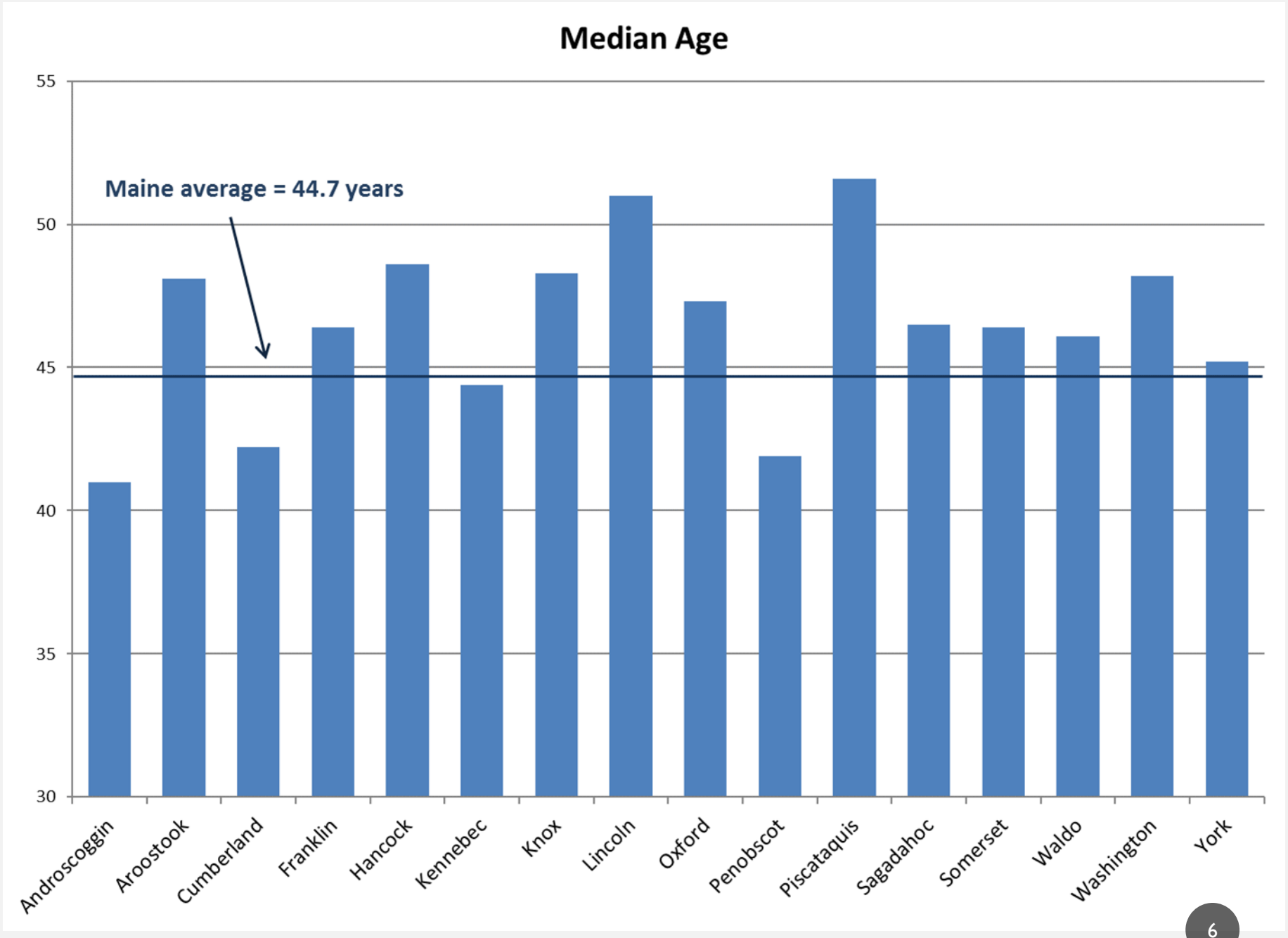
HUMAN CAPITAL TRENDS

Flag	Data	
Demographics		***Maine's slow-growing and aging population is hurting our economy.***
	🔴	Maine's population grew just 0.6% since 2010, 45th lowest in the country, and Maine's median age is the oldest in the country (44.7 years).
	🔴	The percentage of Maine's population who are children has fallen faster, and the percentage over age 65 has increased faster, than the US.
	🟡	Since 2010, Maine has attracted 18,000 people (32nd lowest), of which 10,000 were international migrants (47th lowest).
	🟢	Androscoggin County is a bright spot as Maine's youngest county and the one with the slowest growing percentage of population over 65.
Labor Force		***Maine's anemic labor force growth is holding back business and economic growth.***
	🔴	Maine's labor force is roughly the same size today as it was ten years ago, primarily a result of slow population growth.
	🟢	Labor force participation rates for Maine adults are higher today compared to 2010, largely because there is more economic opportunity today.
Degree Attainment		***Maine people are becoming more educated.***
	🟢	Since 2010, the percentage of Maine's adults with a college degree has increased 5 percentage points, catching up with the US and closing the gap to New England. Degree attainment for men, women, and those age 25-44 has increased faster than NE and the US (but still trails NE).
	🔴	Maine's population age 45-54 with a college degree increased slower and remains lower than both New England and the US.
Higher Ed Affordability		***Maine's colleges and universities have become more affordable.***
	🟢	Maine's colleges and universities are the most affordable in New England. Adjusted for inflation, in-state tuition at UMS is $400 per year less compared to 2010; MCCS tuition is $100 less.
Higher Ed Investment		***Investment in our public higher education institutions has been flat.***
	🔴	State investment in public higher education institutions has been roughly 3.5% of total expenditures since 2010. Expenditures per student were $8,500 in 2017, just below the national average, up from $7,500 in 2010, and about the same as pre-recession levels (about $8,600 per year).
College Success Success		***Long neglected, Maine is beginning to address college success from several angles.***
	🟡	Retention and graduation rates at Maine's community college and university systems have increased somewhat in recent years. Three-year success rates for community college students was 55% for the 2015 cohort (graduated, enrolled, or transferred) compared to 51% in 2010.
	🟢	There is significant energy and resources being devoted to college success, from UMS and MCCS, individual campuses, and third-party organizations like Jobs for Maine's Graduates.
Workforce Skills		***Maine's colleges and universities are responding to in-demand skills.***
	🟢	Since 2010, the number of graduates from Maines universities has increased by over 40% in computer and math fields, 29% in engineering fields (despite slow growth in more recent years) and over 21% in nursing.
	🟡	Graduate degrees for healthcare practitioners have more than doubled since 2010, although advanced degrees in other STEM fields have been flat and decreasing marginally (-2%).
	🟢	In 2018, the FocusMaine internship program supported 418 internships with 29 companies. Over 500 internships are slated for Summer of 2019.
Tomorrow's Workforce		***Maine continues to be challenged in meeting goals of higher student proficiency in reading, math, and technical skills.***
	🔴	The number of students scoring proficient for Grade 3 reading and Grade 8 math has been flat and below New England over the past decade.
	🔴	Enrollment in Maine's 27 Career Technical Education schools has been flat since 2013, declining in 16 schools.
Remote Workforce		***Maine has been attracting an educated remote workforce.***
	🟢	50% of Maine's current remote workforce (40,000 people) have moved to Maine since 2010, 80% of which have a bachelor's degree and 39% have a master's degree. 85% had previous connections to the state (family, vacations, college).

MAINE: A DEMOGRAPHIC SNAPSHOT

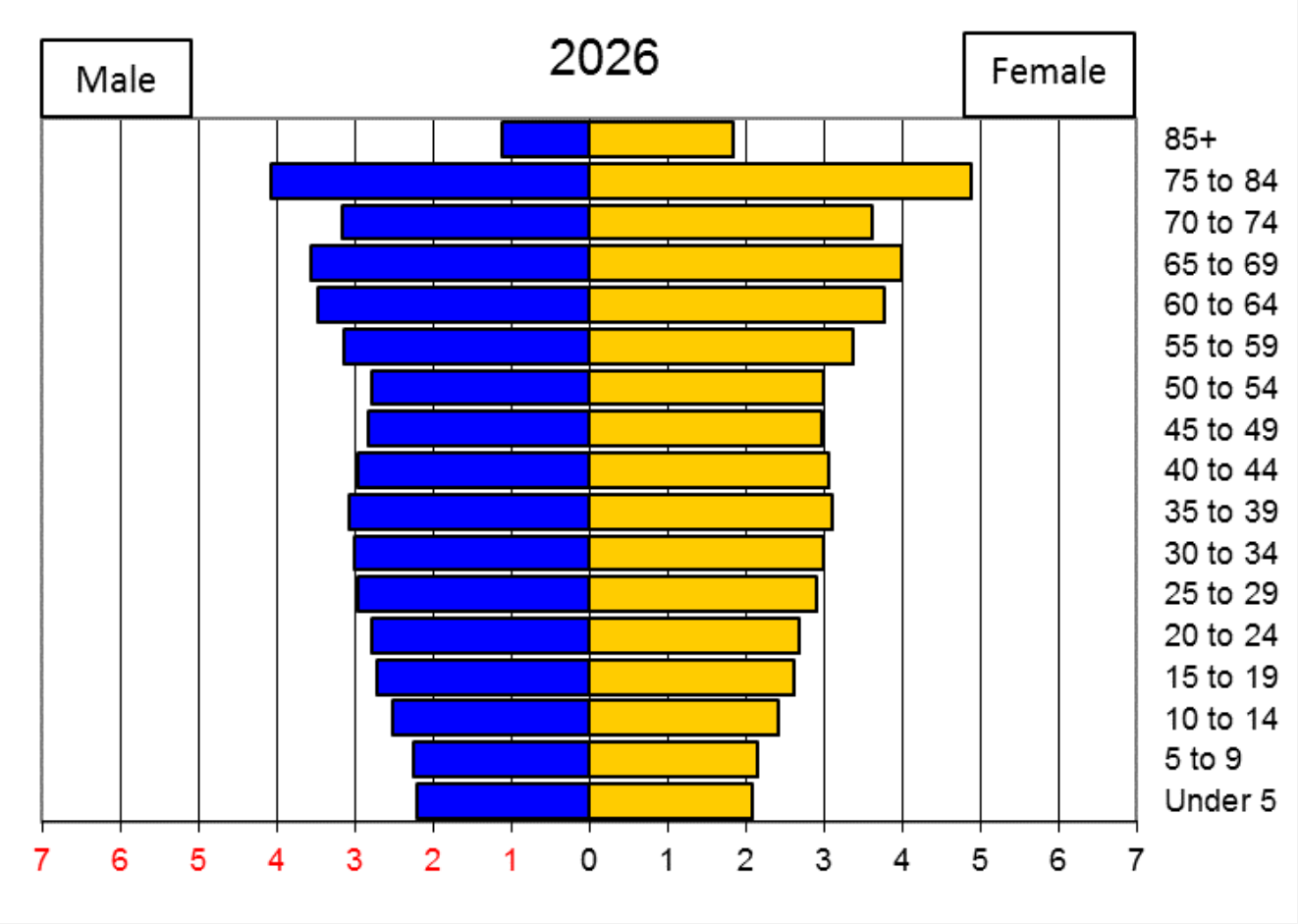
- 2018 Population Estimate: 1,338,404
  - 42nd largest in US
- 2010 – 2018 Population Change: +0.8%
  - 42nd in US (ahead of WV, IL, CT, VT, RI, MS, NY, PA)
- 2017 Median age: 44.7 years
  - Oldest in US
- 93.3% White, Non-Hispanic
  - Highest percentage in US

Source: U.S. Census Bureau, Population Estimates Program



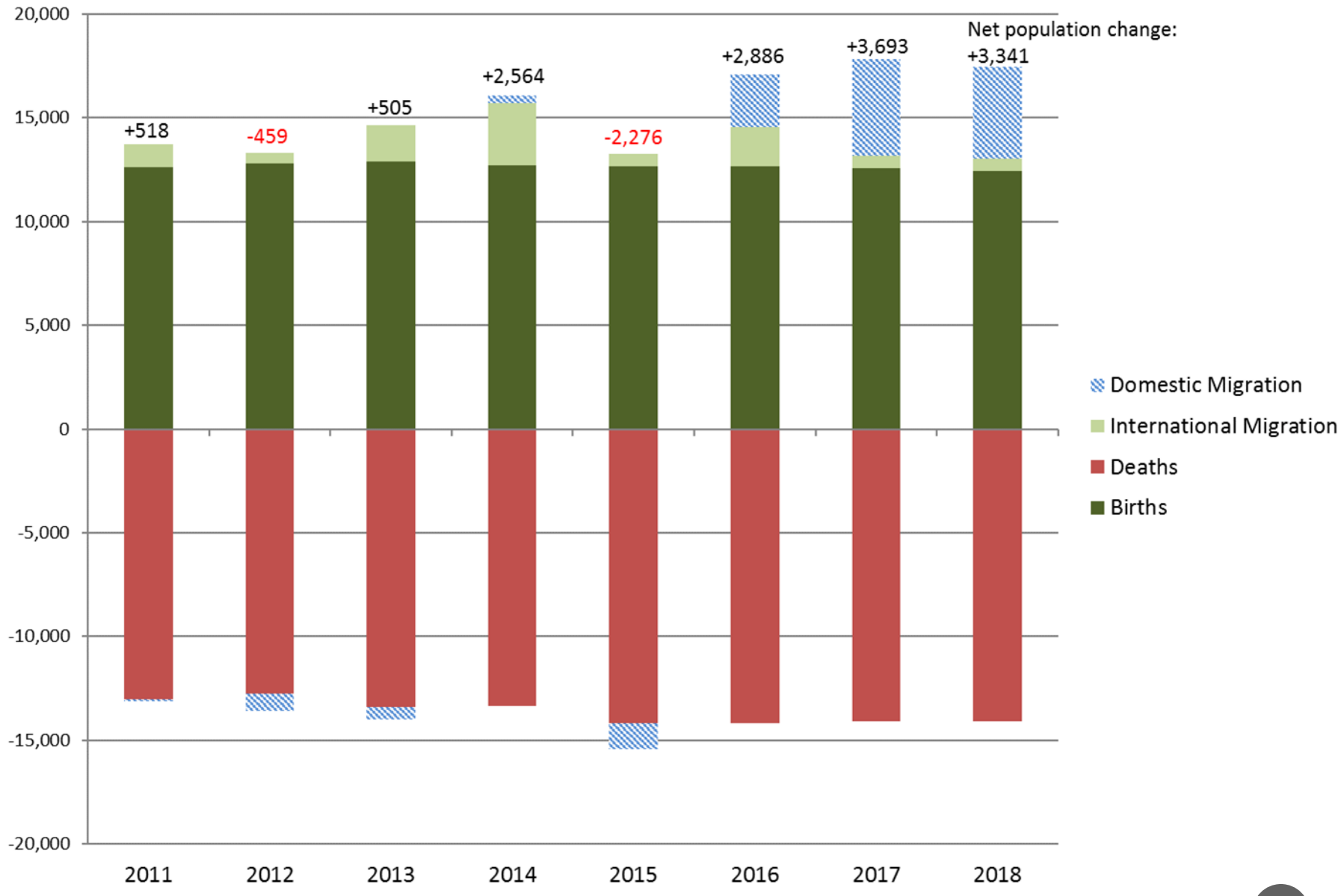
Source: U.S. Census Bureau, 2017 Population Estimates

THE BABY BOOM WAVE



Source: U.S. Census Bureau, Decennial Censuses and State Economist population projections

Components of Population Change, Maine

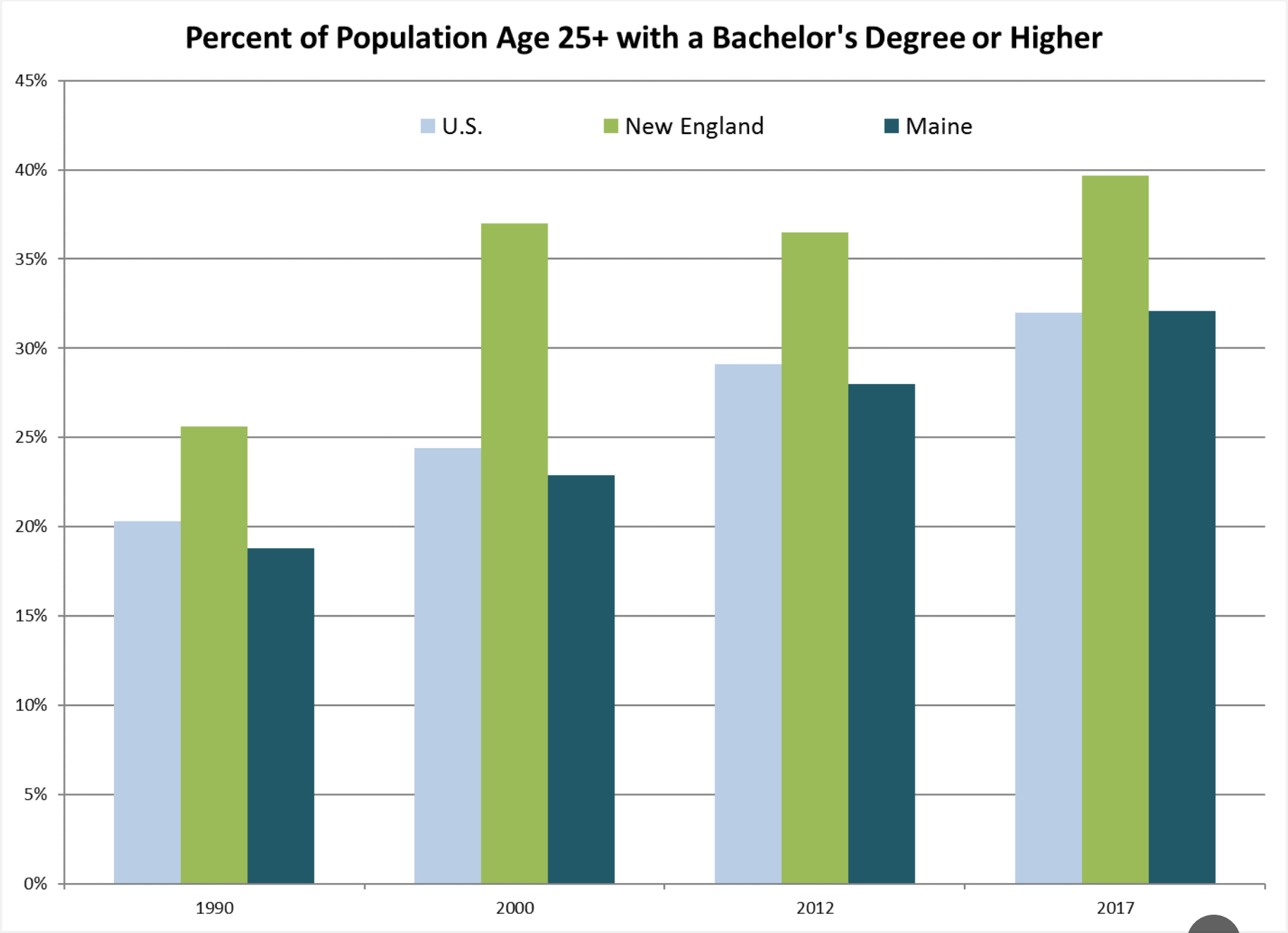


Source: U.S. Census Bureau, Population Estimates Program

WHO ARE THE PEOPLE MOVING TO MAINE?

