ECONOMIC & BUDGET OUTLOOK

FISCAL YEARS 2018-19 TO 2023-24

INDEPENDENT FISCAL OFFICE

NOVEMBER 2018

About the Independent Fiscal Office

The Independent Fiscal Office (IFO) provides revenue projections for use in the state budget process along with impartial and timely analysis of fiscal, economic and budgetary issues to assist Commonwealth residents and the General Assembly in their evaluation of policy decisions. In that capacity, the IFO does not support or oppose any policies it analyzes, and will disclose the methodologies, data sources and assumptions used in published reports and estimates.

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The Independent Fiscal Office was created by the Act of Nov. 23, 2010 (P.L.1269, No.120).

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INDEPENDENT FISCAL OFFICE

November 15, 2018

The Honorable Members of the Pennsylvania General Assembly:

Section 604-B (a)(2) of the Administrative Code of 1929 specifies that the Independent Fiscal Office (IFO) shall "provide an assessment of the state's current fiscal condition and a projection of what the fiscal condition will be during the next five years. The assessment shall take into account the state of the economy, demographics, revenues and expenditures." In fulfillment of that obligation, the IFO submits this report to the residents of the Commonwealth and members of the General Assembly. In accordance with the mission of the office, this report does not make any policy recommendations.

The data and projections presented in this report are from various sources. Economic projections for Pennsylvania are from the IFO, while projections for the U.S. are from the Congressional Budget Office (June 2018) or IHS Markit (October 2018). Demographic projections are from the IFO based on tabulations from the 2017 Population Estimates by the U.S. Census Bureau and data supplied by the Pennsylvania Department of Health. Historical revenue and expenditure data are from the *Governor's Executive Budget* and various departmental reports. All revenue and expenditure projections are from the IFO. Other data sources are noted in the relevant sections of this report.

The office would like to thank all of the individuals, agencies and organizations who assisted in the production of this report. Questions and comments can be submitted to contact@ifo.state.pa.us.

Sincerely,

MATTHEW J. KNITTEL
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Executive Summary

This report examines the demographic, economic, revenue and expenditure trends that will affect the Commonwealth's fiscal condition through fiscal year (FY) 2023-24. Based on the economic and demographic assumptions used by this report, the analysis finds a structural imbalance, as temporary savings and other one-time measures do not recur after the current fiscal year.

From FY 2018-19 to FY 2023-24, the forecast projects that General Fund revenues will increase at an average rate of 3.1 percent per annum. The underlying rate increases to 3.4 percent per annum if a new sales and use tax transfer that begins in FY 2022-23 is excluded ($479 million for that year). The forecast assumes that the Pennsylvania economy operates at its long-term potential and a recession or slowdown does not occur.

For FY 2019-20, expenditures are projected to increase by 8.9 percent. The significant increase is due to the non-recurrence of one-time savings measures used to support expenditures by the Department of Human Services, the expansion of health and human services programs and reduced support from non-General Fund sources (e.g., Tobacco Settlement Fund). After that year, expenditure growth greatly moderates and the projected imbalance levels off. If the new sales tax transfer did not occur, then the fiscal imbalance would contract in all years after FY 2019-20.

General Fund Financial Statement

Fiscal Year	17-18	18-19	19-20	20-21	21-22	22-23	23-24
Beginning Balance[1]	-$1,524	-$39	--	--	--	--	--
Current Year Revenues	34,567	34,199	$35,233	$36,546	$37,695	$38,528	$39,838
Less Refund Reserve	-1,339	-1,392	-1,451	-1,499	-1,560	-1,618	-1,677
Net Revenue	33,228	32,808	33,782	35,047	36,135	36,910	38,161
State Expenditures[2]	-31,948	-32,718	-35,616	-36,740	-37,706	-38,785	-39,870
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Current Year Balance	1,280	89	-1,834	-1,693	-1,571	-1,875	-1,708
Less Assumed DHS Supplemental	0	-200	0	0	0	0	0
Adjustment for Lapses[3]	267	150	125	125	125	125	125
Preliminary Ending Balance	**22**	**0**	**-1,709**	**-1,568**	**-1,446**	**-1,750**	**-1,583**

Note: figures in dollar millions.

[1] Beginning balance omitted for FY 2019-20 and thereafter. Includes adjustments.

[2] Based on appropriations. Includes current year lapses and approved supplemental appropriations.

[3] Prior year lapses and actual transfers to the Budget Stabilization Reserve Fund.

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Section 1: Introduction

This report provides an overview of the demographic, economic, revenue and expenditure trends that will affect the Commonwealth's fiscal condition through fiscal year (FY) 2023-24. The report examines long-term trends to facilitate an assessment of current tax and spending policies. The projections are best viewed as plausible outcomes from the application of reasonable economic assumptions and the continuation of current policies and underlying demographic trends. Actual revenues and expenditures could deviate significantly from the projections in this report due to the uncertainty of economic outcomes and unanticipated technical factors, such as changes to federal tax laws and federal matching funds.

The economic projections displayed in this report motivate most General Fund revenues through FY 2023-24. The projections do not represent a formal economic forecast, but rather a controlled simulation. They assume that economic growth is consistent with full employment, historical labor productivity gains and inflation expectations. The economic simulation provides a neutral baseline that policymakers can use to assess fiscal sustainability, and it does not assume that a recession occurs over the five-year budget window. In this manner, the economic forecast represents a "best case" scenario.

The report designates FY 2018-19 as the base year. All revenue and expenditure projections use that year as a reference year and assume that the policy choices embedded therein do not change through FY 2023-24. The report makes two forecasts of baseline expenditures. The first forecast represents a "cost to carry" concept and only includes increases in mandatory spending such as debt service, pension contributions and entitlement programs. The second forecast assumes that expenditures grow in a manner that is sufficient to maintain the level of real services provided to service populations in the base year. Hence, most expenditure projections include an inflationary adjustment to compensate for rising prices and an appropriate demographic extrapolator. Combined, the two forecasts provide a reasonable lower and upper bound for future spending.

The report projects expenditures supported by General Fund revenues, as well as other revenue sources. To that end, the report includes projections for the Lottery, Tobacco Settlement and Oil and Gas Lease Funds. Certain disbursements from those funds support General Fund programs, and the projections allow policymakers to determine if legislative or policy changes are needed so the funds can maintain their current levels of support in the future. For example, the Tobacco Settlement Fund supports General Fund programs and is assumed to decline based on debt service requirements related to the issuance of revenue bonds. The Appendix provides further detail regarding those funds.

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Section 2: Demographic Outlook

Demographics are a critical factor that motivate long-term economic, revenue and expenditure trends. Demographics determine key populations, such as the potential labor force that affects economic growth, elementary and secondary students who require educational services and elderly residents who may require long-term care. All population projections contained in this section are by the IFO based on data from the U.S. Census Bureau and Pennsylvania Department of Health.[1] Other data sources are noted in the table footnotes.

Trends by Age Group

Demographic data and projections for Pennsylvania reveal the following trends for the two periods that span 2010 to 2017 and 2017 to 2025 (See **Table 2.1**.):

- Total population increased by 94,000 (0.1 percent per annum) from 2010 to 2017 and is projected to increase by 151,000 (0.1 percent per annum) from 2017 to 2025.
- The school age cohort (age 0 to 19) decreased by 163,000 (-0.8 percent per annum) from 2010 to 2017 and is projected to decline by 117,000 (-0.5 percent per annum) from 2017 to 2025.
- The working age cohort (age 20 to 64) decreased by 59,000 (-0.1 percent per annum) from 2010 to 2017 and is projected to decline by 251,000 (-0.4 percent per annum) from 2017 to 2025. This group includes most Millennials and Generation X in 2025.
- The retiree cohort (age 65 to 79) increased by 322,000 (3.1 percent per annum) from 2010 to 2017 and is projected to increase by 442,000 (3.0 percent per annum) from 2017 to 2025. This group includes most of the Baby Boom generation in 2025.
- The elderly cohort (age 80+) decreased by 5,000 (-0.1 percent per annum) from 2010 to 2017 and is projected to increase by 78,000 (1.5 percent per annum) from 2017 to 2025. This group includes most of the Silent generation in 2025.

Broad demographic trends will impact the revenue and expenditure projections included in this report. For example:

- The forecast projects that the working age population (age 20 to 64) will contract from 2017 to 2025 (-251,000, -3.3 percent cumulative). If labor force participation rates do not increase, then this trend will constrain economic and revenue growth.

[1] For more information on the assumptions used in the IFO projections, see the Appendix.

- The forecast projects a contraction of residents age 5 to 19 (-115,000, -5.0 percent cumulative). That trend could affect basic education funding to the extent that policymakers consider per capita funding levels in their deliberations.

Table 2.1
Pennsylvania Demographic Trends and Projections

Age	Number of Residents (000s)			Gain or Loss (000s)		Avg. Annual Growth	
Cohort	2010	2017	2025	2010-17	2017-25	2010-17	2017-25
0-4	729	709	707	-20	-2	-0.4%	0.0%
5-9	752	729	700	-23	-29	-0.4	-0.5
10-14	790	755	718	-34	-37	-0.6	-0.6
15-19	901	816	767	-85	-49	-1.4	-0.8
20-24	876	832	777	-45	-55	-0.7	-0.8
25-29	785	871	822	86	-50	1.5	-0.7
30-34	734	817	866	83	48	1.6	0.7
35-39	758	770	874	12	104	0.2	1.6
40-44	849	716	802	-134	87	-2.4	1.4
45-49	952	819	731	-133	-87	-2.1	-1.4
50-54	985	880	737	-104	-143	-1.6	-2.2
55-59	885	938	800	53	-138	0.8	-2.0
60-64	752	874	856	122	-18	2.2	-0.3
65-69	555	727	842	172	115	3.9	1.8
70-74	428	552	714	124	162	3.7	3.3
75-79	361	386	551	25	165	1.0	4.6
80-84	311	279	343	-32	64	-1.5	2.6
85+	308	335	349	27	14	1.2	0.5
Total	**12,711**	**12,806**	**12,957**	**94**	**151**	**0.1**	**0.1**
Age Cohort Summary							
0-19	3,172	3,009	2,892	-163	-117	-0.8%	-0.5%
20-64	7,576	7,517	7,265	-59	-251	-0.1	-0.4
65-79	1,343	1,665	2,107	322	442	3.1	3.0
80+	620	615	693	-5	78	-0.1	1.5
Total	**12,711**	**12,806**	**12,957**	**94**	**151**	**0.1**	**0.1**

Note: thousands of residents. Detail may not sum to total due to rounding.

Sources: The 2010 and 2017 data are from the U.S. Census Bureau 2017 Population Projections. The 2025 data are projections by the IFO using data from the U.S. Census Bureau and PA Department of Health. Calculations by the IFO.

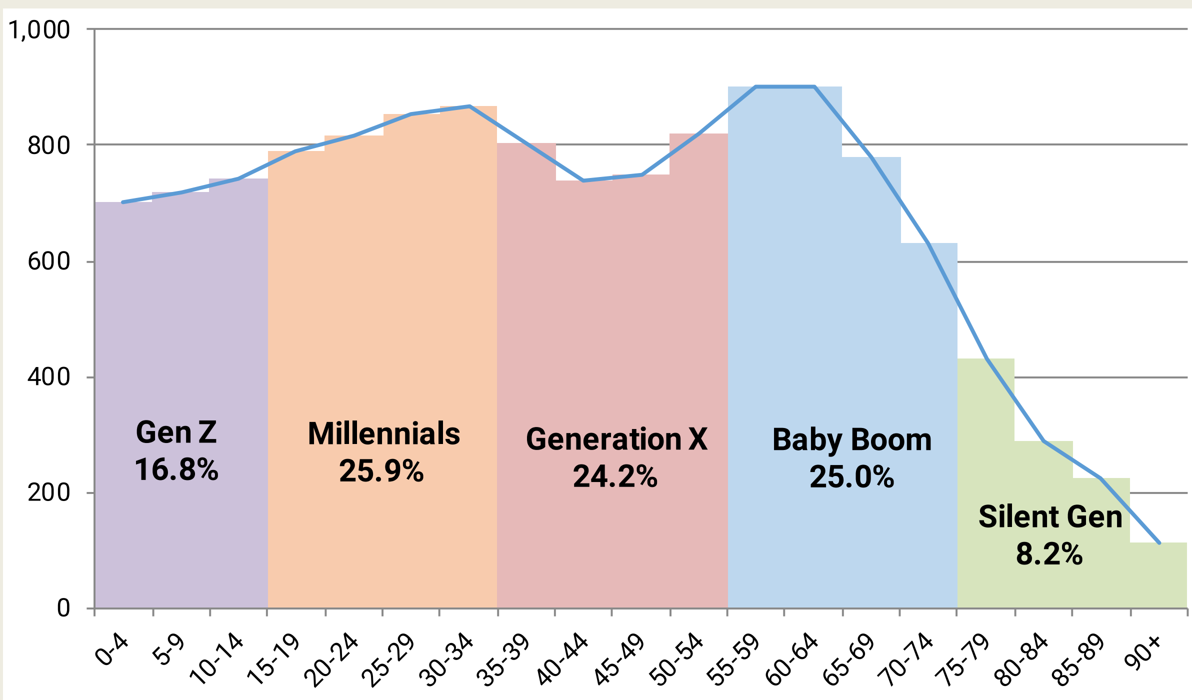
The subsections that follow provide further discussion of demographic trends through 2030. Single year demographic detail through 2025 can be found in the Appendix.

Pennsylvania Population Distribution

Figure 2.1 displays the Pennsylvania population distribution for 2020 by generation. The distribution is characterized by two peaks comprised of Baby Boomers (age 55 to 74, 25.0 percent of total population) and Millennials (age 15 to 34, 25.9 percent). Between those generations resides Generation X, while Generation Z and the Silent Generation reside on the lower and upper tails of the distribution.

Through 2015, the Baby Boom generation was the largest of the five generations and motivated many of the broad trends observed in the state and national economies. By 2020, Millennials will have supplanted Baby Boomers as the largest generation. However, the Millennials' share of the state population will have peaked by that year. By 2025, the forecast projects the following population shares for the five generations: Generation Z (22.3 percent), Millennials (25.8 percent), Generation X (23.7 percent), Baby Boomers (22.9 percent) and Silent Generation (5.3 percent).

Figure 2.1
2020 Pennsylvania Population Distribution



Note: thousands of residents.
Sources: Projections by the IFO using data from the U.S. Census Bureau and PA Department of Health.

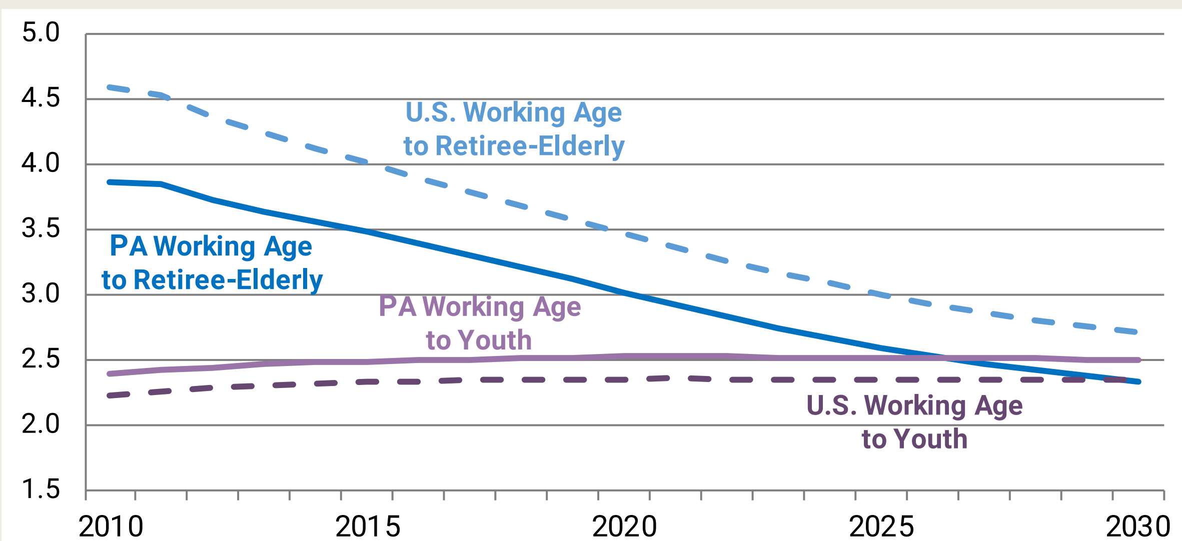
Dependency Ratios

A common metric used by demographers to communicate population trends is dependency ratios. Two widely-used ratios are the youth and retiree-elderly dependency ratios. For this report, the youth dependency ratio is defined as the ratio of residents age 20 to 64 (i.e., the workforce) to residents age 0 to 19. The retiree-elderly dependency ratio uses the same numerator, but residents age 65 or older in the denominator.

Actual data and projections for 2010 through 2030 reveal the following trends (see **Figure 2.2**):

- For 2015 through 2030, there is little change in the youth dependency ratio. For Pennsylvania (solid purple line), there are roughly 2.5 working age adults for every resident under age 20. For the United States (dotted purple line), the ratio is slightly lower (2.4).
- For Pennsylvania, the retiree-elderly dependency ratio declines every year from 3.9 in 2010 to 2.3 in 2030 (solid blue line). A similar trend occurs for the U.S., as the ratio also declines every year from 4.6 in 2010 to 2.7 in 2030 (dotted blue line). The downward slope for the Pennsylvania and U.S. ratios corresponds to the retirement of Baby Boomers.

Figure 2.2
Pennsylvania and U.S. Dependency Ratios



Sources: Data through 2017 are from the U.S. Census Bureau 2017 Estimates. The 2018 through 2030 Pennsylvania data are projections by the IFO using data from the U.S. Census Bureau and PA Department of Health. The 2018 through 2030 U.S. data are from the U.S. Census Bureau Population Projections 2017. Calculations by the IFO.

Figure 2.2 illustrates the challenges that will be faced by policymakers during the next decade. Over time, there will be relatively fewer working age residents to support the needs of rapidly expanding retiree and elderly populations. Stated differently, the burden of support will fall on a smaller group of taxpayers. The actual contraction of the working age cohort, which remits the great majority of state taxes, suggests that real per capita tax levels for that age group must increase to keep pace with the anticipated increase in demand for healthcare and other services.[2]

Long-Run Components of Population Change

Table 2.2 decomposes the change in the Pennsylvania population from 2010 to 2030 and the four five-year periods within that time frame. The top section separates the population change into births less deaths, net domestic migration and net international migration. While births less deaths was positive from 2010 to 2015 and is expected to remain positive through 2020, the forecast projects that the number of deaths will overtake births by 2025 due to the aging of the Baby Boomers and stagnant birth rates. Therefore, any long-term population growth must be motivated by migration inflows. From 2015 through 2020, the forecast projects that total net migration will be 51,000: 176,000 net international migration, partially offset by -126,000 net domestic migration. From 2020 through 2030, the forecast projects total net migration will be 165,000: 365,000 net international and -200,000 net domestic.

The last two sections of the table divide the population change into the same four age cohorts presented in Table 2.1: school age (age 0 to 19), working age (age 20 to 64), retired (age 65 to 79) and elderly (age 80+). Through 2030, the working age cohort contracts due to the aging of the Baby Boom generation. Those individuals first transition to the retired population and then the elderly population.

Demographic trends through 2025 can be projected with a relatively high degree of certainty due to (1) the inherent stability of fertility and death rates and (2) the limited impact of domestic and international migration in the near term. After 2025, there is more uncertainty regarding population growth due to the potential for unanticipated changes in domestic and international migration. Migration patterns can change relatively quickly in response to economic conditions, federal policies and other unanticipated events (e.g., natural disasters). The demographic model used for this analysis assumes that historical migration patterns observed during the past five years will generally continue through 2030. Further detail on the demographics model can be found in the Appendix.

[2] A recent analysis by the IFO found that residents age 65 and older remit roughly 15 to 18 percent of state personal income tax, 20 to 24 percent of state sales tax and 29 to 34 percent of property taxes remitted by all homeowners. See “Aging and the Pennsylvania Economy,” IFO presentation to the Task Force on Private Sector Retirement Security, January 25, 2018.

