

NOVEMBER 2017

ECONOMIC & **BUDGET OUTLOOK**



FISCAL YEARS 2017-18 TO 2022-23



INDEPENDENT FISCAL OFFICE



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 will 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

**Rachel Carson State Office Building
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Harrisburg, Pennsylvania 17105**

November 16, 2017

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 2017) or IHS Economics (October 2017). Demographic projections are from the Pennsylvania State Data Center based on tabulations from the 2016 Population Estimates by the U.S. Census Bureau. Historical revenue and expenditure data are from the Commonwealth’s *Consolidated Annual Financial Report*, 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
Director

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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) 2022-23. Based on the economic and demographic assumptions used by this report, the evaluation finds a long-term fiscal imbalance, as non-recurring revenues such as transfers, borrowing and fees do not provide support after the current fiscal year.

From FY 2017-18 to FY 2022-23, the forecast projects that General Fund revenues will increase at an average rate of 1.7 percent per annum. The underlying rate increases to 3.3 percent per annum if the front-loaded revenue package and a new sales tax transfer are excluded. Personal income and sales taxes motivate most revenue gains. By FY 2022-23, those revenue sources will comprise nearly three-quarters of General Fund revenues.

Motivated by outlays related to healthcare, and to a lesser extent pensions, expenditures increase at an average rate of 3.8 percent per annum. Expenditures for the Department of Human Services (DHS) expand at an average rate of 5.2 percent per annum. Excluding that agency, expenditures grow by 3.0 percent per annum.

Compared to the report released in November 2016, the estimated structural deficit for the end of the forecast period is roughly \$1 billion lower. The smaller deficit is largely due to actual and assumed cost savings built into baseline expenditure projections.

General Fund Projections							
Fiscal Year	16-17	17-18	18-19	19-20	20-21	21-22	22-23
Beginning Balance ¹	\$5	-\$1,538	--	--	--	--	--
Net Revenue ²	30,320	33,358	\$32,403	\$33,340	\$34,518	\$35,538	\$36,242
State Expenditures ³	-31,942	-31,951	-33,516	-35,330	-36,417	-37,447	-38,556
Current Year Balance	-1,622	1,407	-1,113	-1,990	-1,899	-1,909	-2,314
Adjustment for Lapses ⁴	79	210	125	125	125	125	125
Preliminary Ending Balance	-1,538	79	-988	-1,865	-1,774	-1,784	-2,189

Note: figures in dollar millions.

¹ Includes adjustments. Beginning balance omitted for FY 2018-19 and thereafter.

² Includes current year revenues less refund reserves.

³ Based on appropriations and executive authorizations.

⁴ Current year lapses plus prior year lapses.

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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) 2022-23. 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 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 the timing and scope of changes to federal tax laws and federal matching funds.

The economic projections displayed in this report motivate most General Fund revenues through FY 2022-23. The projections do not represent a formal economic forecast, but rather a controlled simulation. They assume that economic growth reverts to a level that is consistent with full employment, historical labor productivity gains and inflation expectations. In other words, the economic simulation assumes typical outcomes for (1) real state economic growth (roughly 2.0 percent per annum), (2) inflation (2.1 percent per annum) and (3) net jobs creation (45,000 to 50,000 annually). 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.

The report designates FY 2017-18 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 2022-23. The report assumes that expenditures grow in a manner that is sufficient to maintain the level of real services provided in the base year. Hence, most expenditure projections include an inflation adjustment to compensate for rising prices. Relevant service populations are allowed to expand (e.g., older residents who require long-term care) or contract (e.g., elementary school students) based on demographic projections. The analysis also assumes that the Commonwealth utilizes its authority to securitize Tobacco Settlement Fund revenues and transfer monies from special funds to the full extent permitted by statute.

The report projects General Fund revenues and the expenditures supported by those revenues. The report also includes projections for the Lottery, Tobacco Settlement and Oil and Gas Lease Funds. Certain expenditures 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. In the case of the Tobacco Settlement Fund, support for General Fund programs is assumed to decline based on debt service requirements related to securitization. The Appendix provides further detail regarding those funds.

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Section 2: Demographic Outlook

Demographics are a fundamental force that motivate long-term economic, revenue and expenditure trends. Demographic trends 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 from the Pennsylvania State Data Center, the official state demographer, with adjustments by the IFO.¹ Other data are sourced where appropriate.

Trends by Age Group

Demographic projections for Pennsylvania reveal the following trends for the two five-year periods that span 2015-20 and 2020-25 (see Table 2.1 and Figure 2.1):

- Total population increases by 165,000 (0.3 percent per annum) and 252,000 (0.4 percent per annum).
- The school age cohort (age 0 to 19) decreases by 16,000 (-0.1 percent per annum) and 42,000 (-0.3 percent per annum).
- The working age cohort (age 20 to 64) decreases by 102,000 (-0.3 percent per annum) and 65,000 (-0.2 percent per annum). This group includes most Millennials and Generation X in 2025.
- The retiree cohort (age 65 to 79) increases by 264,000 (3.2 percent per annum) and 284,000 (2.9 percent per annum). This group includes most of the Baby Boom generation in 2025.
- The elderly cohort (age 80+) increases by 18,000 (0.6 percent per annum) and 75,000 (2.2 percent per annum). This group includes most of the Silent generation in 2025.

For 2020 to 2025, broad demographic trends will impact the revenue and expenditure projections included in this report. For example, revenue growth could be affected by these trends:

- The forecast projects that the working age population (age 20 to 64) will contract during the five-year period (-65,000, -0.9 percent cumulative). If labor force participation rates do not increase, then this trend will restrain economic and revenue growth.

¹ The projection for 2017 was made by the IFO based on recent U.S. Census data. Population growth rates after 2017 are from the Pennsylvania State Data Center and are based on long-term growth trends.

- The continued transition of the large Baby Boom cohort into retirement will restrain total statewide wage growth. Those retirees will be replaced by lower-paid workers, and this natural “churning” will restrain total wages earned to a greater extent than historical trends.

Table 2.1
Pennsylvania Demographics: 2015 - 2020 - 2025

Age Cohort	Number of Residents (000s)			Gain or Loss (000s)		Avg. Annual Growth	
	2015	2020	2025	2015-20	2020-25	2015-20	2020-25
0-4	715	695	694	-19	-2	-0.5%	0.0%
5-9	736	721	703	-16	-18	-0.4	-0.5
10-14	760	746	734	-14	-12	-0.4	-0.3
15-19	829	862	850	33	-11	0.8	-0.3
20-24	857	848	923	-9	75	-0.2	1.7
25-29	864	824	837	-40	13	-0.9	0.3
30-34	798	874	810	76	-64	1.8	-1.5
35-39	739	803	889	64	86	1.7	2.1
40-44	757	731	796	-26	65	-0.7	1.7
45-49	839	757	741	-82	-16	-2.0	-0.4
50-54	930	829	743	-101	-86	-2.3	-2.2
55-59	950	906	805	-44	-101	-0.9	-2.3
60-64	839	901	864	62	-37	1.4	-0.8
65-69	696	769	841	73	73	2.0	1.8
70-74	500	627	715	127	88	4.6	2.7
75-79	367	431	555	64	124	3.3	5.2
80-84	283	292	350	9	58	0.6	3.7
85+	<u>334</u>	<u>343</u>	<u>360</u>	<u>9</u>	<u>17</u>	<u>0.5</u>	<u>1.0</u>
Total	12,792	12,957	13,209	165	252	0.3	0.4

Age Cohort Summary

0-19	3,039	3,023	2,981	-16	-42	-0.1%	-0.3%
20-64	7,573	7,472	7,407	-102	-65	-0.3	-0.2
65-79	1,563	1,827	2,111	264	284	3.2	2.9
80+	<u>617</u>	<u>635</u>	<u>710</u>	<u>18</u>	<u>75</u>	<u>0.6</u>	<u>2.2</u>
Total	12,792	12,957	13,209	165	252	0.3	0.4

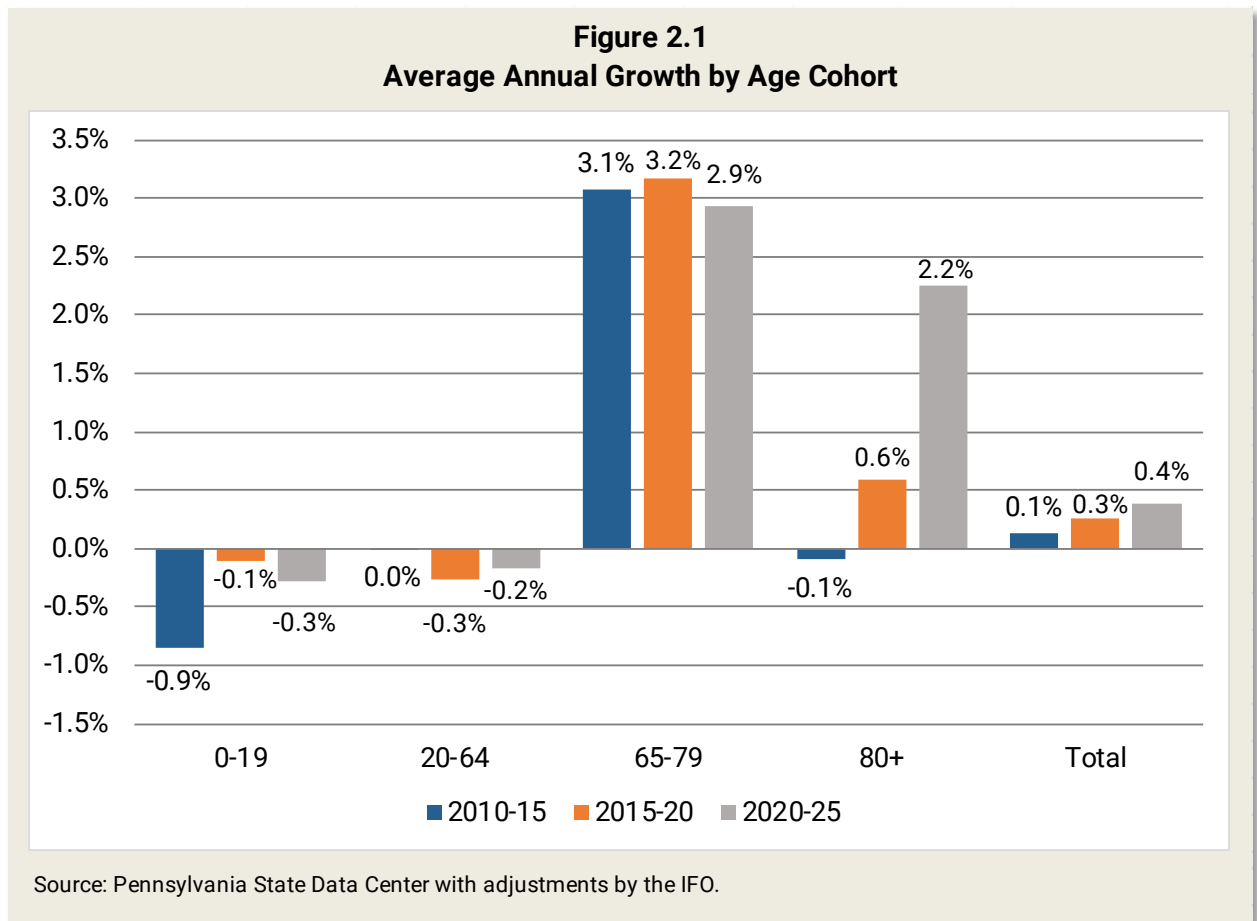
Note: thousands of residents. Detail may not sum to total due to rounding.