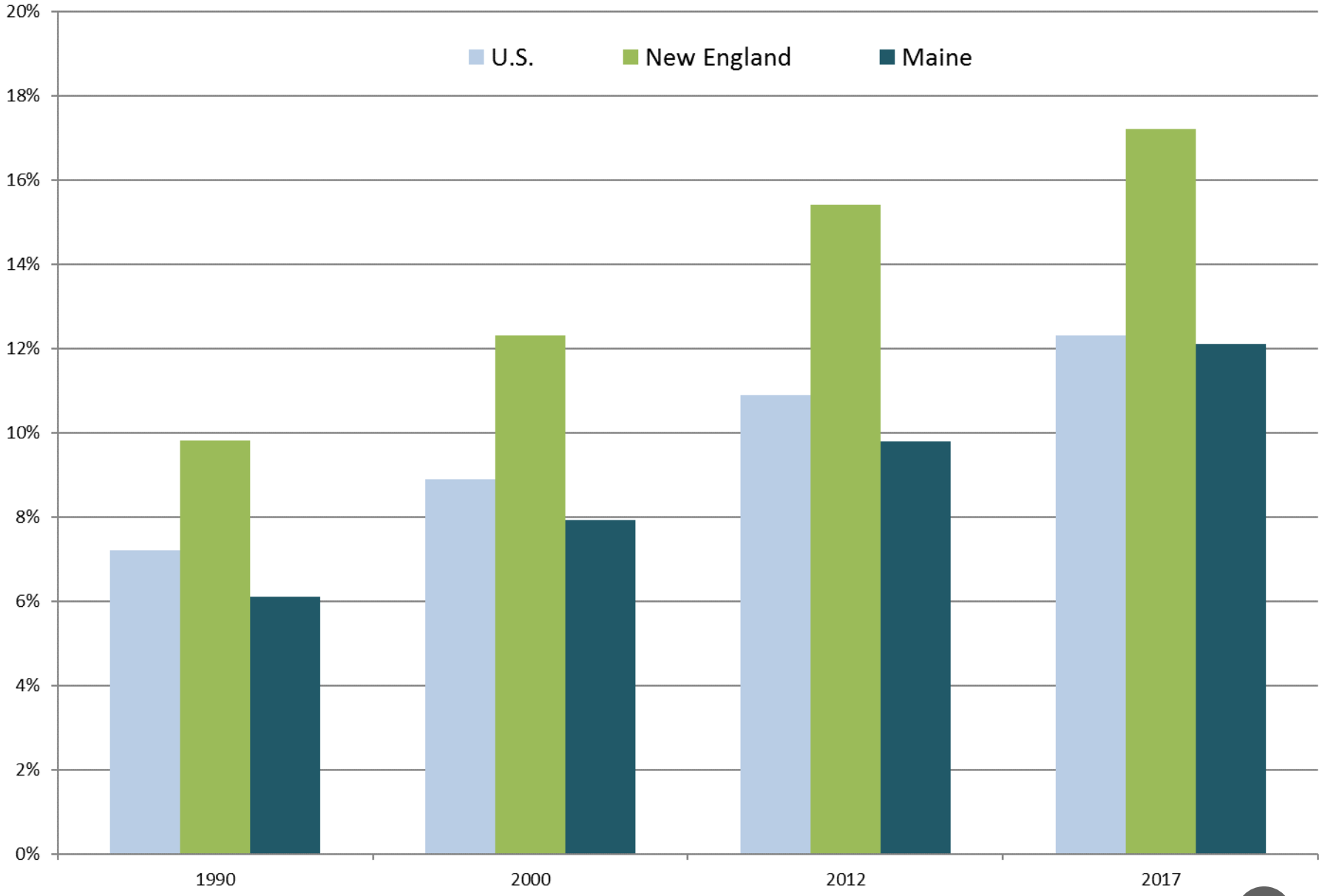
- Educational attainment
  - High School Graduate: net gain of 457
  - Some College or Associate's: +2,555
  - Bachelor's Degree: +2,966
  - Graduate or Professional Degree: +1,896

Source: U.S. Census Bureau, 2017 American Community Survey 1-year estimates



Source: U.S. Census Bureau

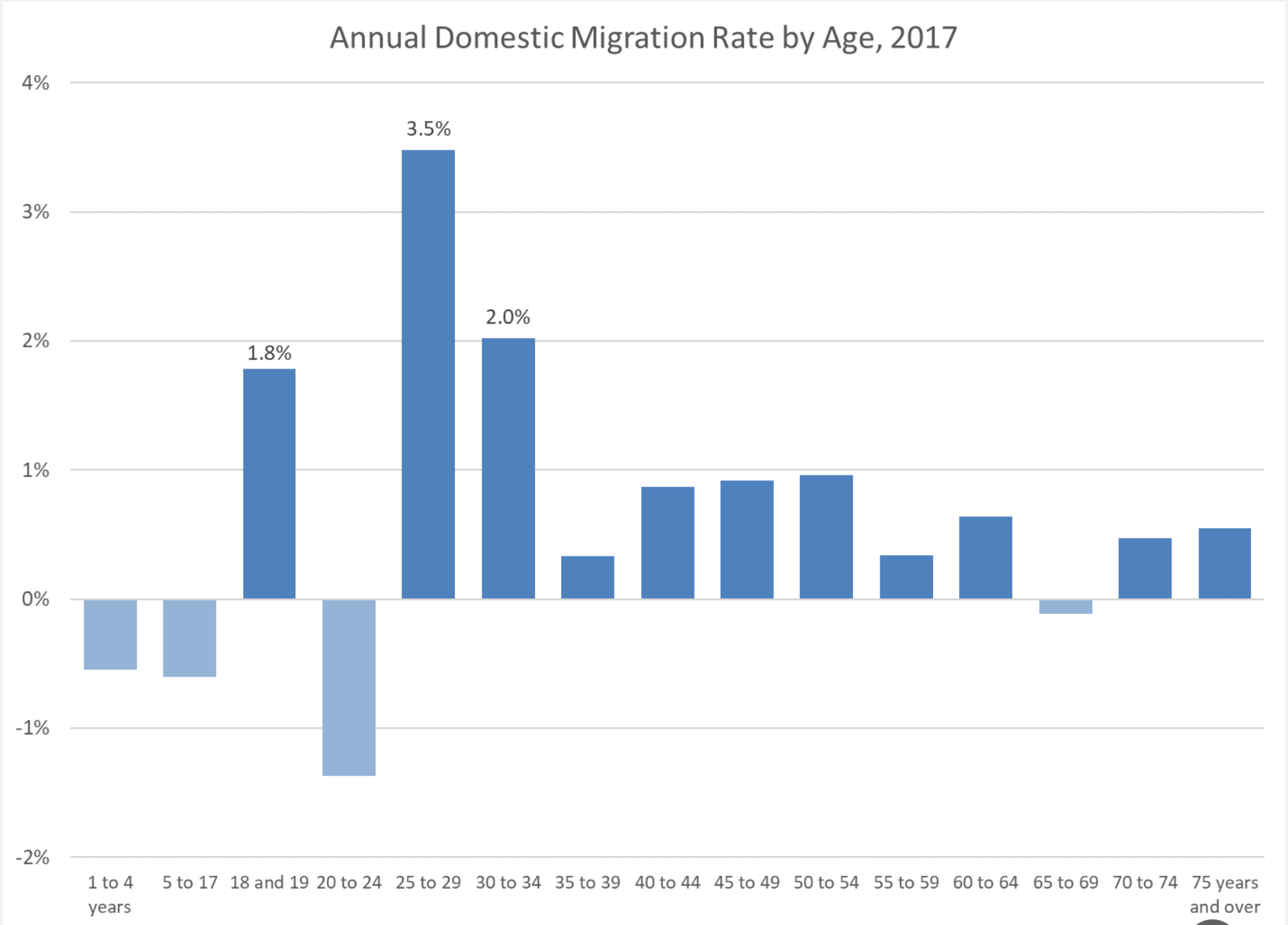
Percent of Population Age 25+ with a Graduate or Professional Degree



Source: U.S. Census Bureau

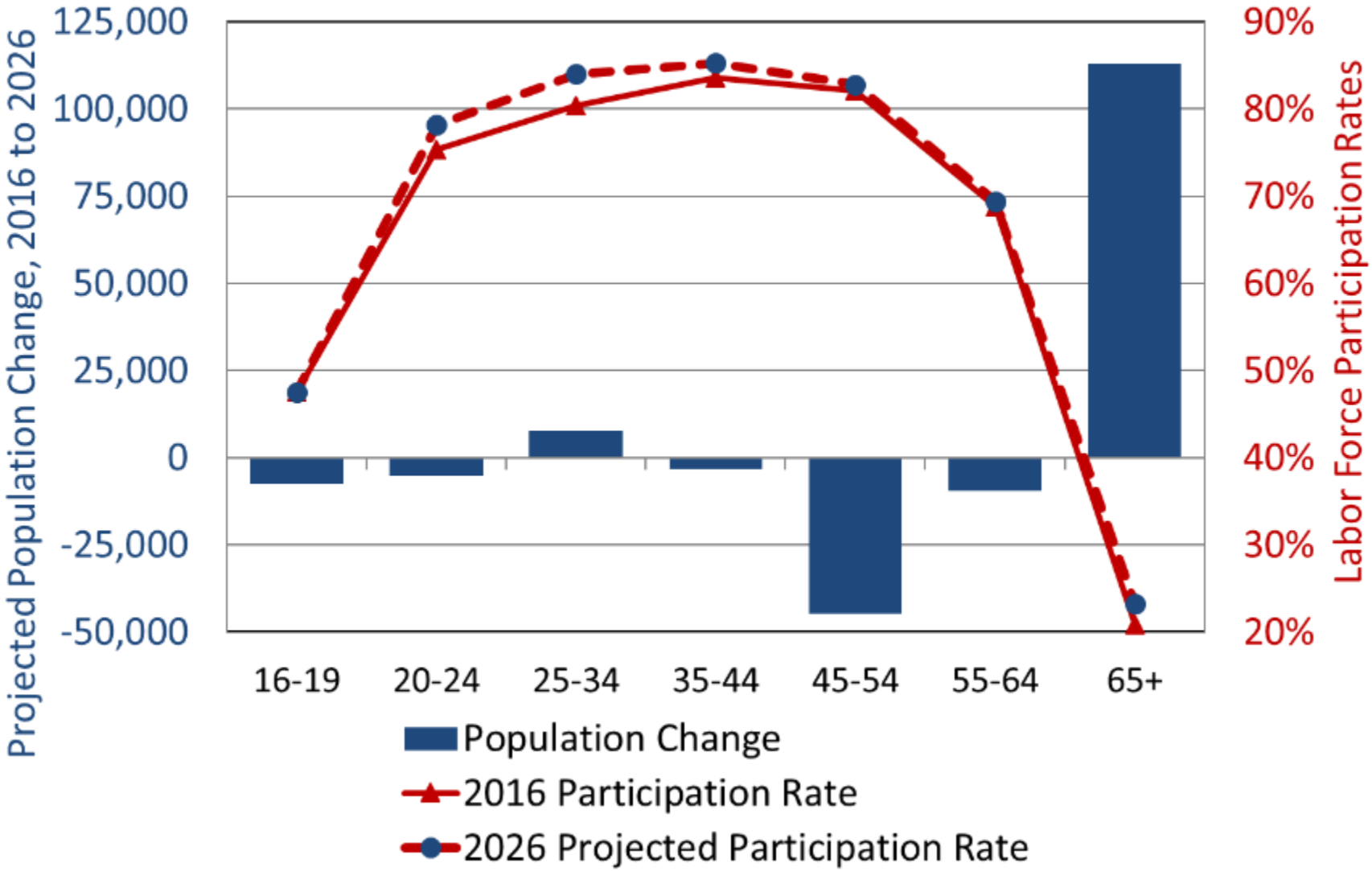
60%
by 2025

MaineSpark.me



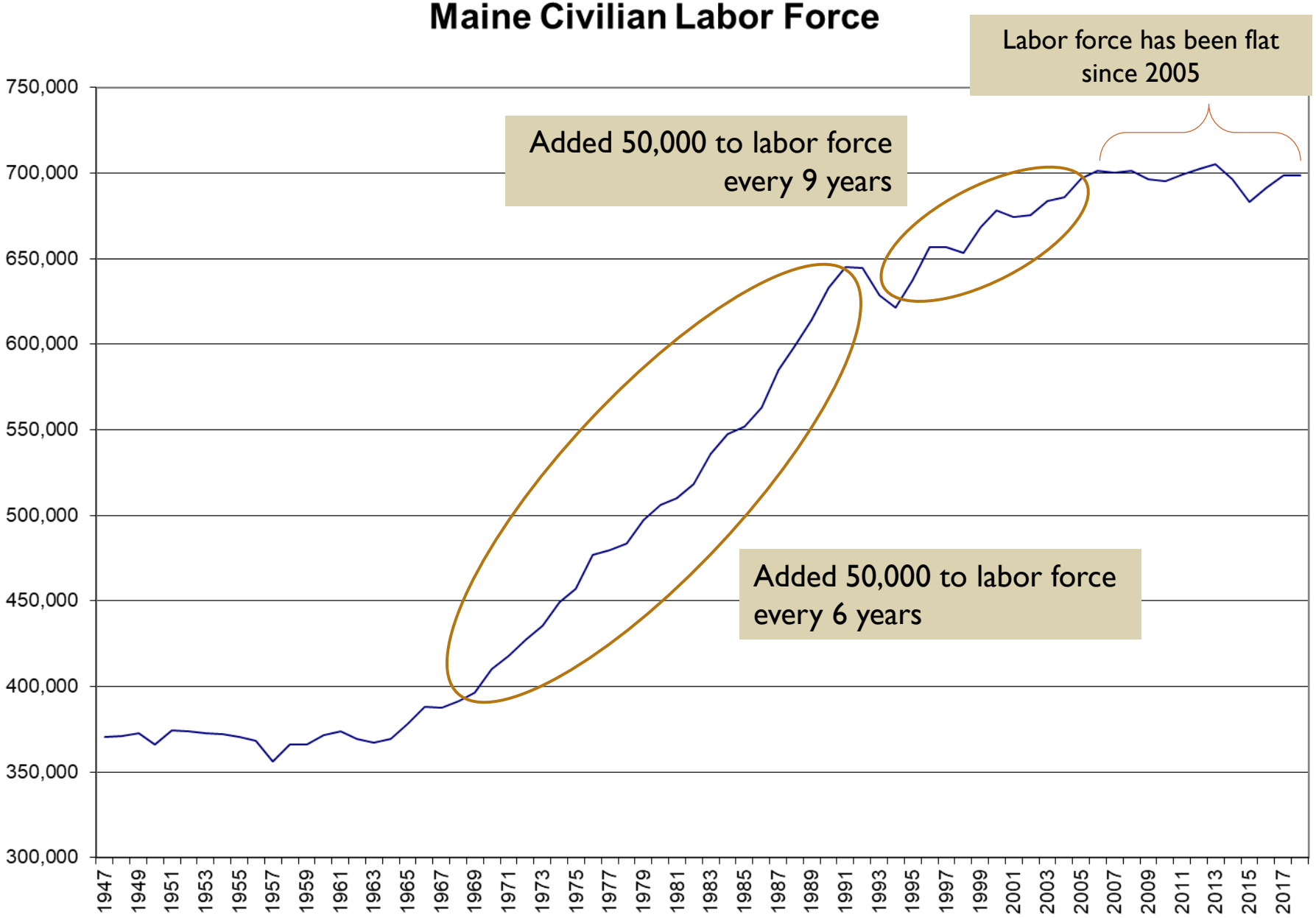
Source: U.S. Census Bureau, 2017 American Community Survey 1-year estimates

Projected Population Change and Participation Rates by Age Group in Maine



Source: Maine Department of Labor, *Employment Outlook to 2026;* https://cwri1.blogspot.com/2018/07/employment-outlookto-2026.html