Table 2.2
Components of Pennsylvania Population Change

	By Source of Change (000s)				Cumulative
	2010-15	2015-20	2020-25	2025-30	2010-30
Start of Period	**12,711**	**12,791**	**12,869**	**12,957**	**12,711**
Births less Deaths	65	27	7	-38	60
Net Domestic Migration	-130	-126	-100	-100	-456
Net International Migration	145	176	182	183	672
End of Period	**12,791**	**12,869**	**12,957**	**13,001**	**13,001**
	By Age Group (000s)				**Cumulative**
	2010-15	**2015-20**	**2020-25**	**2025-30**	**2010-30**
Start of Period	**12,711**	**12,791**	**12,869**	**12,957**	**12,711**
Age 0 to 19	-132	-90	-58	-47	-327
Age 20 to 64	-3	-123	-185	-155	-466
Age 65 to 79	219	280	265	100	864
Age 80+	-4	11	66	146	219
End of Period	**12,791**	**12,869**	**12,957**	**13,001**	**13,001**
	Average Annual Growth Rates				**Cumulative**
	2010-15	**2015-20**	**2020-25**	**2025-30**	**2010-30**
Age 0 to 19	-0.8%	-0.6%	-0.4%	-0.3%	-10.3%
Age 20 to 64	0.0	-0.3	-0.5	-0.4	-6.2
Age 65 to 79	3.1	3.4	2.7	0.9	64.3
Age 80+	-0.1	0.3	2.0	3.9	35.3
All Age Groups	**0.1**	**0.1**	**0.1**	**0.1**	**2.3**

Note: thousands of residents.

Sources: The 2010 through 2017 data are from the U.S. Census Bureau 2017 Population Projections. The 2018 through 2030 data are projections by the IFO using data from the U.S. Census Bureau and PA Department of Health. Calculations by the IFO.

State Migration Data

By 2025, the demographic forecast projects that the number of deaths will exceed births. As a result, population growth in the Commonwealth will rely heavily on migration, especially international migration. Unfortunately, limited international migration data are available at the state level.[3] For domestic migration, the U.S. Census Bureau publishes American Community Survey (ACS) micro-level data on state migration. **Table 2.3** displays Pennsylvania's annual migration inflows and outflows for calendar year (CY) 2016. These data exclude international migration because the ACS only reports international migration inflows, but not outflows.

Table 2.3
2016 Pennsylvania Domestic Migration

Age	Inflow to PA	Outflow from PA	Net Migration
0-19	79,747	55,951	23,796
20-24	30,737	47,369	-16,632
25-29	41,082	38,873	2,209
30-39	45,803	44,645	1,158
40-49	19,863	24,308	-4,445
50-59	16,867	21,681	-4,814
60-69	13,453	18,448	-4,995
70+	11,428	13,245	-1,817
Total	**258,980**	**264,520**	**-5,540**
State[1]	**Inflow to PA**	**Outflow from PA**	**Net Migration**
New York	42,480	24,941	17,539
New Jersey	41,602	25,298	16,304
Maryland	20,737	15,409	5,328
California	12,920	12,779	141
Virginia	11,173	13,477	-2,304
Florida	14,158	32,582	-18,424
All Other States	115,910	140,034	-24,124
Total	**258,980**	**264,520**	**-5,540**

[1] States chosen by greatest inflow of individuals to Pennsylvania.

Source: 2016 American Community Survey, U.S. Census Bureau.

For 2016, the ACS data show that Pennsylvania experienced a net outflow of residents to other states (-5,540). More than half of those leaving (53.8 percent) and entering (58.5 percent) the state were age 30 or younger. The large net migration for the 0 to 19 age group (+23,796) and the negative net migration of 20 to 24 year olds (-16,632) likely

[3] The American Community Survey (U.S. Census Bureau) contains data on the number of migrants coming to the U.S. and the various states, but does not contain data on individuals leaving the U.S.

results from college students entering Pennsylvania from other states, and most returning to their home state upon graduation. The data also show a small positive net inflow (+3,367) for ages 25 to 39, and a net outflow (-16,071) for individuals age 40 and above.

Across all states, Florida received the largest net outflow (-18,424) from Pennsylvania, likely due to retirees moving for reasons related to lifestyle and weather. In contrast, New York (+17,539) and New Jersey (+16,304) had the largest net inflow to Pennsylvania. Maryland (+5,328) also had positive net inflows into Pennsylvania while Virginia (-2,304) received a small net outflow from Pennsylvania.

Labor Force Participation Rates

The state labor force can be an important determinant of economic trends. Given the size of the potential labor force (i.e., all residents age 16 or older), labor force participation rates will determine the actual size of the Pennsylvania labor force. Residents age 16 or older are part of the labor force if they are employed or actively seek employment, but remain unemployed. The statewide labor force participation rate is equal to the ratio of the labor force to all residents age 16 or older.

Table 2.4
Labor Force Participation Rates

		Working Age	Age Groups (Both Genders)					
Year	Total	20-64	16-19	20-24	25-44	45-54	55-64	65+
Pennsylvania								
2001	65.3%	79.8%	51.0%	75.4%	85.3%	83.7%	60.6%	12.0%
2004	64.5	79.1	48.8	73.9	84.3	82.7	63.3	13.0
2007	64.5	77.9	45.3	74.0	83.2	83.2	62.6	15.7
2011	63.2	63.2	45.3	72.3	82.9	80.1	64.1	16.1
2014	62.4	76.8	40.9	69.9	82.5	79.3	67.3	16.9
2017	62.4	77.5	40.4	75.2	82.8	82.7	65.4	19.3
United States								
2001	66.9%	79.5%	50.0%	77.1%	84.4%	82.3%	60.2%	13.1%
2004	66.0	66.9	43.9	75.0	82.8	81.9	62.3	14.4
2007	66.1	67.4	41.3	74.4	82.9	82.0	63.8	16.0
2011	64.1	76.9	34.1	71.3	82.1	80.6	64.2	17.9
2014	62.9	76.1	34.0	70.8	81.6	79.6	64.1	18.6
2017	62.9	76.7	35.1	71.3	82.4	80.3	64.5	19.3

Source: U.S. Bureau of Labor Statistics, Current Population Survey. Calculations by the IFO.

Table 2.4 displays participation rates at six points in time for the U.S. and Pennsylvania. From 2001 to 2017, the Pennsylvania total labor force participation rate declined from 65.3 to 62.4 percent, a reduction of 2.9 percentage points. However, the rate has remained relatively flat during the past three years (62.4 percent in 2014 and 2017).

The underlying detail reveals unique trends across age groups:

- The participation rate for age 20 to 64 has generally declined over the long term, but more recent data shows a reversal of that trend. The long-term trend (2.3 percentage point decline from 2001 to 2017) is similar to the U.S. (2.8 percentage point decline). Since 2014, the participation rate has increased 0.7 percentage points for Pennsylvania and 0.6 percentage points for the U.S.
- The participation rate for residents age 65 or older has increased significantly. From 2001 to 2017, the labor force participation rate increased 7.3 percentage points from 12.0 percent to 19.3 percent for Pennsylvania. For the U.S., the rate increased 6.2 percentage points from 2001 (13.1 percent) to 2017 (19.3 percent).

Based on demographic projections from previous subsections, the Pennsylvania labor force will contract unless labor force participation rates continue to increase as they have during the past two years. Over time, a larger labor force increases the potential output of the Pennsylvania economy and provides a solid foundation for future growth.

Regional Population Comparison

The demographics section concludes with a comparison of demographic trends for the region. **Table 2.5** displays population estimates for Pennsylvania, surrounding states and the U.S. for 2010 and 2017. During that time period, the state population expanded at the same rate as Ohio, more rapidly than West Virginia, but lagged other surrounding states. Compared to the U.S., state population growth was notably slower. Other results include:

- The data show that 23.5 percent of Pennsylvania residents are under age 20, 1.7 percentage points lower than the nation. Compared to surrounding states, only West Virginia has a smaller share of population under age 20 while New York has roughly the same share as Pennsylvania.
- Nearly three-fifths (58.7 percent) of the Pennsylvania population resided in the typical working age range (ages 20 to 64, not shown). That share is slightly below the U.S. (59.2 percent), and higher than three surrounding states.

- The share of Pennsylvania residents age 65 or older is the same or higher than all surrounding states, except for West Virginia and Delaware. Based on median age, Pennsylvania (median age of 40.7 in 2017) was the seventh oldest state in the nation behind Maine (44.7), New Hampshire (43.1), Vermont (42.9), West Virginia (42.5), Florida (42.1) and Connecticut (40.9).

Table 2.5
Regional Population Comparison

	Levels (000s) and Growth			Shares and Median Age 2017		
	2010	2017	AAGR	< 20	65+	Median
Delaware	900	962	1.0%	23.9%	18.1%	40.4
Virginia	8,025	8,470	0.8	24.7	15.0	38.2
Maryland	5,788	6,052	0.6	24.8	14.9	38.7
New York	19,405	19,849	0.3	23.5	15.9	38.7
New Jersey	8,804	9,006	0.3	24.4	15.8	39.8
Ohio	11,539	11,659	0.1	25.0	16.7	39.4
Pennsylvania	**12,711**	**12,806**	**0.1**	**23.5**	**17.8**	**40.7**
West Virginia	1,854	1,816	-0.3	22.8	19.4	42.5
U.S.	309,338	325,719	0.7	25.2	15.6	38.0

Note: AAGR is average annual growth rate.
Source: U.S. Census Bureau 2017 Population Estimates.

Section 3: Economic Outlook

Five metrics provide data that analysts use to gauge the performance of a state economy: (1) real gross domestic product (GDP, excludes inflation), (2) nominal GDP, (3) wages and salaries, (4) the regional consumer price index (CPI-U) and (5) the annual change in payroll employment (i.e., net job gains). These variables motivate most General Fund revenue projections contained in this report. **Table 3.1** displays historical and projected average annual growth rates for these metrics for the two most recent six-year intervals (2006-12 and 2012-18) and the forecast period (2018-24).

The projected average annual growth rates for the forecast period exceed historical averages. That outcome is attributable to the severe 2008-09 recession caused by the housing and financial crisis and the tepid economic recovery. The economic forecast assumes that the state and national economies return to a historical, non-recession rate of expansion and rate of inflation. It provides a baseline that can be used by policymakers to assess whether current fiscal policies are sustainable over the long-term in a favorable economic environment that does not include a downturn or recession.

The economic forecast is based on historical trends for the state and national economies. Key assumptions include the following:

- The Federal Reserve achieves its target inflation rate of 2.0 percent for its preferred inflation measure (personal consumption expenditures).
- Labor force participation rates increase.
- Wage earners receive raises that exceed inflation (i.e., real wages increase).
- Labor productivity growth reverts to historical averages.

Further technical details regarding the economic forecast can be found in the Appendix.

Table 3.1
Average Annual Growth Rates for Pennsylvania Economic Variables

	2006-12	2012-18	2018-24
Real GDP	1.3%	1.9%	1.9%
Nominal GDP	3.3%	3.4%	4.0%
Wages and Salaries	2.6%	3.2%	3.9%
Philadelphia CPI-U	1.9%	1.0%	2.1%
Payroll Job Gains (000s)	5.2	48.1	52.7

Sources: U.S. Bureau of Economic Analysis and U.S. Bureau of Labor Statistics. Forecast by IFO.

The forecast assumes that real economic growth remains stable at a long-run growth rate that is consistent with full employment and normal productivity gains. (See **Table 3.2**.) State economic growth is typically measured by the change in real GDP, which represents the value of all final goods and services produced by the state economy during a calendar year. Real economic growth is a function of the change in employment and labor productivity. Recent data from the U.S. Department of Labor show that U.S. non-farm labor productivity increased by 2.2 percent in 2018 Q3 from the prior year. That rate is a clear improvement compared to the average productivity gain of 0.8 percent per annum from 2012 to 2017. National data must be used to measure labor productivity gains because state level data are not published.

Table 3.2
Annual Growth Rates for Pennsylvania Economic Variables

	2017	2018	2019	2020	2021	2022	2023	2024
Real GDP	1.8%	2.3%	2.1%	2.0%	1.9%	1.9%	1.9%	1.8%
Nominal GDP	3.9%	3.8%	4.2%	4.2%	4.0%	4.0%	4.0%	3.9%
Wages and Salaries	4.0%	4.1%	4.0%	3.9%	3.9%	3.8%	3.8%	3.7%
Philadelphia CPI-U	1.3%	1.8%	2.0%	2.1%	2.1%	2.1%	2.1%	2.1%
Payroll Job Gains (000s)	62.9	66.9	60.1	54.7	52.1	52.5	49.9	47.1

Sources: U.S. Bureau of Economic Analysis and U.S. Bureau of Labor Statistics. Forecast by IFO.

For 2017, the data show moderate inflation (1.3 percent) as measured by the Philadelphia CPI-U, which reflects consumer prices in the Philadelphia metro region. The low inflation rate was caused by deflation (i.e., falling prices) for a broad range of goods and services including home furnishings, apparel and education-communication services. Data through August 2018 reveal somewhat higher inflation for the current year (1.4 percent), with deflation for home furnishings and recreation. The recent increase in gasoline prices (19.1 percent year-over-year growth through August) drives much of the inflation uptick. Excluding energy, the Philadelphia CPI-U is up only 0.7 percent through August. The forecast assumes an acceleration of inflation for calendar year (CY) 2018 (1.8 percent), then convergence to the long-run rate of 2.1 percent per annum.

Employment Trends

Table 3.3 provides historical employment detail across sectors. The figures represent non-farm payroll employment and do not include individuals employed in the agriculture or military sectors, or independent contractors, sole proprietors and certain partners in partnership entities. From 2006 to 2012, the payroll employment data show:

- A net decline of 31,000 payroll jobs.

- A significant contraction for the manufacturing sector.
- Moderate contractions for other sectors including construction, wholesale-retail, information, finance, real estate, other services and all levels of government.

Table 3.3
Pennsylvania Non-Farm Payroll Employment

	Employment Levels (000s)			Change (000s)	
Sector	**2006**	**2012**	**2018**	**06-12**	**12-18**
Mining and Logging	20	37	28	17	-9
Construction	261	224	254	-37	30
Manufacturing	671	567	565	-103	-2
Wholesale	238	223	219	-15	-4
Retail	651	631	618	-20	-12
Transport and Storage	235	244	292	9	48
Information	108	90	81	-18	-9
Finance and Insurance	268	251	261	-17	10
Real Estate	67	58	63	-9	5
Professional Services	305	317	354	12	37
Management	101	130	138	30	8
Business Services	280	286	322	6	36
Education	211	227	240	16	13
Health and Social	837	929	1,036	92	107
Leisure and Hospitality	492	524	576	33	52
Other Services	258	254	264	-4	10
Government	755	732	702	-23	-30
Federal	106	100	97	-5	-3
State	161	158	156	-2	-3
Local	489	474	450	-15	-24
Total	**5,757**	**5,726**	**6,015**	**-31**	**289**

Note: Figures for 2018 are IFO estimates based on preliminary data through September.

Source: U.S. Bureau of Labor Statistics, Current Employment Statistics.

From 2012 to 2018, the preliminary data show a net gain of 289,000 payroll jobs. Notable trends include:

- Contractions for mining, manufacturing, wholesale-retail, information and all levels of government.
- Strong gains for all service sectors located in the middle of the table.

Table 3.4
Recent Changes in Pennsylvania Non-Farm Payroll Employment

	Employment Levels (000s)			Change in Employment (000s)		
Sector	**2016**	**2017**	**2018**	**2016**	**2017**	**2018**
Mining and Logging	25.0	26.6	28.4	-8.9	1.6	1.9
Construction	239.1	248.7	253.9	3.8	9.6	5.2
Manufacturing	559.5	561.3	565.5	-8.1	1.7	4.2
Wholesale	219.1	219.2	218.8	-4.2	0.1	-0.3
Retail	633.7	625.0	618.4	0.4	-8.7	-6.6
Transport and Storage	274.9	283.0	292.4	9.5	8.0	9.5
Information	84.5	82.9	81.2	-0.4	-1.6	-1.7
Finance and Insurance	254.4	257.6	260.9	0.3	3.2	3.3
Real Estate	62.8	63.4	63.4	0.6	0.6	0.0
Professional Services	346.9	350.9	354.2	9.8	4.0	3.3
Management	135.3	136.3	137.9	2.5	1.0	1.6
Business Services	311.1	314.8	321.9	1.5	3.7	7.0
Education	233.8	236.9	239.8	4.1	3.1	3.0
Health and Social	983.7	1,010.6	1,035.7	22.6	26.9	25.1
Leisure and Hospitality	557.7	566.3	576.2	12.4	8.6	9.9
Other Services	260.2	261.2	264.2	5.1	1.0	3.0
Government	703.4	703.4	702.1	-1.2	0.0	-1.3
Federal	96.7	97.3	96.8	0.9	0.6	-0.5
State	156.7	155.5	155.7	0.1	-1.2	0.2
Local	450.0	450.6	449.7	-2.2	0.6	-1.0
Total	**5,885.1**	**5,948.1**	**6,014.9**	**50.0**	**62.9**	**66.9**

Note: Figures for 2018 are IFO estimates based on employment data through September.

Source: U.S. Bureau of Labor Statistics, Current Employment Statistics.

Table 3.4 provides the same data for recent years. For 2018, preliminary data through September show gains for most sectors except the wholesale-retail, information and federal and local government. Other trends for 2018 include:

- The manufacturing sector expands for the second consecutive year.
- The transportation-storage sector records a third year of strong gains.
- The healthcare (25,100) and leisure-hospitality (9,900) sectors continue to be the largest job generators for the Pennsylvania economy.

Pennsylvania Income Trends

Pennsylvania Cash Income includes five income categories: (1) wages and salaries, (2) business income (sole proprietorships, S corporations and partnerships), (3) capital income (interest, rent, capital gains and dividends), (4) retirement income (Social Security, pensions and IRAs) and (5) income maintenance (unemployment compensation, disability, veterans' benefits, Supplemental Nutrition Assistance Program and Supplemental Security Income). This income measure includes all income earned or received, and excludes income that is unrealized, imputed or accrued. (See Appendix for detail.)

Table 3.5 displays income snapshots for three intervals: 2012-16, 2016-20 and 2020-24. Notable trends include the following:

- From 2012 to 2016, total wages grew by 2.8 percent per annum. The forecast projects that wage growth will accelerate to 4.0 percent per annum from 2016 to 2020 and decelerate to 3.8 percent per annum in the long-run.
- From 2012 to 2016, business income grew at an average rate of 2.1 percent per annum. Income shifting out of tax year 2016 into 2017 in anticipation of federal tax cuts drove the low growth. The forecast projects business income will expand at an annual rate of 4.4 percent per annum from 2016 to 2020 and accelerate to 4.8 percent in the long-run.

Table 3.5
Pennsylvania Cash Income

	Amounts ($ billions)				Average Annual Growth		
Source	2012	2016	2020	2024	12-16	16-20	20-24
Wages-Salaries[1]	$288.2	$322.0	$377.0	$438.0	2.8%	4.0%	3.8%
Net Business	55.2	60.0	71.3	86.0	2.1	4.4	4.8
Capital	54.4	58.5	80.8	97.2	1.8	8.4	4.7
Retirement[2]	77.9	92.7	109.6	130.5	4.5	4.3	4.5
Maintenance[3]	25.9	24.6	25.9	28.7	-1.4	1.4	2.6
Cash Income	**501.6**	**557.8**	**664.7**	**780.4**	**2.7**	**4.5**	**4.1**

[1] Includes the U.S. Bureau of Economic Analysis resident adjustment.

[2] Includes Social Security retirement income.

[3] Includes Supplemental Security Income, disability insurance, Earned Income Tax Credit, Supplemental Nutrition Assistance Program, unemployment compensation and veterans' benefits.

Sources: Internal Revenue Service, U.S. Bureau of Economic Analysis and various federal and state agencies. See the Appendix for further detail.