Source: Pennsylvania State Data Center with adjustments made by the IFO.

Demographic trends from 2020 to 2025 could also affect expenditure projections:

- The forecast projects a contraction of residents age 5 to 14 (-30,000, -2.0 percent cumulative). That trend could affect basic education funding to the extent that policymakers consider per capita funding levels in their deliberations.
- The increase in the 65 and older age cohort (359,000, 14.6 percent) implies significant growth in demand for healthcare and long-term care services.

The subsections that follow provide further discussion of demographic trends through 2035. Single year demographic detail through 2025 can be found in the Appendix.



Pennsylvania Population Distribution

Figure 2.2 displays the Pennsylvania population distribution for 2020 based on generations. The distribution is characterized by two peaks comprised of Baby Boomers (age 55 to 74 in 2020, 24.7 percent of total population) and Millennials (age 15 to 34, 26.3 percent). Between those generations resides Generation X. Generation Z and the Silent Generation reside on the lower and upper tails of the distribution.

The Baby Boomers' share of the population in 2020 represents a material reduction of 2.0 percentage points since 2015 when that generation comprised 26.7 percent of the total state population. By contrast, Millennials increased by 0.4 percentage points.

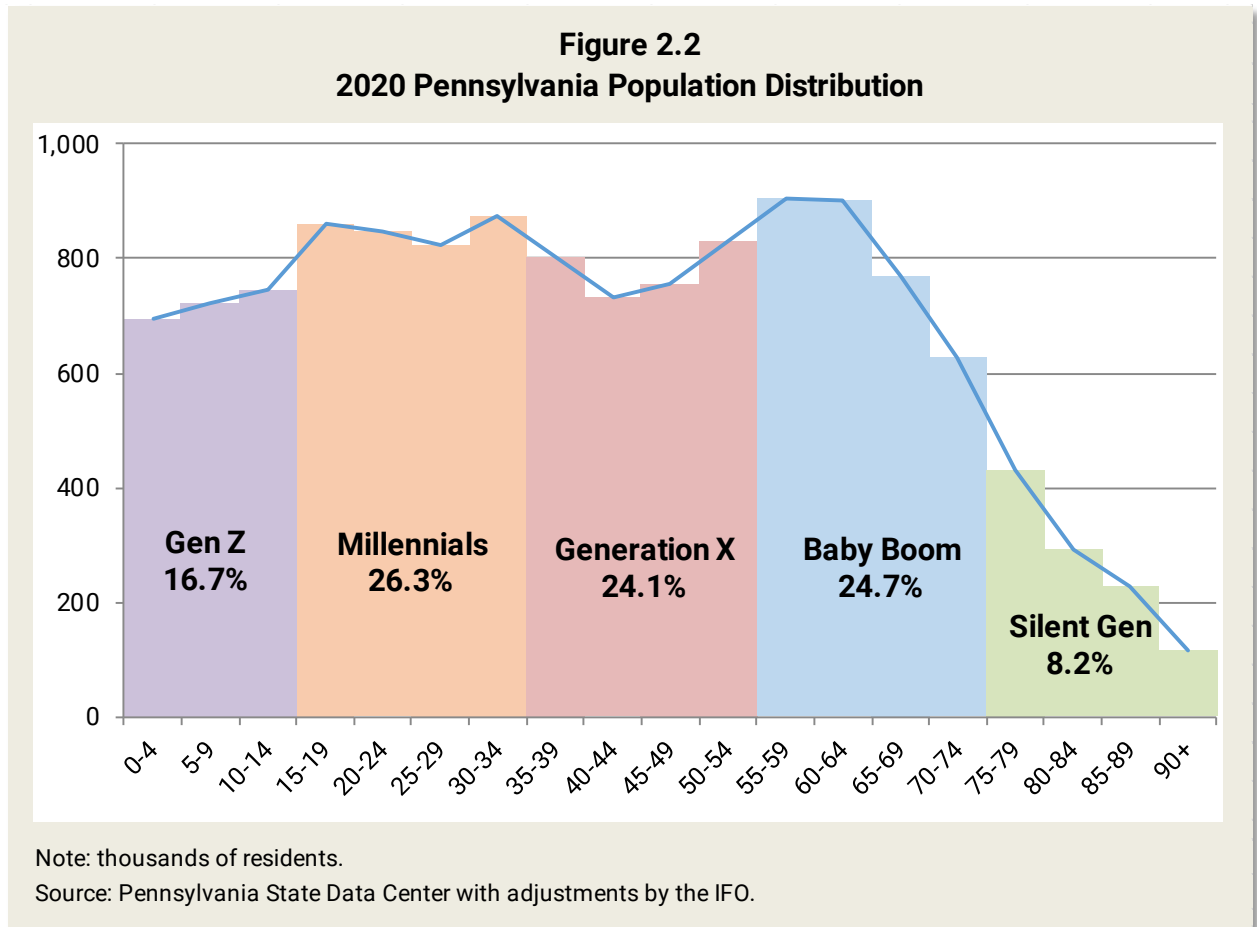
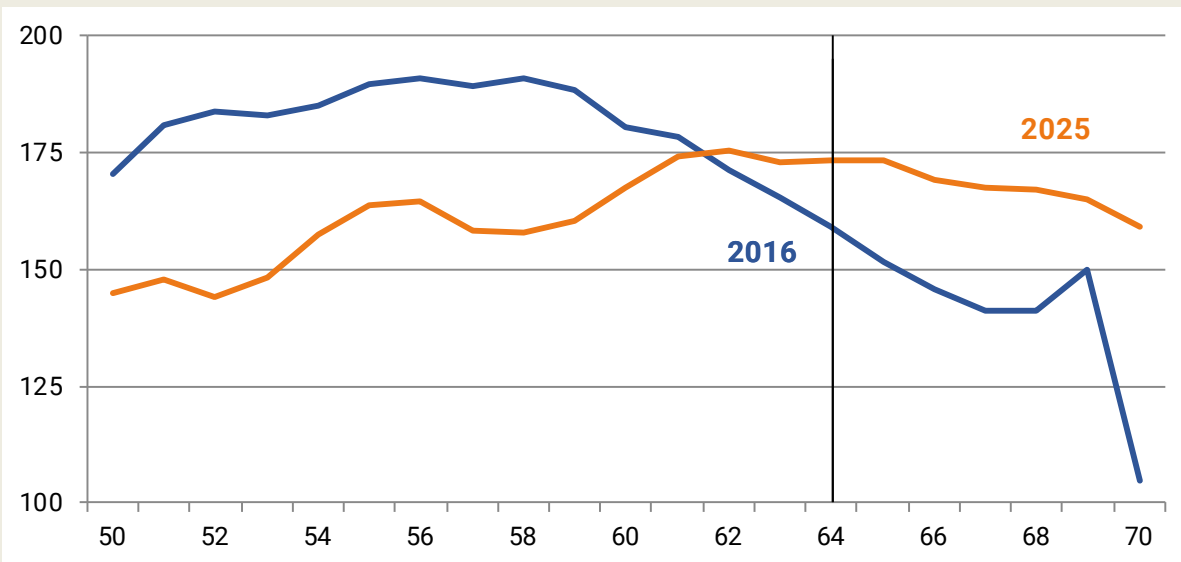


Figure 2.3 displays a distribution of residents age 50 to 70 for 2016 (estimated) and 2025 (projected). The figure provides two snapshots of the Baby Boom generation depicted in Figure 2.2. For 2016, the detail reveals the dramatic disparity (43.1 percent) in the number of residents age 69 compared to those age 70, which represents the leading edge of the Baby Boom generation. The vertical line depicts the average retirement age of 64 for Pennsylvania residents. The figure illustrates the large wave of retirements that will occur during the coming decade. Moving forward to 2025, the future distribution shows that the number of residents turning age 64 will have peaked, and retirements will generally decline over the decade that follows. That dynamic occurs due to the aging of the smaller Generation X.

Figure 2.3
Two Distributions for Residents Age 50 to 70: 2016 vs. 2025



Note: thousands of residents.

Source: Pennsylvania State Data Center with adjustments and calculations by the IFO.