Maine Civilian Labor Force

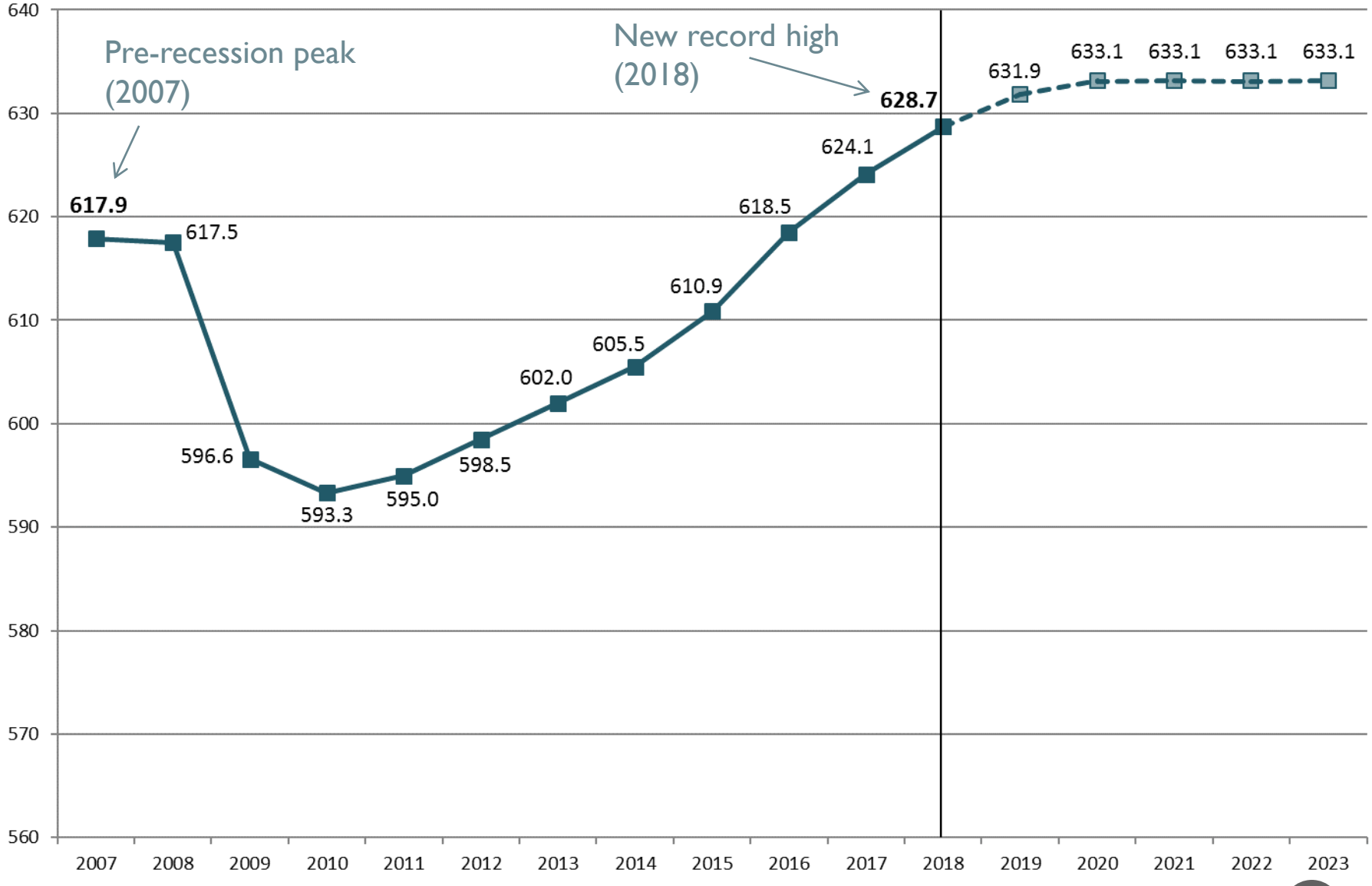


Source: Maine Department of Labor

MACROECONOMIC TRENDS

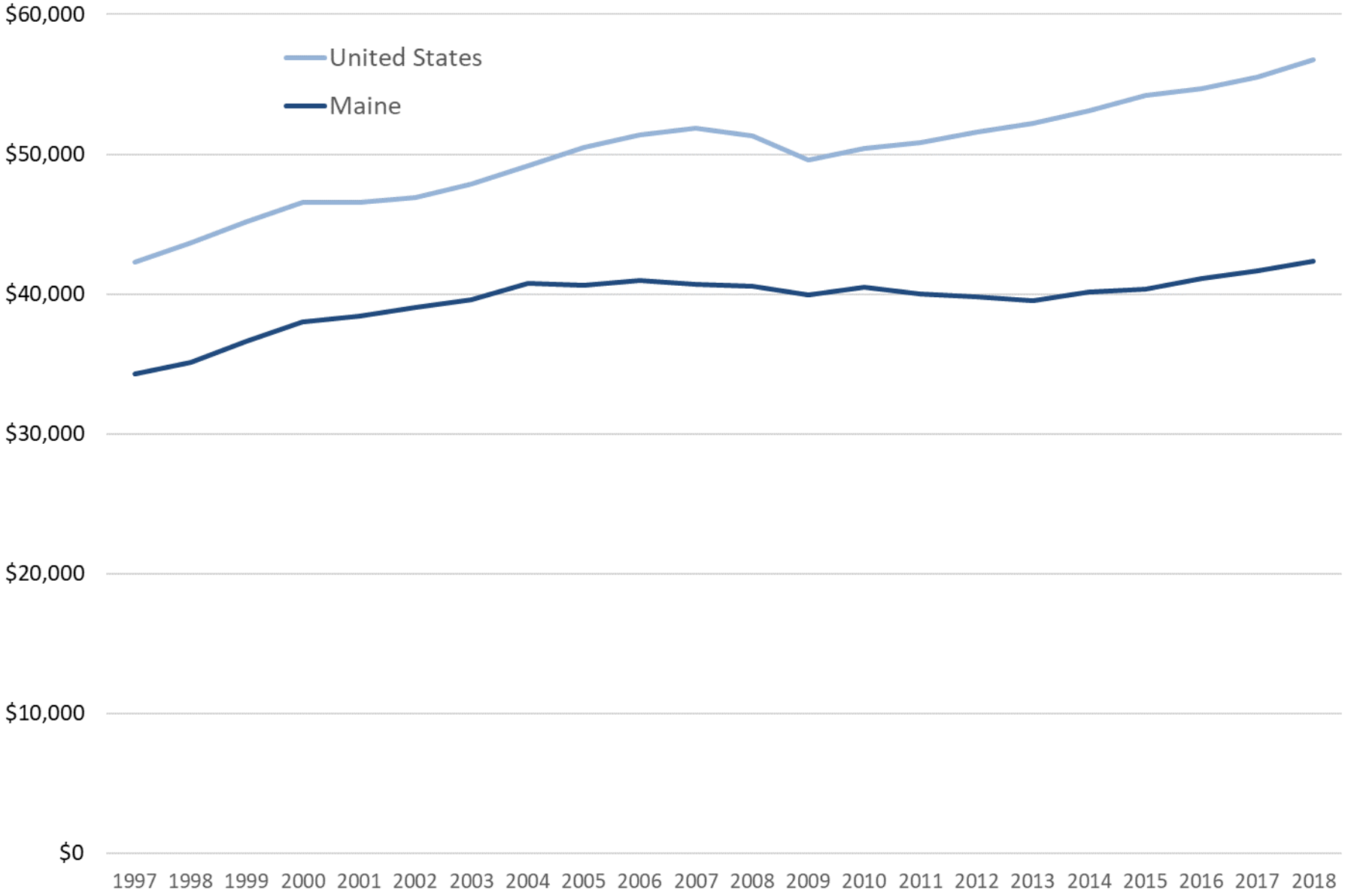
Flag		Data
Slowing Growth		***Maine's economic growth is falling further behind the rest of New England and the US, likely due to our industry mix and demographics.***
	🔴	Since 2010, average annual GDP growth in Maine has been 2.6%, compared to 3.1% and 3.8% for New England and the US, respectively.
Industry Mix		***Maine lacks a critical mass of high-growth industries that are propelling growth elsewhere in the US.***
	🟡	Prior to the 1990s, Maine was unique for its high percentage of manufacturers; now the percentage of manufacturing jobs is similar to the rest of the US.
	🟢	Maine's output is relatively greater than the US in forest products, fishing, retail, health care, social assistance, accomodation, food services, apparel and leather products manufacturing.
	🔴	Maine's output is relatively less than the US in transportation, information, and professional and business services (all of which are growth areas for the US economy), and manufacturing.
Productivity		***Worker productivity is improving but still much lower than the rest of country.***
	🔴	Maine's worker productivity (value added per worker) has improved in the past decade but still trailed the U.S. by about 25% in 2016.
	🔴	Compared to other states, value added in 2016 was particularly low in construction (49th), information (50th), manufacturing (47th), professional, scientific, and technical services (41st), and transportation (43rd).
	🟢	Compared to other states, value added in 2016 was high in accomodation and food services (17th), utilities (19th), and real estate, rental, and leasing (22nd).
Low Incomes		***Incomes and wages are lower in Maine than elsewhere in the US.***
	🔴	Maine's median household income is lower than the US, but the gap has closed slightly from 9% in 2008-2012 to 8% in 2013-2017.
	🔴	Across all industries, average weekly wages are about 20% lower in Maine than the US. This gap is unchanged since 2010.
	🔴	Transfer payments accounted for 22% of personal income in 2018, compared to 17% nationally and 15% in New England. The difference is likely due in part to Maine's higher percentage of older residents.
	🔴	About 1 in 5 Maine households (21%) earn over $100,000, compared to 1 in 4 (26%) nationally, and 1 in 3 (34%) in New England.
	🟡	Maine's income inequality is lower than other states, likely due to having fewer high-income earners. In 2017, it ranked 36th of the 50 states and DC.
Poverty		***Maine's overall poverty rate is falling, and lower than the US, but poverty is high among children and in Maine's "rim" counties.***
	🟡	In 2017, Maine's poverty rate of 11% was lower than the US rate of 13%, but fifth highest in New England (after Rhode Island).
	🟡	In Northern and outlying counties, poverty exceeds the national average, while in Southern and coastal counties, it is lower.
	🔴	Childhood poverty in Maine is high, although some statistics suggest it may be falling. Estimates for 2013-2017 show 20% of Maine children under age 5 living in poverty, compared to 9% of people age 65+. During the same years, nearly half of single mothers with children under age 5 were living in poverty.
Seasonal Economy		***Maine's economy and tax revenue are highly dependent on tourism and retail, which are cyclical.***
	🔴	From August to January, the number of employed Mainers generally falls by 6%, or 36,000 (2014-2018 five-year average).
	🔴	Taxable retail sales for the month of January are generally 69% lower than August (2014-2018 five-year average).
Rural/Urban Divide		***Economic growth is increasingly concentrated around Portland and, to a lesser extent, Maine's other urban areas.***
	🔴	The Portland region generated 52% of Maine's GDP in 2017, with Bangor and Lewiston-Auburn contibuting 17%. The rest of Maine generated 31%, down from 34% in the early 2000s.
	🔴	The economic divide between Maine's urban and rural areas is steadily growing. Since 2010, the annual growth of jobs, wages, and per capita income has been more than 20% higher in urban areas, on average.
	🟡	The rural/urban divide fades somewhat for poverty. Poverty is lower in the Portland region than the rest of the state (10% versus 15%, respectively), but in Augusta, Bangor, and Lewiston-Auburn, it is about equal. Research suggests poor residents seek access to transportation, affordable housing, jobs, and public services found in urban areas.
Exports		***After growing strongly in the 2000s, Maine's export growth has stalled.***
	🔴	From 2002 to 2010, Maine's exports grew 7.5% annually on average, just below the US rate of 8.6%. Since 2010, exports have fallen by 1.1% each year on average, while US exports have grown continued growing around 3.6%.

Total Nonfarm Employment (in thousands)
History and CEFC forecast



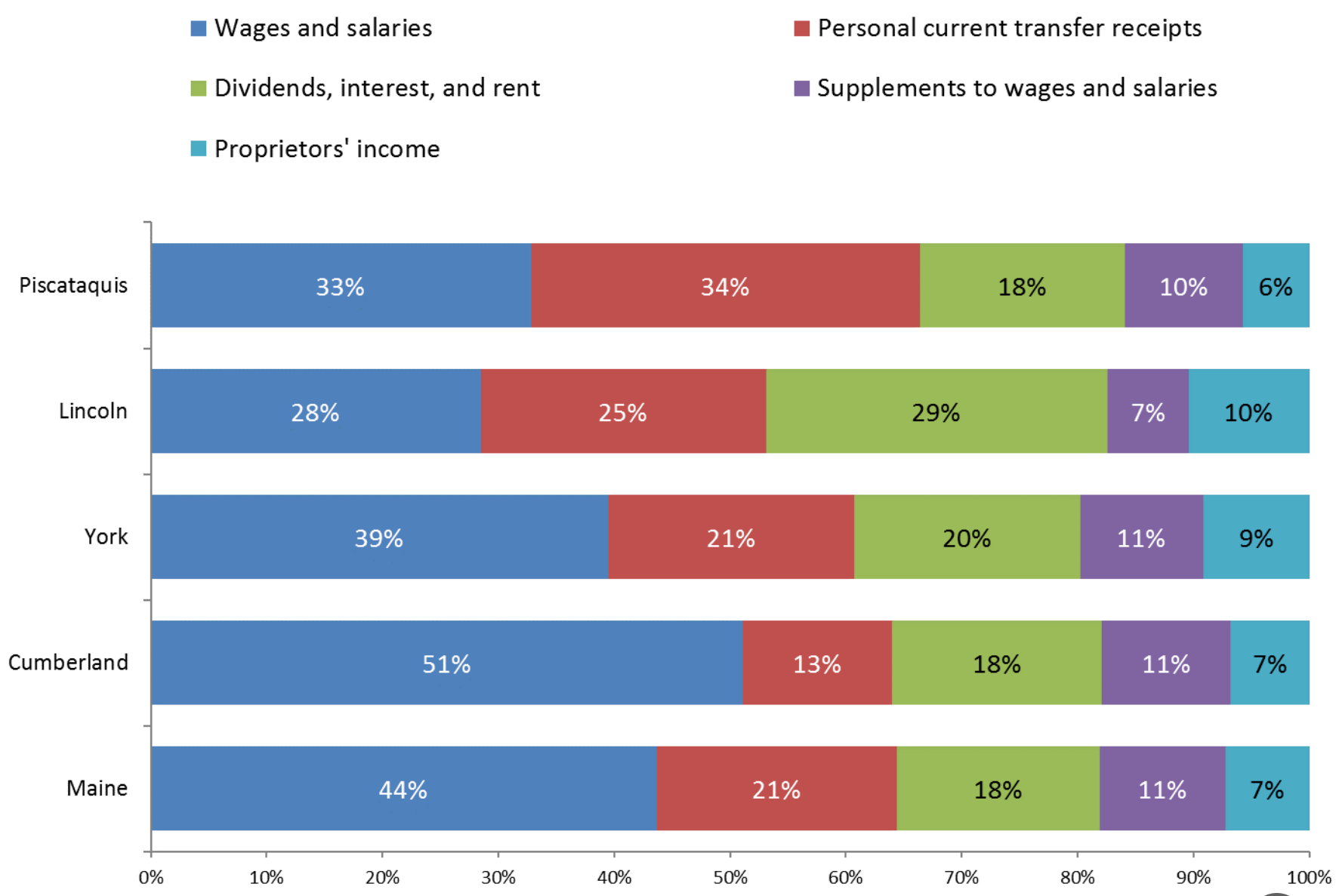
Sources: Maine Department of Labor and Consensus Economic Forecasting Commission report, April 1, 2019

Per Capita Real Total GDP



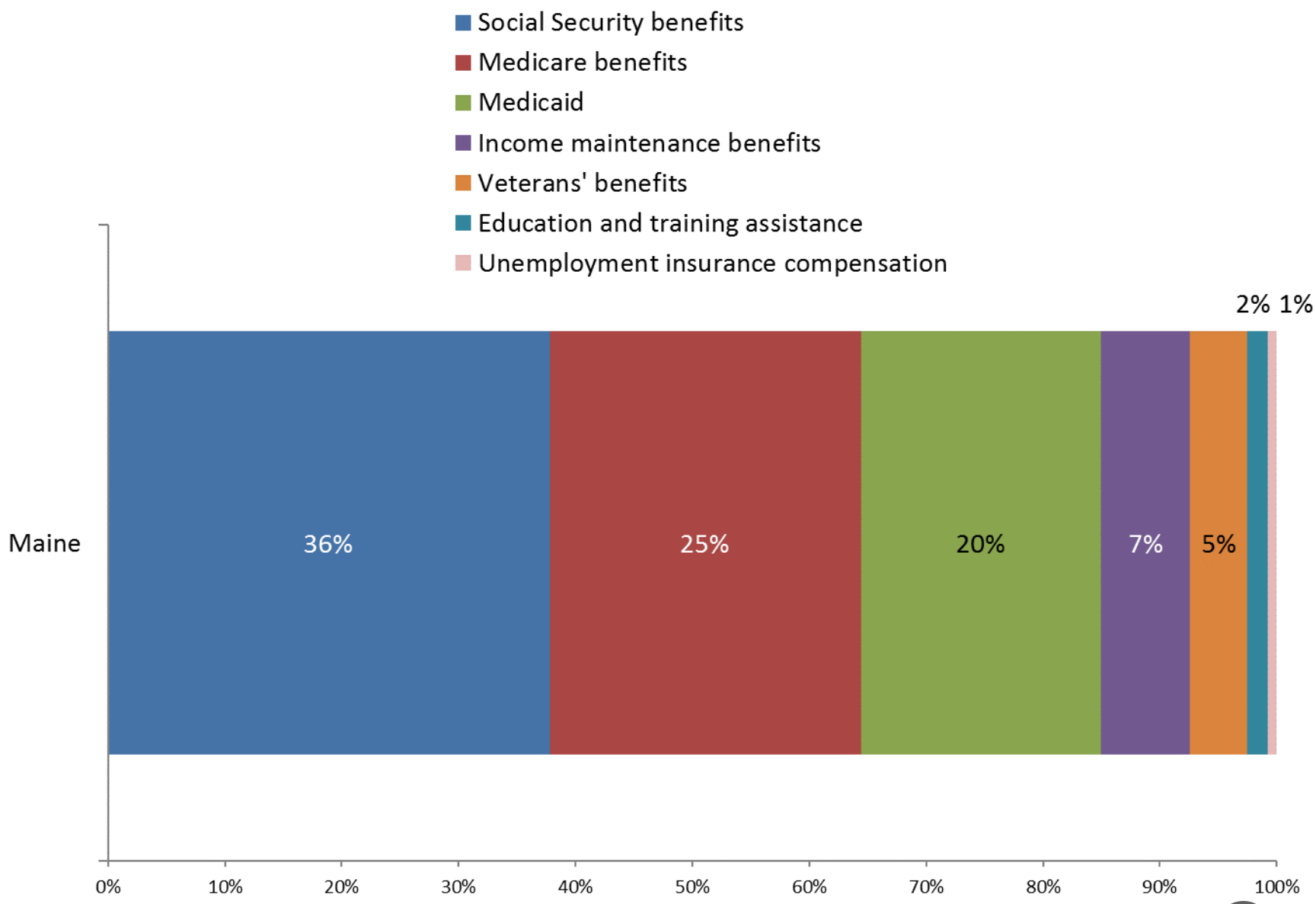
Source: U.S. Bureau of Economic Analysis