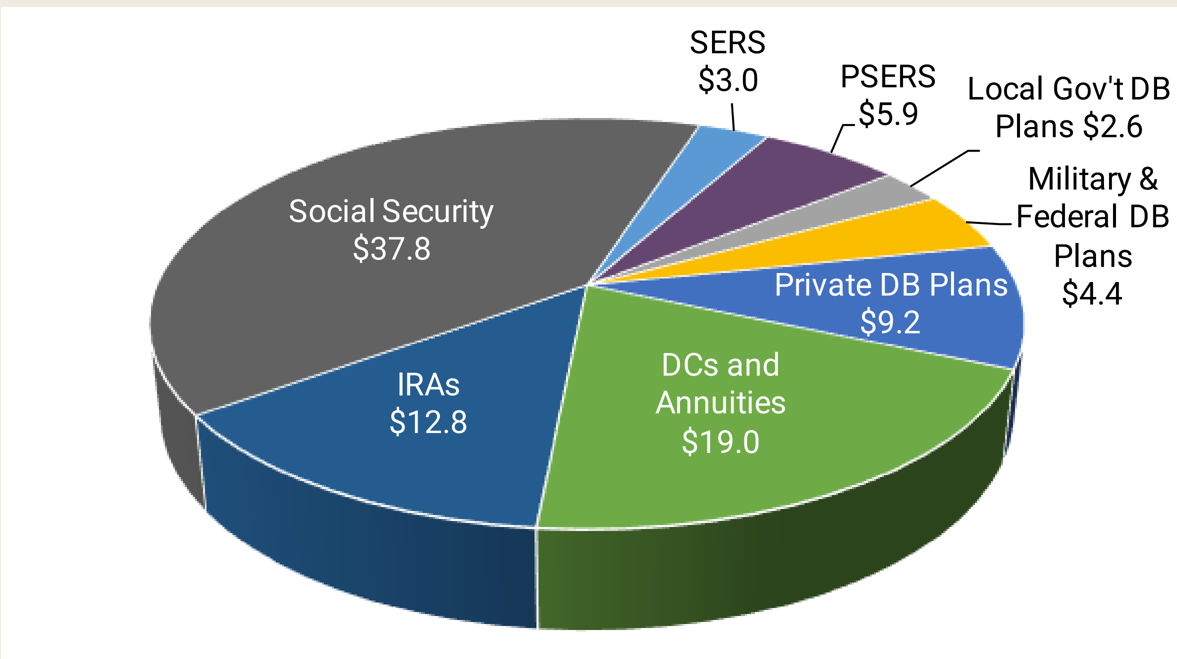
- The forecast projects strong growth for capital income in the current period (8.4 percent per annum). Higher interest rates and interest income motivate part of that result. Strong capital gains are also a factor, as an expanding cohort of retirees sells assets and realize stock market gains partly driven by federal corporate tax cuts.

- Retirement income also expands quickly because (1) the number of residents over age 65 expands at an average rate of 2.5 percent per annum and (2) the forecast assumes those retirees receive an annual Social Security cost-of-living-allowance of 2.2 percent for most years.

Sources of Retirement Income

Retirement income will play a more prominent role in the Pennsylvania economy in the coming decade. **Figure 3.1** provides additional detail on the sources of retirement income for 2017. By far, Social Security comprised the largest portion of retirement income ($37.8 billion, excludes disability benefits) for Pennsylvania residents. Data from the U.S. Social Security Administration show that 2.3 million residents received retirement or survivor benefits.

Figure 3.1
Sources of Pennsylvania Retirement Income - 2017



Note: figures in dollar billions.

Sources: U.S. Social Security Administration, U.S. Bureau of Economic Analysis, Internal Revenue Service and various other federal and state agencies. See the Appendix for further detail.

Income from defined contribution plans and annuities ($19.0 billion) was the next largest source of retirement income. The forecast projects that this income source will expand rapidly due to the retirement of Baby Boomers.

Withdrawals or disbursements from IRAs ($12.8 billion) was the third largest source of retirement income. For 2016, federal tax return data show that the average IRA withdrawal or disbursement reported on Pennsylvania tax returns was $15,825. Although individuals of any age could withdraw funds from an IRA, federal tax data show that filers age 55 or older reported the great majority (87.9 percent) of withdrawals.

Defined benefit (DB) plans comprise the remaining retirement income. Private plans ($9.2 billion) account for roughly half the total, while military and federal ($4.4 billion), PSERS ($5.9 billion, resident portion only, excludes lump sum disbursements), SERS ($3.0 billion, resident portion only) and local government ($2.6 billion) plans comprise the residual.

Regional Economic Comparison

Two common metrics used to compare economic growth across states are real gross domestic product (GDP) and personal income. Personal income includes income that is earned or received (except capital gains), as well as certain accrued income (pension benefits prior to disbursement) and imputed income (e.g., the rental value of a home). Personal income growth rates will typically exceed real GDP because the former includes inflation, while the latter does not.

A regional economic comparison reveals the following trends (see **Table 3.6**):

- From 2007 to 2012, the Pennsylvania economy expanded at an average real rate (0.8 percent per annum) that was the same as the regional average.
- From 2012 to 2017, the Pennsylvania economy expanded at a faster pace than all states in the region.
- From 2012 to 2017, Pennsylvania personal income growth (2.6 percent per annum) was comparable to the regional average (2.7 percent), but lower than the U.S. (3.4 percent).

It is noted that these comparisons do not control for population growth. If comparisons had been made based on per capita real GDP and personal income growth, then Pennsylvania would compare more favorably due to the relatively slower population growth for the state relative to the region and nation.

Table 3.6
Regional Comparison - Average Annual Growth Rates

	Real GDP		Personal Income	
	2007-12	2012-17	2007-12	2012-17
Pennsylvania	**0.8%**	**1.8%**	**3.0%**	**2.6%**
Ohio	0.3	1.6	2.6	2.7
Delaware	-0.3	1.5	1.8	3.4
Maryland	1.3	1.4	3.2	2.8
New York	1.4	1.0	3.0	2.8
New Jersey	-0.5	0.9	2.3	2.8
Virginia	0.7	0.9	3.2	2.6
West Virginia	1.2	0.6	3.7	1.3
Region Average	0.8	1.2	2.9	2.7
U.S.	0.4	2.0	3.0	3.4

Source: U.S. Bureau of Economic Analysis. Data for 2017 are preliminary and will be revised.

Potential Impact of Recession

This section concludes with a cautionary note on the economic and revenue implications of a recession. A recent survey of economists by the Wall Street Journal placed the likelihood of recession at 17 percent for 2019, 50 percent for 2020 and 22 percent for 2021. Hence, most economists believe that a recession is likely during the next three calendar years.

Recessions can take many forms and have various degrees of intensity. **Table 3.7** lists economic and revenue growth rates during the most recent mild recession (2001-02), severe recession (2008-09) and an economic "pullback" (2016-17). The final column lists the long-run growth rates assumed for this report. As noted in the introduction, the economic forecast used for this report assumes that the state economy operates at its long-run potential based on demographic trends and other long-term structural factors (e.g., labor productivity). The forecast provides a reasonable baseline, and could also be viewed as a "best case" scenario. Policymakers could adjust the results from this report's fiscal analysis to assume a mild recession occurs at some point during the next five years, with the corresponding negative impact on economic growth and revenues.

The three cases in Table 3.7 are as follows:

Mild Recession This jobs recession was motivated by the "dot com" bubble. Although state employment contracted, real GDP growth continued at a moderate pace. PIT non-withholding and corporate net income tax revenues declined notably due to lower business profits. For FY 2001-02, General Fund revenues declined by 2.6 percent.

Severe Recession The financial markets-housing bubble collapsed following the bankruptcy of Lehman Brothers in 2008. All revenue sources declined, most notably sales and use taxes as financial markets locked up and many businesses and consumers could no longer borrow.

Economic Slowdown or Pullback Tax return data for 2016 show weak wage growth and a decline in business profits and capital gains, despite a strong labor market. The data also suggest that taxpayers shifted income out of 2016 in anticipation of possible federal tax cuts. Consumers pulled back and sales and use taxes recorded only modest growth.

Table 3.7
Recession Impact on Economic and Revenue Growth Rates

	Mild Recession		Severe Recession		Pullback		IFO
PA Economics	**2001**	**2002**	**2008**	**2009**	**2016**	**2017**	**Long Run**
Real GDP	1.6%	1.0%	1.5%	-2.9%	0.9%	1.8%	1.9%
Profits and Gains	-18.5%	-3.2%	-12.2%	-17.9%	-7.1%	9.8%	n.a.
Wages-Salaries	2.8%	1.8%	2.7%	-2.2%	1.3%	4.0%	3.8%
Net Job Gains (000s)	-9.0	-41.6	1.2	-184.2	50.0	62.9	52.7
	Mild Recession		**Severe Recession**		**Pullback**		**IFO**
FY Revenues	**00-01**	**01-02**	**07-08**	**08-09**	**15-16**	**16-17**	**Long Run**
Withholding	6.5%	-0.2%	3.7%	-0.2%	3.5%	2.3%	3.9%
Non-Withholding	4.6%	-17.9%	13.3%	-22.5%	2.6%	-2.9%	5.5%
Sales and Use	2.6%	1.2%	-1.1%	-4.2%	3.2%	1.8%	3.3%
Corp. Net Income	-13.8%	-11.5%	-3.0%	-18.1%	1.1%	-4.1%	3.4%
Other Tax Revenue	-1.9%	-1.8%	2.5%	-9.0%	0.7%	4.0%	1.6%
Total Tax Revenue	**1.4%**	**-2.6%**	**2.3%**	**-7.3%**	**2.6%**	**1.3%**	**3.4%**

Note: FY 2016-17 removes tax amnesty. Sales and use tax long-run growth rate excludes the new transfer in FY 2022-23. Profits and Gains are business profits and capital gains as reported on the Pennsylvania personal income tax return.

For this report, the analysis assumes that General Fund revenues will expand by roughly 3.4 percent per annum through FY 2023-24. However, if the economy weakens, such as in one of the three scenarios shown, that weakness will translate directly into lower tax revenues. Every 1.0 percentage point that General Fund revenue growth falls short of forecast translates into a revenue shortfall of $350 million for that fiscal year. Moreover, it is likely that a shortfall would carry forward to future years. Following the 2008-09 recession, the U.S. economy did not revert to its former long-run growth path. Instead, it permanently shifted downwards to a lower level of economic output.

Section 4: Revenue Outlook

General Fund revenues totaled $34.57 billion in FY 2017-18, including $1.9 billion in one-time revenues associated with the sale of bonds backed by future payments due to the Commonwealth under the Tobacco Master Settlement Agreement, special funds transfers and gaming fees. For FY 2018-19, the forecast projects General Fund revenues of $34.20 billion, a reduction of $368 million (-1.1 percent) over the prior fiscal year. (See **Table 4.1**.) The updated forecast used by this report reflects an increase of $300 million over the IFO's official revenue estimate released in July 2018.[4] Increases in corporate net income tax ($75 million), mutual thrift institutions tax ($15 million), non-motor sales and use tax ($212 million) and gaming expansion ($59 million) are partially offset by reductions in escheats ($50 million) and other adjustments ($11 million).

Table 4.1
General Fund Revenues

Fiscal Year	17-18	18-19	19-20	20-21	21-22	22-23	23-24
Personal Income	$13,399	$13,980	$14,547	$15,342	$15,897	$16,600	$17,265
Sales and Use	10,381	10,963	11,374	11,721	12,092	11,995	12,371
Corporate Income	2,879	3,149	3,219	3,306	3,439	3,580	3,726
Gross Receipts	1,150	1,213	1,248	1,254	1,257	1,268	1,280
Cigarette	1,198	1,136	1,099	1,062	1,027	993	960
Realty Transfer	514	543	584	626	664	694	728
All Other	5,045	3,216	3,163	3,234	3,318	3,399	3,509
Total	**34,567**	**34,199**	**35,233**	**36,546**	**37,695**	**38,528**	**39,838**
Growth Rate	9.2%	-1.1%	3.0%	3.7%	3.1%	2.2%	3.4%

Note: figures in dollar millions.

Revenues are forecast to grow at an average rate of 3.1 percent per annum from FY 2018-19 through FY 2023-24. In the near-term, notable factors that impact revenues include:

- The corporate net income tax forecast is negatively impacted by the phase-in of the higher net operating loss deduction through 2020 and the depletion of previously unused depreciation deductions over the next five years.

[4] See Official Monthly & Quarterly Revenue Estimates for more information: http://www.ifo.state.pa.us/download.cfm?file=/Resources/Documents/MQRE-FY18-19-July.pdf.

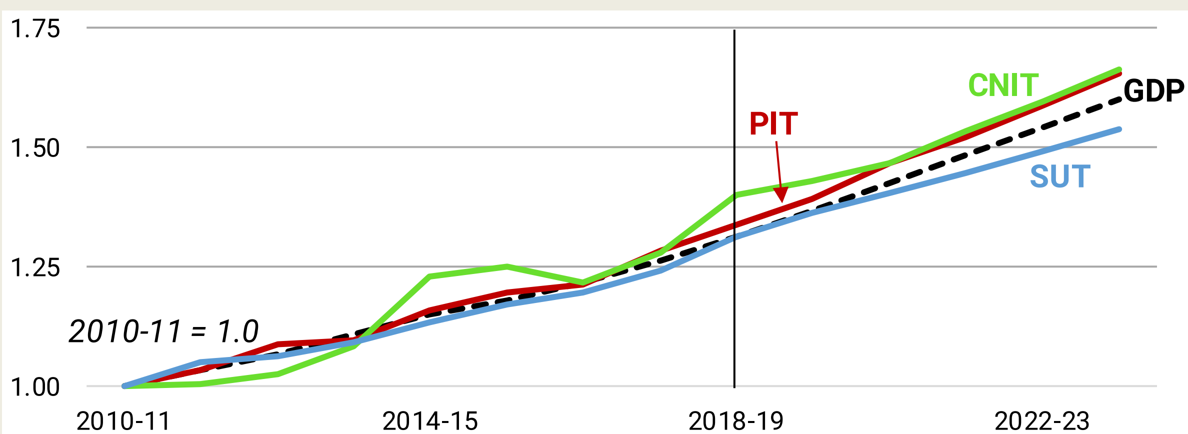
- Gross receipts tax revenues are expected to rebound in FY 2018-19 due to a significant increase in demand for residential electricity. Through FY 2023-24, the forecast assumes the electric market will continue to recover while the tax on telecommunications services will decline due to a deteriorating tax base.
- Online retailer provisions enacted under Act 43 of 2017 are expected to increase sales and use tax revenue by $263 million in FY 2018-19 and grow to $389 million in FY 2023-24.

The text that follows provides a brief discussion of historical revenue trends and the outlook for six of the largest General Fund revenue sources. The final subsection provides an overview of other revenue sources. Historical data for General Fund revenues can be found in the Appendix.

Long-Term Revenue Trends

Figure 4.1 displays cumulative growth rates for the state economy (nominal GDP), personal income, sales and use and corporate net income tax revenues. For this comparison, FY 2010-11 is used as the base year and cumulative growth is computed from that year. The figure illustrates that the three largest revenue sources have generally kept pace with the expansion of the Pennsylvania economy in the years since the end of the Great Recession (June 2009). This pattern is a shift from the seven fiscal years prior to the start of the recession (December 2007), when all three sources grew at a slower rate than the state economy.

Figure 4.1
Cumulative Growth of Largest Tax Revenue Sources and State GDP



Note: For FY 2023-24, the PIT value is 1.66. That figure implies that PIT revenues have grown by 66 percent since the FY 2010-11 base year. SUT excludes transfers of $479 million in FY 2022-23 and $494 million in FY 2023-24 to the Public Transportation Trust Fund. CNIT is adjusted to exclude the impact of 100 percent bonus depreciation.

Sources: Historical state GDP data from U.S. Bureau of Economic Analysis. Forecasts by IFO.

The personal income tax (PIT) tracks closest to statewide economic growth because wages drive most PIT remittances (withholding) and also comprise nearly half of the economic activity included in state GDP. Through the current fiscal year, PIT revenues have expanded at a rate roughly equal to the state economy. The forecast projects that PIT growth will outpace GDP growth, assuming the absence of a recession. Under those conditions, certain components of the PIT base (business profits, capital gains and dividends) typically expand at a faster pace than the state economy.

The sales and use tax (SUT) base generally expands at a rate similar to the overall Pennsylvania economy, but trends slightly lower due to the erosion of the tax base. Spending patterns continue to shift toward non-taxable services, partly due to the aging Pennsylvania population. For 2017, purchases of goods (generally taxable) comprised 29.4 percent of total spending by Pennsylvania consumers. That share was 2.0 percentage points lower than 2010 (31.4 percent).[5] In recent years, this base erosion has been partially offset by certain technical factors (e.g., increased enforcement efforts, a reduction in the vendor discount rate, etc.). The forecast assumes that the base will continue to erode through 2024.

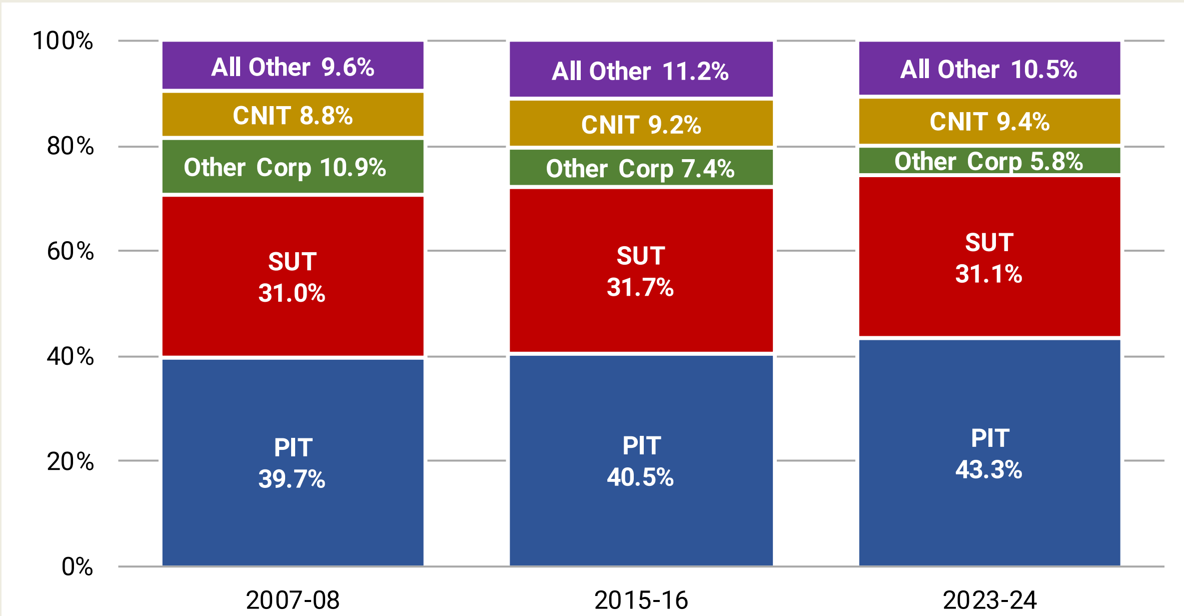
For corporate net income tax (CNIT), revenues peaked in FY 2006-07 due to the U.S. expansion related to the housing and financial boom. A profits contraction then ensued, and CNIT did not surpass its former peak until FY 2013-14. For 2018, the Tax Cuts and Jobs Act (TCJA) expands the federal tax base, from which the Pennsylvania CNIT is calculated, and effectively provides a boost to state tax revenues. From the recovery through the current fiscal year, CNIT revenues outpaced Pennsylvania GDP. The forecast projects that CNIT revenues will continue to expand at roughly the same rate as the state economy through FY 2023-24.

The GDP comparison provides a convenient benchmark to assess historical and projected growth in tax revenue. In the absence of a recession, PIT, SUT and CNIT should all grow at roughly the same rate as the Pennsylvania economy and the forecast assumes that these revenues continue to keep pace with state GDP. If a recession should occur (which many analysts believe is likely during the forecast period), growth in tax revenues will again lag the state economy.

Historical data and revenue projections reveal that income taxes will provide an increasing share of revenues over time. **Figure 4.2** displays the composition of General Fund revenues at three eight-year intervals. The share of revenues generated by the PIT increases from 39.7 percent in FY 2007-08 to 43.4 percent in FY 2023-24. The increase in the PIT share is offset by declines in the share of revenue generated by the "Other Corp" (capital stock, gross receipts, insurance premiums and bank shares) category, due to the elimination of the capital stock and franchise tax and the modest growth of gross receipts tax revenues.

[5] U.S. Bureau of Economic Analysis, Personal Consumption Expenditures by state.

Figure 4.2
Composition of General Fund Revenues



Sources: Historical data from the Executive Budget (various years). Forecasts and calculations by IFO.

Personal Income Tax

The Commonwealth levies a 3.07 percent PIT on resident and non-resident individuals, estates and trusts and pass-through business entities. Eight income categories comprise taxable income: (1) compensation for labor services (e.g., wages, salaries, options and bonuses), (2) net profits from business operations, (3) net capital gains, (4) rent and royalty income, (5) dividends, (6) interest, (7) gambling and lottery proceeds and (8) gains or income distributed from estates or trusts. Losses may only be used to offset gains within the same class of income.

The forecast projects that PIT revenues will grow at an average rate of 4.3 percent per annum from FY 2018-19 to FY 2023-24. (See **Table 4.2**.) Wages and withholding tax revenues expand at a slower rate (3.9 percent) than non-withholding (5.5 percent). The forecast includes strong growth in FY 2020-21 withholding payments due to the unusual occurrence of 53 weekly due dates (Wednesdays) in that fiscal year. This strength is reversed in FY 2021-22, as the number of due dates returns to normal.