Dependency Ratios

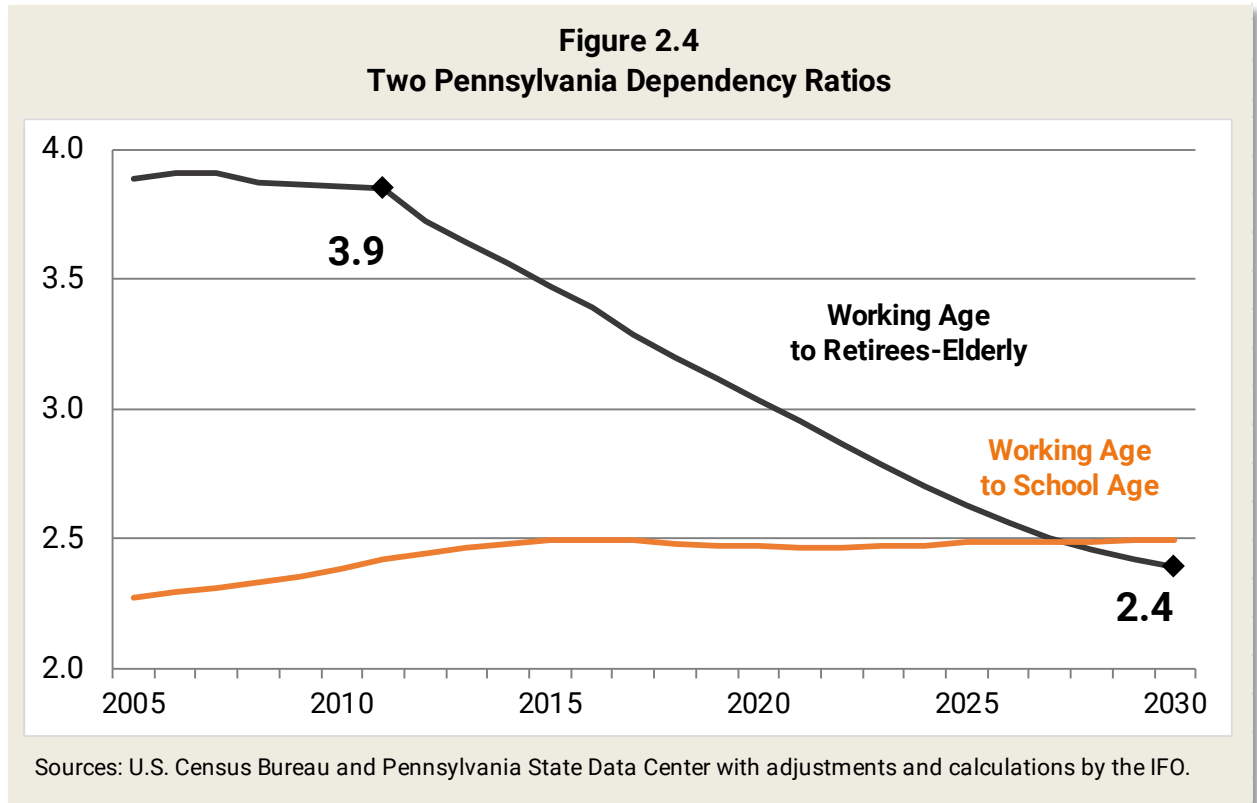
A common metric used by demographers is dependency ratios. These ratios provide a convenient method to summarize important trends in a state or national population. Two widely-used ratios are the youth and retiree-elderly dependency ratios. For this report, the youth dependency ratio is defined as the 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 2005 through 2030 reveal the following (see Figure 2.4):

- For 2015 through 2030, there is little change in the youth dependency ratio: there are roughly 2.5 working age adults for every resident under age 20. Both age groups experience a modest contraction through 2030, and the ratio remains stable.
- The retiree-elderly dependency ratio falls from 3.9 to 2.4. The ratio decreases every year through 2030. The downward slope corresponds exactly to the retirement of Baby Boomers.

Figure 2.4 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 a rapidly expanding elderly population. 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.



Regional Population Comparison

Table 2.2 displays population estimates for Pennsylvania, surrounding states and the U.S. for 2010 and 2016. 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 23.6 percent of Pennsylvania residents are under age 20, 1.8 percentage points lower than the nation. Compared to surrounding states, only West Virginia has a smaller share of population under age 20.
- Nearly three-fifths (59.0 percent) of the state population resided in the typical working age range (ages 20 to 64, not shown). That share is roughly the same as the U.S., and higher than three surrounding states.

- The share of 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 2016) was the sixth oldest state in the nation behind Maine (44.6), New Hampshire (43.0), Vermont (42.7), West Virginia (42.2) and Florida (42.1).

Table 2.2
Regional Population Comparison

	Levels (000s) and Growth			Shares and Median Age 2016		
	2010	2016	AAGR	< 20	65+	Median
Delaware	900	952	0.9%	24.1%	17.5%	40.2
Virginia	8,026	8,412	0.8	24.9	14.6	38.1
Maryland	5,789	6,016	0.6	25.0	14.6	38.5
New York	19,403	19,745	0.3	23.8	15.4	38.5
New Jersey	8,804	8,944	0.3	24.6	15.3	39.7
Ohio	11,541	11,614	0.1	25.1	16.2	39.3
Pennsylvania	12,712	12,784	0.1	23.6	17.4	40.7
West Virginia	1,854	1,831	-0.2	22.9	18.8	42.2
U.S.	309,348	323,128	0.7	25.4	15.2	37.9

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

Long-Run Change in Age Cohorts

Table 2.3 decomposes the change in the Pennsylvania population from 2015 to 2020 and the three five-year periods that follow into the same four age cohorts presented in Table 2.1: students (age 0-19), working (age 20-64), retired (age 65-79) and elderly (age 80+). Through 2025, the working age cohort contracts due to the aging of the Baby Boom generation. Those residents transition into the retiree population and that cohort increases at an average rate of roughly 3.0 percent per annum. These demographic trends through 2025 are known 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.

There is more uncertainty regarding population changes in the long term due to the variability of domestic and international migration. The forecast assumes an increase in net migration into the state. Based on U.S. Census data, new migrants are assumed to have an age profile that looks similar to historical trends where the median migrant (age 28 to 29 for all migrants) is considerably younger than the median Pennsylvania resident (age 41).

For 2025 to 2035, the demographic projections forecast that the elderly population (age 80+) will expand at a rate of 3.5 to 3.9 percent per annum. The youngest age cohort resumes expansion as the large Millennial generation forms households and has children. The (potential) labor force (age 20 to 64) also expands as the Millennial generation displaces smaller Generation X, which fully transitions into retirement.

Table 2.3
Long-Term Change in Age Cohorts

	Change in Number (000s)				Cumulative
	2015-20	2020-25	2025-30	2030-35	2015-35
Start of Period	12,792	12,957	13,209	13,470	12,792
Age 0 to 19	-16	-42	-12	22	-48
Age 20 to 64	-102	-65	0	118	-48
Age 65 to 79	264	284	121	-45	625
Age 80+	<u>18</u>	<u>75</u>	<u>151</u>	<u>163</u>	<u>406</u>
End of Period	12,957	13,209	13,470	13,727	13,727
	Average Annual Growth Rates				Cumulative
	2015-20	2020-25	2025-30	2030-35	2015-35
Age 0 to 19	-0.1%	-0.3%	-0.1%	0.1%	-1.6%
Age 20 to 64	-0.3	-0.2	0.0	0.3	-0.6
Age 65 to 79	3.2	2.9	1.1	-0.4	40.0
Age 80+	<u>0.6</u>	<u>2.2</u>	<u>3.9</u>	<u>3.5</u>	<u>65.9</u>
All Age Groups	0.3	0.4	0.4	0.4	7.3

Note: thousands of residents.

Source: Pennsylvania State Data Center with adjustments by the IFO.

State Migration Data

Beginning with 2030-35, the forecast projects that Pennsylvania births will not keep pace with deaths. As a result, population growth in the Commonwealth will rely heavily on migration, especially international migration. For international migration into the United States, only one data source is available.² For domestic migration, two data sources provide insight into domestic migration trends across states. The subsections that follow provide brief descriptions of those two data sources.

² 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.

Domestic Migration Data Sources

The U.S. Census Bureau's American Community Survey (ACS) and the Internal Revenue Service (IRS) publish annual domestic migration data for all states. The two data sources include different types of migrants and have relative strengths and weaknesses.

The ACS is an annual survey of residents based on where the respondent currently lives, even if the residence serves as a temporary domicile. For example, a survey respondent who is an 18-year-old out-of-state college student is counted as a migrant into the state even though the parents' residence may serve as their permanent address. The primary advantages of the ACS data are that (1) it reflects all segments of the population even if individuals do not have taxable income (e.g., certain dependents and elderly) and (2) the publicly available micro-level dataset includes the age of all respondents (and any family members) included in the survey. The main weakness is that data will contain survey error. The five-year survey results can be used to minimize survey error, but those migration patterns, which reflect a five-year average, may not reflect migration patterns during the past year.³

The IRS migration data are based on the address reported on federal tax returns and use a filer's permanent address. Therefore, an 18-year-old out-of-state college student is not counted as migrating into Pennsylvania because they will likely still use their parents' address on the tax return, assuming that a return is filed. The primary advantage of IRS data is that they are based on a robust statistical sample of tax returns drawn from all residents who file a tax return. Hence, the data do not suffer from potential survey error, and the most recent year of IRS migration data can be utilized to provide insight into current migration patterns.

However, IRS tax data also have shortcomings. The data only reflect taxpayers and their dependents, and exclude individuals who do not file a tax return. The data will undercount senior citizens and other individuals who do not have taxable income or are not reported as a dependent on the federal tax return. Moreover, although IRS migration data provide standard age group tabulations, the groupings are based on the age of the primary filer, and do not reflect the ages of a spouse or dependents.

In general, ACS data will likely be more useful to researchers interested in the migration of all individuals, including those who may not file a tax return and those migrating to temporary locations (e.g., college). Conversely, IRS data may be more useful to researchers interested in the migration of individuals who have taxable income and would likely be active in the labor market. Regardless of the dataset used, both datasets reveal a small net domestic migration out of Pennsylvania to other states for recent years.

³ The five-year ACS data have a considerably smaller survey error (i.e., a narrower confidence interval) because the dataset contains many more observations than the one-year ACS data.

American Community Survey (ACS) Data

The U.S. Census Bureau publishes an ACS five-year (2011-2015) file that includes micro-level data on state migration. Table 2.4 displays the five-year Pennsylvania average annual migration inflows and outflows from 2011 to 2015. These data exclude international migration because the ACS only reports international migration inflows, but not outflows.