Major Components of Personal Income, 2017

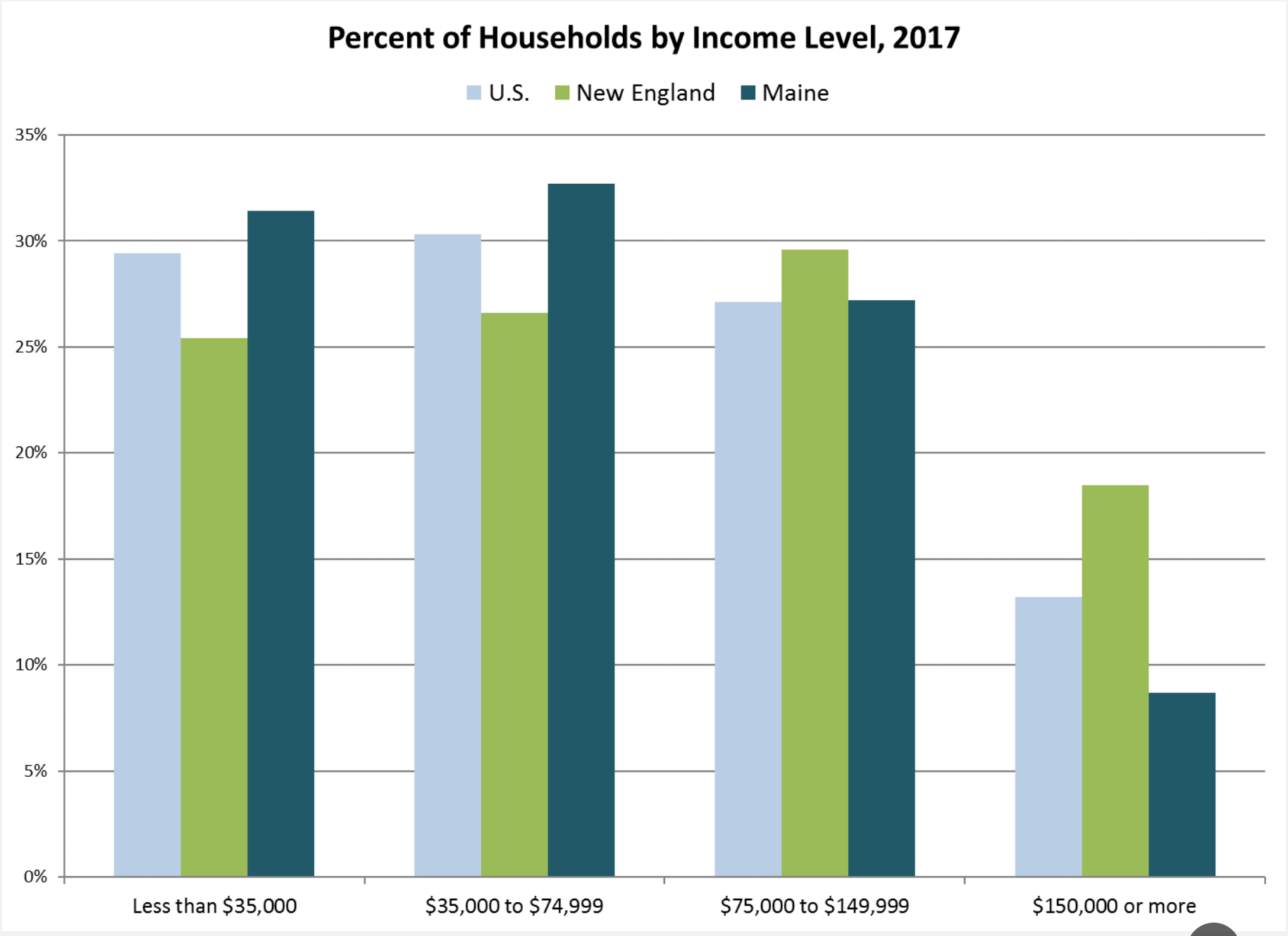


Sources: U.S. Bureau of Economic Analysis; State Economist calculations

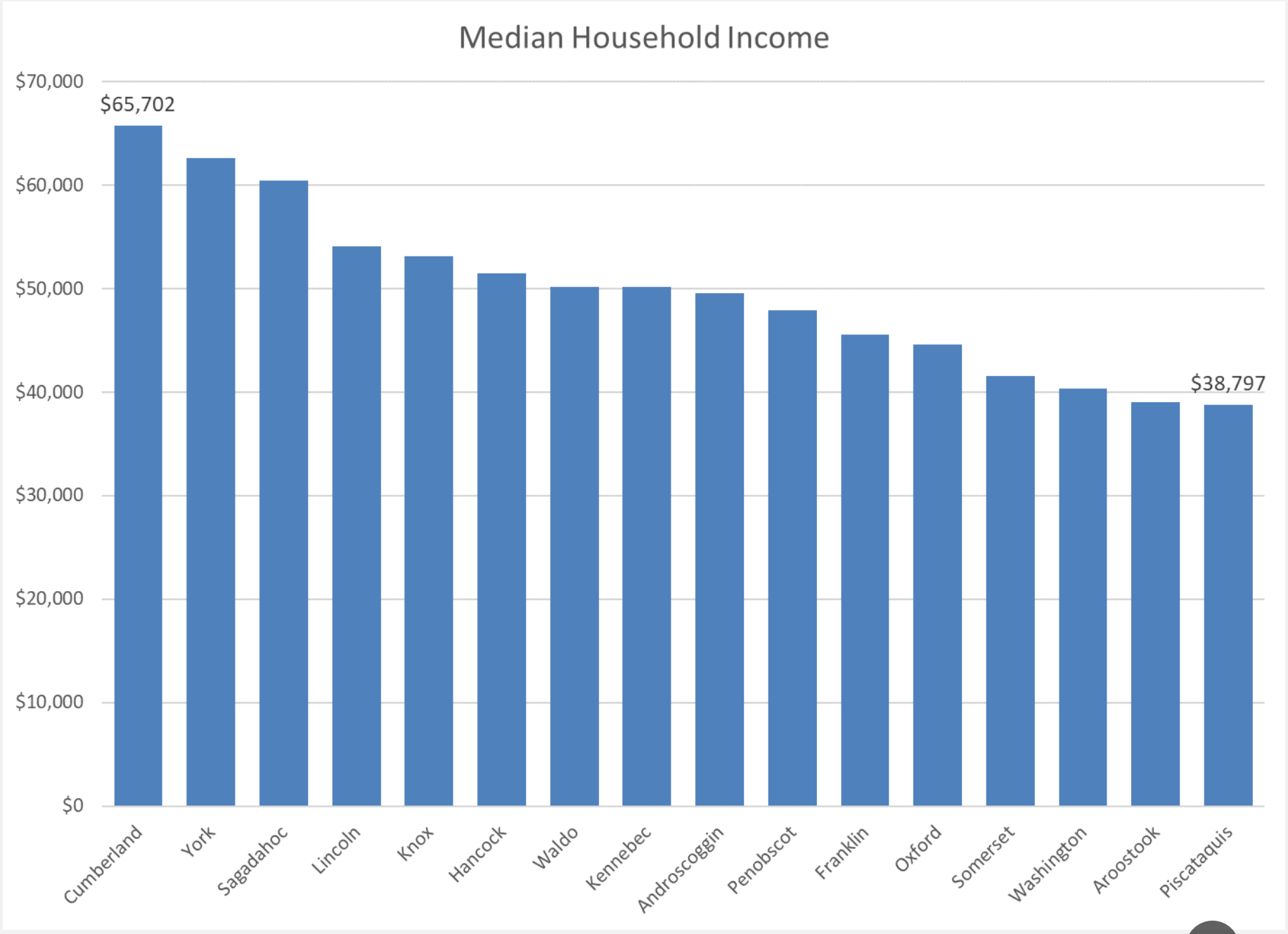
Components of Personal Current Transfer Receipts, 2017



Source: U.S. Bureau of Economic Analysis

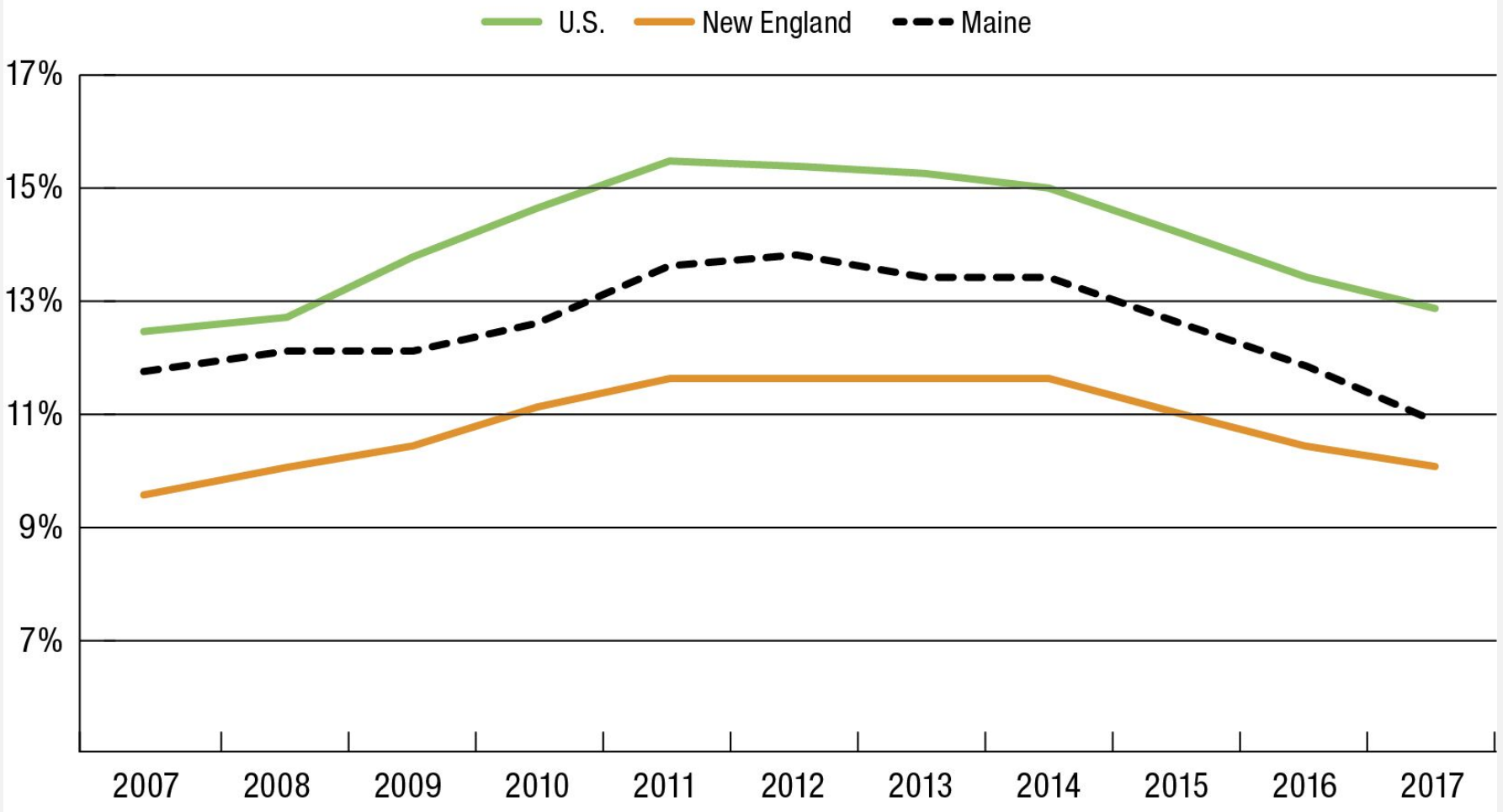


Source: U.S. Census Bureau, 2017 American Community Survey 1-year estimates



Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-year estimates

Fig 5a: Poverty Rate, 2007-2017



Source: U.S. Census Bureau, Small Area Income and Poverty Estimates

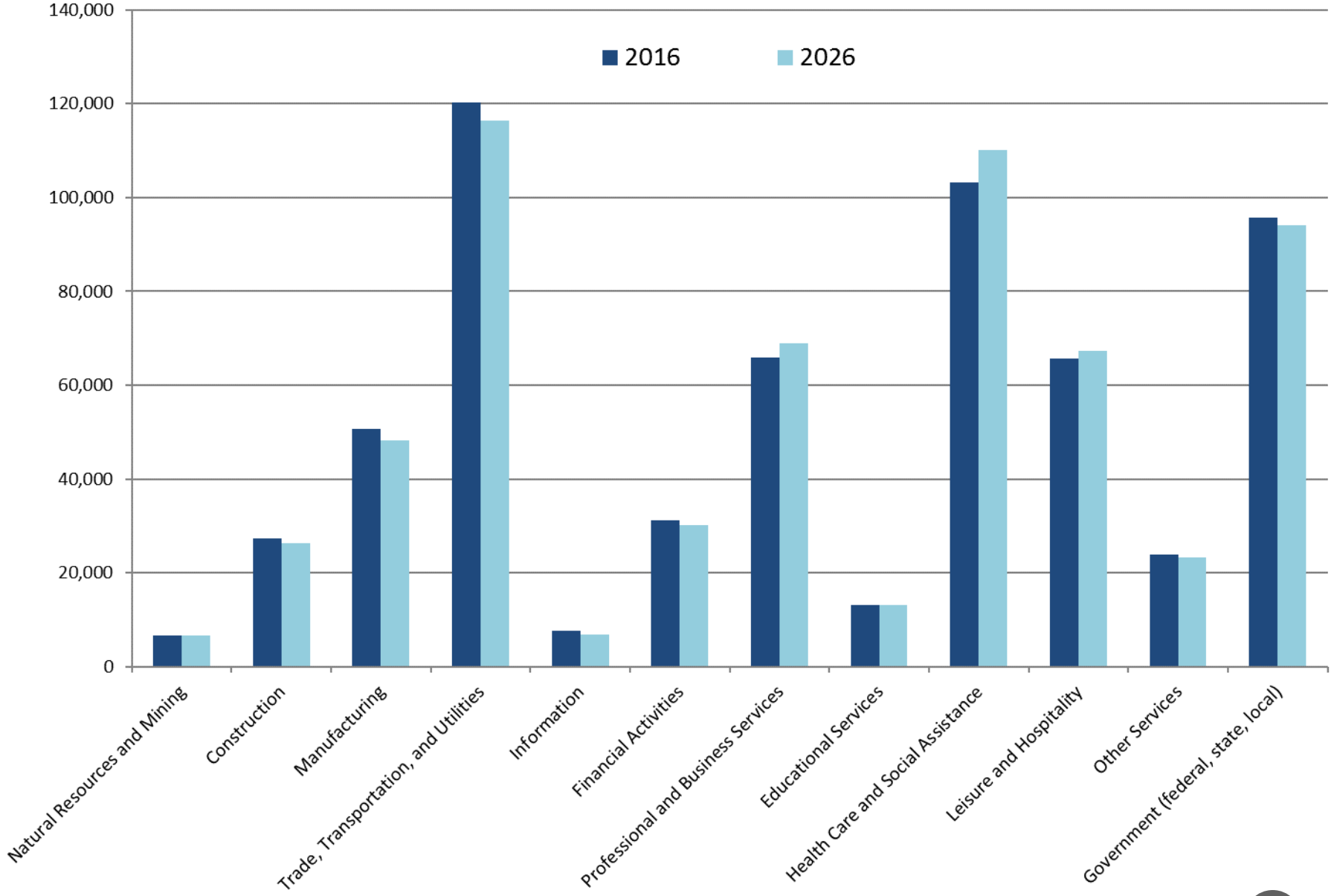
ECONOMIC SECTOR AND CLUSTER TRENDS

Flag	Data
Tourism	***Maine's healthy tourism industry provides employment and income for thousands of people, but needs more well-paying, year-round jobs.***
	Maine's tourism industry has enjoyed steady year-over-year growth, attracting 37 million visitors in 2017.
	Since 2010, jobs in accomodation, food services, arts, entertainment, and recreation have grown twice as fast as the job market overall (1.7% compared to 0.8%). However, these jobs are often seasonal and pay significantly less than jobs in other industries.
	Maine is well positioned to meet growing national demand for experiential tourism that draws on an area's unique natural, cultural, and adventure assets.
Healthcare	***Health care continues to be one of Maine's largest employers, but the industry is maturing and the pace of growth is slowing.***
	In 2017, health care accounted for more than 1 in 7 jobs in Maine, 90,000 total, nearly as many as all goods-producing businesses in the state.
	Employment in healthcare continues to rise but the pace of growth is slowing. Since 2010, annual job growth has averaged 0.8%, equal to the growth rate for all industries.
Prof & Bus	***Professional and business services is one of Maine's largest and fastest growing industries.***
	The percentage of Maine jobs in professional and business services grows nearly every year, reaching 11% in 2017.
	Jobs in professional and business services have grown about 3% annually since 2010, much faster than the rest of the economy. Leading sectors are administrative and support services, janitorial and land scaping services, engineering, computer systems, and management offices.
Manufacturing	***After decades of decline, the manufacturing industry has stabilized and diversified, and is seeing pockets of growth.***
	Manufacturing employs thousands fewer people than in decades past, but 0.3% annual job growth since 2010 is positive news for this industry.
	Since 2010, job losses in pulp and paper manufacturing (about 3,000) have been surpassed by gains in boat building, food and beverages, pharmaceuticals, and an assortment of other industries (about 4,000).
	After years of decline, the number of manufacturing employers has grown each year since 2012, reaching 1,860 in 2017 (from a low of about 1700).
Construction	***Construction employment has not returned to pre-recession levels, but those levels were likely artificially high due to the housing bubble.***
	Since 2010, construction jobs have increased 1.9% annually, on average, exceeding the overall growth rate of 0.8%.
	The construction industry created 31,000 jobs in 2017, making it Maine's seventh largest industry, although employment has not yet returned to pre-recession levels.
Financial Activities	***The composition of Maine's financial industry is shifting and overall employment has fallen slightly.***
	Employment in financial activities has fallen 2% (700 jobs) since 2010. The biggest losses were in commercial banking, which were only partially offset by gains in financial transaction processing and clearing, credit unions, and insurance.
Boatbuilding	***After declining in the 2000s, Maine's boat building industry is growing and diversifying.***
	The number of boat builders has grown in recent years after declining in the 2000s. In 2017, Maine had 87 boat builders, up from a low of 70 in 2012.
	Job growth in boat building has been more than double Maine's overall job growth rate, avering 1.7% since 2010, compared to 0.8%. The industry supported 12,500 jobs in 2017.
Forest Products	***After decades of challenges, Maine's forest products industry now has high potential to modernize, diversify, and grow.***
	Maine is well positioned to supply new markets are being developed for forest products for use in biobased chemicals and renewable plastics.
	In a unique move, the leaders and supporters of Maine's forest products industry have joined the Forest Opportunity Roadmap/Maine, a proactive group formed to plan the next phase of this industry's growth.
	The University of Maine is an important R&D partner for the industry, and a "unique and advantageous asset."
Farming	***Farming is enjoying a revival, propelled in part by increased demand for local, sustainable, and organic products.***
	Maine's farming industry is growing and diversifying. From 2010 to 2017, the number of farm employers increased 39% and farm jobs grew 25%.
	Maine ranks 2nd nationally, behind only Vermont, in an index of states' commitment to local food. The index includes farmers markets, direct-to-consumer farm sales, and other public programs.
	In 2016, there were 494 certified organic farms in Maine, totaling over $65.6 million in sales (a 37% increase from the prior year).

ECONOMIC SECTOR AND CLUSTER TRENDS

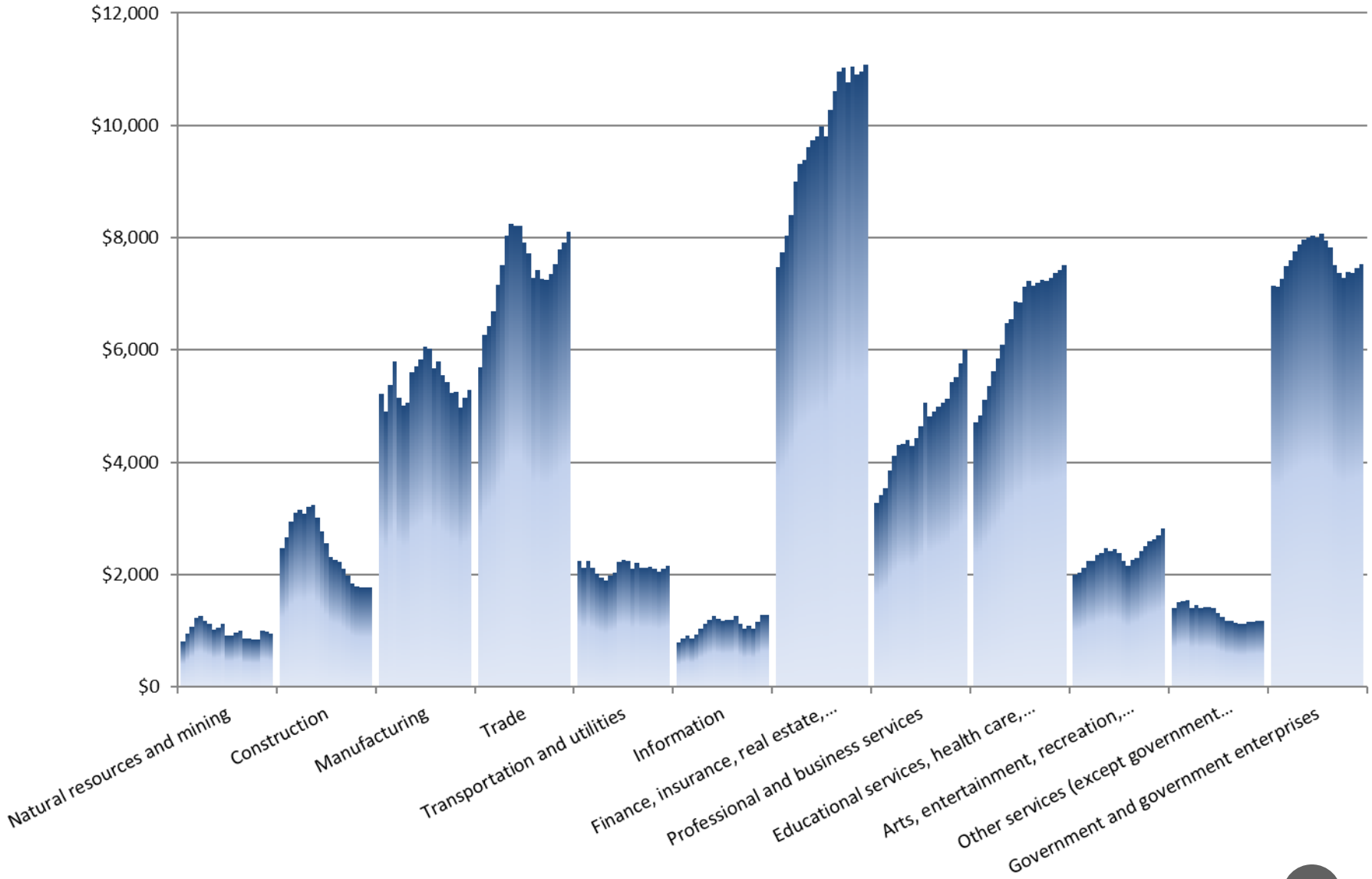
Brewing	***There is a growing cluster of locally-grown beer and breweries that is attracting tourists and contributing to exports.***
	● In 2017, Maine craft brewers generated 1,910 jobs and paid $54 million in wages.
	● An estimated 9 million tourists visited a Maine brewery in 2017, equivalent to 1 in 5 tourists.
Energy	***Maine is a regional leader in renewable energy but this industry needs support and stability to grow.***
	● Maine leads New England in wind power generation and trails only Vermont in hydroelectric.
	● Despite recent regulatory setbacks, Maine's natural environment creates unique opportunities for clean energy production, especially in on- and off-shore wind, tidal, and hydroelectric.
Aquaculture	***Aquaculture is a small but promising industry that leverages Maine's marine resources.***
	● After declining steadily in the 2000s, employment in aquaculture is now growing, reaching several hundred in 2017. The number of aquaculture employers grew from about 20 in 2010 to about 30 in 2017.