For FY 2017-18, non-withholding revenues were impacted by the new limitation on the federal deduction for state and local taxes (SALT) for tax year 2018, as taxpayers had an incentive to pre-pay tax on certain types of income (capital gains, dividends and net profits) in calendar year 2017. The forecast projects that the FY 2019-20 growth rate for non-withholding revenues (3.8 percent) will decelerate due to income shifting into 2018, which provides a temporary boost to revenues for FY 2018-19.

Table 4.2
Personal Income Tax Revenue

Fiscal Year	17-18	18-19	19-20	20-21	21-22	22-23	23-24
Withholding	$10,037	$10,450	$10,881	$11,438	$11,751	$12,214	$12,659
Quarterly	2,020	2,060	2,105	2,220	2,356	2,488	2,607
Annuals	1,343	1,470	1,561	1,683	1,791	1,898	1,999
Total Revenue	**13,399**	**13,980**	**14,547**	**15,342**	**15,897**	**16,600**	**17,265**
Growth Rate	5.8%	4.3%	4.1%	5.5%	3.6%	4.4%	4.0%

Note: figures in dollar millions.

Sales and Use Tax

The Commonwealth levies a 6.0 percent SUT on the retail sale of tangible personal property and certain services. General Fund revenues are reduced by (1) transfers to the Public Transportation Trust Fund and the Public Transportation Assistance Fund and (2) transfers to the Commonwealth Financing Authority. A new transfer to the Public Transportation Trust Fund begins in FY 2022-23 and is estimated to be $479 million for that fiscal year and $494 million for the following fiscal year.[6]

Act 43 of 2017 requires online retailers that sell to Pennsylvania residents to either collect and remit sales tax or comply with notice and reporting requirements. The act is projected to increase revenue by $260 million in FY 2018-19 and $390 million in FY 2023-24. Including the new transfer and tax law changes, total sales and use tax revenues are projected to grow at an average rate of 2.4 percent per annum from FY 2018-19 to FY 2023-24. (See **Table 4.3**.) Excluding the new transfer, the average growth rate is 3.3 percent per annum.

The forecast projects that non-motor vehicle revenues will expand at a rate of 2.7 percent per annum through FY 2023-24. Over the forecast period, growth in non-motor revenues is restrained by long-term base erosion caused by the shifting consumption patterns (from taxable goods to nontaxable services) of Pennsylvania's aging population. Motor vehicle revenues expand at an average rate of 0.9 percent per annum during the forecast period. After reaching record levels in 2016, U.S. car and light truck sales are

[6] The transfer is equal to the greater of (1) the ratio of $450 million to FY 2020-21 sales tax receipts multiplied by current year sales tax receipts or (2) $450 million.

projected to decline slightly through 2022, while the average price of a new vehicle increases at a rate of 2.8 percent per annum. Some analysts have expressed caution regarding the motor vehicle sales outlook due to the high volume of auto loans made in recent years. Currently, auto loans is the third largest category of debt for Pennsylvania consumers, after primary mortgage and student loan debt.

Table 4.3
Sales and Use Tax Revenue

Fiscal Year	17-18	18-19	19-20	20-21	21-22	22-23	23-24
Non-Motor	$8,989	$9,535	$9,916	$10,243	$10,590	$10,528	$10,880
Motor	1,393	1,427	1,458	1,478	1,503	1,467	1,490
Total Revenue	**10,381**	**10,963**	**11,374**	**11,721**	**12,092**	**11,995**	**12,371**
Growth Rate	3.8%	5.6%	3.8%	3.1%	3.2%	-0.8%	3.1%

Note: figures in dollar millions.

Corporate Net Income Tax

The Commonwealth levies a flat 9.99 percent tax on the net income of corporations with nexus (i.e., presence) in Pennsylvania. Pass through entities such as S corporations, partnerships and sole proprietorships are not subject to the tax. Banks, savings institutions, insurance companies and non-profits are also exempt from the CNIT.

The forecast projects that CNIT revenues will expand at an average rate of 3.4 percent per annum. (See **Table 4.4**.) Revenues grow slowly after FY 2018-19, but then converge to steady state growth rates by the end of the window that is consistent with long-term profits growth for non-recessionary periods.

Several factors have a negative impact on revenues over the forecast horizon:

- Anecdotal evidence suggests that firms shifted taxable income from tax year 2017 to tax year 2018 to qualify for the lower federal corporate tax rate. That shift provides an artificial boost to FY 2018-19 revenues.
- The phase-in of the higher net operating loss deduction limitation from 30 to 35 percent of taxable income (2019) and then 35 to 40 percent (2020).
- Act 72 of 2018 allows normal MACRS (Modified Accelerated Cost Recovery System) depreciation for firms that claim federal bonus depreciation. Previously, a portion of those deductions were delayed. Over time, a stock of unused depreciation deductions has accumulated and will offset future taxable income.

Table 4.4
Corporate Net Income Tax Revenue

Fiscal Year	17-18	18-19	19-20	20-21	21-22	22-23	23-24
Total Revenue	**$2,879**	**$3,149**	**$3,219**	**$3,306**	**$3,439**	**$3,580**	**$3,726**
Growth Rate	4.6%	9.4%	2.2%	2.7%	4.0%	4.1%	4.1%

Note: figures in dollar millions.

Gross Receipts Tax

The gross receipts tax is primarily levied on gross receipts from sales of electricity (59 mills) and telecommunications services (50 mills) within Pennsylvania. In FY 2017-18, electricity and telecommunications comprised roughly 70 and 30 percent of the tax base, respectively.

The gross receipts forecast projects strong growth in FY 2018-19, driven by a significant increase in residential demand for electricity after two consecutive years of decline. Through August 2018, electricity demand in the residential sector has grown 8.4 percent compared to the same period in 2017.[7] Among the four sectors of electricity customers (residential, commercial, industrial, transportation), the largest share of electricity sales belongs to residential (38 percent of total sales through the first eight months of 2018). The sharp increase in residential demand is likely impacted by recent weather trends, as residential customers are sensitive to weather variation. In the long-term, the forecast assumes that the electricity market will continue to recover while receipts from telecommunications services will continue to decline due to its diminishing tax base.

Table 4.5
Gross Receipts Tax Revenue

Fiscal Year	17-18	18-19	19-20	20-21	21-22	22-23	23-24
Total Revenue	**$1,150**	**$1,213**	**$1,248**	**$1,254**	**$1,257**	**$1,268**	**$1,280**
Growth Rate	-6.6%	5.5%	2.9%	0.5%	0.2%	0.9%	1.0%

Note: figures in dollar millions.

[7] Electricity data are from the U.S. Energy Information Administration.

Cigarette Tax

The Commonwealth levies a tax of 13 cents per cigarette, or $2.60 per pack of 20 cigarettes. General Fund revenues are reduced by three annual transfers to designated funds: (1) a $25 million transfer to the Agricultural Conservation Easement Purchase Fund, (2) a $31 million transfer to the Children's Health Insurance Program (CHIP) and (3) a transfer authorized under Act 84 of 2016 equal to $58 million less revenue deposited into the Local Cigarette Tax Fund (Philadelphia cigarette tax) during the prior fiscal year. The Local Cigarette Tax Fund transfer occurs in July and reduces General Fund cigarette tax revenues by $14 million in FY 2018-19 and grows to $20 million in FY 2023-24. Revenues are projected to decline at an average rate of 3.3 percent per annum from FY 2018-19 through FY 2023-24.

Table 4.6
Cigarette Tax Revenue

Fiscal Year	17-18	18-19	19-20	20-21	21-22	22-23	23-24
Total Revenue	**$1,198**	**$1,136**	**$1,099**	**$1,062**	**$1,027**	**$993**	**$960**
Growth Rate	-5.0%	-5.2%	-3.3%	-3.3%	-3.3%	-3.3%	-3.3%

Note: figures in dollar millions.

Realty Transfer Tax

The Commonwealth levies a 1.0 percent realty transfer tax (RTT) on the actual consideration or price of real property or contracted-for improvements to property transferred by deed, instrument, lease or other writing. Beginning in FY 2016-17, RTT revenues are reduced due to an annual transfer (made in July) to the Housing Affordability and Rehabilitation Enhancement Fund. Act 58 of 2015 authorized the transfer, which is based on RTT collections in the prior fiscal year and is capped at $25 million annually. For FY 2018-19, the transfer was $25 million and is projected to remain at that level.

In recent months, a limited supply of housing has restrained the number of home sales in Pennsylvania, but has placed upward pressure on prices. Home sales are projected to remain subdued during the forecast period, while prices increase at a moderate pace (4.1 percent per annum). For the second quarter of 2018, sales data from the Federal Housing Finance Agency show that average Pennsylvania home prices increased by 4.9 percent compared to the prior year.[8] The forecast projects that RTT revenues will expand at an average rate of 6.0 percent per annum from FY 2018-19 to FY 2023-24.

[8] Data are for the purchase-only index. See https://www.fhfa.gov/DataTools/Downloads/Pages/House-Price-Index-Datasets.aspx#qpo.

Table 4.7
Realty Transfer Tax Revenue

Fiscal Year	17-18	18-19	19-20	20-21	21-22	22-23	23-24
Total Revenue	**$514**	**$543**	**$584**	**$626**	**$664**	**$694**	**$728**
Growth Rate	7.6%	5.6%	7.4%	7.3%	6.1%	4.4%	4.9%

Note: figures in dollar millions.

Other Revenue Sources

Other notable trends that affect General Fund revenues include the following:

- Pennsylvania Life and Health Guaranty Association (PLHGA) credits are projected to reduce Insurance Premiums Tax revenues by $33 million in FY 2018-19 and by the same amount annually through FY 2022-23.
- The Neighborhood Improvement Zone (NIZ) and City Revitalization and Improvement Zone (CRIZ) programs have a growing impact on the minor and repealed category during the forecast period. These programs reduce collections by $62 million in FY 2018-19, and the impact grows to $85 million by FY 2023-24.
- The licenses and fees estimate for FY 2018-19 includes the impact of iGaming ($95 million), sports betting ($50 million), Category 4 table game fees ($5 million) and additional Category 3 fees ($3 million).
- Treasury collections for FY 2018-19 include $30 million for a settlement under the Air Pollution Control Act.
- All estimates assume that Enhanced Revenue Collection Account (ERCA) funding is reauthorized prior to its expiration on June 30, 2020.

Table 4.8
Other General Fund Revenue Sources

Fiscal Year	17-18	18-19	19-20	20-21	21-22	22-23	23-24
Accelerated Deposits	$4	$0	$0	$0	$0	$0	$0
Utility Property	34	35	36	37	38	39	40
Insurance Premiums	451	426	435	445	466	479	525
Financial Institutions	371	378	394	406	419	432	445
Other Tobacco Products	119	119	121	123	125	127	129
Malt Beverage	24	23	23	23	23	23	23
Liquor	372	387	402	418	435	452	471
Inheritance Tax	1,019	1,046	1,057	1,071	1,088	1,106	1,123
Gaming	123	139	160	176	183	192	197
Minor and Repealed	-35	-42	-48	-55	-57	-59	-61
Liquor Store Profits	185	185	185	185	185	185	185
Licenses, Fees & Misc.	2,303	442	319	323	331	339	346
Fines, Penalties & Int.	75	78	80	82	83	85	86
Total Revenue	**5,045**	**3,216**	**3,163**	**3,234**	**3,318**	**3,399**	**3,509**
Growth Rate	53.9%	-36.3%	-1.6%	2.2%	2.6%	2.4%	3.2%

Note: figures in dollar millions.

Section 5: Expenditure Outlook

For FY 2018-19, total General Fund appropriations are $32.72 billion, a $770 million increase over FY 2017-18. The text in this section uses the terms appropriation and expenditure interchangeably. However, the spending authority granted to a particular department or agency (i.e., the appropriation) need not equal actual expenditures for that year. Unused spending authority is reflected as a lapse that reduces budget short-falls or increases budget surpluses.

Table 5.1
General Fund Expenditures by Agency

Fiscal Year	17-18	18-19	19-20	20-21	21-22	22-23	23-24
Agency							
Education[1]	$13,243	$13,734	$14,355	$14,690	$14,997	$15,331	$15,648
Human Services	12,151	12,151	13,955	14,674	15,148	15,675	16,237
Criminal Justice[2]	2,438	2,552	2,608	2,694	2,740	2,808	2,855
Treasury	1,121	1,164	1,300	1,340	1,375	1,393	1,438
State Police	252	307	355	404	452	511	562
All Other	2,743	2,810	3,043	2,938	2,994	3,068	3,130
Total Expenditures	**31,948**	**32,718**	**35,616**	**36,740**	**37,706**	**38,785**	**39,870**
Growth Rates							
Education[1]	3.5%	3.7%	4.5%	2.3%	2.1%	2.2%	2.1%
Human Services	-1.8	0.0	14.8	5.2	3.2	3.5	3.6
Criminal Justice[2]	-4.9	4.7	2.2	3.3	1.7	2.5	1.7
Treasury	-4.2	3.8	11.7	3.1	2.6	1.3	3.2
State Police	-2.0	21.8	15.6	14.0	11.7	13.3	9.9
All Other	-1.0	2.4	8.3	-3.5	1.9	2.5	2.0
Total Expenditures	**0.0**	**2.4**	**8.9**	**3.2**	**2.6**	**2.9**	**2.8**

Note: figures in dollar millions.

[1] Includes the State System of Higher Education and Thaddeus Stevens College of Technology.

[2] Includes the Department of Corrections and the Board of Probation and Parole.

The projections throughout most of this section represent General Fund appropriations required to maintain the same level of services provided in the FY 2018-19 base year. Unless otherwise noted, the analysis assumes that FY 2018-19 expenditures supported by funds such as federal funds, other state funds or user fees (sometimes referred to as augmentations) continue to receive support from those sources. An exception occurs when it is clear that the funding source will be unable to provide the same level of relative support in future years. Those instances are described in greater detail in the relevant subsections that follow, as well as the "Other Funds" section in the Appendix.

From FY 2018-19 to FY 2023-24, General Fund expenditures are projected to increase at an average rate of 4.0 percent per annum. The overall trends are driven by the Departments of Human Services (DHS) and Education (PDE), as those two agencies comprise nearly four-fifths of total General Fund expenditures. (See **Table 5.1**.) Three factors motivate the trends in total expenditures:

- Service populations that expand or contract (e.g., school age children).
- The growth of employee wages and employee and retiree healthcare.
- Various inflation adjustments that maintain the purchasing power of funds appropriated in the base year for all future years.

Tables 5.1 and 5.2 provide detail based on department and expenditure category. Notable trends include:

- SERS and PSERS contributions have stabilized after many years of significant growth. From FY 2018-19 to FY 2023-24, the average annual growth rate of SERS contributions is nearly flat (0.4 percent) while PSERS grows at an average rate of 4.0 percent per annum.
- Pre-K-12 expenditures grow modestly due to contraction of the school age population. The uptick in growth for FY 2019-20 (4.2 percent) is due to the return of the authority rentals and sinking fund requirements (commonly known as PlanCon reimbursements, discussed further in the education subsection).
- Strong growth in DHS expenditures for FY 2019-20 (14.8 percent) due to the use of one-time revenues to offset spending in FY 2018-19. The program expenditures funded by these revenues are expected to return to a long-term growth trend in future years.
- Due to a phased-in cap on funds transferred from the Motor License Fund (MLF) under Act 85 of 2016, the General Fund must provide additional support for the State Police. This impact is termed "MLF Funding Shift" in Table 5.2.
- The notable increase in "All Other" agencies in FY 2019-20, and corresponding decline in FY 2020-21, is due to the repayment of a $165 million transfer from the Workers' Compensation Security Fund to the General Fund that occurred in FY 2016-17.[9]

[9] Act 44 of 2017 amends the Fiscal Code to require repayment of a $165 million transfer from the Workers' Compensation Security Fund by July 1, 2019. The analysis assumes that repayment occurs in FY 2019-20.

Table 5.2
General Fund Expenditures by Category

Fiscal Year	17-18	18-19	19-20	20-21	21-22	22-23	23-24
Expenditure Type							
Wages[1]	$2,467	$2,507	$2,564	$2,640	$2,702	$2,764	$2,826
Pensions - SERS	840	851	857	860	844	878	868
Pensions - PSERS	2,264	2,488	2,667	2,779	2,862	2,959	3,025
Retiree Healthcare	334	356	359	376	394	411	430
Employee Healthcare[2]	599	584	606	631	653	676	699
Pre-K-12 Education[3]	9,701	9,916	10,331	10,526	10,721	10,927	11,147
Medical Assistance	4,395	4,809	6,104	6,501	6,689	6,928	7,198
Long-Term Living	2,495	1,994	2,096	2,203	2,310	2,420	2,533
Intellectual Disability	1,845	1,899	1,995	2,060	2,127	2,196	2,267
Other Human Services	2,739	2,780	3,077	3,212	3,309	3,396	3,488
Debt Service	1,072	1,118	1,253	1,292	1,326	1,342	1,387
MLF Funding Shift[4]	0	44	88	133	177	230	276
All Other	3,197	3,373	3,619	3,527	3,593	3,659	3,726
Total Expenditures	**31,948**	**32,718**	**35,616**	**36,740**	**37,706**	**38,785**	**39,870**
Growth Rates							
Wages[1]		1.6%	2.2%	3.0%	2.3%	2.3%	2.3%
Pensions - SERS		1.3	0.7	0.4	-1.9	4.0	-1.1
Pensions - PSERS		9.9	7.2	4.2	3.0	3.4	2.2
Retiree Healthcare		6.5	1.0	4.8	4.5	4.5	4.4
Employee Healthcare[2]		-2.5	3.9	4.1	3.5	3.5	3.4
Pre-K-12 Education[3]		2.2	4.2	1.9	1.9	1.9	2.0
Medical Assistance		9.4	26.9	6.5	2.9	3.6	3.9
Long-Term Living		-20.1	5.1	5.1	4.9	4.7	4.6
Intellectual Disability		2.9	5.1	3.3	3.2	3.2	3.2
Other Human Services		1.5	10.7	4.4	3.0	2.6	2.7
Debt Service		4.3	12.1	3.1	2.6	1.2	3.4
MLF Funding Shift[4]		n.a.	101.0	51.6	32.8	30.1	20.0
All Other		5.5	7.3	-2.5	1.9	1.8	1.8
Total Expenditures		**2.4**	**8.9**	**3.2**	**2.6**	**2.9**	**2.8**

Note: figures in dollar millions.

[1] Includes wages, salaries, bonuses and payroll taxes (Medicare and Social Security).

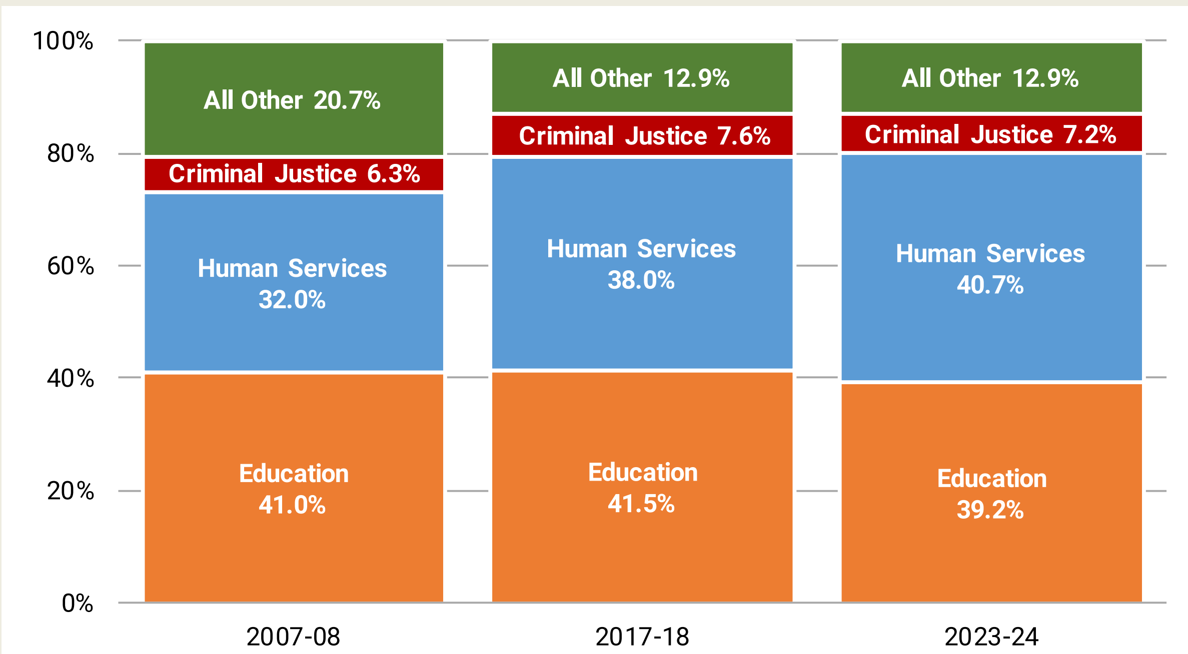
[2] Includes all non-pension benefits such as health and life insurance and other miscellaneous benefits.