Table 2.4
Average Annual Domestic Migration by Age, 2011-2015

Age	Inflow to PA	Outflow from PA	Net Migration
0-19	63,951	58,059	5,892
20-24	36,960	41,305	-4,345
25-30	33,019	37,106	-4,087
30-39	37,441	36,618	823
40-49	20,645	23,054	-2,409
50-59	17,077	19,009	-1,932
60-69	10,800	16,665	-5,865
70+	<u>9,405</u>	<u>12,695</u>	<u>-3,290</u>
Total	229,298	244,511	-15,213
State¹	Inflow to PA	Outflow from PA	Net Migration
New Jersey	38,979	21,324	17,655
New York	32,116	22,652	9,464
Maryland	17,318	14,558	2,760
Florida	14,934	27,679	-12,745
Ohio	12,274	15,356	-3,082
Virginia	11,216	13,373	-2,157
All Other States	<u>102,461</u>	<u>129,569</u>	<u>-27,108</u>
Total	229,298	244,511	-15,213

¹ States selected by largest inflow of individuals to Pennsylvania.

Source: U.S. Census Bureau, 2011-2015 American Community Survey.

From 2011 to 2015, the ACS data show that Pennsylvania experienced an average annual net outflow of residents to other states (-15,213). More than half of those leaving (55.8 percent) and entering (58.4 percent) the state were age 30 or younger. Nearly all age groups recorded a net outflow, except for a large net gain for the 0 to 19 age group and a minor gain for the 30 to 39 age group. Across all states, Florida received the largest annual net outflow (-12,745) from Pennsylvania, likely due to retirees moving for reasons related to lifestyle and weather. In contrast, New Jersey had the largest net inflow to Pennsylvania (+17,655). New York (+9,464) and Maryland (+2,760) also had positive net inflows into Pennsylvania.

Table 2.5
Average Annual Domestic Migration: Age 18 to 24

Age	Inflow to PA	Outflow from PA	Net Migration
18	17,417	10,129	7,288
19	9,484	9,522	-38
20	7,944	6,682	1,262
21	6,156	5,974	182
22	8,365	9,997	-1,632
23	8,222	10,446	-2,224
24	<u>6,273</u>	<u>8,206</u>	<u>-1,933</u>
Total	63,861	60,956	2,905

State ¹	Inflow to PA	Outflow from PA	Net Migration
New Jersey	15,798	3,616	12,182
New York	9,312	7,735	1,577
Maryland	5,534	4,033	1,501
Ohio	3,839	4,890	-1,051
Virginia	2,716	4,233	-1,517
California	2,575	3,342	-767
All Other States	<u>24,087</u>	<u>33,107</u>	<u>-9,020</u>
Total	63,861	60,956	2,905

¹ States selected by largest inflow of individuals to Pennsylvania.

Source: U.S. Census Bureau, 2011-2015 American Community Survey.

The college age cohort is an important component of state migration patterns. For 2011 to 2015, the data show that the state had an average net gain of approximately 2,900 individuals in the college age cohort (age 18 to 24). The ACS data find that a relatively large number of 18 year-olds (roughly 17,400) migrated into Pennsylvania each year. (See Table 2.5.) It is likely that most of those 18 year-olds are students pursuing higher education in Pennsylvania. Upon graduation, some out-of-state students and Pennsylvania residents find employment in other states. While there is a net out-migration of those age 22 to 24, the ACS data show that Pennsylvania maintains a positive net inflow for the entire college age cohort.

Internal Revenue Service (IRS) Data

The IRS publishes annual data files that use taxpayer returns to track migration patterns between states. The data represent PA taxpayers and their claimed dependents, but do not reflect the migration of individuals who do not file a federal tax return (e.g., certain elderly) or are not claimed as a dependent. Hence, the IRS data understate migration for certain segments of the population. Roughly 80 percent of the state population

is reflected on federal income tax returns through the number of exemptions claimed, and would therefore be included in the IRS migration data. As noted, the IRS data are based on the primary filer's permanent address, rather than a temporary address where a filer may have resided. For these reasons, migration estimates published by the IRS are generally lower than migration estimates published by the U.S. Census Bureau.

Table 2.6
Pennsylvania Domestic Migration - Tax Returns Filed in 2014 vs. 2015

	Non-Migrants		Inflow less Outflow		Outflow Share	
	Number Returns	\$ AGI (millions)	Number Returns	\$ AGI (millions)	Number Returns	\$ AGI (millions)
Under Age 26	401,953	\$10,408	-3,598	-\$137	4.8%	5.3%
Under 50k	366,096	7,640	-2,924	-69	4.6	4.4
50k-100k	32,097	2,061	-569	-36	6.8	6.9
100k+	3,760	708	-105	-32	9.3	10.3
Age 26-45	1,589,814	101,279	-4,620	-275	2.5	2.2
Under 50k	893,027	23,672	-2,461	-64	2.8	2.5
50k-100k	439,201	31,198	-1,426	-99	2.1	2.1
100k+	257,586	46,410	-733	-111	2.0	2.1
Age 46-64	1,838,029	177,624	-2,529	-388	0.9	1.0
Under 50k	750,341	20,609	-1,052	-27	1.1	0.9
50k-100k	595,748	43,156	-571	-41	0.6	0.6
100k+	491,940	113,859	-906	-320	0.9	1.3
Age 65+	1,043,371	71,020	-2,100	-222	0.8	1.1
Under 50k	616,000	12,591	-1,127	-22	0.8	0.7
50k-100k	255,081	18,389	-350	-25	0.8	0.8
100k+	172,290	40,039	-623	-175	1.2	1.4
All Ages	4,873,167	360,331	-12,847	-1,022	1.7	1.5
Under 50k	2,625,464	64,511	-7,564	-182	2.1	1.9
50k-100k	1,322,127	94,804	-2,916	-202	1.3	1.3
100k+	925,576	201,016	-2,367	-638	1.3	1.5

Note: Age groups represent the age of the primary tax filer. Figures represent number of filers who moved into or out of PA from tax year 2013 to tax year 2014 (returns filed in 2014 and 2015). Data exclude individuals not required to file a tax return. If all exemptions are included, net outflow across all age groups is -17,209 and outflow share for all ages is 1.4%.

Source: Statistics of Income Division, Internal Revenue Service.

Table 2.6 displays the number of returns filed for tax year 2014 for filers who did not migrate, the reported federal adjusted gross income (AGI) and the corresponding figures for net migrants (inflows less outflows). The table also provides detail by age group

across three income classes based on the age of the primary filer. The final columns display the rate of outflow, which is equal to the ratio of outflows to non-migrants plus outflows. The ratio illustrates the share of taxpayers (and income) from 2014 that moved out of state in 2015.⁴

The data reveal the following trends for individuals who filed returns in different states for tax years 2013 and 2014 (returns filed in calendar years 2014 and 2015):

- All age groups and income classes recorded net outflows. The largest relative outflow was taxpayers under age 26; the smallest was middle income taxpayers age 46 to 64.
- There is no clear pattern that suggests lower- or upper-income taxpayers are more inclined to migrate out of the state. Across all age groups, a somewhat higher proportion of low-income taxpayers migrated out of the state.

These same results hold if personal exemptions are used instead of the number of filers. That metric reveals a net outflow of -17,209 residents that is distributed across all age groups and income levels.

As noted, the IRS data do not reflect all migrants. In particular, the data undercount retirees, elderly and lower-income migrants who do not need to file tax returns. Overall, the data appear to represent roughly 80 percent of all residents. It is not known whether the omissions would appreciably alter the patterns from Table 2.6.

Labor Force Participation Rates

The demographic section concludes with a discussion of labor force participation rates. Given the size of the potential labor force (i.e., all residents age 16 or older), labor force participation rates determine the size of the actual 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 2.7 displays participation rates at five-year intervals for the U.S. and Pennsylvania. From 2001 to 2016, the Pennsylvania total labor force participation rate declined from 65.3 to 63.3 percent, a reduction of 2.0 percentage points. (See Table 2.7.) However, the rate has increased during the past two years from 62.4 percent (2014) and 62.8 percent (2015) (not shown in table).

⁴ The IRS data show a net outflow of \$1.0 billion in adjusted gross income. That result does not imply that the income is no longer part of the state economy. For example, it is possible that non-migrants fill job vacancies created by those who departed.

Table 2.7
Labor Force Participation Rates

Year	Total	Working Age	Age Groups (Both Genders)					
		20-64	16-19	20-24	25-44	45-54	55-64	65+
<u>Pennsylvania</u>								
2001	65.3%	79.8%	51.0%	75.4%	85.3%	83.7%	60.6%	12.0%
2006	64.4	78.5	45.2	73.3	84.3	82.2	64.8	14.4
2011	63.2	76.8	45.3	72.3	82.9	80.1	64.1	16.1
2016	63.3	78.1	42.9	75.5	84.0	82.5	65.8	20.1
<u>United States</u>								
2001	66.9%	79.5%	50.0%	77.1%	84.4%	82.3%	60.2%	13.1%
2006	66.2	78.5	43.6	74.6	83.4	81.9	63.7	15.4
2011	64.1	76.9	34.1	71.3	82.1	80.6	64.2	17.9
2016	62.8	76.3	35.2	70.5	82.0	80.0	64.1	19.3

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

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 (1.7 percentage point decline from 2001 to 2016) is similar to the U.S. (3.2 percentage point decline). Since 2011, the participation rate has increased 1.3 percentage points in Pennsylvania, but continued to decline for the United States (-0.6 percentage points).
- The participation rate for teenagers age 16-19 in Pennsylvania has decreased substantially over the last 15 years from 51.0 percent in 2001 to 42.9 percent in 2016. However, the 2016 participation rate was the highest rate since 2011. Similar long- and short-term trends for this age group occurred at the national level. For the U.S., the participation rate for 16 to 19 year olds has declined from 50.0 percent (2001) to 35.2 percent (2016).
- The participation rate for residents age 65 or older has increased significantly. From 2001 to 2016, the labor force participation rate increased 8.1 percentage points from 12.0 percent to 20.1 percent in Pennsylvania. Roughly half (4.0 percentage points) of this increase occurred in the last five years. For the U.S., the rate increased 6.2 percentage points from 2001 (13.1 percent) to 2016 (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 over 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.

Section 3: Economic Outlook

Six metrics provide a current snapshot of the Pennsylvania economy: (1) real state gross domestic product (GDP, excludes inflation), (2) nominal GDP, (3) the regional consumer price index (CPI-U), (4) personal income, (5) wages and salaries and (6) the annual change in payroll employment. 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 (2005-11 and 2011-17) and the forecast period (2017-23).