Maine Wage and Salary Employment by Industry

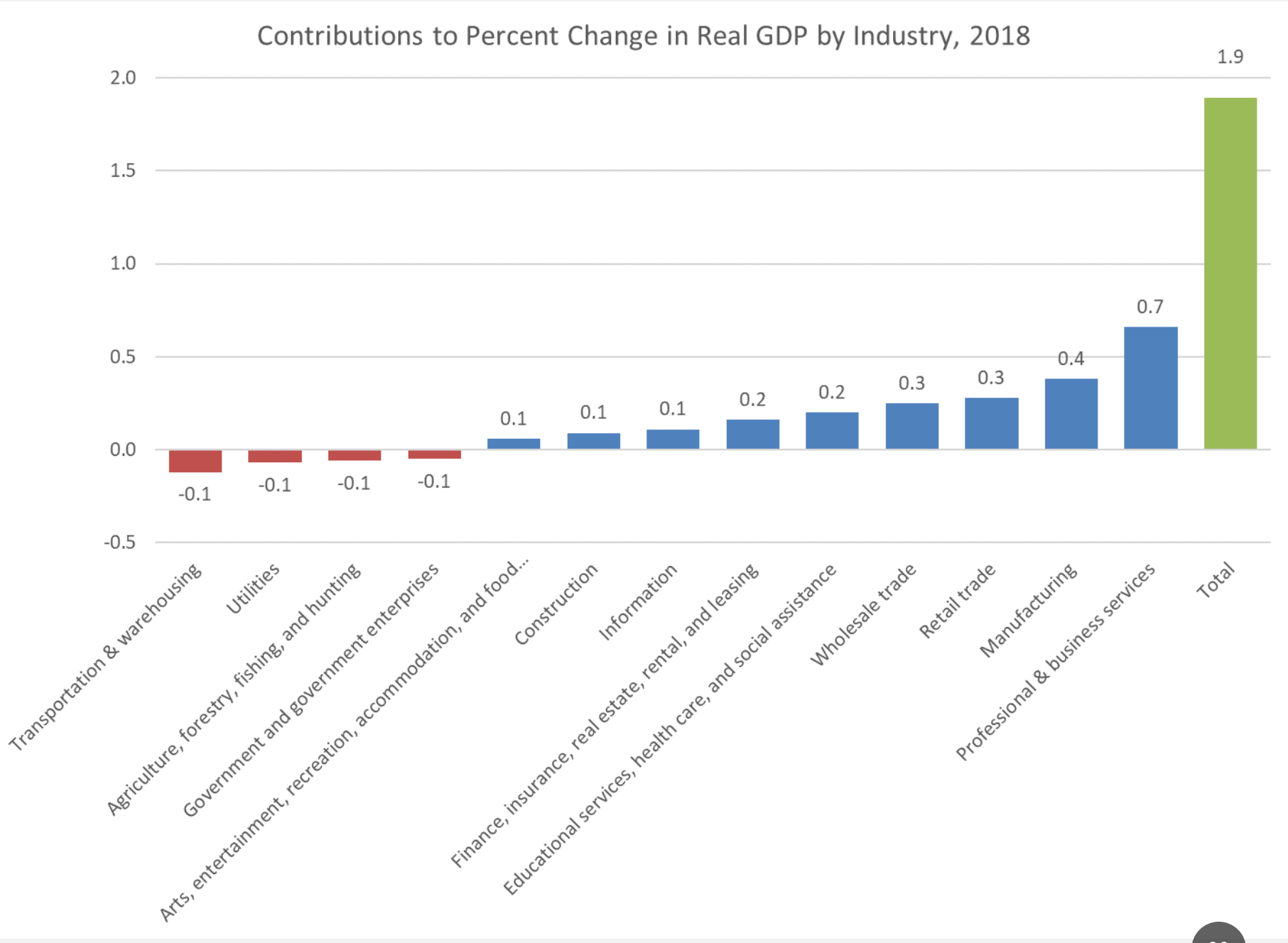


Sources: Maine Department of Labor, Center for Workforce Research and Information

Maine Real GDP by Industry, 1997-2017
(in millions of chained 2012 dollars)



Source: U.S. Bureau of Economic Analysis



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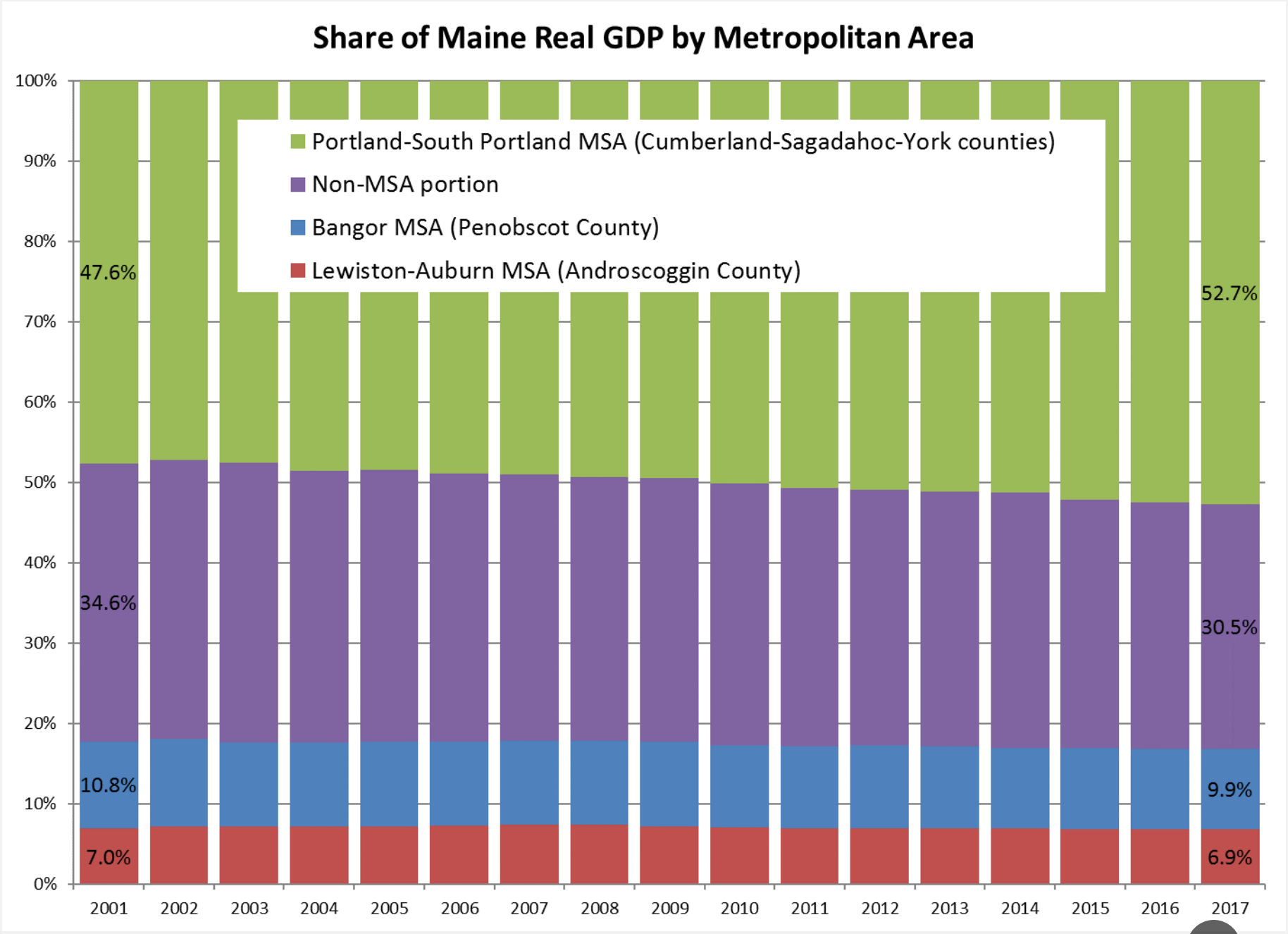

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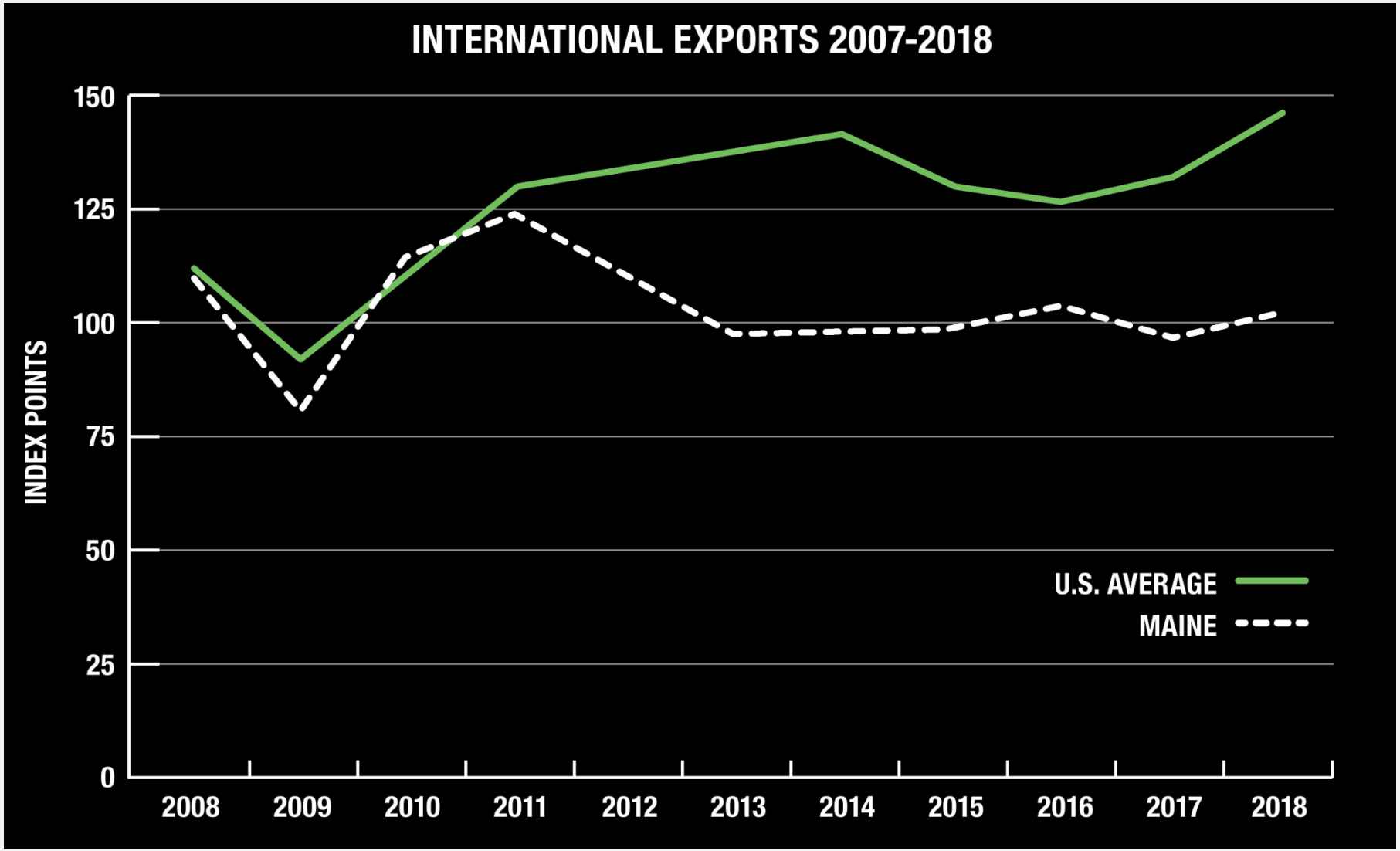
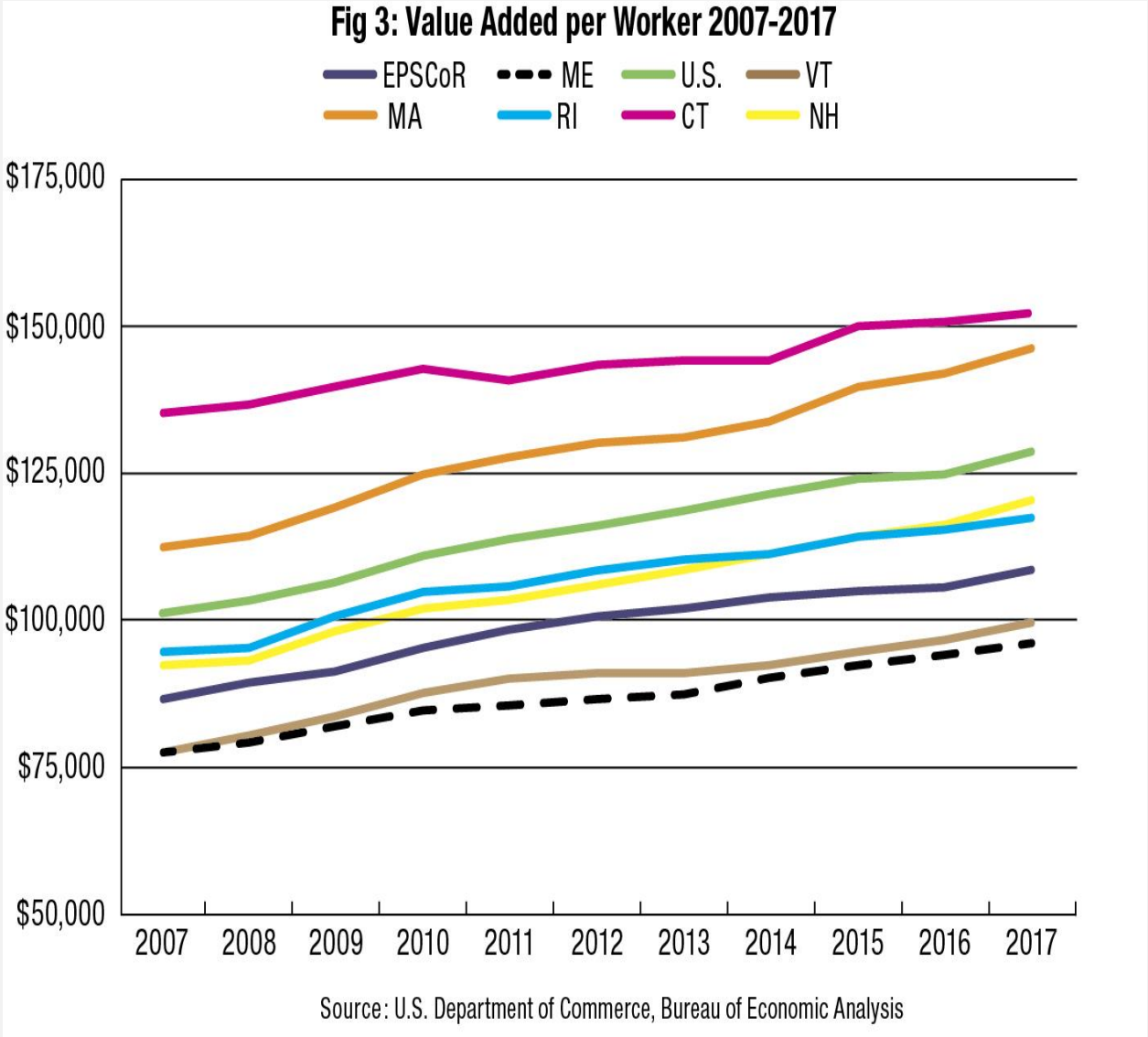

INTERNATIONAL EXPORTS 2007-2018
INDEX POINTS
150
125
100
75
50
25
0
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
U.S. AVERAGE
MAINE

Fundamental Performance Indicator: Value Added per Worker



LEVERAGE EXISTING WORK

Maine Forest Products Council

Maine

Professional Logging Contractors of Maine

Maine Woodland Owners

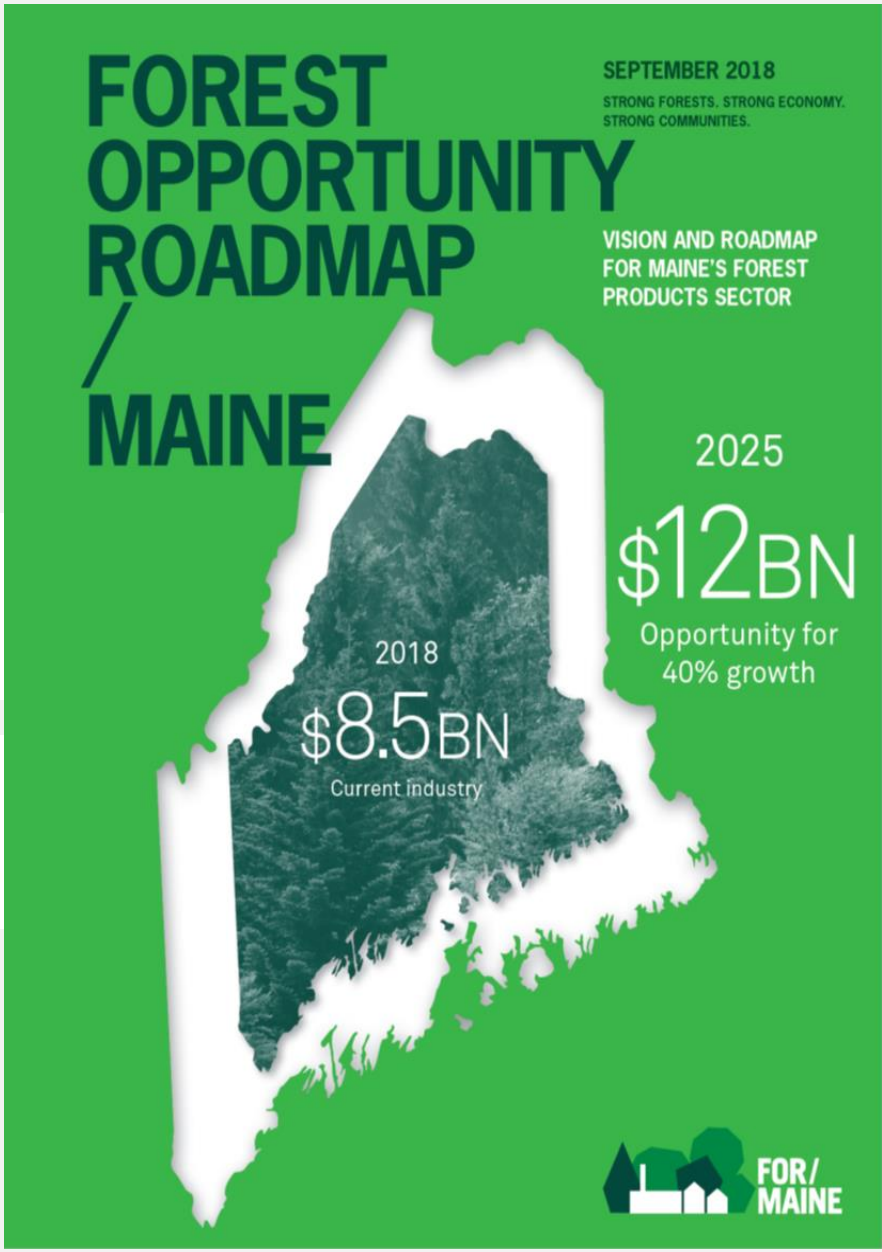
BIOBASED MAINE
ADVANCING SUSTAINABLE MANUFACTURING

USDA
United States Department of Agriculture
National Institute of Food and Agriculture