[3] Excludes department personnel expenses and the state share of PSERS funding.

[4] Act 85 of 2016 limits State Police funding from the Motor License Fund (MLF). The analysis assumes that the General Fund absorbs the reduction from the MLF.

Figure 5.1 displays the changing composition of General Fund expenditures for FY 2007-08 (decade earlier), FY 2017-18 (latest actual) and FY 2023-24 (final forecast year). Over the past decade, the share of General Fund expenditures for DHS and Criminal Justice increased by 6.0 and 1.3 percentage points, respectively. Moving to FY 2023-24, the forecast projects that the share of General Fund expenditures for DHS programs will increase by 2.7 percentage points, while Criminal Justice and Education decline by 0.4 and 2.3 percentage points, respectively. The relative increase in DHS funding levels is driven by technical factors and economic and demographic projections.

Figure 5.1
Composition of General Fund Expenditures



Note: Criminal Justice includes the Department of Corrections and the Board of Probation and Parole. Education includes the State System of Higher Education and Thaddeus Stevens College of Technology.

Sources: Historical data from the Executive Budget (various years). Forecasts and calculations by IFO.

Current Services Versus Cost-to-Carry Baselines

Expenditures can be forecast using various methods. A "current services" concept is reflected in Tables 5.1 and 5.2 and used throughout this section. The current services method applies inflationary or demographic adjustments to maintain the level of real services provided to residents of the Commonwealth in the base year. Another method to project expenditures is the cost-to-carry approach. The cost-to-carry concept only increases funding for programs or line items that must be funded due to state or federal law, debt or pension obligations or the care of individuals under the jurisdiction of a state agency. For the purpose of the cost-to-carry concept, the following items increase at the same rate as the current services approach:

(1) programs administered by DHS, Department of Corrections (DOC), Pennsylvania Board of Probation and Parole (PBPP) and Pennsylvania State Police (PSP);

(2) state employee personnel costs including wages, retiree healthcare and current employee healthcare and other benefits;

(3) general obligation debt service funded by the General Fund;

(4) pension contributions funded by the General Fund including reimbursements to school districts for school employee pensions (PSERS) and state employee pensions (SERS);

(5) payments to school districts for partial reimbursement of school employee Social Security employer costs; and

(6) PlanCon reimbursements, repayment of the transfer from the Workers' Compensation Security Fund and Farm Show Complex financing agreement costs.

All other programs or line items (referred to as discretionary spending) are held flat at FY 2018-19 funding levels. Those items include the basic and special education subsidies, as well as funds for non-personnel expenses such as office supplies, rent, utilities, furniture, computers and travel.

Table 5.3 provides details on the cost-to-carry concept and a comparison to the current services concept at the bottom of the table. The difference between the current services and cost-to-carry forecasts increases from $234 million in FY 2019-20 to $1.24 billion in FY 2023-24. The cost-to-carry forecast grows at an average rate of 3.4 percent per annum while the current services forecast grows by 4.0 percent per annum. The subsections that follow use the current services approach.

Table 5.3
Cost-to-Carry Versus Current Services

Fiscal Year	18-19	19-20	20-21	21-22	22-23	23-24
Human Services[1]	$11,482	$13,273	$13,976	$14,435	$14,940	$15,486
Criminal Justice[1,2]	592	609	629	641	652	663
State Police[1,3]	90	135	181	226	280	327
General Obligation Debt[4]	1,118	1,253	1,292	1,326	1,342	1,387
School Employee Pensions[4]	2,488	2,667	2,779	2,862	2,959	3,025
School Employee Social Security[4]	541	557	567	577	587	597
Farm Show Complex Financing	0	13	13	13	13	13
PlanCon[5]	11	225	215	211	211	211
WCSF Transfer[6]	0	165	0	0	0	0
Wages/Salaries	2,507	2,564	2,640	2,702	2,764	2,826
State Employee Pensions	851	857	860	844	878	868
Retiree Healthcare	356	359	376	394	411	430
Employee Healthcare[7]	584	606	631	653	676	699
All Other (Discretionary)	12,099	12,099	12,099	12,099	12,099	12,099
Cost-to-Carry Expenditures	**32,718**	**35,382**	**36,259**	**36,984**	**37,813**	**38,632**
Current Services Expenditures[8]	**32,718**	**35,616**	**36,740**	**37,706**	**38,785**	**39,870**
Difference	**0**	**234**	**481**	**722**	**972**	**1,238**

Note: figures in dollar millions.

1 Excludes personnel expenditures.

2 Includes the Department of Corrections and the Board of Probation and Parole.

3 Includes the shift in expenditures from the MLF to the General Fund as a result of Act 85 of 2016.

4 Only includes state General Fund share.

5 Also called the "authority rentals and sinking fund."

6 Repayment of a $165 million transfer from the Workers' Compensation Security Fund (WCSF).

7 Includes all non-pension benefits such as health and life insurance and other miscellaneous benefits.

8 See Tables 5.1 and 5.2 for details.

Expenditure Extrapolators

Table 5.4 lists the economic and demographic forecasts used to extrapolate General Fund expenditures from the FY 2018-19 base year through FY 2023-24. Projected expenditures are a function of (1) service populations, (2) inflation and (3) various technical factors (e.g., the increasing state share under Medicaid expansion).

When possible, base year expenditures were disaggregated into five categories across all agencies: (1) wages, (2) pensions, (3) employee healthcare and other benefits, (4) retiree healthcare and (5) other expenditures (e.g., grants and subsidies, non-personnel expenses). Those categories were forecast separately for each agency using the extrapolators displayed in Table 5.4 and then recombined at the agency level.

Wage compensation comprises roughly seven percent of total General Fund expenditures. For each agency, wages were extrapolated using two factors. The first factor is an agency-specific employee turnover rate based on data compiled by the Office of Administration (not shown). For all agencies, that factor is negative due to retirements at the upper end of the pay scale that are replaced by younger workers who receive lower wages. The second factor is a general adjustment that reflects (1) a cost of living increase and (2) a general step increase. The forecast assumes that factor is the same across all agencies (3.75 percent per annum). When combined, the two factors yield a growth rate of roughly 2.7 percent per annum. (See Table 5.4.)

Table 5.4
General Fund Expenditure Extrapolators

Fiscal Year	19-20	20-21	21-22	22-23	23-24
Demographic Groups					
Age 5 to 17	-0.6%	-0.5%	-0.7%	-0.6%	-0.5%
Age 65 and Older	2.7	2.7	2.7	2.7	2.5
All Residents	0.2	0.2	0.2	0.1	0.1
Personnel Expenses					
Wages[1]	2.7	2.7	2.7	2.7	2.7
Pensions - SERS[2]	-1.5	-2.5	-4.1	1.7	-3.2
Retiree Healthcare[3]	0.0	4.1	4.3	4.3	4.3
Employee Healthcare[3]	3.6	3.6	3.6	3.6	3.6
Non-Personnel Expenses	2.1	2.1	2.1	2.1	2.1

[1] Reflects an average employee turnover factor.

[2] Growth in employer contribution rates only.

[3] Separate extrapolators are used for Pennsylvania State Police troopers (not shown).

Source: Forecasts by IFO.

The State Employees' Retirement System (SERS) pension extrapolator represents the change in pension contributions based on projected employer contribution rates. The SERS extrapolator in Table 5.4 does not reflect the projected growth in wages or personnel. Hence, the total growth in pension contributions would equal the product of the growth rates for SERS contribution rates, wages and any assumed growth or decline in the state complement.

The forecast assumes that payments for active employee healthcare increases at an average rate of 3.6 percent per annum. That rate is equal to general consumer inflation plus a 1.5 percentage point premium for healthcare costs. It is also roughly equivalent to the increase in the per capita active employee healthcare premiums for the past six fiscal years. The retiree healthcare extrapolator assumes that contributions remain flat for FY 2019-20, then increase by 4.3 percent per annum. The projected growth rates are based on the latest projection of employer benefit payments published by the actuary for the Retired Employees Health Program.

Non-personnel expenses include items such as computers, office supplies and utilities. The forecast assumes those expenditures grow at the same rate as the regional CPI-U. Non-personnel expenses also include grants or subsidies made to local units and institutions. Forecasts for grants and subsidies generally assume that the relevant service population grows with demographic projections, and the average cost to provide services grows with inflation. Two exceptions are the basic and special education subsidies. For those amounts, the relevant extrapolator (roughly 2.1 percent per annum) reflects an average pay increase (3.75 percent per annum), a general turnover factor (-1.0 percent) and a demographic component (-0.7 to -0.5 percent).

The subsections that follow provide additional detail for pensions, debt service and the Departments of Human Services, Education, Criminal Justice and the State Police.

General Fund Pensions

Mandated employer contributions for state employee and school employee pensions will comprise a material, but generally stable, share of General Fund expenditures through FY 2023-24. Combined payments to SERS and the Public School Employees' Retirement System (PSERS) from General Fund appropriations are projected to be $3.34 billion (10.2 percent of appropriations) in FY 2018-19 and $3.89 billion (9.8 percent) by FY 2023-24.

Pension contribution projections are based on (1) the underlying rate of change applied to personnel costs of the employer and (2) the ratio of the employer contribution rate in the forecast year to the rate in the preceding year. The Commonwealth reimburses school districts for a portion of their employer contributions, and the PSERS projection represents the state share (generally between 55 and 56 percent).

Act 5 of 2017 made extensive changes to the pension plans for employees hired on or after January 1, 2019 (SERS) or July 1, 2019 (PSERS). New employees hired on or after those dates must choose among three different pension plans: two are hybrid plans with defined benefit and defined contribution components, and one is a stand-alone defined contribution plan. These plans generally will result in lower employer contribution rates compared to the defined benefit plans available to employees under prior law. The forecast does not reflect savings in the short-term because (1) employer contribution rates continue to include the amortization of the unfunded liabilities of SERS and PSERS and

(2) any changes to the level of aggregate employer contributions resulting from the new statute will occur over a long period of time based on employee turnover.

Table 5.5 displays the most recent publicly available estimates for employer contribution rates for the two pension systems. **Table 5.6** displays estimates for SERS and PSERS contributions.

Table 5.5
Employer Contribution Rates

Fiscal Year	Employer Rate[1]		% Change in Rate	
	SERS	PSERS	SERS	PSERS
2015-16	25.00%	25.84%	22.0%	20.7%
2016-17	29.50	30.03	18.0	16.2
2017-18	33.22	32.57	12.6	8.5
2018-19	32.90	33.43	-1.0	2.6
2019-20	32.40	34.79	-1.5	4.1
2020-21	31.60	35.26	-2.5	1.4
2021-22	30.30	35.68	-4.1	1.2
2022-23	30.80	36.32	1.7	1.8
2023-24	29.80	36.82	-3.2	1.4

[1] Expressed as a percentage of payroll.
Sources: Rates are from various reports released by SERS and PSERS.

Table 5.6
Employer Pension Contributions - State General Fund Share

Fiscal Year	17-18	18-19	19-20	20-21	21-22	22-23	23-24
SERS[1]	$840	$851	$857	$860	$844	$878	$868
PSERS	2,264	2,488	2,667	2,779	2,862	2,959	3,025
Total	**3,104**	**3,339**	**3,524**	**3,639**	**3,706**	**3,836**	**3,893**
Growth Rate	9.0%	7.5%	5.6%	3.3%	1.8%	3.5%	1.5%

Note: figures in dollar millions.
[1] Excludes any pension expenses related to the Motor License Fund shift to the General Fund for State Police personnel costs.

The SERS projections in Table 5.6 represent only the amounts paid from General Fund appropriations. In addition to appropriations, state agencies make employer contributions from other sources such as augmentations, federal funds and other state funds. For FY 2018-19, agencies making employer contributions from General Fund appropriations made additional contributions of $349 million from those other sources. The forecast assumes that the other sources will supply the same share of funding as supplied in the base year. If those funds are not sufficient, then General Fund appropriations may need to absorb part of the shortfall.

General Fund Debt Service

The Commonwealth may authorize debt for a variety of purposes and terms. General obligation bonds (20 year) are the largest source of debt issuance and are backed by the full faith and credit of the Commonwealth. These bonds may be financed with revenue from the General Fund or any of the various special funds (e.g., highway projects funded via the Motor License Fund). The source of repayment is established by statute and generally determined based on how the borrowed funds will be used. This subsection discusses debt financed with General Fund revenue. **Table 5.7** displays the projected amount of new debt that will be issued over the forecast period.

Table 5.7
General Fund Debt Service Payments

Fiscal Year	17-18	18-19	19-20	20-21	21-22	22-23	23-24
Projected Bond Issues[1]	n.a.	$1,032	$1,010	$1,010	$1,010	$1,010	$1,010
New Debt Service[2]	n.a.	0	93	163	234	305	377
Existing Debt Service[3]	n.a.	1,118	1,160	1,129	1,092	1,037	1,010
Total Debt Service	**$1,072**	**1,118**	**1,253**	**1,292**	**1,326**	**1,342**	**1,387**
Growth Rate	-3.5%	4.3%	12.1%	3.1%	2.6%	1.2%	3.4%

Note: figures in dollar millions.

[1] Based on IFO projections of future bond issues.

[2] Debt service related to bond issue projections. This estimate does not include payments for debt incurred before November 2018.

[3] Debt service related to bonds issued before November 2018 and adjusted to account for General Fund debt service payments that originate from non-General Fund sources. FY 2017-18 is reduced by a $48 million lapse that resulted from debt refinancing.

General obligation bonds are issued annually to meet cash flow needs, and are dedicated for specific projects. The bonds are authorized in an amount necessary to cover that year's cash flow related to currently authorized projects. Therefore, the lag between approval of a project and the bond issue that provides funding can vary greatly based on the project schedule and the agency that administers the funds.

Bond Ratings

The Pennsylvania Constitution (Article VIII, Section 7) allows debt to be issued (1) for capital projects specifically itemized in an approved capital budget, (2) purposes approved by voter referendum and (3) in response to natural disasters. The amount of debt incurred with each issue is a function of interest rates, and the rates assigned to an issue are based largely on the municipal bond rating specified for that particular issue. The ratings are determined by a rating agency prior to the issuance of a bond, and can also be updated periodically via public release.

Although Pennsylvania's bond ratings have generally been stable over the short-term, certain maturities in recent bond issues have required underwriting from a municipal bond insurance policy to increase investor demand for those maturities. In September 2017, S&P Global Ratings downgraded Pennsylvania's rating from AA- to A+, citing chronic structural imbalances and a history of late budget adoption. This rating was first reflected in the Commonwealth's November 2017 bond issuance. The ratings for subsequent issuances (May 2018) have remained unchanged. (See **Table 5.8**.)

Table 5.8
Pennsylvania Bond Ratings

	Moody's	S&P	Fitch
March 2009	Aa2	AA	AA
May 2009	Aa2	AA	AA
January 2010	Aa2	AA	AA
May 2010	**Aa1**	AA	**AA+**
December 2010	Aa1	No Rating	AA+
October 2011	Aa1	AA	AA+
April 2012	Aa1	AA	AA+
April 2013	**Aa2**	AA	AA+
October 2013	Aa2	AA	**AA**
April 2014	Aa2	AA	AA
February 2015	**Aa3**	**AA-**	**AA-**
May 2015[1]	Aa3	AA-	AA-
June 2016[1]	Aa3	AA-	AA-
August 2016[2]	Aa3	AA-	AA-
November 2017	Aa3	**A+**	AA-
May 2018[1]	Aa3	A+	AA-

[1] Certain maturities were insured by a municipal bond insurance policy and therefore received a higher rating by Kroll Bond Rating Agency (AA+), Moody's (A2) and Standard & Poor's (AA).

[2] Certain maturities were insured by a municipal bond insurance policy and therefore received a higher rating by Kroll Bond Rating Agency (AA+) and Standard & Poor's (AA).

<u>Forecast</u>

The projected increase in borrowing for FY 2019-20 is mostly due to $41 million in capitalized interest from the Commonwealth's May 2018 bond issuance and estimated new debt service. Over the next four years, the forecast assumes no increase in new bond issues. Interest rates are expected to rise over the forecast period. The interest rate assumptions are related to an anticipated general rise in interest rates and do not include any additional increases related to a further reduction in the Commonwealth's bond rating. A sensitivity analysis suggests that an interest rate that is 0.5 percentage points higher than the baseline rate beginning with bonds issued in FY 2018-19 would increase borrowing costs by roughly $0.85 billion over the next 20 years (through FY 2038-39). The impact of any change is linear, so that an increase that is 1.0 percentage point higher would raise costs by roughly $1.7 billion.

Human Services

The Department of Human Services (DHS) provides access to medical and other services to the Commonwealth's most vulnerable residents. For FY 2018-19, General Fund appropriations are $12.15 billion. State special funds, augmenting revenues and federal funds provide additional support. While General Fund appropriations are the primary focus of the analysis, those appropriations will fluctuate in response to the availability of funds from other sources. For example, the General Fund may pick up the difference if a special fund, such as the Lottery Fund or the Tobacco Settlement Fund, cannot maintain its current level of support.

For FY 2018-19, base year appropriations for DHS are the same as the prior fiscal year. (See **Table 5.9**.) The level funding does not reflect actual program costs, but rather the use of $1.0 billion in one-time revenue sources to manage current year appropriations. For example, FY 2018-19 expenditures are offset by collections from the former managed care organization (MCO) gross receipts tax and settlement proceeds pursuant to the Tobacco Master Settlement Agreement lawsuit. In future years, the expenditures supported by these sources are expected to follow the long-term growth trend. As discussed in this subsection, adjustments also are made for other factors that will affect expenditures in the forecast period. By FY 2023-24, the forecast projects that General Fund expenditures will be $16.24 billion, an average increase of 3.9 percent per annum after FY 2019-20.

The provision of Medicaid services comprises the largest share of expenditures for DHS. Medicaid is a joint state/federal program that plays an important role in the provision of (1) physical and behavioral healthcare services to eligible low-income individuals and families and (2) home and community-based and long-term care services to eligible residents who have physical or cognitive disabilities. Medicaid services are provided through various programs grouped under the Medical Assistance (MA), Long-Term Living (LTL) and Intellectual Disabilities (ID) categories. These program categories comprise almost three-quarters of DHS General Fund expenditures, and the forecast projects that they will increase at an average rate of 4.2 percent per annum from FY 2020-21 through FY 2023-24.

Table 5.9
General Fund Expenditures - Department of Human Services

Fiscal Year	17-18	18-19	19-20	20-21	21-22	22-23	23-24
Wages[1]	$324	$347	$355	$364	$373	$382	$391
Pensions	152	132	133	133	130	136	134
Retiree Healthcare	63	73	73	76	79	83	86
Employee Healthcare[2]	137	117	121	125	130	135	140
All Other							
Medical Assistance	4,395	4,809	6,104	6,501	6,689	6,928	7,198
Long-Term Living	2,495	1,994	2,096	2,203	2,310	2,420	2,533
Intellectual Disabilities	1,845	1,899	1,995	2,060	2,127	2,196	2,267
Human Services Programs	1,263	1,309	1,349	1,391	1,431	1,473	1,520
Mental Health	658	664	684	706	728	751	774
Child Development	460	472	480	489	498	508	518
Income Maintenance	259	203	389	398	407	416	425
Human Services Support	89	120	122	125	127	130	133
Children's Health Insurance	11	13	51	104	117	117	118
Total	**12,151**	**12,151**	**13,955**	**14,674**	**15,148**	**15,675**	**16,237**
Growth Rate	-1.8%	0.0%	14.8%	5.2%	3.2%	3.5%	3.6%

Note: figures in dollar millions.

[1] Includes wages, salaries, bonuses and payroll taxes (Medicare and Social Security).

[2] Includes all non-pension benefits such as health and life insurance and other miscellaneous benefits.

The basic components of the forecast are identified in the following bullets. Additional factors that affect expenditure projections for FY 2018-19 and beyond are discussed in the paragraphs that follow.

- The projections assume costs per enrollee for MA and LTL will increase by 3.1 percent per annum. These rates are motivated by healthcare inflation.
- Increases in the service population track the growth in total population (0.2 percent per annum) for MA and ID programs and the age 60 or older population (1.9 percent per annum) for LTL programs.