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 reverts to historical levels.

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

	2005-11	2011-17	2017-23
Real GDP	1.1%	1.8%	1.9%
Nominal GDP	3.3%	3.4%	4.0%
Philadelphia CPI-U	2.3%	1.1%	2.1%
Personal Income	3.7%	3.1%	4.3%
Wages and Salaries	2.8%	3.1%	3.9%
Annual Job Gains (000s)	2.7	43.1	52.6

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 1.5 percent in 2017 Q3 relative to the prior year. That rate is a clear improvement compared to the average productivity gain of 0.6 percent per annum from 2010 to 2016.

Table 3.2
Annual Growth Rates for Pennsylvania Economic Variables

	2016	2017	2018	2019	2020	2021	2022	2023
Real GDP	1.1%	1.8%	1.9%	1.9%	1.9%	2.0%	1.9%	1.9%
Nominal GDP	2.3%	3.8%	3.9%	4.0%	4.1%	4.1%	4.1%	4.1%
Philadelphia CPI-U	0.6%	1.7%	2.0%	2.1%	2.1%	2.1%	2.1%	2.1%
Personal Income	1.8%	4.0%	4.3%	4.3%	4.3%	4.2%	4.2%	4.2%
Wages and Salaries	1.3%	3.8%	3.8%	3.9%	3.9%	3.9%	3.9%	3.9%
Annual Job Gains (000s)	52.2	58.1	55.0	54.0	53.0	51.9	50.8	51.2

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

Table 3.3 displays the share of Pennsylvania real economic output or production by sector for 2004, 2010 and 2016, and average annual growth rates during those intervals. Measured by economic value, the professional-business service sector was largest in 2016, followed by the real estate-housing, manufacturing and wholesale-retail sectors. The real estate-housing sector is large because it includes the implicit value of housing services consumed by homeowners. A notable result is the significant growth of the mining sector since 2004. By contrast, the share of economic output attributable to the government sector contracted by more than two percentage points. Since 2010, real economic output for the sector has contracted due to an employment contraction at the local level.

**Table 3.3
Pennsylvania Real Economic Output**

Sector	Share of Real Economic Output			Avg. Annual Growth Rate	
	2004	2010	2016	2004-10	2010-16
Mining	0.8%	1.4%	3.5%	10.9%	18.0%
Construction	4.8	3.8	3.9	-3.1	2.4
Manufacturing	15.0	12.4	11.7	-2.1	0.7
Wholesale-Retail	12.7	11.3	10.8	-0.9	0.9
Information	4.2	6.8	7.5	9.6	3.3
Finance-Insurance	5.9	5.9	5.7	1.1	1.2
Real Estate-Housing	10.9	12.4	12.4	3.3	1.8
Professional-Business	11.6	12.5	13.2	2.4	2.6
Healthcare-Social Assist	8.9	9.4	9.5	1.9	1.9
All Government	11.7	11.1	9.5	0.2	-0.9
All Other Sectors	<u>13.5</u>	<u>13.1</u>	<u>12.3</u>	<u>0.5</u>	<u>0.7</u>
Total	100.0	100.0	100.0	1.1	1.7

Source: U.S. Bureau of Economic Analysis.

Employment Trends

Table 3.4 provides historical and current employment detail across sectors. The figures represent non-farm payroll employment and do not include (1) individuals employed in the agriculture or military sectors, or (2) independent contractors, sole proprietors and certain partners in partnership entities. From 2003 to 2010, the payroll employment data show:

- A significant contraction for the manufacturing sector.
- Robust expansion for the professional service, healthcare and leisure-hospitality sectors.
- Total non-farm payroll employment levels were roughly the same.

From 2010 to 2017, the preliminary data show a net gain of 323,000 payroll jobs. Notable trends include:

- A minor contraction for the manufacturing sector.
- Very strong gains for all service sectors located in the middle of the table.
- An employment contraction for all levels of government, especially for local government employment related to schools.

Table 3.4
Pennsylvania Non-Farm Payroll Employment

Sector	Employment Levels (000s)			Change (000s)	
	2003	2010	2017	03-10	10-17
Construction	246	215	245	-31	30
Manufacturing	712	560	552	-152	-9
Wholesale and Retail	886	844	849	-43	5
Transportation-Storage	220	234	282	13	48
Professional-Bus. Services	610	690	810	80	120
Healthcare and Social	772	900	1,009	129	108
Leisure and Hospitality	471	500	574	29	73
State-Federal Government	270	272	252	2	-20
All Local Government	482	499	450	16	-49
All Other Sectors	943	908	925	-34	17
Total	5,612	5,622	5,945	9	323

Note: Figures for 2017 are IFO estimates based on preliminary data through September.
Sources: U.S. Bureau of Labor Statistics, Current Employment Statistics. Forecast by IFO.

The employment data also provide insights into recent trends across sectors. For 2017, preliminary data through September show gains for most sectors except the mining, manufacturing and local government sectors. (See Table 3.5.) Other trends for 2017 include:

- The manufacturing sector contracts for the second consecutive year.
- The transportation-storage sector records a third year of strong gains.
- The healthcare (24,000) and leisure-hospitality (15,400) sectors continue to be the largest job generators for the Pennsylvania economy.

Table 3.5
Recent Changes in Pennsylvania Non-Farm Payroll Employment

Sector	Employment Levels (000s)			Change in Employment (000s)		
	2015	2016	2017	2015	2016	2017
Mining and Logging	33.9	24.9	23.2	-3.8	-9.0	-1.7
Construction	235.3	238.9	244.5	6.4	3.6	5.6
Manufacturing	567.6	558.3	551.5	0.0	-9.3	-6.8
Wholesale	223.3	219.8	219.6	0.3	-3.5	-0.2
Retail	633.0	633.8	629.0	0.8	0.8	-4.8
Transport and Storage	265.4	274.5	281.8	11.1	9.1	7.3
Information	84.9	84.6	83.5	-0.5	-0.3	-1.1
Finance and Insurance	254.1	253.7	254.8	-0.3	-0.4	1.1
Real Estate	62.1	63.0	62.7	1.2	0.9	-0.3
Professional Services	337.1	347.9	356.7	8.1	10.8	8.8
Management	132.7	135.3	140.9	0.0	2.6	5.6
Business Services	309.5	310.5	312.1	9.9	1.0	1.6
Education	230.1	236.4	240.2	-0.2	6.3	3.8
Healthcare and Social	961.0	984.7	1,008.7	11.1	23.7	24.0
Leisure and Hospitality	545.0	558.1	573.5	7.5	13.1	15.4
Other Services	254.9	257.6	260.5	1.4	2.7	2.9
Government	704.6	704.6	701.6	-6.5	0.0	-3.0
Federal	95.8	96.7	97.2	0.3	0.9	0.5
State	156.6	156.6	154.6	-0.1	0.0	-2.0
Local	<u>452.2</u>	<u>451.3</u>	<u>449.7</u>	<u>-6.7</u>	<u>-0.9</u>	<u>-1.6</u>
Total	5,834.5	5,886.6	5,944.8	46.6	52.2	58.1

Note: Figures for 2017 are preliminary.

Sources: U.S. Bureau of Labor Statistics, Current Employment Statistics. Forecast by IFO.

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).⁵ This income measure includes all income earned or received, and excludes income that is unrealized, imputed or accrued. (See Appendix for detail.)

Table 3.6 displays income snapshots for 2010, 2016 and 2022. Notable trends include the following:

⁵ Pennsylvania Cash Income referred to as Current Income in previous documents.

- From 2010 to 2016, wages grew by 3.1 percent per annum. The forecast projects that wage growth will accelerate to 3.9 percent per annum for 2016 to 2022.
- Business income is sensitive to economic expansions and contractions because much of the income is profits. The forecast projects business income will expand at an annual rate (5.5 percent) that exceeds wage growth because business profits generally increase (or contract) at a faster rate than wages paid to employees.
- The forecast projects strong growth for capital income (7.1 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 to generate income.
- Retirement income also outpaces economic growth as the number of residents over age 65 expands at an average rate of 2.7 percent per annum. The forecast assumes those retirees receive an annual Social Security cost-of-living-allowance of 2.2 percent for most years based on the Congressional Budget Office national economic forecast.

Table 3.6
Pennsylvania Cash Income

Source	Levels (\$ billions)			Share of Income			Avg. Ann. Growth	
	2010	2016	2022	2010	2016	2022	10-16	16-22
Wages-Salaries ¹	\$268.2	\$321.7	\$403.9	58.7%	57.8%	55.6%	3.1%	3.9%
Net Business	47.9	59.7	82.2	10.5	10.7	11.3	3.8%	5.5%
Capital	45.1	56.2	84.7	9.9	10.1	11.7	3.7%	7.1%
Retirement	68.5	94.2	127.1	15.0	16.9	17.5	5.5%	5.1%
Maintenance ²	<u>27.3</u>	<u>24.4</u>	<u>28.1</u>	<u>6.0</u>	<u>4.4</u>	<u>3.9</u>	<u>-1.8%</u>	<u>2.4%</u>
Cash Income	457.0	556.4	726.0	100.0	100.0	100.0	3.3%	4.5%