EDA
U.S. ECONOMIC DEVELOPMENT ADMINISTRATION

United States Congress

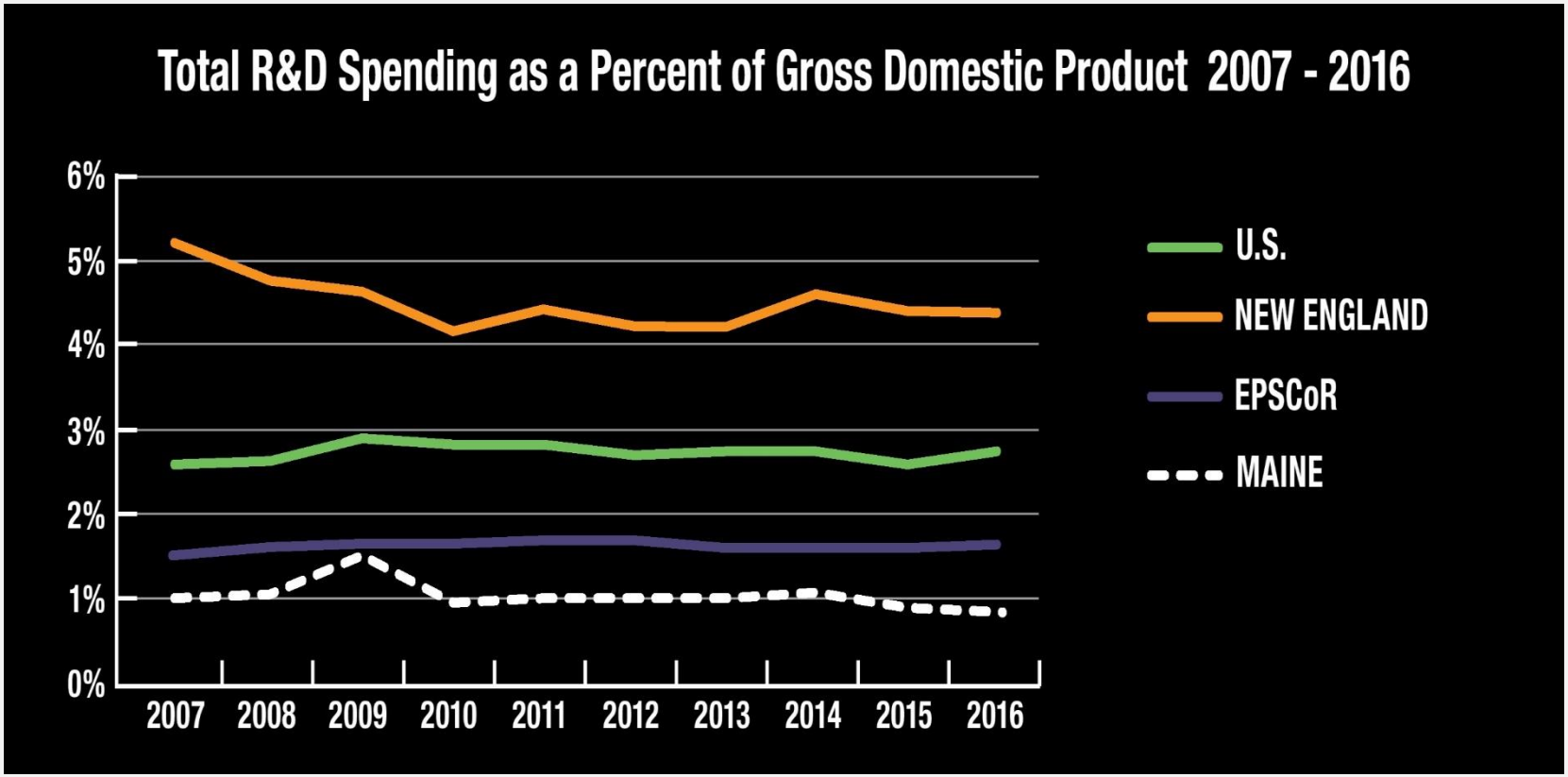
mdf
CONNECTING PEOPLE & STRATEGIES TO DRIVE MAINE'S ECONOMY



INNOVATION AND ENTREPRENEURSHIP TRENDS

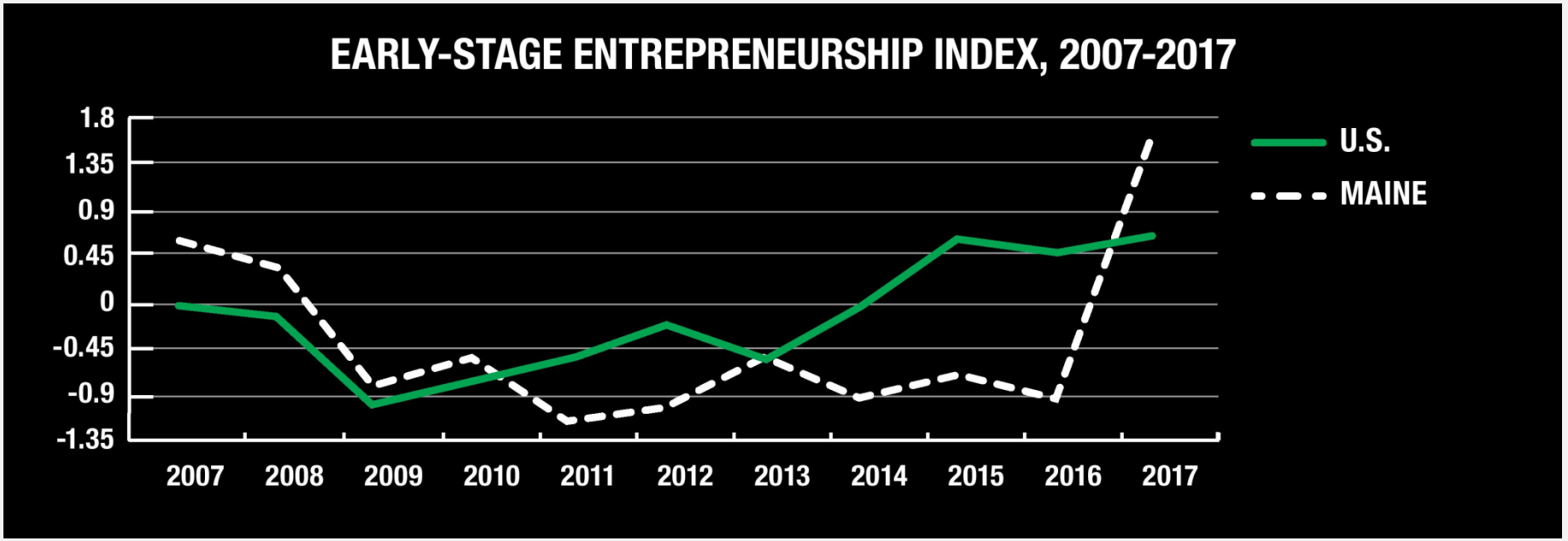
Flag	Data
R&D	***Maine lags behind other states in R&D spending, particularly in the private sector.***
	In 2016, R&D spending in Maine ranked 45th of the 50 states. Maine's R&D expenditures have grown 1% annually on average since 2010, compared to 4% nationally.
	R&D spending by Maine businesses is notablly lower than elsewhere in the US, perhaps reflecting differences in Maine's industry mix.
	New patents granted to Maine business and universities grew to a new level in 2010 but have since plateaued. By contrast, Massachusetts and New Hampshire have experienced 37% and 17% growth, respectively, since 2010.
	Most of Maine's R&D activity occurs in the Portland region. From 2010 to 2015, 70% of patents were registered in Cumberland and York counties; followed by 8% in Penobscot.
	The Maine Economic Improvement Fund spurs economic development through university-based R&D by leverages state funds to attract private and federal grants and contracts.
Entrep'ship	***Maine entreprenuers are succeeding at rates similar to their US peers, but more are needed to make a meaningful economic impact.***
	Since 2010, the rate of entrepreneurship in Maine has been flat at around 0.3%, equal to the US average.
	Since 2010, the number of new start-ups each year in Maine has grown 0.4% on average, compared to 2.3% nationally. So while Mainers are just as likely as others in the US to become entreprenuers, our slower population growth means fewer start-ups.
	Since 2010, the number of jobs created by Maine start-ups has grown 3.6% annually on average, compared to 0.9% nationally. Maine start-ups have created 4,800 new jobs per year on average.
	Portland is a growing hub for entrepreneurship efforts. WalletHub's 2019 list of the best small cities for starting a business placed Portland 339th out of 1,200 cities nationally. It ranked 78th in terms of access to resources (such as workers and investors).
Start-up	***Support for business start-ups has been increasing, mainly in Southern Maine, but more is needed to make a meaningful economic impact.***
Support	Opportunities for Maine start-ups to learn and network have blossomed in the past decade. They include conferences, pitch competitions, educational classes, technical support, and networking events. Most are located near population centers in Southern and Central Maine.
	Since 2010, the one-year survival rate of Maine start-ups is 80% on average, just above the U.S. rate of 78%.
	Maine's level of venture capital fluctuates from year to year, but appears to fall just below neighboring states. From 2010 to 2017, VC investments hovered around $1500 per $1 million GDP, compared to about $1700 in NH, CT, and RI. In MA, it was over $12,000 per $1 million GDP.
	The Maine Technology Institute is a valuable source of funding for Maine start-ups. It has invested over $260 million in more than 2,500 projects since 1999.

Red Flag: Research & Development Expenditures



Source: Camoin Associates & National Science Foundation

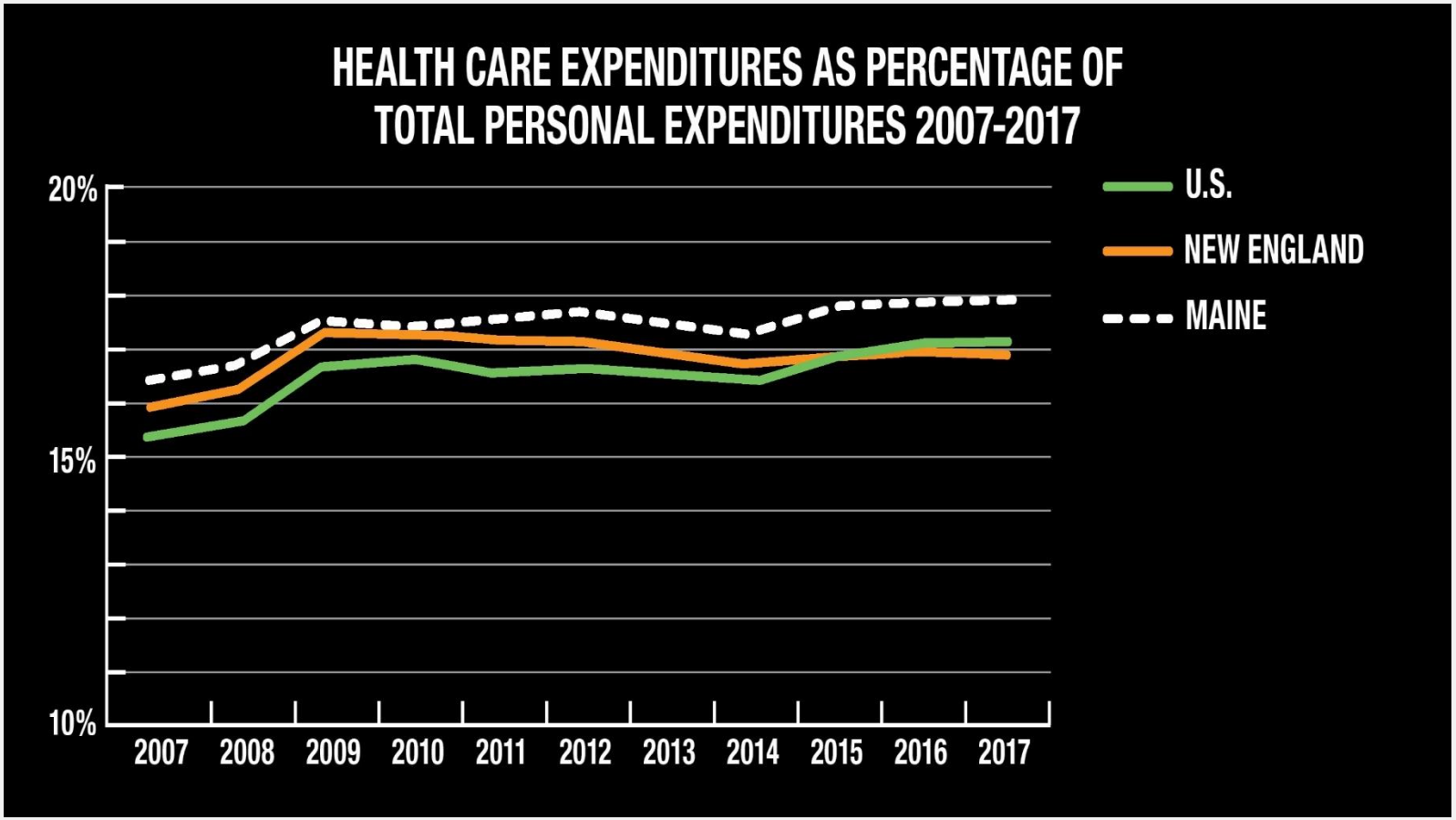
MOG: ENTREPRENEURSHIP



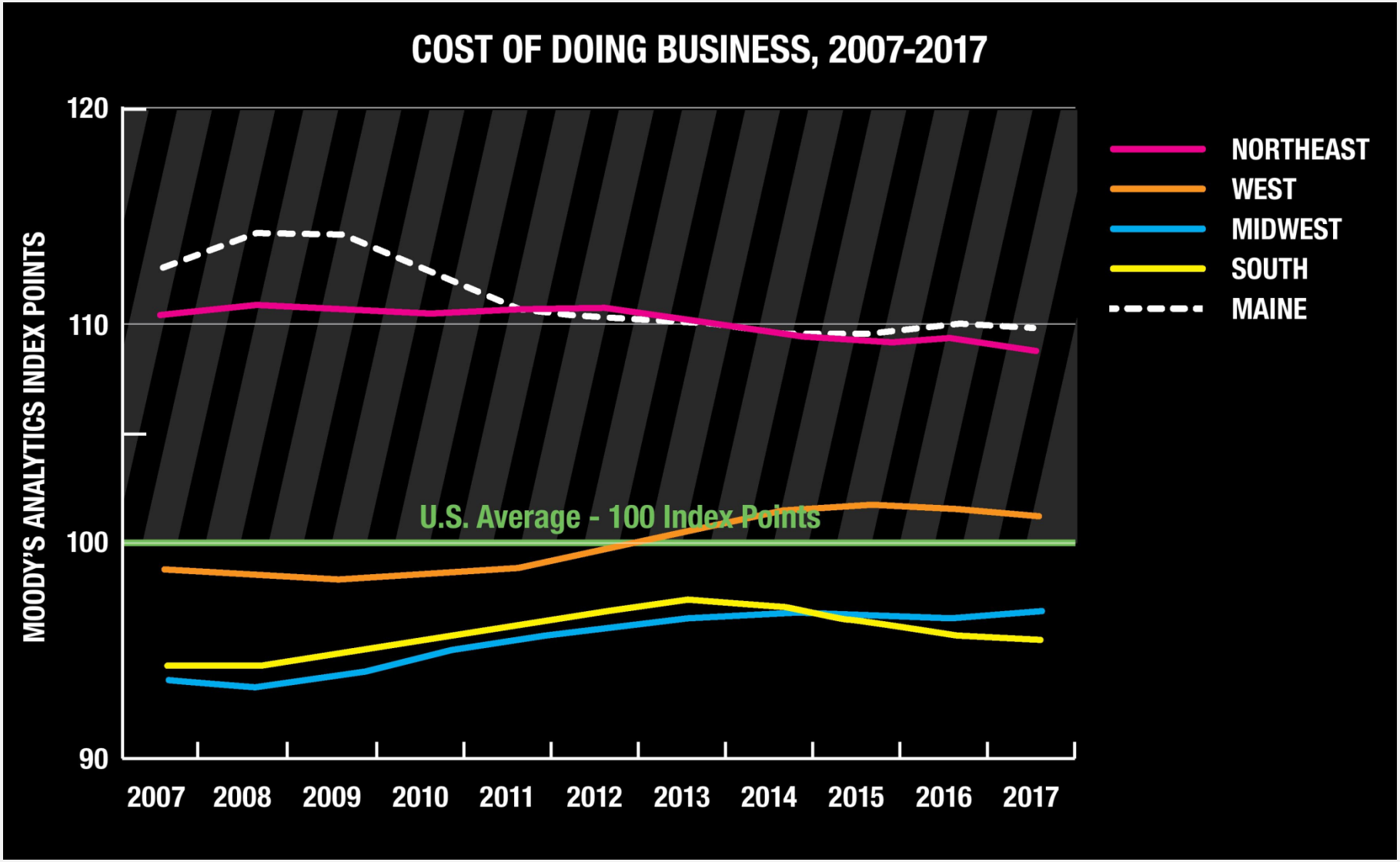
GOVERNANCE AND BUSINESS CLIMATE TRENDS

Flag	Data
Taxes	***Progress has been made on taxes, but Maine's overall tax rank is still high and reforms are needed.***
	Maine's per capita state and local tax burden was essentially flat from 2010 to 2016, and persistently higher than the New England average.
	Maine's rank in the Tax Foundation's *State Business Tax Climate Index* improved from 34th best in 2010 to 30th in 2019.
	Maine's top marginal tax rate has fallen from 8.5% to 7.15% but is still 11th highest in the country.
	Maine's per capita property tax collections are 10th highest in the country, although this rank does not account for Maine's highest-in-the-nation percentage of second homes, many of which are owned by non-residents.
	Maine's 5.5% sales tax rate is 8th lowest in the country, partially due to our lack of a local option sales tax.
	Maine's state tax revenues are inherently volatile, and current reserves would not offset revenue losses in even a moderate recession.
Energy Costs	***Maine is the most energy-intensive economy in New England, with costs and usage exceeding the national average.***
	The average cost of retail electricity has risen for the last five years and is now 11th highest in the nation.
	The cost of industrial retail electricity has fallen from 14 cents per kilowatt hour in 2007 to 9 cents in 2017. This rate is lower than elsewhere in New England but still exceeds the US average of about 7 cents.
	Maine has very energy-intensive industries, such as forest products and other manufacturing businesses, that account for nearly one-third of the state's energy use. That is more than double the share of industries in other New England states.
Cost of Doing Business	***The cost of doing business in Maine has improved, and is lower than some other New England states, but is still high.***
	According to Moody's Analytics, Maine's cost-of-doing-business was 8th highest in the country in 2017, up from 10th in 2010. Maine's rank was third worst in New England.
Regulatory Perceptions	***Perceptions of Maine's regulatory environment are persistently negative.***
	The percentage of Maine business leaders naming "state regulations" as a top issue facing the state fell 19.5% from 2010 to 2018.
	In 2018, Forbes ranked Maine as the 48th best state in which to do business, and 50th in terms of regulatory environment.
Healthcare Costs	***Health care costs exceed the New England and US averages, and are a top concern of Maine business leaders.***
	In 2017, Maine's health care spending was equivalent to 18% of total personal spending, compared to 17% in the US and New England. This percentage has risen slowly since 2011, when it was essentially on par with the rest of New England.
	In a 2018 survey, Maine business leaders recommended "cost of health insurance" as the top priority for Maine's next governor.
Governance	***Some of Maine's government and civic institutions need updating.***
	An aging and declining population is threatening the viability of some small, rural communities.
	Maine's tradition of local governance inhibits regional policy making and economic development.
	Maine lacks a process for evaluating the potential regional and state economic impacts of proposed laws.