Appropriations from the Lottery Fund and the Tobacco Settlement Fund supplement General Fund expenditures for the MA and LTL program groups. The Lottery Fund is projected to supply $308 million for DHS expenditures in FY 2018-19, an amount that is held constant through FY 2023-24. The Tobacco Settlement Fund is projected to supply $257 million in FY 2018-19, but the forecast assumes an $89 million reduction for FY 2019-20 based on the fund balance and debt service requirements associated with the Tobacco Settlement Fund revenue bonds. In future fiscal years, Tobacco Settlement Fund revenues available for MA and LTL programs decline an additional $15 million for a total reduction of $104 million from the FY 2018-19 base year level. In the forecast, the General Fund absorbs any reduction in support from these special funds. See the Appendix for additional information regarding the relevant special fund forecasts.

The analysis includes the impact of Medicaid expansion on General Fund appropriations. The baseline incorporates net savings from the transfer of previously 100 percent state-funded General Assistance (GA) recipients to MA, paid entirely with enhanced federal matching funds. However, beginning with calendar year 2017, the Commonwealth is responsible for a portion of the costs from enrollees eligible under Medicaid expansion (former GA recipients and others). The state share begins at 5 percent for 2017 and increases to 10 percent by 2020 and thereafter. The MA forecast includes the projected impact on General Fund appropriations from a phase down of the enhanced federal matching rate for Medicaid expansion.[10]

Support for MA and LTL programs is derived from augmenting revenues from various assessments (e.g., MCOs, hospitals and nursing homes). Act 92 of 2015 replaced the previous gross receipts tax on Medicaid MCOs with a monthly, per-member assessment on all MCOs. These assessments expire at various points prior to the end of the forecast period in this report (June 2024), but the analysis assumes that they are extended. The forecast further assumes that the augmenting facility assessments, along with the corresponding federal matching revenues, supply the same share of funding for total DHS expenditures as supplied in the base year.

The following bullets list additional factors that affect DHS expenditures for the current fiscal year and forecast period:

- Use of one-time funds to pay current fiscal year expenses. This method of temporarily reducing current year appropriations (e.g., MA capitation and MA Community HealthChoices) creates a significant increase in appropriation levels the following year unless additional funds become available.
- Expiration of the moratorium on health insurer provider fees. The implementation of these fees, originally scheduled to take effect in 2014 pursuant to the Affordable Care Act, have been delayed each year. The forecast anticipates that the moratorium will not be extended for 2018. The fee is waived in 2019, but is assumed to remain in effect thereafter.
- Expansion of the ID Community Waiver Program for new graduates. The initiative closes the gap in service coverage for individuals after graduation.
- Reinstatement of cash assistance benefits to the GA population due to the July 2018 Pennsylvania Supreme Court ruling on Act 80 of 2012 (after enactment of the current year budget). GA cash assistance benefits totaled $150 million annually before being eliminated by Act 80 of 2012.

[10] The applicable enhanced federal matching rates are as follows: 100 percent for calendar years 2015 and 2016, 95 percent for 2017, 94 percent for 2018, 93 percent for 2019 and 90 percent for 2020 and thereafter.

- Commencement of Community HealthChoices (CHC) in the Southeast and the rest of the state. CHC introduces a managed care approach for MA-eligible persons who need long-term services and supports. CHC is intended to increase the utilization of home and community-based services and reduce the utilization of institutional services.[11] The forecast includes (1) the initial program costs for the final two phases, (2) the overlap of costs incurred under the fee-for-service model prior to the implementation of CHC and (3) a change in the case mix to reflect a modest shift from institutional to community services.
- Shifts from LTL appropriations to MA appropriations due to the implementation of CHC. In FY 2018-19, LTL appropriations decline by $500 million as those costs are absorbed by the MA – CHC appropriation. Moving forward, LTL appropriations are expected to continue to decline as more costs are covered by the CHC program. IFO projections do not reflect the shift between lines as this is not expected to affect overall DHS costs.
- Reduction of the federal matching rate for the Children's Health Insurance Program (CHIP). The forecast assumes that an 11.5 percentage point reduction in the federal matching rate will occur beginning in FY 2019-20. In FY 2020-21, the federal matching rate is assumed to drop another 11.5 percentage points, and remains at that level for the remainder of the forecast period.

Education

The Pennsylvania Department of Education (PDE) provides resources, support and oversight to the state's 500 school districts to help schools meet the needs of the Commonwealth's public, private and non-public school students. Additionally, PDE funding provides grants and subsidies to post-secondary institutions including: 14 universities within the Pennsylvania State System of Higher Education (PASSHE), 14 community colleges, and 4 state-related universities as well as Thaddeus Stevens College of Technology. PDE appropriations can be separated into three broad categories: (1) pre-kindergarten through grade 12 (Pre-K-12), (2) post-secondary and (3) other. The text that follows provides brief descriptions of these categories.

Pre-K-12

Based on demographic trends of the school-age population, the forecast assumes that the number of public school students will decline from 1.72 million in FY 2017-18 to 1.68 million by FY 2023-24. (See **Table 5.10**.) Holding the ratio of public school students to teachers constant (14.4), the total number of public school staff is also assumed to decline from 145,700 in FY 2017-18 to 142,500 in FY 2023-24.

[11] Currently, implementation is scheduled to occur in three phases: January 2018 (southwest zone), January 2019 (southeast zone) and January 2020 (rest of the state).

Table 5.10
Pennsylvania Public School K-12 Enrollments

School Year	17-18	18-19	19-20	20-21	21-22	22-23	23-24
Traditional Schools[1]	1,582	1,573	1,568	1,563	1,555	1,548	1,541
Charter Schools	138	139	139	140	140	140	140
Total Schools[2]	**1,719**	**1,712**	**1,707**	**1,703**	**1,695**	**1,688**	**1,681**
Growth Rate	-0.2%	-0.4%	-0.3%	-0.2%	-0.5%	-0.4%	-0.4%

Note: thousands of students.

[1] Includes students in school districts, state juvenile correctional institutions and comprehensive Career and Technical Centers.

[2] Excludes students in non-public schools in which tuition is paid privately.

Source: FY 2017-18 from the Department of Education. Projections by IFO.

Most PDE appropriations (a little less than 90 percent) are dedicated to Pre-K-12 purposes. For FY 2018-19, Pre-K-12 appropriations are $12.24 billion, $438 million (3.7 percent) higher than FY 2017-18 appropriations. (See **Table 5.12**.) These amounts include the basic education and special education subsidies, the state share of school employees' retirement contributions, pupil transportation, school employees' Social Security, early intervention, Ready to Learn Block Grant and other miscellaneous expenditures.

Demographic projections show that the 5 to 17 year age cohort will contract by 0.6 percent per annum through FY 2023-24. Despite this contraction, Pre-K-12 expenditures expand at a faster pace (2.7 percent per annum) to $13.99 billion, due primarily to solid growth in state reimbursements for school district retirement contributions (4.0 percent per annum) and the authority rentals and sinking fund appropriation (82.3 percent per annum) included in the "All Other" line.[12] The basic education and special education subsidies expand at a rate of 2.1 percent per annum to maintain a current level of service.

Post-Secondary

For FY 2016-17, there were roughly 349,900 full-time students enrolled at PASSHE universities, state-related universities or community colleges within Pennsylvania. This figure has declined every year since FY 2010-11 when there were 376,100 full-time students enrolled in these three institutional categories. The upper half of **Table 5.11** displays the annual growth rates of full-time college students within these three categories of post-secondary institutions.

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12 The "authority rentals and sinking fund" appropriation, also known as PlanCon, provides funds to reimburse school districts for school construction costs. The appropriation also supports roughly $10.5 million in annual charter school lease reimbursements. The projection increases from $10.5 million in FY 2018-19 to $224.6 million in FY 2019-20, then declines to $211.4 million by FY 2023-24.

Table 5.11
Annual Growth in Post-Secondary Student Enrollment

Fiscal Year	10-11	11-12	12-13	13-14	14-15	15-16	16-17
Selected PA Post-Secondary Institutional Categories[1]							
State System of Higher Education	2.2%	-2.0%	-2.5%	-2.4%	-2.0%	-2.4%	-2.4%
Community Colleges	-0.1	-2.1	-5.8	-4.0	-4.5	-4.0	-4.9
State-Related Universities	1.0	-0.9	2.6	0.5	1.6	1.0	2.9
Combined	**1.0**	**-1.6**	**-1.3**	**-1.5**	**-1.0**	**-1.3**	**-0.5**
Total PA Post-Secondary	**0.8**	**-2.4**	**-3.0**	**-2.1**	**-2.2**	**-2.7**	**n.a.**
Total U.S. Post-Secondary	**2.1**	**-1.6**	**-2.5**	**-1.7**	**-1.6**	**-1.5**	**n.a.**

[1] Includes full-time enrollment only.
Sources: Selected PA Post-Secondary Institutional Categories: Executive Budget, various years. Total PA and U.S. Post-Secondary Enrollment: National Center for Education Statistics.

Since FY 2010-11, community colleges recorded the largest decline in full-time students followed by PASSHE universities. The recent decline in student enrollment at PASSHE and the community colleges mirror statewide and national trends for all post-secondary institutions. (The last two rows in Table 5.11 display the annual growth rates for all students, both full- and part-time.) By contrast, state-related universities have recorded gains.

For FY 2018-19, PDE's post-secondary appropriations are $1.36 billion, $40 million (3.0 percent) higher than FY 2017-18 appropriations. (See Table 5.12.) These amounts comprise roughly 10 percent of total expenditures by PDE and include state-owned and state-related universities, community colleges and Thaddeus Stevens College of Technology. While the number of students attending post-secondary institutions has declined (see Table 5.11), appropriations for recent years suggest that policymakers desire to provide a level of funding that grows at roughly the same rate as inflation. Therefore, the forecast assumes that all post-secondary line items grow with general inflation (2.1 percent per annum) to $1.51 billion in FY 2023-24.

Other and Summary

PDE also receives appropriations to provide subsidies to libraries and to fund personnel costs. For FY 2018-19, those amounts are $133 million and increase to $148 million by FY 2023-24 (2.1 percent per annum). For FY 2018-19, PDE's total appropriation is $13.73 billion, a $491 million (3.7 percent) increase from the prior fiscal year. The forecast projects that expenditures will increase to $15.65 billion (2.6 percent per annum) by FY 2023-24.

Table 5.12
General Fund Expenditures - Department of Education

Fiscal Year	17-18	18-19	19-20	20-21	21-22	22-23	23-24
Pre-K through Grade 12							
Basic Education Subsidy	$5,995	$6,095	$6,223	$6,357	$6,486	$6,621	$6,766
School Employees' Retirement	2,264	2,488	2,667	2,779	2,862	2,959	3,025
Special Education Subsidy	1,122	1,137	1,161	1,186	1,210	1,235	1,262
Pupil Transportation	549	549	557	566	574	582	591
School Employees' Social Sec.	500	541	557	567	577	587	597
Early Intervention	264	286	290	294	298	303	307
Ready To Learn Block Grant	250	268	272	276	280	284	289
All Other[1]	857	876	1,103	1,108	1,120	1,136	1,152
Total Pre-K through Grade 12	**11,801**	**12,239**	**12,829**	**13,132**	**13,406**	**13,706**	**13,990**
Post-Secondary							
State-Related Universities	565	581	593	606	619	632	645
Community Colleges[2]	288	295	301	307	314	320	327
PASSHE-State Universities	453	468	478	488	498	508	519
Thaddeus Stevens Coll. of Tech.	14	15	15	15	16	16	16
Other Post-Secondary	3	3	3	3	4	4	4
Total Post-Secondary	**1,323**	**1,363**	**1,390**	**1,420**	**1,449**	**1,480**	**1,511**
General Government Operations	26	27	28	28	29	30	30
Libraries[3]	62	62	63	65	66	68	69
All Other	31	44	45	46	47	48	49
Grand Total	**13,243**	**13,734**	**14,355**	**14,690**	**14,997**	**15,331**	**15,648**
Growth Rate	3.5%	3.7%	4.5%	2.3%	2.1%	2.2%	2.1%

Note: figures in dollar millions.

[1] Includes Pre-K Counts, special education-approved private schools, services to nonpublic schools, nonpublic and charter school pupil transportation, authority rentals and sinking fund requirements, and other miscellaneous line items.

[2] Includes community colleges, transfer to Community College Capital Fund and regional community colleges.

[3] Includes library services for the disabled, public library subsidy, library access and state library.

Criminal Justice

The Department of Criminal Justice includes the Department of Corrections (DOC) and the Pennsylvania Board of Probation and Parole (PBPP). The two departments were combined into a single agency in FY 2017-18.[13] Similar to its predecessors, the Department of Criminal Justice (1) provides for the care and supervision of all offenders under its jurisdiction and (2) ensures citizen safety through careful selection of offenders who qualify for parole and re-entry into society.

Although still legally separate, the agencies operate under a memorandum of understanding that combined certain offices and yielded cost savings through the elimination of administrative redundancies. Another key element of the consolidation is improved transition of inmates under the DOC's jurisdiction to parolees under the Board's supervision.

Table 5.13
Populations - Department of Corrections and Board of Probation and Parole

	2012	2013	2014	2015	2016	2017	2018	2019
Inmate Population	51,184	51,512	50,756	49,914	49,301	48,438	47,949	48,430
Annual Change	317	328	-756	-842	-613	-863	-489	481
Percent Change	0.6%	0.6%	-1.5%	-1.7%	-1.2%	-1.8%	-1.0%	1.0%
Parolee Population	35,982	37,971	39,726	41,226	41,500	42,057	41,777	41,225
Annual Change	1,972	1,989	1,755	1,500	274	557	-280	-552
Percent Change	6.0%	5.5%	4.6%	3.8%	0.7%	1.3%	-0.7%	-1.3%

Note: Parolee population is reported on a fiscal year basis.

Sources: Pennsylvania Department of Corrections, Annual Statistical Report (various years). Pennsylvania Board of Probation and Parole, Monthly Statistics (various years). Projections are from the Criminal Justice Projections Committee.

Table 5.13 displays a time series of inmates under the jurisdiction of the DOC and parolees under the supervision of the PBPP. From 2012 to 2018, the inmate population decreased at a rate of 1.1 percent per annum, while the parolee population expanded at a rate of 2.5 percent per annum. These trends were motivated by structural and data-driven changes implemented by the Justice Reinvestment Initiative, which diverted technical parole violators (TPVs) from state prisons to contracted county jails and community corrections centers. This action yielded significant cost savings due to average cost differentials. For FY 2018-19, the average cost of an inmate is roughly $49,600

[13] See Act 1A of 2017.

(includes all costs, including indirect costs and overhead), more than ten times the average cost of a parolee ($4,100).

Based on population projections published by the Criminal Justice Projections Committee, the IFO assumes that from FY 2018-19 to FY 2023-24, the inmate population increases at an average rate of 0.1 percent per annum and the parolee population declines by 0.8 percent per annum.[14]

For FY 2018-19, total appropriations for the Department of Criminal Justice are $2.55 billion, $114 million (4.7 percent) more than FY 2017-18 appropriations. Most of the increase in total appropriations is attributable to the DOC for Medical Care ($19.2 million, includes personnel costs), Inmate Education and Training ($1.5 million) and State Correctional Institutions ($82 million). A $10.7 million increase in State Field Supervision also contributes to the increase in appropriations.

The forecast projects that expenditures for the Department of Criminal Justice will grow by 2.3 percent per annum from FY 2018-19 to FY 2023-24. (See **Table 5.14**.) The modest growth rate is attributable to the flat growth in employer pension contribution rates and the projected number of inmates.

Table 5.14
General Fund Expenditures - Department of Criminal Justice

Fiscal Year	17-18	18-19	19-20	20-21	21-22	22-23	23-24
Wages[1]	$1,139	$1,196	$1,220	$1,263	$1,291	$1,318	$1,345
Pensions	379	391	393	397	389	404	399
Retiree Healthcare	130	127	128	135	140	146	152
Employee Healthcare[2]	254	246	257	269	279	288	297
Inmate Medical Care	145	157	162	167	170	173	176
All Other	391	435	448	462	471	479	487
Total	**2,438**	**2,552**	**2,608**	**2,694**	**2,740**	**2,808**	**2,855**
Growth Rate	-4.9%	4.7%	2.2%	3.3%	1.7%	2.5%	1.7%

Note: figures in dollar millions.

[1] Includes wages, salaries, bonuses and payroll taxes (Medicare and Social Security).

[2] Includes all non-pension benefits such as health and life insurance and other miscellaneous benefits.

[14] Population Projections, Criminal Justice Projections Committee. October 2018.

State Police

The State Police promotes traffic safety, investigates crime and reduces criminal activity. The agency also provides investigative assistance and support services to all law enforcement agencies within the Commonwealth. Most funding for the State Police is provided through the General Fund and Motor License Fund (MLF). Act 85 of 2016 instituted a series of caps on the amount of funding that the MLF can provide to the State Police. For FY 2018-19, the MLF appropriation to the State Police is capped at 96.0 percent of the FY 2016-17 amount per Act 85 of 2016. In FY 2019-20, that amount is reduced by 4.0 percentage points each fiscal year until FY 2026-27. After that year, the cap is set at $500 million per year.

For FY 2018-19, the MLF appropriation to the State Police is $769.7 million, which is equal to the capped amount for that fiscal year. The funding decrease to the State Police from the MLF is partially offset by complement cost savings and fee increases authorized under Act 40 of 2017. However, due to the progressive caps, the forecast shows a significant increase in General Fund expenditures because the fund must absorb future cost increases and also provide replacement funds previously supplied by the MLF. State Police expenditures grow at an average rate of 1.7 percent per annum excluding the MLF funding shift, and 12.9 percent per annum including the shift. **Table 5.15** displays the impact of Act 85 on the General Fund beginning in FY 2018-19.

Table 5.15
General Fund Expenditures - State Police

Fiscal Year	17-18	18-19	19-20	20-21	21-22	22-23	23-24
Pre-MLF Funding Shift	$252	$263	$267	$271	$275	$282	$286
Growth Rate	-2.0%	4.5%	1.5%	1.6%	1.4%	2.5%	1.6%
MLF Funding Shift[1]	$0	$44	$88	$133	$177	$230	$276
Total	**$252**	**$307**	**$355**	**$404**	**$452**	**$511**	**$562**
Growth Rate	-2.0%	21.8%	15.6%	14.0%	11.7%	13.3%	9.9%

Note: figures in dollar millions.

[1] Act 85 of 2016 limits State Police funding from the MLF. The analysis assumes that the General Fund absorbs the reduction from the MLF.

All Other Expenditures

The forecasts for all other agencies or departments use the extrapolators from Table 5.4. Most expenditures increase by 2.2 to 2.5 percent per annum over the forecast window. Notable assumptions across agencies include:

- The Pennsylvania Higher Education Assistance Agency (PHEAA) has nearly flat growth because the projected growth rate is equal to the product of inflation (2.1 percent per annum) and growth in total student population (-2.1 percent per annum).
- In FY 2019-20, there is a scheduled repayment of the $165 million transfer from the Workers' Compensation Security Fund (included in the "All Others" line item in **Table 5.16**).
- Department of General Services includes $13.3 million for the Farm Show Complex financing agreement entered into in FY 2017-18. The annual payments begin in FY 2019-20.

Table 5.16
General Fund Expenditures - All Other Agencies

Fiscal Year	17-18	18-19	19-20	20-21	21-22	22-23	23-24
Legislature[1]	$381	$402	$411	$421	$431	$444	$455
Judiciary	356	356	364	372	380	392	401
PHEAA	322	323	323	323	323	323	323
Health	189	200	204	208	213	218	223
Revenue	184	187	191	196	200	205	210
Executive Offices	180	140	143	146	149	153	156
Community & Economic Dev.	145	157	160	164	167	171	175
Environmental Protection	146	156	160	163	167	172	176
Agriculture	144	152	155	158	162	165	169
Military & Veterans Affairs	142	150	154	157	161	165	169
Cons. & Natural Resources	105	123	125	128	131	135	138
General Services	117	121	137	139	142	145	148
All Others[2]	382	391	565	409	418	429	438
Total	**2,793**	**2,856**	**3,091**	**2,986**	**3,043**	**3,119**	**3,181**
Growth Rate	-1.3%	2.3%	8.2%	-3.4%	1.9%	2.5%	2.0%

Note: figures in dollar millions.

[1] Includes government support agencies.

[2] Includes all other agencies and departments not listed above with the exception of PDE, DHS, Criminal Justice, PSP and the debt service part of Treasury.