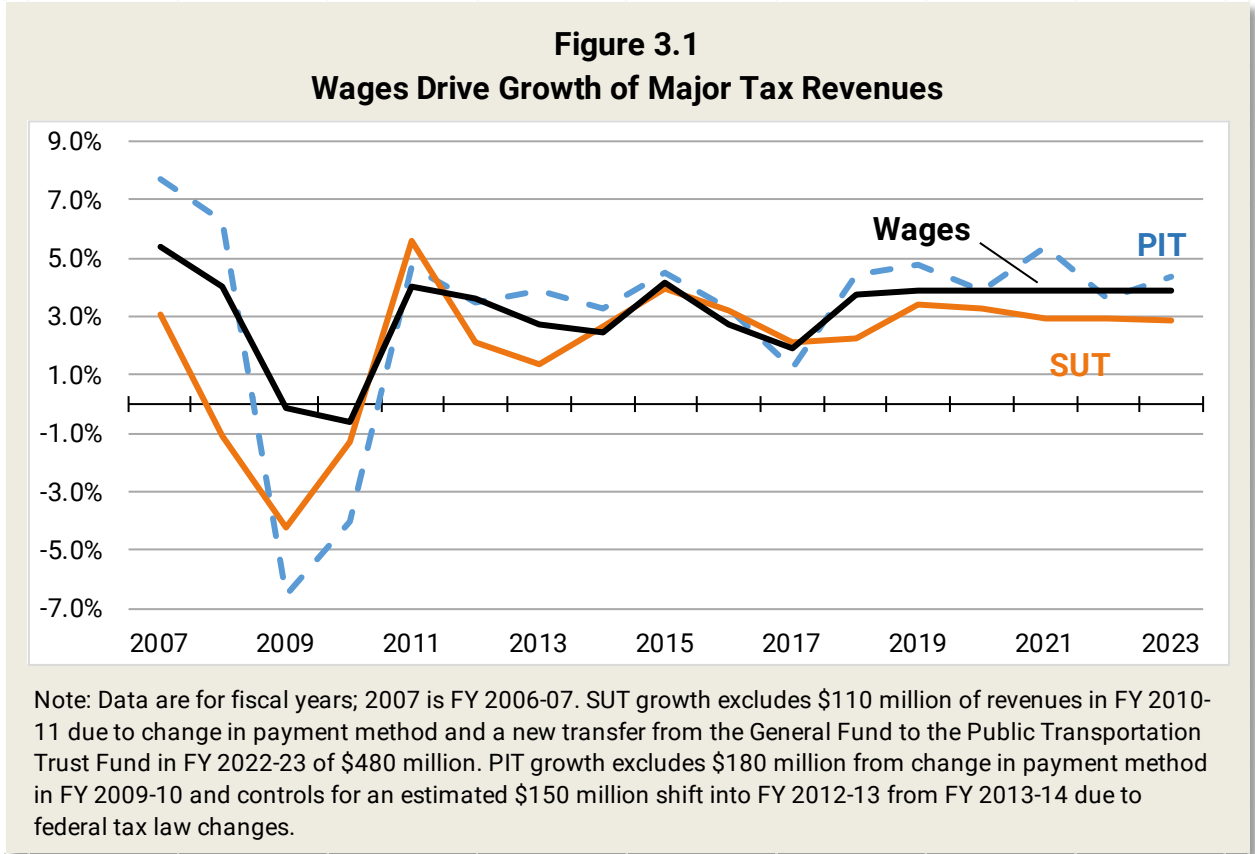
¹ Includes the U.S. Bureau of Economic Analysis resident adjustment.

² 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 key economic variable that determines General Fund revenue growth is wages and salaries paid to workers. Wages paid to workers motivates most personal income tax (PIT) and sales and use tax (SUT) revenues. Those two tax sources comprise roughly 73 percent of General Fund tax revenues for the current fiscal year. Figure 3.1 illustrates the very high correlation in the annual growth rates of wages, PIT and SUT since 2007. The forecast assumes this relationship continues through FY 2022-23. For the forecast period, PIT growth exceeds wage growth due to business profits, dividends and capital

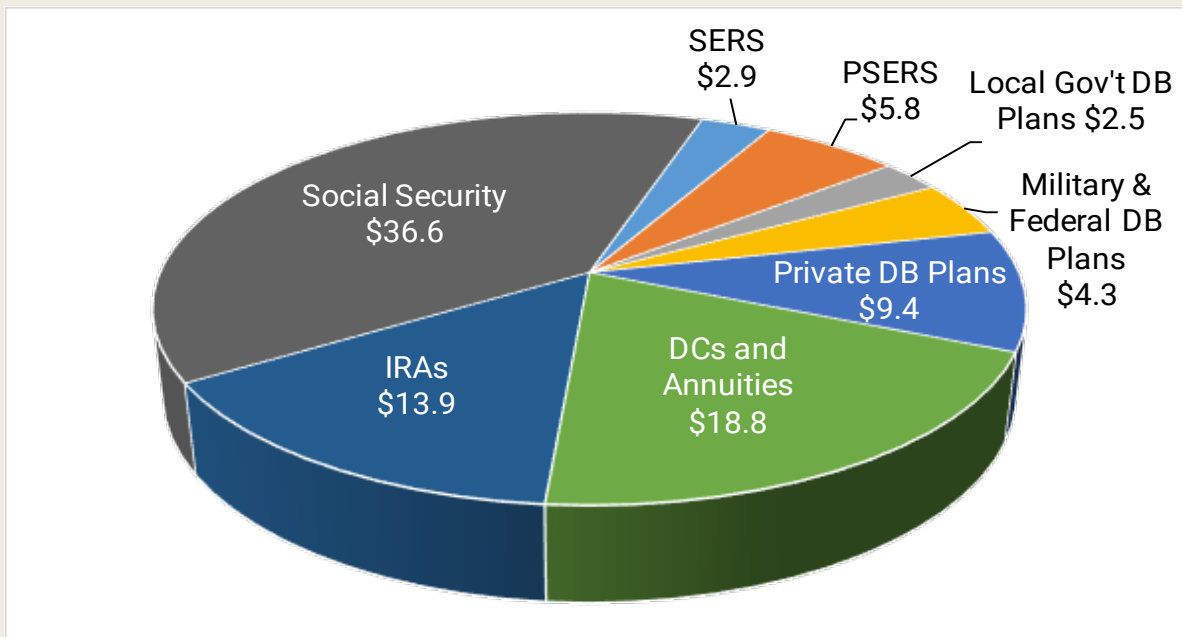
gains, which typically outpace wages paid to workers when the economy is not in a recession. By contrast, SUT growth is somewhat lower due to (1) tax base erosion related to more purchases of services over time and (2) increased purchases of non-taxable healthcare due to the aging of the state population.



Sources of Retirement Income

Retirement income will play a more prominent role in the Pennsylvania economy in the coming decade. Figure 3.2 provides additional detail on the sources of retirement income for 2016. By far, Social Security comprised the largest portion of retirement income (\$36.6 billion, 38.9 percent, excludes disability benefits). Data from the U.S. Social Security Administration show that 2.3 million residents received retirement or survivor benefits.

Figure 3.2
Sources of Pennsylvania Retirement Income - 2016



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 (\$18.8 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 (\$13.9 billion) was the third largest source of retirement income. For 2015, federal tax return data show that the average IRA withdrawal or disbursement reported on Pennsylvania tax returns was \$15,757. 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 (\$9.4 billion) account for roughly half the total, while military and federal (\$4.3 billion), PSERS (\$5.8 billion, resident portion only), SERS (\$2.9 billion, resident portion only) and local government (\$2.5 billion) plans comprise the residual. The forecast projects moderate growth for most defined benefit plans. An exception is PSERS because the number of annuitants is projected to expand at an average rate of 2.9 percent per annum through 2023.

Regional Economic Comparison

Two common metrics used to compare state economic growth 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) and imputed income (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 (see Table 3.7):

- From 2010 to 2016, the Pennsylvania economy expanded at an average real rate (1.7 percent per annum) that exceeds all comparison states except New York (1.9 percent).
- Both regional and Pennsylvania economic growth are somewhat lower than the U.S. average.
- Since the recession, average Pennsylvania income growth (3.3 percent per annum) is the same or higher than all comparison states except New Jersey (3.6 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 even more favorably due to the relatively slower population growth for the state relative to the region and nation.

Table 3.7
Regional Comparison - Average Annual Growth Rates

	Real GDP		Personal Income	
	2004-10	2010-16	2004-10	2010-16
Pennsylvania	1.1%	1.7%	3.5%	3.3%
Delaware	-0.3	1.2	2.2	3.1
Maryland	1.7	1.2	3.8	2.6
Ohio	0.0	0.9	3.0	3.0
New Jersey	1.6	1.2	3.5	3.6
New York	-0.5	1.9	2.5	3.3
Virginia	1.7	0.7	4.2	3.1
West Virginia	1.6	0.2	4.2	2.1
Region Average	1.0	1.3	3.4	3.2
U.S.	1.0	1.9	3.7	3.8

Source: U.S. Bureau of Economic Analysis.

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Section 4: Revenue Outlook

For FY 2016-17, General Fund revenues totaled \$31.67 billion. For FY 2017-18, the forecast projects General Fund revenues of \$34.70 billion, a \$3.03 billion (9.6 percent) increase over the prior fiscal year. (See Table 4.1.) The forecast projects that revenues will grow at an average rate of 1.7 percent per annum from FY 2017-18 through FY 2022-23. In the near-term, notable factors that impact revenues include:

- For FY 2017-18, the General Fund will receive a \$200 million transfer from the Joint Underwriting Association, and transfers of \$300 million from various sources. These transfers do not need to be repaid.
- Recent legislation allows the establishment of up to ten mini-casinos, iGaming and placement of video game terminals (VGTs) at qualified truck stops. Table 4.2 provides estimates of those provisions through FY 2022-23.
- Federal tax reform could be enacted for tax year 2018, which would implement significant tax rate cuts for corporate and certain pass-through business income. The forecast includes a modest revenue shift from this fiscal year to next to reflect the potential delay of income recognition.

The text that follows provides a brief discussion of the recently enacted revenue package, 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.

Table 4.1
General Fund Revenues

Fiscal Year	16-17	17-18	18-19	19-20	20-21	21-22	22-23
Personal Income	\$12,664	\$13,258	\$13,872	\$14,411	\$15,188	\$15,735	\$16,426
Sales and Use	10,005	10,225	10,542	10,877	11,192	11,518	11,366
Corporate Income	2,751	2,794	3,049	3,180	3,288	3,404	3,520
Gross Receipts	1,231	1,230	1,186	1,191	1,193	1,194	1,196
Cigarette	1,262	1,231	1,203	1,164	1,125	1,085	1,048
Realty Transfer	478	504	511	527	555	585	612
All Other	<u>3,279</u>	<u>3,155</u>	<u>3,130</u>	<u>3,175</u>	<u>3,258</u>	<u>3,354</u>	<u>3,467</u>
Baseline Revenue	31,670	32,397	33,492	34,525	35,798	36,875	37,635
Growth Rate	2.5%	2.3%	3.4%	3.1%	3.7%	3.0%	2.1%
Revenue Package	<u>0</u>	<u>2,303</u>	<u>216</u>	<u>140</u>	<u>91</u>	<u>77</u>	<u>72</u>
Total Revenue	31,670	34,700	33,708	34,665	35,888	36,953	37,707
Growth Rate	2.5%	9.6%	-2.9%	2.8%	3.5%	3.0%	2.0%

Note: figures in dollar millions.