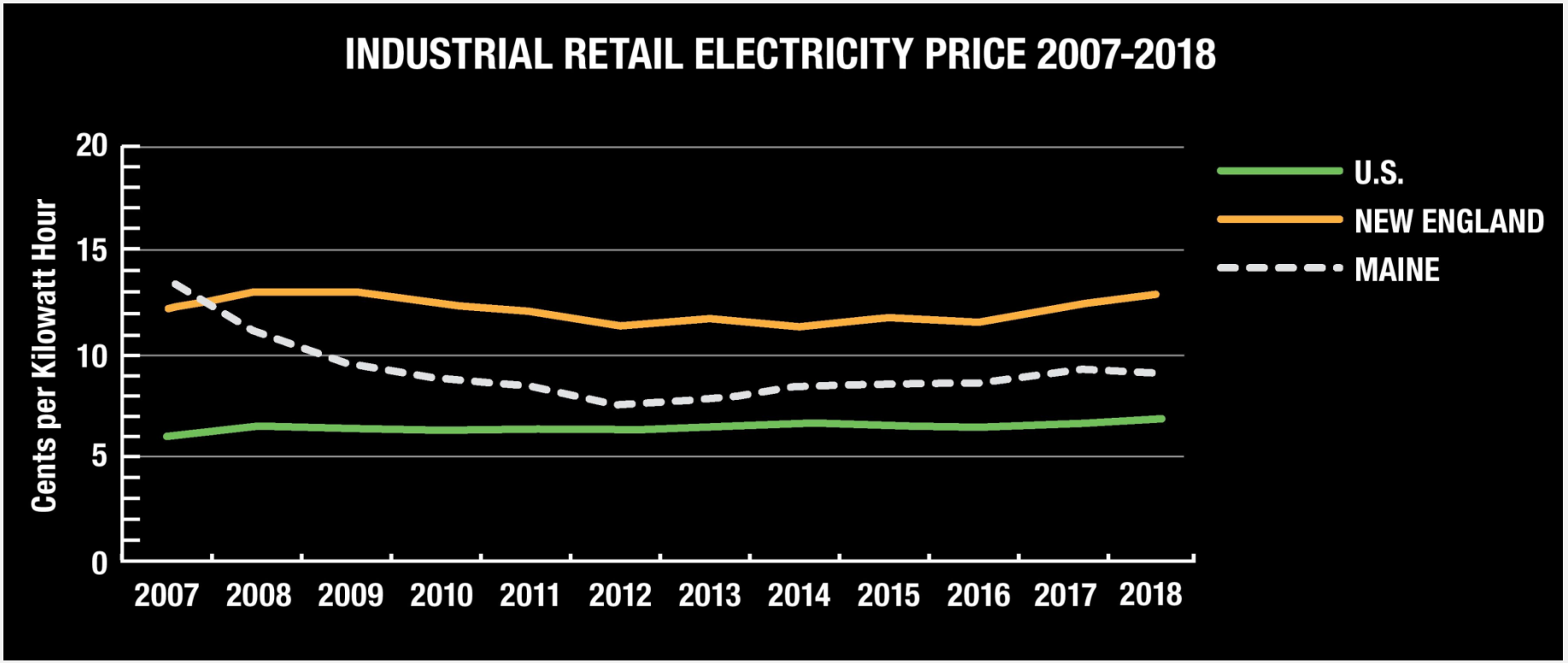
Red Flag: Cost of Health Care



Source: Bureau of Economic Analysis


COST OF DOING BUSINESS, 2007-2017
MOODY'S ANALYTICS INDEX POINTS
120
110
100
90
U.S. Average - 100 Index Points
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
NORTHEAST
WEST
MIDWEST
SOUTH
MAINE

MOG: COST OF ELECTRICITY



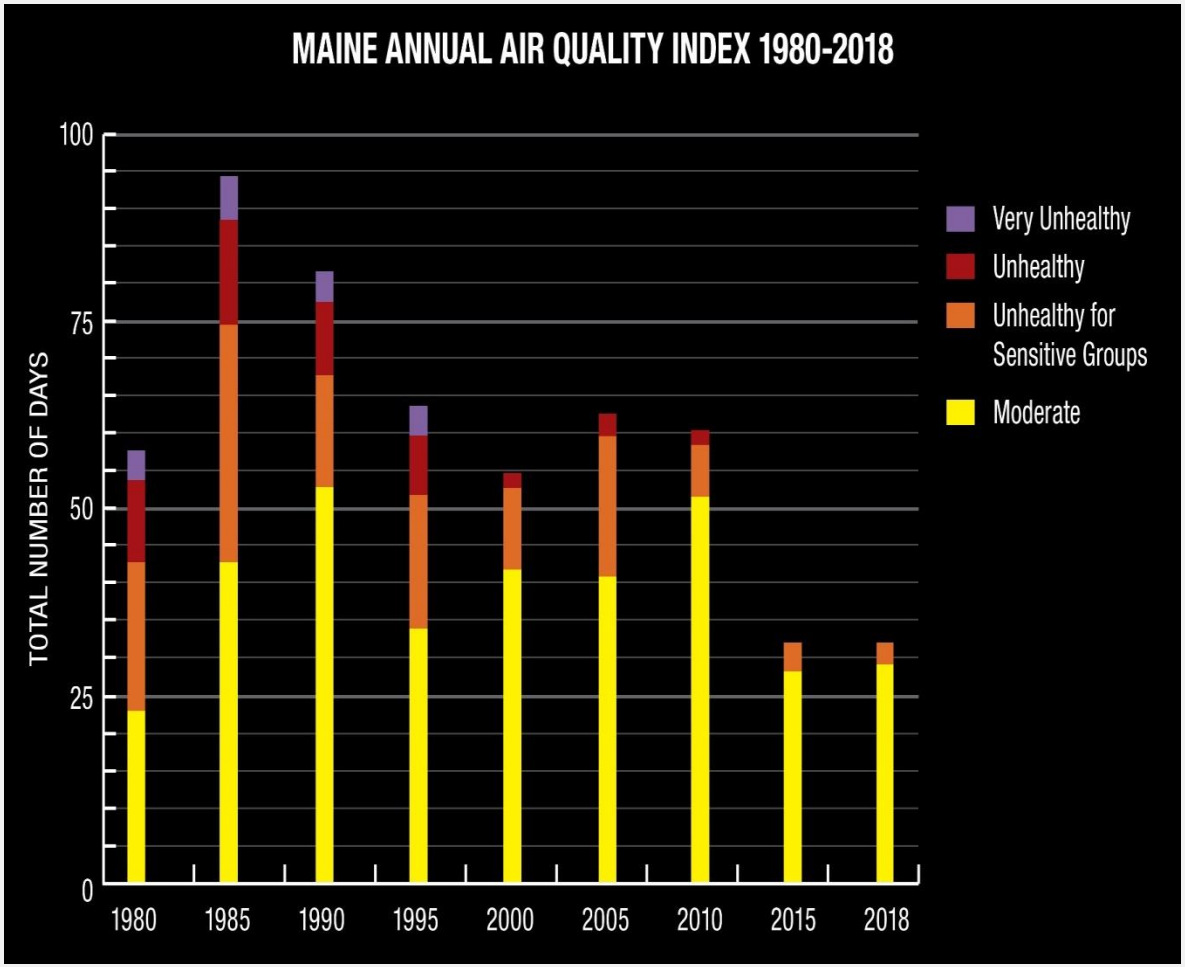
PHYSICAL AND VIRTUAL ENVIRONMENT TRENDS

Flag		Data
Roads and Bridges		***Maine's roads and bridges continue to require significant and sustained investment.***
Bridges	🔴	Since 2012, the percentage of Maine's major roads graded "D" or "F" has remained relatively flat at about one-third. One of three Maine bridges shows significant deterioration or does not meet current design standards, about the same as in 2012.
	🔴	Maine has 23,450 miles of public roadway, more miles per person than any other New England state, and 5 1/2 times as many rural as urban road miles. It takes about $98 million per year to maintain our roadways in the winter, a cost of $2,000-8,000 per mile for municipalities.
	🔴	Maine's gas tax has not been raised since 2012, when inflation indexing was repealed. Adjusted for inflation, revenues are 3.5% lower today. Nationally, average fuel efficiency has increased by 4 mpg since 2010 and 9 mpg since 2000, leading to less gasoline purchased per mile of driving.
Housing		***Buying or renting a home in Maine has become less affordable, particularly in southern and coastal Maine, and for low-income households.***
	🔴	Since 2012, median house prices have increased faster than median incomes. Southern and coastal Maine are the least affordable.
	🔴	Increasing demand for rental units, a national phenomenon, is pushing vacancy rates lower and rents higher. Twice as many higher-income earners rent today than in 2010. Unaffordability is most acute for those earning less than $35,000.
	🟡	Maine's housing stock is older than the rest of the country (but not New England). One quarter of Maine homes were built before 1940 and three-quarters before 1990 (vs. 68% US, 81% NE). Androscoggin and Knox counties have the oldest housing stock.
Renewable Energy		***State policies have hindered investments in wind power and rooftop solar over the last eight years, but that is changing.***
Energy	🔴	Maine lost a major investment in offshore windpower in 2013 (Statoil), a moratorium on land-based wind power was passed in 2018 (repealed in 2019), and the PUC replaced net metering with gross metering in 2017 (reinstated in 2019).
Heating oil		***Maine has made significant progress transitioning away from oil heat, but still has a ways to go.***
	🟢	62,000 fewer households heat with oil today compared to 2010. This 12 percentage point change is faster than the US and NE. Roughly ¼ switched to gas, ¼ to propone, ¼ to wood, ¼ to other sources. This dynamic cuts across geographies and income brackets.
	🔴	62% of Maine's households still heat primarily with oil, the highest rate in the country (compared to 37% in NE and 5% in the US). The highest rate is in York (69%) and the lowest is in Piscataquis (54%).
Broadband		***Broadband access has increased, still with room to go, particularly in rural areas.***
	🟢	The number of Maine households with broadband service increased from 72% in 2013 to 81% in 2017. Access varies regionally, with 84% of households with access in Cumberland compared to 65% in Piscataquis.
	🔴	Currently, 55,000 households (10%) are unserved by broadband access of at least 25Mbps of broadband.
	🔴	Maine's MLTI wireless network at middle and high schools is obsolete and was last refreshed in 2012. Schools with the means to do so are opting out, creating inequities and higher average costs.
Higher Ed Infrastructure		***The capital investment needs at UMS are intensifying.***
	🔴	The percent of UMS space over 50 years old has increased from 31% in 2010 to 47% today, far above the average for its peers, and is projected to be 55% in 2023. There is an expected $1.15 billion in facility needs over the next 10 years.
	🟡	MCCS currently has an estimated $40 million in facility needs.
Connections to the to the World		***Maine has increased its connections to export markets, particularly in Portland.***
	🟢	Maine is strategically positioned to service three major population centers by road: New York (20.3 million people), Boston (4.6 million), and Montreal (4.1 million).
	🟢	Cargo volume passing through the Port of Portland grew 244% from 2013 to 2017; vessel traffic grew 71%; and the total value traded rose to $2.46 billion in 2018, up from $2.21 billion in 2017.

PHYSICAL AND VIRTUAL ENVIRONMENT TRENDS

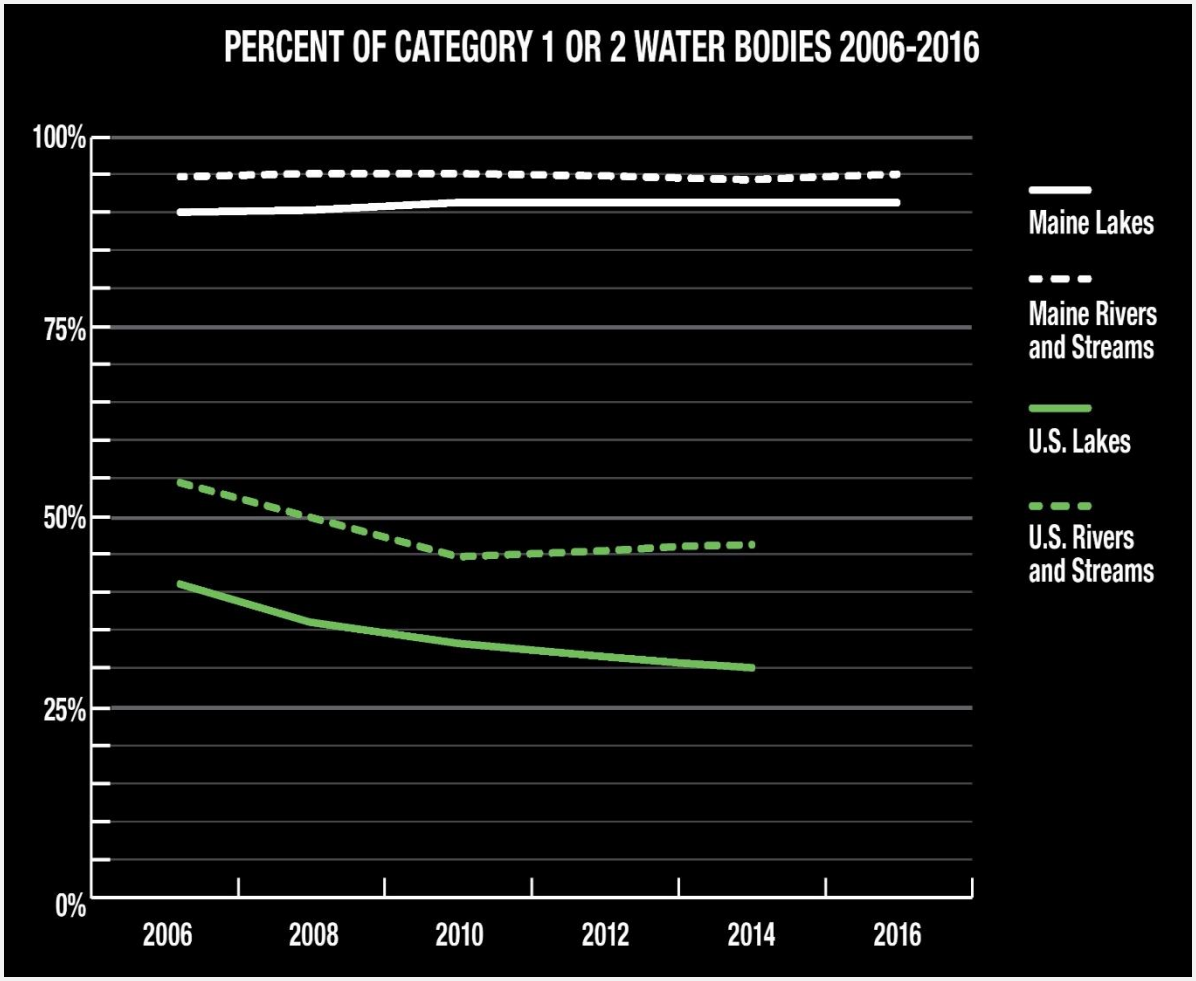
Forests		***Maine's forests continue to provide significant economic value and potential.***
	●	Maine's forestland has remained stable in the past four decades at over 17 million acres, 12 million of which are non-industrial privately-owned acres. About half is certified as sustainably managed. More trees are growing than being harvested, a trend that has been increasing since 2000.
	●	Some 3 million acres have been conserved in the last generation, expanding Maine's percentage of conserved land from 5 to 20% of total land area. This trend slowed in the last decade but the number of organizations and funding sources dedicated to conservation suggest it will not flatten. 1,200 miles of ATV trails, 1,700 miles of snowmobile trails, and 350 boat launch sites have been conserved for public recreation.
Climate Change		***Climate change is coming, with significant implications for our economy.***
	●	A recent academic study estimated that sea level rise has already contributed to a loss of $70 million in property values since 2005. NRCM estimates that a one-meter rise in sea level will impact over 20,000 acres of land and 85km of roads in coastal towns.
	●	Ocean acidification and rising sea temperatures could shift key Gulf of Maine fisheries north, (e.g., lobster, shrimp, groundfish). GMRI found these waters are warming faster than nearly every other part of the world's oceans.
Water Quality		***The water quality of Maine's lakes and rivers remains high and a competitive advantage compared to many other states.***
	●	95% of Maine rivers and 91% of Maine lakes have good quality water (classified by DEP as category 1 or 2).
Public Transportation		***Few Maine workers use public transporation to get to work.***
	●	Just 0.6% of workers age 16 take public transportation to work, unchanged since 2010 and compared to 6.3% of workers in N.E. and 5.1% in the US.
	●	A lack of public transit options disproporationaly affects low-income workers; of those who took public transit to work, two-thirds earned less than $35,000/year.
Rail		***Maine's railways have not been modernized.***
	●	Maine has no Class I railways. Many of our shorthaul lines are not able to handle the emerging standard rail car weight of 286,000 lbs and/or are in need of investment and repair.

Gold Star: Air Quality



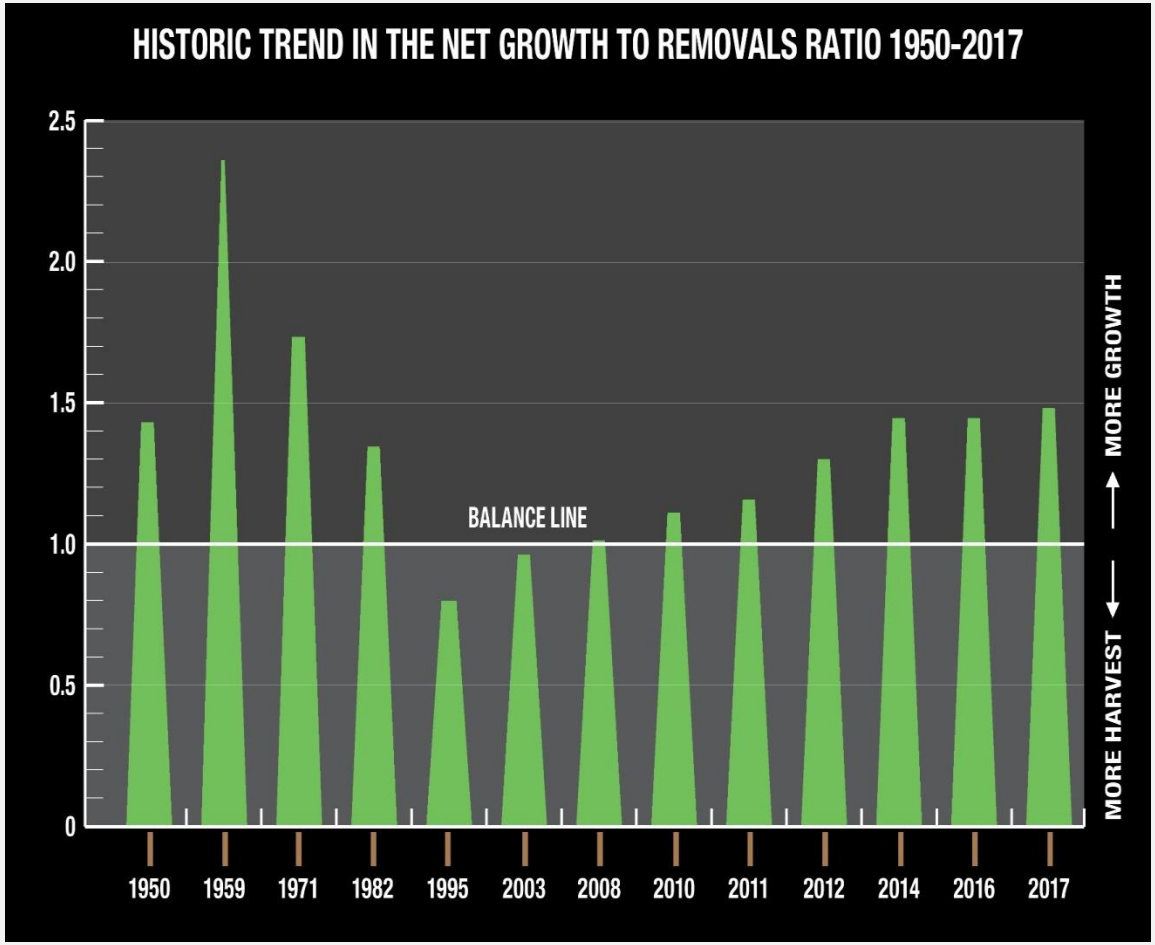
Source: Maine Department of Environmental Protection