Section 6: Fiscal Outlook

This report facilitates an assessment of the Commonwealth's fiscal outlook based on demographic and economic trends for the next five fiscal years. This section of the report combines the projections from previous sections to identify any potential long-term structural imbalance, or an imbalance that remains after unusual economic conditions or other factors (e.g., one-time revenue transfers) are no longer relevant or available.

The General Fund revenue and expenditure projections included in this report reflect a structural imbalance of $1.71 billion in FY 2019-20, that declines to $1.58 billion by FY 2023-24.[15] In previous years, projected imbalances were addressed by a mix of (1) revenue enhancements, transfers and accelerations, (2) expenditure reductions, shifts and deferrals and (3) increased reliance on special funds and federal funds. Because the purpose of the analysis is to identify structural imbalances, the projections assume that new one-time or temporary measures are not employed in future years.

Table 6.1 displays a basic General Fund financial statement. Overall, the results reflect improvement compared to ending balances contained in the prior year's report.[16] The imbalance for FY 2019-20 falls by $156 million, and by $439 million in FY 2022-23 (the last year projected in the November 2017 report). Additionally, the projected annual imbalances decline over the forecast period.[17]

For FY 2018-19, the analysis projects that revenues and expenditures are roughly balanced after incorporating (1) the prior year surplus, (2) current year adjustments to the beginning balance, (3) prior year lapses, (4) the IFO's updated revenue estimates (+$300 million from the IFO's official estimate) and projected refund reserve, (5) appropriations enacted for the current fiscal year and (6) an assumed supplemental appropriation (detailed below). Net revenues for the fiscal year decline by 1.3 percent (due to the non-recurrence of $1.9 billion in one-time revenues received in FY 2017-18) and expenditures increase by 3.0 percent.[18]

The enacted budget for FY 2018-19 relies on a $200 million transfer from the Pennsylvania Professional Liability Joint Underwriting Association (JUA) as a one-time funding mechanism to offset DHS program costs. The transfer has been challenged in federal

[15] The structural imbalance computation assumes a "current services" baseline, or the expenditures necessary to maintain the current level of real services provided to residents of the Commonwealth as in the base year (FY 2018-19). See Table 5.3 for a comparison of the current services vs. cost-to-carry expenditure forecast.

[16] See *Economic and Budget Outlook: Fiscal Years 2017-18 to 2022-23*: http://www.ifo.state.pa.us/download.cfm?file=/Resources/Documents/Five_Year_Outlook_2017.pdf

[17] In previous reports, the fiscal imbalances generally grew over time.

[18] Expenditure growth of 3.0 percent incorporates the $200 million assumed DHS appropriation for FY 2018-19.

court and it is uncertain whether these funds will be received in the current fiscal year. The improved General Fund revenue outlook for FY 2018-19 would enable these costs to be covered with a supplemental in the current fiscal year. The General Fund financial statement in Table 6.1 includes the impact of a $200 million supplemental in the event that the JUA transfer does not occur.

Table 6.1
General Fund Financial Statement

Fiscal Year	17-18	18-19	19-20	20-21	21-22	22-23	23-24
Beginning Balance[1]	-$1,524	-$39	--	--	--	--	--
Current Year Revenues	34,567	34,199	$35,233	$36,546	$37,695	$38,528	$39,838
Less Refund Reserve	-1,339	-1,392	-1,451	-1,499	-1,560	-1,618	-1,677
Net Revenue	33,228	32,808	33,782	35,047	36,135	36,910	38,161
State Expenditures[2]	-31,948	-32,718	-35,616	-36,740	-37,706	-38,785	-39,870
	--------	--------	--------	--------	--------	--------	--------
Current Year Balance	1,280	89	-1,834	-1,693	-1,571	-1,875	-1,708
Less Assumed DHS Supplemental	0	-200	0	0	0	0	0
Adjustment for Lapses[3]	267	150	125	125	125	125	125
Preliminary Ending Balance	**22**	**0**	**-1,709**	**-1,568**	**-1,446**	**-1,750**	**-1,583**

Note: figures in dollar millions.

[1] Beginning balance omitted for FY 2019-20 and thereafter. Includes adjustments.

[2] Based on appropriations. Includes current year lapses and approved supplemental appropriations.

[3] Prior year lapses and actual transfers to the Budget Stabilization Reserve Fund.

For FY 2019-20, the analysis projects that expenditure growth (8.2 percent) will exceed net revenue growth (3.0 percent) by a significant margin.[19] Total General Fund expenditures in FY 2019-20 are expected to increase by $2.70 billion, which is roughly $1.70 billion more than the projected increase in net revenues. The factors driving the unusually large growth in FY 2019-20 expenditures are associated with more than $1.0 billion in one-time funding sources used to balance the FY 2018-19 budget, as well as additional anticipated costs in the FY 2019-20 budget. Adjusting for these factors reduces FY 2019-20 expenditure growth from 8.2 percent to 3.3 percent, which is roughly in line with revenues for that year.

[19] Expenditure growth of 8.2 percent incorporates the $200 million assumed DHS appropriation for FY 2018-19.

The major factors driving the growth in FY 2019-20 expenditures include:

- The use of $351 million from the eliminated gross receipts tax on managed care organizations to offset DHS program expenditures in FY 2018-19.
- The use of $342 million in one-time settlement proceeds related to disputed payments under the Tobacco Master Settlement Agreement to offset DHS program costs in FY 2018-19.
- The $214 million increase in the appropriation for school construction and facilities reimbursement costs (commonly known as PlanCon) as a result of the use of bond proceeds to cover these costs in FY 2018-19.
- The repayment of the $165 million transfer from the Workers' Compensation Security Fund to the General Fund that occurred in FY 2016-17.
- The impact of a July 2018 Pennsylvania Supreme Court ruling on Act 80 of 2012 that reinstates cash assistance benefits to the GA population, which cost $150 million in the DHS budget prior to Act 80 of 2012.
- The expansion of Community HealthChoices, DHS's managed long-term care program, to the Southeast region in January 2019 and to the rest of the state in January 2020 ($139 million).
- The reduction in Federal Medical Assistance Percentages (FMAP) applied in FY 2019-20 relating to MA expansion and the Children's Health Insurance Program (CHIP) ($122 million).
- The reduction of Tobacco Settlement Fund revenues available to support DHS program expenditures as a result of debt service payments related to the $1.5 billion in revenue bonds issued in FY 2017-18. The forecast assumes $89 million in DHS program costs are shifted to the General Fund in FY 2019-20.
- The $44 million additional increase in Pennsylvania State Police (PSP) expenses resulting from the cap on PSP costs paid from the MLF under Act 85 of 2016.

Over the last four years of the forecast (FY 2019-20 through FY 2023-24), net revenues are projected to increase at an average rate of 3.1 percent per annum, outpacing average expenditure growth of 2.9 percent per annum.[20] These trends assume the absence of a recession (see Table 3.7 for more information on the impact of a recession on revenue projections) and result in a reduced imbalance over time. Three factors drive the lower growth in expenditures: (1) SERS and PSERS employer contribution rates stabilize, (2) a contraction of the school age population restrains the growth of Pre-K-12 expenditures and (3) the aging of the Commonwealth's workforce (high wage employees retire and are replaced with less experienced, lower wage staff).

[20] Excluding the new transfer from SUT to the Public Transportation Trust Fund ($494 million in FY 2023-24), the average net revenue growth is 3.4 percent per annum.

It is noted that the report characterizes the projected disparity between revenues and expenditures as "potential." All projections are sensitive to changes in the economic forecast and any modification to existing law or policy could have a long-term impact on revenues or expenditures. As a result, the financial statement contained in this report is best used as a reasonable benchmark to assess broad trends that impact the Commonwealth's fiscal position.

Appendix

Demographics

The IFO demographics forecast uses a cohort-component model in which birth, death, and migration rates are projected separately for male and females. Projections were made by single-year ages using data from the Pennsylvania Department of Health and the U.S. Census Bureau. The projections use the July 1, 2017 Census population estimates as the base year of the forecast.

From the base year, the IFO projected birth, death and net migration rates for Pennsylvania residents. The projection for births was based on a three-year average birth rate from 2014 to 2016. The model used averages for four groups of females: 13 to 18 year olds, 19 to 22 year olds, 23 to 29 year olds and 30 to 50 year olds. Birth rates for females age 22 or younger were assumed to decline slightly over time based on recent historic trends. Birth rates for females age 23 to 29 were held constant at the computed three-year average. The birth rates for females age 30 and older were assumed to increase based on recent historic trends.

Similarly, deaths were projected using a three-year average death rate from 2014 to 2016. Death rates for those below age 65 were held constant at the three-year average. Death rates for those age 65 and older were assumed to decline by a small amount each year of the forecast based on recent historical trends. These rates were then applied to the projected population.

Net migration was calculated using net domestic migration and net international migration. Net domestic migration was assumed to be approximately -20,000 per year. That level is consistent with recent data published by the U.S. Census Bureau and Internal Revenue Service. The distribution of net domestic migration by age was calculated using the U.S. Census Bureau's 2012-2016 Five-Year American Community Survey. Net international migration was assumed to be approximately 35,000 per year. The age distribution for net international migration was estimated using a variety of sources including: 2012-2016 Five Year American Community Survey and the Migration Policy Institute. **Table A.1** provides a summary of single year population estimates and projections from 2015 through 2025.

Table A.1
Pennsylvania Population Projections 2015 to 2025

Age	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
0-4	714	711	709	706	704	702	703	706	707	707	707
5-9	737	732	729	722	720	717	713	707	704	702	700
10-14	760	754	755	753	747	742	737	730	724	721	718
15-19	830	823	816	807	799	788	781	780	778	772	767
20-24	863	847	832	825	819	818	814	805	796	788	777
25-29	858	864	871	872	867	853	843	835	829	823	822
30-34	796	806	817	831	850	867	877	884	885	879	866
35-39	739	754	770	784	795	803	814	824	838	857	874
40-44	757	727	716	716	723	737	755	770	784	794	802
45-49	839	833	819	800	776	749	721	710	710	717	731
50-54	930	904	880	857	835	822	818	805	786	763	737
55-59	951	950	938	924	915	901	877	856	834	812	800
60-64	840	856	874	890	897	901	902	892	879	870	856
65-69	696	730	727	740	759	780	797	816	831	838	842
70-74	499	508	552	573	601	631	663	663	676	694	714
75-79	367	373	386	407	420	431	440	480	500	524	551
80-84	282	280	279	282	286	288	293	304	322	334	343
85+	333	335	335	337	336	338	340	341	344	347	349
Total	**12,791**	**12,787**	**12,806**	**12,827**	**12,848**	**12,869**	**12,889**	**12,908**	**12,925**	**12,942**	**12,957**

Note: thousands of residents.

Sources: The 2015 through 2017 data are from the U.S. Census Bureau 2017 Population Projections. The 2018 through 2025 data are projections by the IFO using data from the U.S. Census and PA Department of Health. Calculations by the IFO.

Economics

The economic forecast used for this report follows the general methodology used by the U.S. Congressional Budget Office (CBO). The approach is a simplified "growth accounting" framework, where real economic output or Gross Domestic Product (GDP) is equal to the product of (1) growth in employment and (2) growth in average worker output, also known as labor productivity. For example, if the number of individuals employed grows by 1.0 percentage point and the average productivity of all workers grows by 0.5 percentage points, then real economic growth would equal (1.01) * (1.005) - 1.0, or 1.5 percent. Hence, an increase (decrease) in employment growth or labor productivity will translate into higher (lower) economic growth.

The state economic forecast is built upon four basic assumptions. They are as follows:

- The Federal Reserve achieves its target inflation rate of 2.0 percent, as measured by the personal consumption expenditures price index. Based on historical trends, the more widely-used consumer price index (CPI-U) would increase at a slightly faster pace, and the analysis assumes that rate is 2.1 percent.
- Regional inflation, as measured by the Philadelphia CPI-U, grows at the same rate as the U.S. CPI-U.
- Statewide labor productivity reverts to a historical average, and is consistent with U.S. projections.
- The average worker's wage grows by inflation plus a modest premium that is consistent with historical trends for the U.S. and Pennsylvania.

The economic forecast is somewhat different than forecasts typically issued by government entities or private firms. The forecast assumes that certain economic variables revert to historical rates of growth that are consistent with (1) forecasts for the U.S. economy and (2) demographic projections by the IFO. The main purpose of the forecast is to serve as a neutral benchmark against which policymakers could assess the sustainability of fiscal policies over a five-year time horizon. Therefore, the economic forecast employs a simple methodology and does not attempt to capture the many intricacies of the Pennsylvania economy that may ultimately drive economic growth.

The model first establishes the real growth rate of the Pennsylvania economy, which is a function of employment growth and labor productivity. During the past four years, the Pennsylvania economy generated an average of 50,000 to 60,000 net jobs per year. The forecast assumes that trend continues through 2024. This assumption yields an upward trend in the employment to population ratio, which is consistent with recent historical data. (See **Table A.2**.) The data reveal a significant decline in that ratio in 2009 (not shown), but general recovery since that point. This trend is also consistent with the assumption of higher labor force participation rates, which was discussed in the economics chapter of this report.

The middle of Table A.2 displays the average output per worker, and the growth in that metric, which may also generally be viewed as labor productivity. For 2016, the average worker produced $110,800 of real output or production. The forecast assumes that labor productivity accelerates in 2018 and reverts to a historical rate of growth of roughly 1.1 percent per annum. That level and trend is consistent with the national economic forecast published by the CBO in August 2018. Typically, Pennsylvania worker productivity lags the U.S. by a small amount.

The employment and worker productivity forecasts yield real economic growth of roughly 1.9 percent per annum. That rate is consistent with the U.S. forecasts issued by the CBO and IHS Markit. Those forecasts assume average U.S. economic growth of 1.9 percent per annum for 2019 through 2024.

The bottom of Table A.2 displays the forecast for the Philadelphia CPI-U. As noted, the forecast assumes that the regional inflation measure follows the level and trends of the national inflation forecast. The CBO forecast assumes that the national CPI-U will increase at an average rate of 2.4 percent per annum from 2018 to 2024. The average regional rate used by this report is slightly lower (2.1 percent).

The final primary economic variable is total wages and salaries paid to workers. The Pennsylvania forecast assumes that wages for the average worker will increase by the rate of inflation, plus a modest premium so that the purchasing power of those wages increases over time. For this analysis, that premium ranges from 0.8 to 0.9 percent per annum. The CBO forecast also includes a premium for U.S. workers, and the premium generally ranges from 1.0 to 1.4 percent per annum. The Pennsylvania premium is consistent with historical state trends. However, it should be noted that the premium is an average gain across all workers, and may not be shared equally by all workers across the income spectrum.

Given these assumptions, the average wage for all workers increases by roughly 3.0 percent per annum. If employment expands by 0.8 percent per annum, then total wages paid to all workers will increase by the product of those growth rates, or roughly 3.9 percent per annum. Similar to the other forecasts, Pennsylvania wages and salaries expand at a somewhat slower pace than the CBO national forecast (4.4 percent) of total wages.

<u>Data Sources</u>

Various sources were used to construct the Cash Income measure referenced in the economics section of this report. These sources are noted below, as well as the many sources used to derive the estimate of Pennsylvania retirement income. Further detail regarding the Pennsylvania Cash Income metric can be found in the Independent Fiscal Office's release entitled *Revenue Estimate Methodology* (June 2018).

Wages and Salaries - Data are from the U.S. Bureau of Economic Analysis Table SA4: http://www.bea.gov/regional/index.htm. Includes the resident adjustment for individuals who live in the state, but work in another state.

All Capital Income - Data are from the federal tax returns filed by Pennsylvania residents: https://www.irs.gov/uac/SOI-Tax-Stats-Historic-Table-2. Capital income includes dividends, interest (taxable and tax-exempt), rents, royalties, estates and trusts and capital gains. All amounts are grossed up for non-compliance based on IRS compliance studies.

Business Net Income - Data are from the federal tax returns filed by Pennsylvania residents: https://www.irs.gov/uac/SOI-Tax-Stats-Historic-Table-2. Business net income includes the net income of sole proprietors (file a federal Schedule C, includes independent contractors), partnerships and S corporations. Amounts do not include unused net operating losses carried forward from previous years. All amounts are grossed up for non-compliance based on IRS compliance studies.

Retirement Income - Data are from various sources. SERS data are from the comprehensive annual financial report (CAFR): http://sers.pa.gov/newsroom_facts.aspx. PSERS data are also from the CAFR: http://www.psers.state.pa.us/content/publications/financial/cafr. Figures exclude 10 percent of payments that are paid to individuals who do not reside in the state.

Military pensions are from the Department of Defense: http://actuary.defense.gov/. Federal pensions are from the Office of Personnel Management: http://catalog.data.gov/dataset/fiscal-year-employee-and-survivor-annuitants-by-geographic-distribution. Local pensions are from the U.S. Census Bureau, Annual Survey of Public Pensions: https://www.census.gov/govs/retire/. Private defined pensions are from the U.S. Bureau of Economic Analysis, National Income and Product Tables 7.20 through 7.25. Exact figures are not available for individual states. The analysis assumes that the Pennsylvania share is equal to the share of Pennsylvania taxable pension amounts reported on federal tax returns (4.2 percent for 2016). Defined contribution plans use the same data source, tables and methodology, as well as information from the Investment Company Institute. The analysis assumes that Pennsylvania is 4.2 percent of the national total and that rollovers to IRAs comprise roughly two-fifths (40 percent) of the total benefit payouts reported, and hence, are not counted as income in that year.[21] Annuities are assumed to equal 10 percent of total defined benefit and defined contribution income based on retirement asset data published by the Investment Company Institute. Individual retirement account data are from federal tax returns and include a gross up for non-compliance and non-filers.

Income Maintenance - Data are from two sources. Data for Social Security (retirement and disability) benefits are from the U.S. Social Security Administration Annual Statistical Supplement: https://www.ssa.gov/policy/docs/statcomps/supplement/. Data for all other income (veterans' benefits, unemployment compensation, Supplemental Nutrition Assistance Program, Earned Income Tax Credit, Supplemental Security Income, Worker's Compensation and railroad retirement benefits) are from the U.S. Bureau of Economic Analysis, regional data, Table SA35: http://www.bea.gov/regional/index.htm.

[21] This assumption is based upon the paper by Saeblehaus and Weiner, "Disposition of Lump-Sum Pension Distributions: Evidence from Tax Returns," National Tax Journal, Volume 52, No.3 (September 1999).

Table A.2
Pennsylvania Economic Variables

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Payroll Employment[1]	5,686	5,726	5,740	5,788	5,835	5,885	5,948	6,015	6,075	6,130	6,182	6,234	6,284	6,331
Change	65	40	14	48	47	50	63	67	60	55	52	53	50	47
Growth Rate	1.2%	0.7%	0.2%	0.8%	0.8%	0.9%	1.1%	1.1%	1.0%	0.9%	0.8%	0.8%	0.8%	0.8%
Residents: Age 20 to 69[1]	8,185	8,224	8,241	8,259	8,269	8,271	8,244	8,240	8,235	8,231	8,219	8,197	8,171	8,142
Employ / Population	69.5%	69.6%	69.6%	70.1%	70.6%	71.2%	72.2%	73.0%	73.8%	74.5%	75.2%	76.1%	76.9%	77.8%
Avg Output per Worker[1]	105.1	106.0	107.5	108.8	110.7	110.8	111.6	112.9	114.1	115.4	116.6	117.8	119.1	120.3
Growth Rate	0.1%	0.9%	1.4%	1.2%	1.7%	0.1%	0.8%	1.2%	1.1%	1.1%	1.0%	1.1%	1.1%	1.0%
Real GDP[2]	597.3	607.2	617.1	629.6	645.8	651.9	663.8	679.0	693.4	707.3	720.8	734.6	748.2	761.4
Growth Rate	1.3%	1.6%	1.6%	2.0%	2.6%	0.9%	1.8%	2.3%	2.1%	2.0%	1.9%	1.9%	1.9%	1.8%
Philadelphia CPI-U	233.8	238.1	240.9	244.1	243.9	245.3	248.4	252.9	258.0	263.4	268.9	274.5	280.3	286.2
Growth Rate	2.7%	1.8%	1.2%	1.3%	-0.1%	0.6%	1.3%	1.8%	2.0%	2.1%	2.1%	2.1%	2.1%	2.1%
Wages-Salaries[2]	269.7	280.0	285.2	296.4	308.3	312.5	324.8	338.1	351.7	365.5	379.8	394.4	409.3	424.6
Average Wage[1]	47.4	48.9	49.7	51.2	52.8	53.1	54.6	56.2	57.9	59.6	61.4	63.3	65.1	67.1
Growth Rate	2.7%	3.1%	1.6%	3.0%	3.2%	0.5%	2.9%	2.9%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%

[1] Thousands of units or dollars.
[2] Billions of dollars.