Recently enacted legislation increases General Fund revenue projections by \$2.30 billion in FY 2017-18, and by \$216 million in FY 2018-19.⁶ The most significant provisions include: (1) increasing the reporting requirements for remote sellers (sales and use tax or SUT), (2) providing for the transfer of \$500 million from various sources to the General Fund, (3) allowing for the securitization of certain Tobacco Settlement Fund revenues, (4) modifying the maximum amount of allowable net operating loss (NOL) deductions (corporate net income tax or CNIT) and (5) providing for the expansion of gaming in Pennsylvania. The last three provisions are discussed below.

Table 4.2
New General Fund Revenues¹

Fiscal Year	17-18	18-19	19-20	20-21	21-22	22-23
Corporate Net Income						
Net Operating Loss	\$207	\$104	\$56	\$24	\$8	-\$2
Tax Credits & Other	16	16	0	-1	-2	-4
Insurance Premiums	1	1	1	1	1	1
Bank Shares	1	1	1	1	1	1
Sales and Use	5	39	52	56	59	61
Malt Beverage	2	2	0	0	0	0
Personal Income	-35	-20	-19	-18	-17	-16
Minor & Repealed ²	3	4	5	5	5	5
Licenses & Fees	1	1	1	1	1	1
Gaming Expansion	103	68	43	23	23	25
JUA & Other Transfers	500	0	0	0	0	0
Securitization	<u>1,500</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total New Revenue	2,303	216	140	91	77	72

Note: figures in dollar millions. IFO estimates.

¹ Includes (1) Acts 42, 43, 44 and 55 of 2017 and (2) the impact of the recent Supreme Court decision on net operating loss deductions. Excludes the impact on refunds for changes related to the net operating loss deduction (corporate net income tax) and the enhanced revenue collection account (personal income tax).

² Includes the new fireworks tax.

Act 43 of 2017 authorizes the Commonwealth Financing Authority (CFA) to securitize a portion of future payments due to the Commonwealth under the Tobacco Master Settlement Agreement in an amount sufficient to raise \$1.50 billion in net proceeds for the current fiscal year. The act also increases the current cap on CNIT NOLs from 30 percent to 35 percent of taxable income for tax year 2018, and to 40 percent for tax year 2019 and later years. Combined with a recent Pennsylvania Supreme Court ruling that the dollar portion of the NOL cap (\$5 million) violates the uniformity clause, the NOL

⁶ Acts 42, 43, 44 and 55 of 2017.

changes are expected to increase FY 2017-18 revenues by \$207 million and FY 2018-19 revenues by \$104 million.

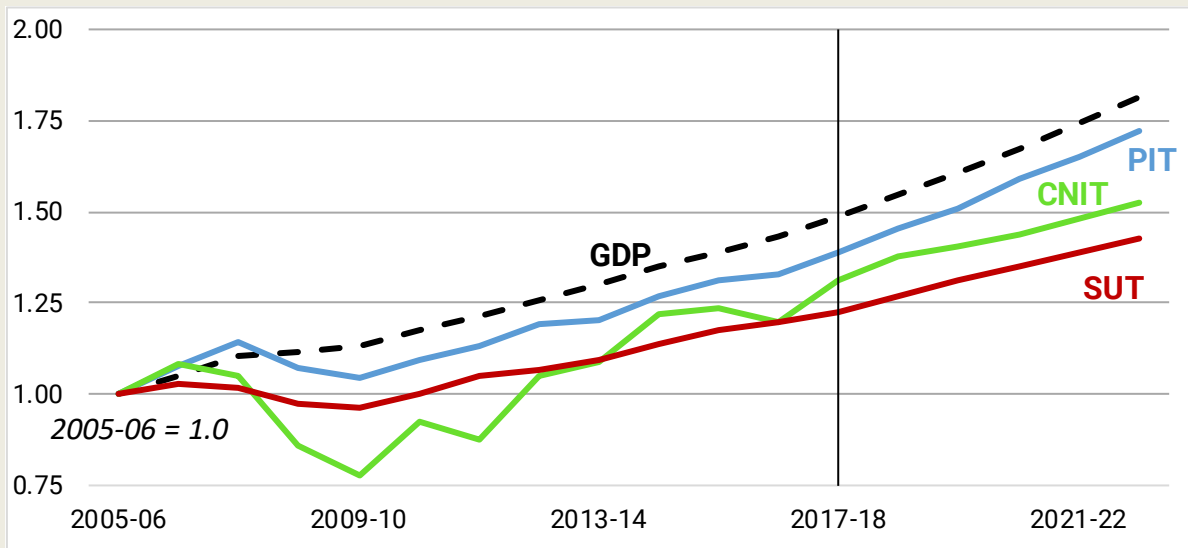
Act 42 of 2017 dramatically increases the availability of gaming in Pennsylvania through the expansion of existing resort casinos and the authorization of up to ten mini-casinos, VGTs at qualified truck stops and iGaming through any internet connected device. For FY 2017-18, almost all of the revenue generated by gaming expansion (\$103 million) is related to license fees. First year fee revenue includes: (1) \$5 million for the expansion of existing resort casinos, (2) \$40 million for the auction and licensure of four mini-casinos (a fifth is incorporated into FY 2018-19) and (3) \$42 million for the issuance of iGaming certificates and associated operator licenses. (The estimates assume that two additional iGaming licenses are then issued in the following two fiscal years, for a total of eight licensees by the end of FY 2019-20.) The impact of gaming expansion falls over time, as all operators are licensed and the expanded gaming market matures. A more detailed analysis of all the newly enacted General Fund revenue provisions will be provided in a December re-release of the IFO's monthly revenue estimates.

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 the purpose of this comparison, FY 2005-06 is used as the base and cumulative growth is computed from that year. The figure illustrates that the three largest revenue sources have failed to keep pace with the general expansion of the Pennsylvania economy. This simple comparison does not imply that tax revenues should grow at the same rate as the state economy. The GDP comparison merely provides a convenient benchmark to assess historical growth patterns.

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. In FY 2008-09 and FY 2009-10, revenues declined due to the severe housing and financial recession. Through the current fiscal year, PIT revenues have expanded at a somewhat slower rate than the state economy. The forecast projects that PIT growth will slightly 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.

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



Note: For FY 2022-23, the PIT value is 1.72. That figure implies that PIT revenues have grown by 72 percent since the FY 2005-06 base year. SUT excludes a transfer of roughly \$480 million in FY 2022-23 to the Public Transportation Trust Fund.

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

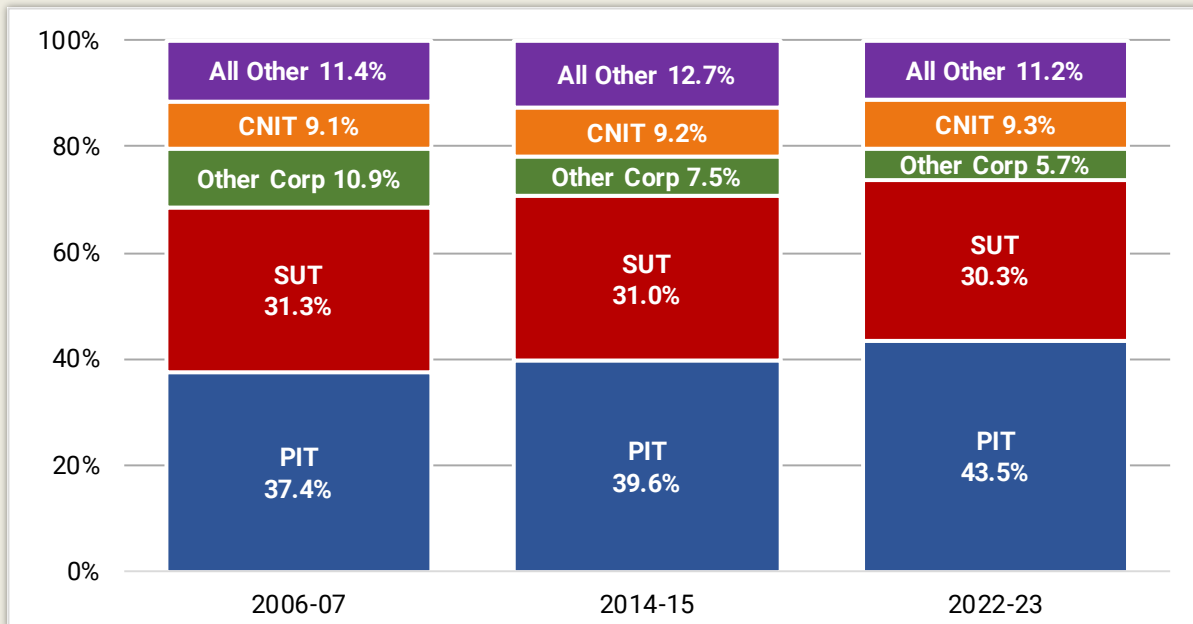
The SUT base continues to erode from the base year. Spending patterns have shifted towards non-taxable services, partly due to the aging Pennsylvania population. For 2016, purchases of goods (mostly taxable) comprised 30.3 percent of total spending by Pennsylvania consumers. That share was 3.2 percentage points lower than 2005 (33.5 percent).⁷ The forecast assumes that trend continues through 2023.

For 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 revenues did not fully recover until FY 2013-14. Through FY 2022-23, the forecast projects that CNIT revenues will expand at a slower rate (3.1 percent) than state GDP (4.1 percent) due to the declining revenue impact from the court decision on NOL deductions. (See Table 4.2.)

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 37.4 percent in FY 2006-07 to 43.5 percent in FY 2022-23. 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.

⁷ 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 personal income tax (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 4.4 percent per annum from FY 2017-18 to FY 2022-23. (See Table 4.3.) Wages and withholding tax revenues expand at a slower rate (3.9 percent) than non-withholding (5.8 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.