Gold Star: Water Quality



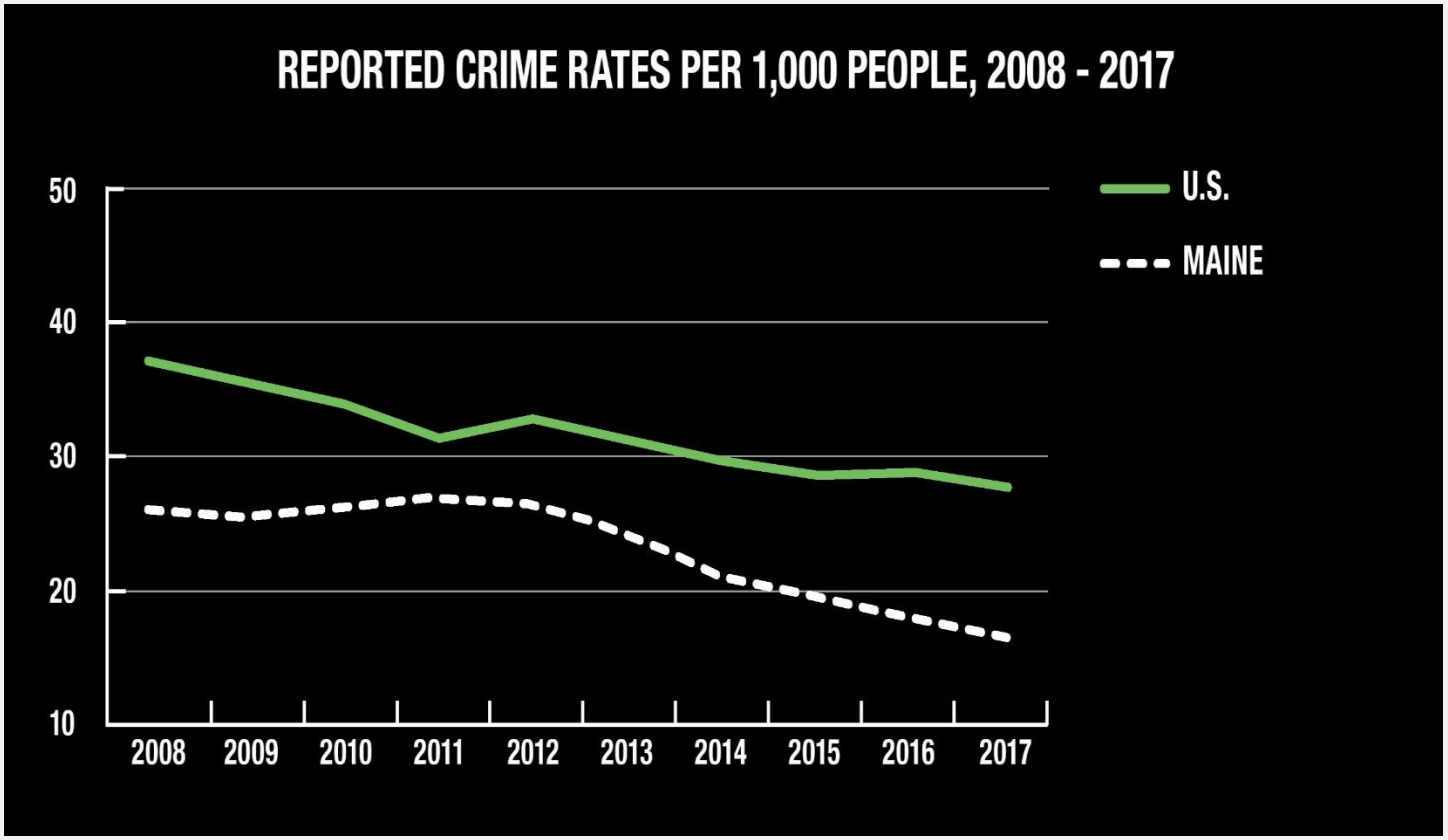
Source: Maine Department of Environmental Protection & U.S. Environmental Protection Agency

Gold Star: Sustainable Forest Lands

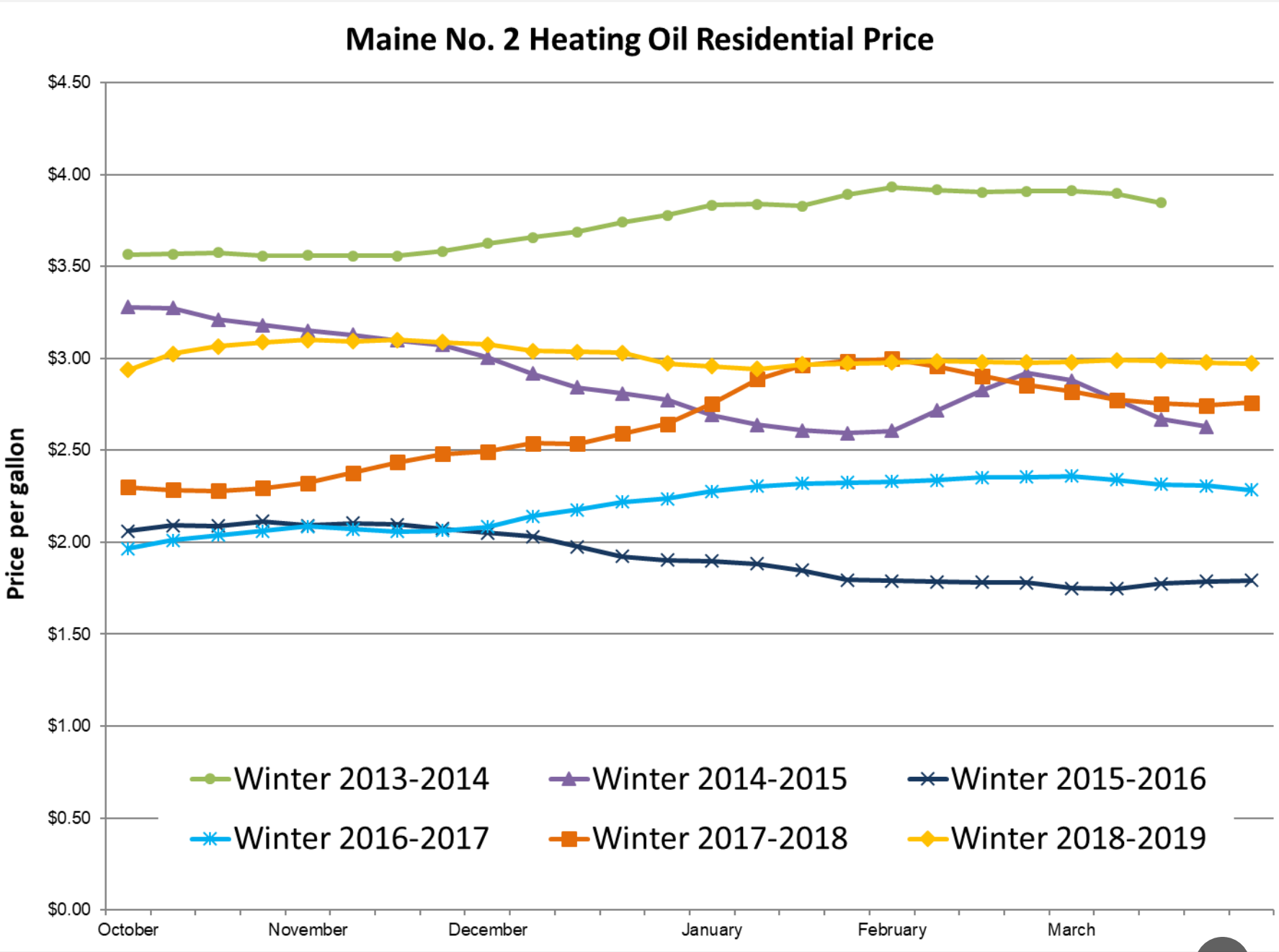


Source: Maine Forest Service

Gold Star: Safety

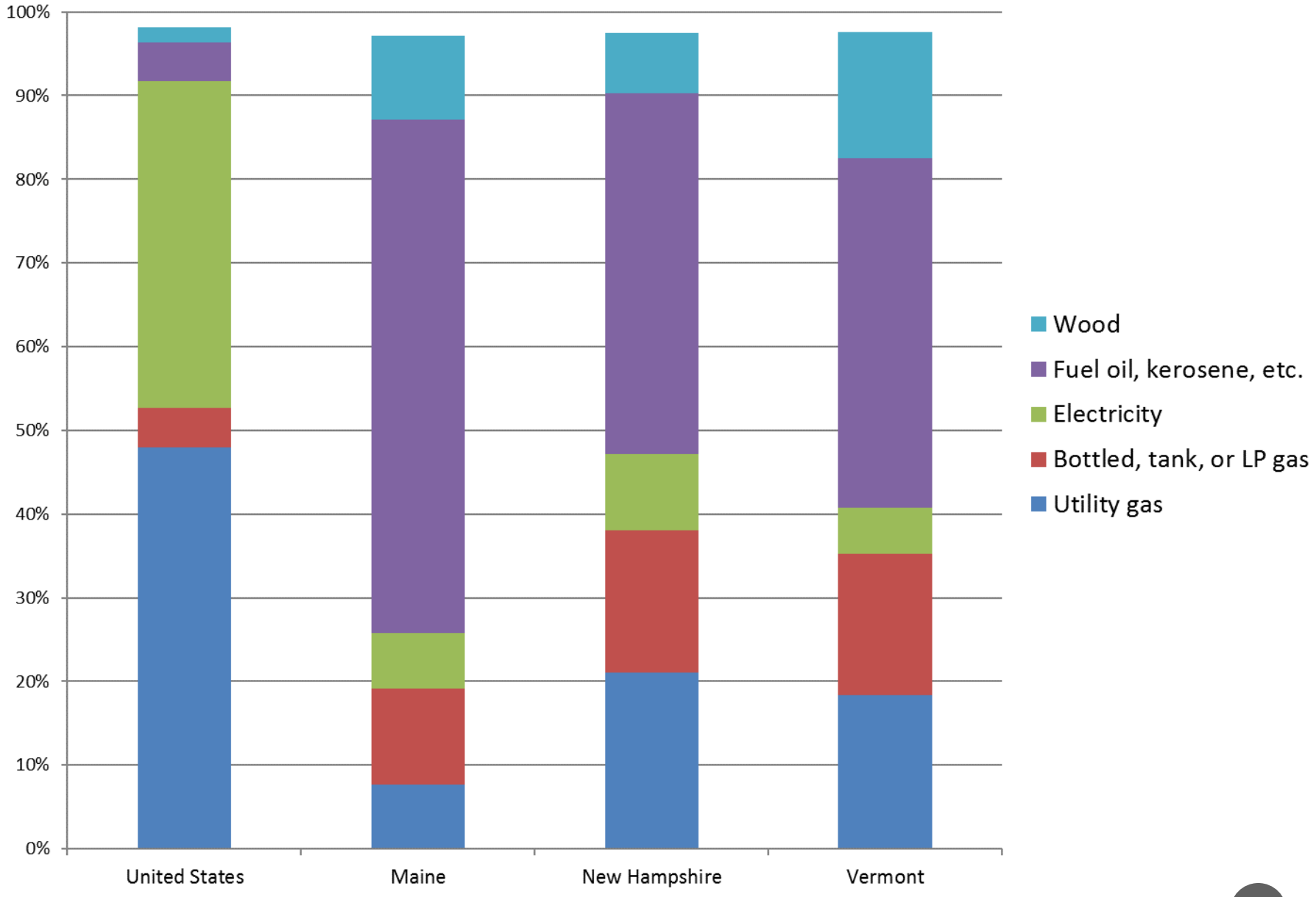


Source: Maine State Police



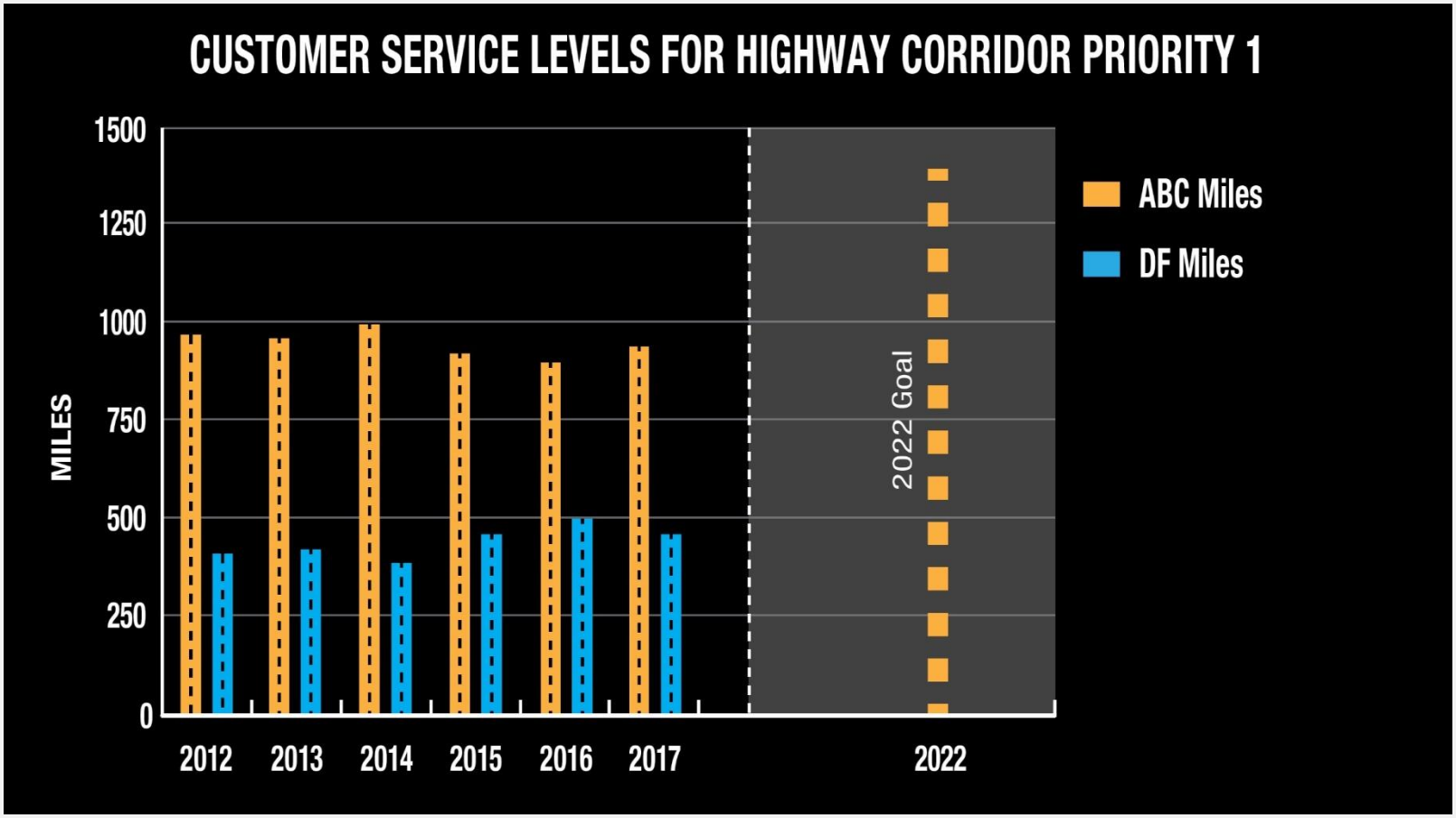
Source: U.S. Energy Information Administration

Percent of Housing Units by Type of Primary Heating Fuel (2017)



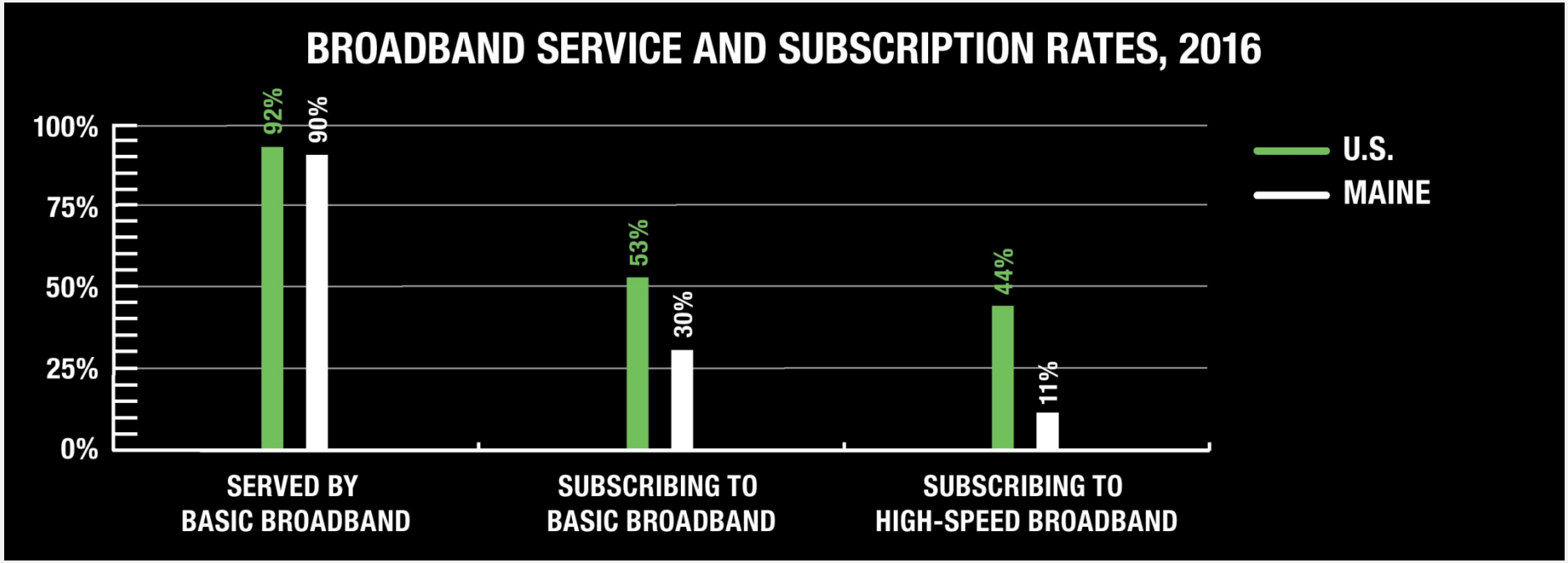
Source: U.S. Census Bureau, 2017 American Community Survey 1-year estimates

Red Flag: Transportation Infrastructure



Source: Maine Department of Transportation

MOG: BROADBAND CONNECTIVITY



SWOT ANALYSIS: STRENGTHS (INTERNAL)

- Maine lifestyle brand
- Abundant natural resources
- Southern Maine economic strength
- Industries of promise
- UMS/MCCS responsiveness
- Young population can be reached
- Relatively solid K-12 education system
- Easy to make connections and create opportunities (public/private)
- Strong, attractive communities
- University capacity for increased R&D
- Enterprising spirit
- Relatively more diversified economy

SWOT ANALYSIS: WEAKNESSES (INTERNAL)

- Size and quality of workforce
- Low productivity and wages
- Lack of R&D
- Aging demographics
- Infrastructure is old or incomplete including broadband and public transit
- Lack of coherent childcare system
- Inconsistent economic opportunity
- Inconsistent regulatory administration
- Aspirations are often low
- Fragmented economic programs
- High taxes relative to income
- Industry mix and high number of part-time/seasonal jobs
- Local governance may confound state initiatives
- Flat education investment

SWOT ANALYSIS: OPPORTUNITIES (EXTERNAL)

- Desire for Maine lifestyle – safe, clean, quality of place, work/life balance
- Close to Boston and North Atlantic
- Climate change – water resources, growing season
- Increased global migration
- Trend to high-tech and remote workforce
- Demand for healthier food
- Lower cost of business than New England

SWOT ANALYSIS: THREATS (EXTERNAL)

- Recession likely in forecast period
- Perception of Maine may be negative or inaccurate
- Climate change – flooding, ocean acidification, etc.
- Healthcare costs climbing
- Knowledge economy favors urban areas
- Opioid crisis
- Federal legal immigration laws/policies
- Federal trade policy
- Small corporate base (headquarters)
- Decline in rural economics
- Heavy sector reliance
- Higher cost of business than U.S.