Revenues

Table A.3
General Fund Revenues

	Amounts ($ millions)						Regional	Nominal
	Corporate	Other	Sales and	Personal	All	General	CPI-U	State GDP
FY Ending	Net	Corporate	Use	Income	Other	Fund	(levels)	($ billions)
1998	$1,703	$2,295	$6,152	$6,236	$1,736	$18,123	167.2	$364.7
1999	1,725	2,363	6,606	6,684	1,850	19,227	169.8	382.2
2000	1,860	2,333	7,018	7,066	1,980	20,257	174.4	399.6
2001	1,603	2,260	7,204	7,492	2,003	20,562	179.1	417.3
2002	1,419	2,183	7,293	7,139	2,027	20,060	182.7	432.0
2003	1,397	2,354	7,520	7,106	2,938	21,315	187.0	447.3
2004	1,678	2,673	7,729	7,734	3,015	22,828	192.1	470.2
2005	1,921	2,830	8,000	8,747	2,810	24,309	200.6	495.1
2006	2,302	2,888	8,334	9,524	2,806	25,854	208.5	516.2
2007	2,493	2,984	8,591	10,262	3,121	27,449	214.1	542.9
2008	2,418	3,040	8,497	10,908	3,066	27,928	221.1	569.7
2009	1,980	2,854	8,136	10,199	2,361	25,530	223.1	576.7
2010	1,791	2,788	8,029	9,969	5,071	27,648	226.1	585.3
2011	2,132	2,761	8,590	10,436	3,579	27,497	230.3	606.0
2012	2,022	2,941	8,772	10,801	3,141	27,678	236.0	626.7
2013	2,423	2,766	8,894	11,371	3,192	28,647	239.9	648.8
2014	2,502	2,397	9,130	11,437	3,142	28,607	242.5	672.7
2015	2,811	2,305	9,493	12,107	3,875	30,593	244.1	697.7
2016	2,842	2,295	9,795	12,506	3,463	30,902	244.2	716.8
2017	2,751	2,030	10,004	12,664	3,463	31,669	247.1	738.0
2018	2,879	2,010	10,381	13,399	4,219	34,567	249.8	766.4
2019	3,149	2,051	10,963	13,980	5,898	34,199	256.5	797.0
2020	3,219	2,113	11,374	14,547	4,057	35,233	260.7	830.1
2021	3,306	2,142	11,721	15,342	3,981	36,546	266.2	864.2
2022	3,439	2,180	12,092	15,897	4,035	37,695	271.7	899.2
2023	3,580	2,217	11,995	16,600	4,087	38,528	277.4	935.3
2024	3,726	2,291	12,371	17,265	4,136	39,838	283.3	972.2
Average Annual Growth Rates								
1998 to 2008	3.6%	2.9%	3.3%	5.8%	5.9%	4.4%	2.8%	4.6%
2008 to 2018	1.8%	-4.1%	2.0%	2.1%	3.2%	2.2%	1.2%	3.0%
2018 to 2024	4.4%	2.2%	3.0%	4.3%	-0.3%	2.4%	2.1%	4.0%

Source: Executive Budget, various years. Projections by IFO.

Expenditures

Table A.4
General Fund Expenditures

FY Ending	Amount ($ millions) Education[1]	Human Services	Criminal Justice[2]	Treasury	All Other	General Fund	Regional CPI-U (levels)	Nominal State GDP ($ billions)
1998	$7,214	$5,553	$977	$649	$2,838	$17,230	167.2	$364.7
1999	7,511	5,853	1,042	788	3,069	18,263	169.8	382.2
2000	7,640	6,189	1,130	656	3,680	19,295	174.4	399.6
2001	8,041	6,480	1,161	414	3,766	19,862	179.1	417.3
2002	8,277	6,669	1,151	586	3,747	20,429	182.7	432.0
2003	8,509	6,530	1,247	393	3,721	20,400	187.0	447.3
2004	8,754	7,440	1,299	713	3,680	21,885	192.1	470.2
2005	9,407	7,886	1,331	450	3,980	23,054	200.6	495.1
2006	9,687	8,918	1,358	769	3,933	24,665	208.5	516.2
2007	10,461	9,304	1,420	900	4,212	26,298	214.1	542.9
2008	11,060	8,617	1,600	923	4,768	26,968	221.1	569.7
2009[3]	11,273	8,590	1,606	955	4,660	27,084	223.1	576.7
2010[3]	10,588	8,577	1,593	976	3,209	24,942	226.1	585.3
2011[3]	10,455	8,780	1,663	1,023	3,146	25,067	230.3	606.0
2012	10,491	10,495	1,856	1,090	3,097	27,031	236.0	626.7
2013	10,967	10,623	1,867	1,139	3,122	27,717	239.9	648.8
2014	11,114	11,045	1,998	1,117	3,121	28,395	242.5	672.7
2015	11,564	11,362	2,134	1,144	3,069	29,200	244.1	697.7
2016	12,103	11,516	2,235	1,177	3,096	30,127	244.2	716.8
2017	12,801	12,380	2,564	1,171	3,027	31,942	247.1	738.0
2018	13,243	12,151	2,438	1,121	2,995	31,948	249.8	766.4
2019	13,734	12,151	2,552	1,164	3,117	32,718	256.5	797.0
2020	14,355	13,955	2,608	1,300	3,398	35,616	260.7	830.1
2021	14,690	14,674	2,694	1,340	3,342	36,740	266.2	864.2
2022	14,997	15,148	2,740	1,375	3,445	37,706	271.7	899.2
2023	15,331	15,675	2,808	1,393	3,580	38,785	277.4	935.3
2024	15,648	16,237	2,855	1,438	3,692	39,870	283.3	972.2
Average Annual Growth Rates								
1998 to 2008	4.4%	4.5%	5.1%	3.6%	5.3%	4.6%	2.8%	4.6%
2008 to 2018	1.8%	3.5%	4.3%	2.0%	-4.5%	1.7%	1.2%	3.0%
2018 to 2024	2.8%	4.9%	2.7%	4.2%	3.5%	3.8%	2.1%	4.0%

[1] Includes State System of Higher Education and Thaddeus Stevens College of Technology.
[2] Prior to FYE 2017, Criminal Justice excludes the Board of Probation and Parole.
[3] Excludes expenditures supported by funds provided under the American Recovery and Reinvestment Act of 2009 (ARRA). Excluded ARRA amounts are: $1.2 billion (FYE 2009), $2.7 billion (FYE 2010) and $3.1 billion (FYE 2011).
Sources: Executive Budget, various years. Projections by IFO.

Other Funds

This report facilitates an assessment of the Commonwealth's fiscal condition by providing a detailed analysis of General Fund revenues and expenditures for the current fiscal year and the next five fiscal years. In addition to the General Fund, the Commonwealth maintains numerous special funds dedicated to specific purposes. In general, this report does not address those funds; however, three special funds have unique implications for General Fund expenditures.

Table A.5
Other Fund Disbursements to Offset General Fund Expenditures

Fiscal Year	Lottery[1]	Tobacco[2]	Oil & Gas[3]	Total
2007-08	$249	$206	$4	$459
2008-09	301	248	12	561
2009-10	178	263	19	460
2010-11	178	228	24	430
2011-12	178	290	60	528
2012-13	309	255	68	632
2013-14	330	256	102	688
2014-15	477	364	137	978
2015-16	310	284	86	680
2016-17	308	297	50	655
2017-18	253	303	58	614
2018-19	308	322	61	691
2019-20	308	199	50	557
2020-21	308	184	50	542
2021-22	308	184	50	542
2022-23	308	184	50	542
2023-24	308	184	50	542

Note: figures in dollar millions.

[1] Includes MA Long-Term Care, Home and Community-Based Services, Community HealthChoices and MA Transportation.

[2] Includes MA for Workers with Disabilities, Long-Term Care, Home and Community-Based Services, Community HealthChoices and Uncompensated Care.

[3] Includes General Government, State Parks and State Forests.

For recent fiscal years, General Fund appropriations for the Departments of Human Services and Conservation and Natural Resources have been supplemented by the Lottery Fund (Human Services), the Tobacco Settlement Fund (Human Services) and the Oil and Gas Lease Fund (Conservation and Natural Resources). **Table A.5** displays a history and forecast for special funds that augment General Fund expenditures.

Due to the interrelation between these special funds and certain General Fund appropriations, this appendix projects revenues and expenditures for the Lottery Fund, Tobacco Settlement Fund and Oil and Gas Lease Fund for FY 2018-19 through FY 2023-24. These forecasts inform the projection of General Fund appropriations found in the main body of the report. Unless otherwise noted, if special funds cannot sustain the same level of funding provided in prior years, the analysis assumes that future General Fund appropriations will increase to make up the difference.

Lottery Fund

The majority of Lottery Fund revenues support programs that address the needs of a growing elderly population in Pennsylvania. The Departments of Human Services (DHS), Revenue and Transportation receive General Fund and Lottery Fund appropriations. Lottery monies fund most of the budget for the Department of Aging, and that agency does not receive any General Fund appropriations.

For FY 2017-18, Lottery Fund expenditures ($1.80 billion) were roughly equal to funds available ($1.81 billion). (See **Table A.6**.) For future fiscal years, the analysis holds disbursements to programs administered by the Departments of Human Services and Transportation flat to maintain a small, positive ending balance.

Gross ticket sales are projected to grow at an average rate of 2.4 percent per annum for FY 2018-19 through FY 2023-24:

- Instant ticket sales grow by 3.4 percent per annum, based on trends in disposable cash income and the 18 or older population, who may legally purchase tickets.
- Multi-state lottery sales grow by 1.6 percent per annum after strong sales for the current fiscal year.
- Other traditional game (in-state lottery, numbers and raffle) sales decline by 1.0 percent per annum. Numbers games are projected to decline by 2.5 percent per annum, while in-state lottery sales are projected to increase by 2.1 percent per annum.
- For FY 2018-19, iLottery sales are projected to total $301 million while Keno sales total $45 million. Both games expand at a rate of 2.0 percent per annum through FY 2023-24.

The forecast projects that net revenues (gross ticket sales less prizes, commissions, transfers and other amounts) will grow at an average rate of 1.4 percent per annum from FY 2018-19 to FY 2023-24.

The forecast projects that total expenditures will increase by 1.6 percent per annum from FY 2018-19 through FY 2023-24. The department details are as follows:

- Department of Aging appropriations grow by 2.5 percent per annum. Those revenues are earmarked for general operations, PENNCARE, Pre-Admissions

Assessment, Caregiver Support, Alzheimer's Outreach, Pharmaceutical Assistance Fund and grants for senior centers. The Pharmaceutical Assistance Fund forecast assumes a decrease in appropriations because the program's income thresholds limit the growth in the eligible population. Other programs are projected based on trends for the 65 or older age cohort or the total population and the CPI-U.

- Department of Revenue appropriations grow by 1.9 percent per annum. Approximately two-thirds of appropriations are used for administrative and advertising expenses, vendor commissions and the payment of prize monies. The forecast projects that those operational costs grow in line with total game sales. The remainder is earmarked for the Property Tax Rent Rebate (PTRR) program for general operations and rebate claims. The PTRR forecast declines due to the program's statutorily set rebate amounts and income eligibility thresholds. As incomes rise over time, more households will exceed the income limits.
- Department of Transportation appropriations are held flat through the forecast period. The revenues are earmarked for the Older Pennsylvanians Shared Ride program and a transfer to the Public Transportation Trust Fund.

Table A.6
Lottery Fund Financial Statement

Fiscal Year	17-18	18-19	19-20	20-21	21-22	22-23	23-24
Beginning Balance[1]	**-$18**	**$4**	**--**	**--**	**--**	**--**	**--**
Gross Ticket Sales	4,221	4,691	$4,806	$4,933	$5,055	$5,172	$5,286
Less Field Paid Prizes & Comm.	-2,580	-2,942	-3,027	-3,121	-3,212	-3,301	-3,387
Transfers, Earnings and Lapses	184	146	139	136	134	134	132
Net Revenue	**1,825**	**1,895**	**1,918**	**1,948**	**1,977**	**2,005**	**2,031**
Funds Available	**1,807**	**1,899**	**1,918**	**1,948**	**1,977**	**2,005**	**2,031**
Aging	534	520	532	545	558	572	587
Human Services	253	308	308	308	308	308	308
Revenue	837	862	892	906	920	933	946
Transportation	179	179	179	179	179	179	179
Total Expenditures	**1,803**	**1,869**	**1,911**	**1,938**	**1,965**	**1,992**	**2,020**
Ending Balance	**4**	**30**	**7**	**10**	**12**	**13**	**11**

Note: figures in dollar millions.

[1] Beginning balance omitted for FY 2019-20 and thereafter.

- The DHS appropriations for Home and Community-Based Services, Medical Assistance – Transportation Services, Medical Assistance – Long-Term Care and Medical Assistance – Community HealthChoices are held flat through the forecast period.
- The small annual fund balances projected for FY 2019-20 through FY 2023-24 imply the fund may support appropriations at current levels without legislative or policy changes to boost net income or move appropriations currently supported by the Lottery Fund to the General Fund.

Tobacco Settlement Fund

The Tobacco Settlement Fund receives monies paid to the Commonwealth under the Tobacco Master Settlement Agreement. The agreement ended litigation between certain large tobacco companies and state attorneys general regarding the advertising, marketing and promotion of tobacco products, as well as the costs incurred by state Medicaid programs to treat smoking-related illnesses. The revenues received by the fund generally are used for health-related programs.

For FY 2017-18, expenditures ($369 million) exceeded receipts ($352 million), which reduced the fund balance from $124 million at the beginning of the fiscal year to an estimated $107 million at the end of the year (excludes federal funds). (See **Table A.7**.)

Tobacco Settlement Fund revenue projections for FY 2018-19 through FY 2023-24 are based on the schedule of annual payments to Pennsylvania included in the Master Settlement Agreement. The last strategic contribution payment was received in the Spring of 2017.

As permitted by Act 43 of 2017, the Commonwealth Financing Authority issued twenty-year bonds with a principal amount of $1.5 billion backed by proceeds from the Master Settlement Agreement. Annual principal and interest payments totaling $115 million will begin in FY 2019-20. Funds to make the principal and interest payments will be transferred to the Commonwealth Financing Authority.

The expenditure forecast reflects the following assumptions:

- In June 2018, the Office of Attorney General announced it had reached a settlement with tobacco companies resolving past and future disputed payments under the MSA. Under the terms of the settlement, the Commonwealth will receive $357 million in FY 2018-19 on top of the $345 million in expected annual contributions. This one-time settlement amount will support the attorney general's criminal enforcement activities and other health-related programs in the General Fund. As a result, there is no impact to the Tobacco Settlement Fund in FY 2018-19. However, the Office of Attorney General announced that an additional $279 million will be received under the terms of the settlement over the following twelve years. For the purposes of this analysis, it is assumed that $23 million will be deposited annually in the Tobacco Settlement Fund over twelve years as a result of these additional payments. To the extent that these funds provide additional support for DHS programs, they absorb costs that would otherwise be shifted to the General Fund.

Table A.7
Tobacco Settlement Fund Financial Statement

Fiscal Year	17-18	18-19	19-20	20-21	21-22	22-23	23-24
Beginning Balance[1]	**$124**	**$107**	**$20**	**--**	**--**	**--**	**--**
Gross Settlements	349	345	345	$345	$345	$345	$345
Attorney General Settlement	0	0	23	23	23	23	23
Interest and Other	2	0	0	0	0	0	0
Total Revenues	**352**	**345**	**368**	**368**	**368**	**368**	**368**
Funds Available	**476**	**452**	**388**	**368**	**368**	**368**	**368**
Community & Economic Devel.	3	3	3	3	3	3	3
Health	63	108	67	67	67	67	67
Human Services	303	322	199	184	184	184	184
Commonwealth Financing Agency	0	0	115	115	115	115	115
Total Expenditures	**369**	**432**	**384**	**369**	**369**	**369**	**369**
Ending Balance	**107**	**20**	**4**	**0**	**0**	**0**	**0**

Note: figures in dollar millions. Excludes federal funds.

[1] Beginning balance omitted for FY 2020-21 and thereafter.

- The Department of Health expenditures are based on the FY 2018-19 percentage allocations of receipts for the Tobacco Use, Prevention and Cessation and the Health Research line items. These allocations are used for all years of the forecast and account for the $23 million deposited as a result of the settlement agreement announced by the Office of Attorney General in June 2018.
- Appropriations for the Department of Human Services are reduced by $89 million in FY 2019-20 and an additional $15 million in FY 2020-21 to account for the payment of debt service. The reductions in appropriations account for the $23 million deposited as a result of the June 2018 settlement agreement and maintain a small fund balance. Reductions in DHS appropriation lines are absorbed by the General Fund.

Oil and Gas Lease Fund

The Oil and Gas Lease Fund (OGLF) receives monies from the leasing of state lands for oil and gas drilling, in the form of rents, royalties, bonus payments and interest. The OGLF revenues support programs related to environmental conservation. Expenditures from the fund are made to the Department of Conservation and Natural Resources (DCNR), with priority given to state park and state forest programs and the Marcellus Legacy Fund, which supports other conservation-related programs.

For FY 2017-18, revenues ($85 million) were less than expenditures ($93 million), which reduced the fund balance from $29 million at the beginning of the fiscal year to $20 million at the end of the year. For FY 2018-19, General Fund appropriations ($121 million) supplied the majority of DCNR funding. Appropriations from the OGLF include $12 million to state park and state forest programs, $49 million for DCNR's general government operations and a $35 million transfer to the Marcellus Legacy Fund. Based on revenues of $80 million, the fund balance is projected to be $4 million at the end of the fiscal year.

The forecast projects that royalty revenues will remain low in FY 2018-19, but eventually return to a level closer to the historical baseline. The reduction in royalty revenues in recent years is due to the dramatic reduction in the price of natural gas. Industry analysts project that prices will remain low through 2020, then gradually rise through 2024 as several large pipeline projects will be in service by 2020. Those projects, which have been delayed in recent years, should alleviate the oversupply of natural gas in Pennsylvania that has depressed regional prices.

The revenue projection uses a combination of data provided by DCNR, the Department of Environmental Protection and Bentek Energy. Royalties are forecasted using expected trends in price, production and pipeline capacity through the forecast horizon, with adjustments to reflect actual prices received from sales of natural gas extracted from state lands.[22] Rentals and bonus payments are projected to remain flat.

The forecast reflects the following assumptions:

- Expenditures from the fund represent statutory provisions for (1) an appropriation of up to $50 million annually for DCNR and (2) a $35 million transfer to the Marcellus Legacy Fund for distribution to the Environmental Stewardship Fund ($20 million for FY 2017-18 and thereafter) and the Hazardous Sites Cleanup Fund ($15 million for FY 2017-18 and thereafter). The amount of the transfer to the Marcellus Legacy Fund was modified by Act 44 of 2017.
- For the purpose of this financial statement and the DCNR forecast, the analysis assumes that the only expenditures from the fund are a $50 million

[22] Natural gas production on state lands is assumed to grow at the same rate as total state production (6.2 percent per annum from CY 2018 to CY 2024).

appropriation to support DCNR's operations and a $35 million transfer to the Marcellus Legacy Fund. The positive fund balances may be used to support other policy initiatives. However, the Pennsylvania Supreme Court has issued an opinion that restricts the use of the fund. Future case law will likely define the parameters of such restrictions.[23]

Table A.8
Oil and Gas Lease Fund Financial Statement

Fiscal Year	17-18	18-19	19-20	20-21	21-22	22-23	23-24
Beginning Balance[1]	**$29**	**$20**	**--**	**--**	**--**	**--**	**--**
Royalties	71	70	$79	$83	$90	$100	$113
Rents, Interest and Other	14	10	10	10	10	10	10
Total Revenues	**85**	**80**	**89**	**93**	**100**	**110**	**123**
Funds Available	**114**	**100**	**89**	**93**	**100**	**110**	**123**
Cons. of Natural Resources	58	61	50	50	50	50	50
Transfers to Other Funds	35	35	35	35	35	35	35
Total Expenditures	**93**	**96**	**85**	**85**	**85**	**85**	**85**
Ending Balance	**20**	**4**	**4**	**8**	**15**	**25**	**38**

Note: figures in dollar millions.

[1] Beginning balance omitted for FY 2019-20 and thereafter.

[23] Pennsylvania Environmental Defense Foundation v. Commonwealth, 161 A.3d 911 (Pa. Cmwlth. 2017).