The forecast projects that the growth rate for non-withholding revenue will rebound in FY 2017-18 (5.9 percent) following a decline in FY 2016-17 (-2.1 percent).⁸ Revenues in FY 2016-17 (primarily for tax year 2016) were likely impacted by the delayed recognition of certain types of income (capital gains, dividends and net profits) by high-income taxpayers in anticipation of federal tax cuts in 2017. While it is now clear that policymakers do not intend to change the tax rates on capital gains and dividend income, uncertainty remains regarding large tax cuts for business income. The PIT projections include a moderate shift from FY 2017-18 to FY 2018-19 as upper-income taxpayers with pass-through business income may delay the recognition of income until tax year 2018.

Table 4.3
Personal Income Tax Revenue

Fiscal Year	16-17	17-18	18-19	19-20	20-21	21-22	22-23
Withholding	\$9,614	\$9,994	\$10,395	\$10,803	\$11,350	\$11,661	\$12,127
Quarterly	1,736	1,839	1,981	2,055	2,192	2,329	2,453
Annuals	<u>1,314</u>	<u>1,391</u>	<u>1,476</u>	<u>1,534</u>	<u>1,628</u>	<u>1,728</u>	<u>1,831</u>
Total Revenue	12,664	13,223	13,852	14,392	15,170	15,718	16,410
Growth Rate	1.3%	4.4%	4.8%	3.9%	5.4%	3.6%	4.4%

Note: figures in dollar millions. Includes estimates of the revenue provisions displayed in Table 4.2.

Sales and Use Tax

The Commonwealth levies a 6.0 percent sales and use tax 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 \$480 million for that fiscal year.⁹

Act 43 of 2017 modified sales tax to require large, online retailers to either remit sales tax to the state or comply with notice and reporting requirements. The act increases revenues by \$6 million in FY 2017-18 and \$63 million in FY 2022-23. Including the new transfer and tax law changes, sales and use tax revenues are projected to grow at an average rate of 2.2 percent per annum from FY 2017-18 to FY 2022-23. (See Table 4.4.) Excluding the new transfer, the average growth rate is 3.1 percent per annum.

⁸ The FY 2017-18 rebound is weakened by changes under Act 44 of 2017. Prior to Act 44, PIT refunds averted due to the Department of Revenue's enhanced enforcement efforts were transferred to the General Fund. Act 44 discontinues this practice. The result is an annual reduction of \$46 million in PIT annual payments beginning in FY 2017-18, and a corresponding adjustment to PIT refunds.

⁹ 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.

The forecast projects that non-motor vehicle revenues will expand at a rate of 2.3 percent per annum through FY 2022-23. 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 2.1 percent per annum during the forecast period. After reaching record levels in 2016, U.S. car and light truck sales are 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 on the 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, behind primary mortgage and student loan debt.

Table 4.4
Sales and Use Tax Revenue

Fiscal Year	16-17	17-18	18-19	19-20	20-21	21-22	22-23
Non-Motor	\$8,638	\$8,837	\$9,159	\$9,463	\$9,736	\$10,017	\$9,885
Motor	<u>1,367</u>	<u>1,393</u>	<u>1,422</u>	<u>1,466</u>	<u>1,512</u>	<u>1,560</u>	<u>1,543</u>
Total Revenue	10,005	10,230	10,581	10,929	11,247	11,577	11,428
Growth Rate	2.1%	2.2%	3.4%	3.3%	2.9%	2.9%	-1.3%

Note: figures in dollar millions. Includes estimates of the revenue provisions displayed in Table 4.2.

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 corporate net income tax (CNIT).

The forecast projects that CNIT revenues will expand at an average rate of 3.1 percent per annum. (See Table 4.5.) Several factors impact revenues over the forecast period:

- The elimination of the capital stock and franchise tax (CSFT) for tax year 2016 results in the transfer of a portion of unused CSFT credits to CNIT. Those credits reduce CNIT revenues in FY 2016-17 and FY 2017-18, but no longer suppress CNIT payments beginning in FY 2018-19.
- The state Supreme Court ruled that the dollar portion of the net operating loss deduction cap (\$5 million) violates the uniformity clause. The CNIT forecast includes the impact of that change and the Act 43 of 2017 increase in

the taxable income cap to 35 percent (tax year 2018) and 40 percent (later years).

- It is unclear how proposed federal tax reform might impact state CNIT revenues. If firms believe that a significant rate cut could be enacted for tax year 2018, they will likely shift income out of tax year 2017, thereby reducing FY 2017-18 revenues.

**Table 4.5
Corporate Net Income Tax Revenue**

Fiscal Year	16-17	17-18	18-19	19-20	20-21	21-22	22-23
Total Revenue	\$2,751	\$3,018	\$3,168	\$3,236	\$3,311	\$3,409	\$3,514
Growth Rate	-3.2%	9.7%	5.0%	2.1%	2.3%	3.0%	3.1%

Note: figures in dollar millions. Includes estimates of the revenue provisions displayed in Table 4.2.

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. For FY 2016-17, electricity and telecommunications comprised roughly 70 and 30 percent of the tax base, respectively.

The forecast projects a decline in revenues next fiscal year, followed by flat growth due to (1) recent declines in electricity prices and consumption, advances in energy efficient technologies, low natural gas prices and recent weather trends and (2) continued long-term erosion of the telecommunications tax base.

**Table 4.6
Gross Receipts Tax Revenue**

Fiscal Year	16-17	17-18	18-19	19-20	20-21	21-22	22-23
Total Revenue	\$1,231	\$1,230	\$1,186	\$1,191	\$1,193	\$1,194	\$1,196
Growth Rate	-5.7%	0.0%	-3.6%	0.4%	0.1%	0.1%	0.2%

Note: figures in dollar millions.

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 \$25.5 million transfer to the Agricultural Conservation Easement Purchase

Fund, (2) a \$30.7 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 \$9.8 million in FY 2017-18 and \$16.7 million in FY 2022-23.

Act 84 of 2016 increased the state cigarette tax from 8 cents to 13 cents per cigarette (\$1.60 to \$2.60 per pack of 20 cigarettes) effective August 1, 2016. The tax increase, along with the associated floor tax, generated \$381 million in new tax revenue for FY 2016-17. The forecast projects that cigarette tax growth rates will revert to historical trends in FY 2018-19, after the tax increase has been in effect for a full fiscal year. Revenues are projected to decline at an average rate of 3.2 percent per annum from FY 2017-18 through FY 2022-23.

**Table 4.7
Cigarette Tax Revenue**

Fiscal Year	16-17	17-18	18-19	19-20	20-21	21-22	22-23
Total Revenue	\$1,262	\$1,231	\$1,203	\$1,164	\$1,125	\$1,085	\$1,048
Growth Rate	38.4%	-2.4%	-2.3%	-3.2%	-3.4%	-3.5%	-3.4%

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 2017-18, the transfer was \$17.2 million and is projected to hit the cap each year thereafter.

In recent months, a limited supply of housing has restrained the number of home sales in Pennsylvania. Home sales are projected to remain subdued during the forecast period while prices increase at a moderate pace (3.1 percent per annum). For the second quarter of 2017, sales data from the Federal Housing Finance Agency show that average Pennsylvania home prices increased by 4.4 percent compared to the prior year.¹⁰ The

¹⁰ Data are for the purchase-only index. See <https://www.fhfa.gov/DataTools/Downloads/Pages/House-Price-Index-Datasets.aspx#qpo>.

forecast projects that RTT revenues will expand at an average rate of 4.0 percent per annum from FY 2017-18 to FY 2022-23.

Table 4.8
Realty Transfer Tax Revenue

Fiscal Year	16-17	17-18	18-19	19-20	20-21	21-22	22-23
Total Revenue	\$478	\$504	\$511	\$527	\$555	\$585	\$612
Growth Rate	-0.8%	5.3%	1.5%	3.2%	5.2%	5.4%	4.6%

Note: figures in dollar millions.

Other Revenue Sources

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

- On March 1, 2017, the Commonwealth Court of Pennsylvania issued orders placing Penn Treaty Network America Insurance Company and its wholly-owned subsidiary, American Network Insurance Company, into liquidation. The Pennsylvania Life and Health Guaranty Association (PLHGA) will continue to service policies and provide coverage to impacted Pennsylvania residents. To offset the added cost to the association, PLHGA assessments to member insurers have increased. Impacted insurers will generate additional PLHGA tax credits, which may be used to offset insurance premiums tax (IPT) liabilities. The PLHGA credits are expected to reduce General Fund revenues by \$33 million in FY 2017-18, and \$43 million for FY 2018-19 through FY 2021-22, before falling to \$10 million in 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 2017-18, and the impact grows to \$123 million by FY 2022-23.
- Licenses and fees revenues include a \$50 million slot machine license fee in FY 2017-18, and a \$25 million table games fee in FY 2018-19.
- Miscellaneous revenues for FY 2016-17 reflect the transfer of \$165 million from the Workers' Compensation Security Fund. The FY 2017-18 estimate includes a transfer of \$200 million from the Pennsylvania Professional Liability Joint Underwriting Association and an additional \$300 million in transfers from various sources.

Table 4.9
Other General Fund Revenue Sources

Fiscal Year	16-17	17-18	18-19	19-20	20-21	21-22	22-23
Accelerated Deposits	\$3	\$0	\$0	\$0	\$0	\$0	\$0
Capital Stock & Fran.	33	0	0	0	0	0	0
Utility Property	40	42	43	44	46	47	48
Insurance Premiums	433	415	414	423	433	462	506
Financial Institutions	323	343	345	356	367	378	389
Other Tobacco Products	84	114	116	118	120	121	123
Malt Beverage	24	25	25	23	23	23	23
Liquor	362	381	397	413	430	447	465
Inheritance Tax	978	990	1,009	1,038	1,067	1,090	1,108
Table Games	121	122	125	116	121	124	131
Minor and Repealed	-39	-39	-50	-55	-60	-65	-71
Liquor Store Profits	216	185	185	185	185	185	185
Licenses, Fees & Misc.	621	507	452	440	454	468	483
Fines, Penalties & Int.	79	77	78	80	81	83	84
Gaming Expansion	0	103	68	43	23	23	25
JUA & Other Transfers	0	500	0	0	0	0	0
Securitization	<u>0</u>	<u>1,500</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total Revenue	3,279	5,265	3,207	3,225	3,288	3,384	3,500
Growth Rate	7.1%	60.6%	-39.1%	0.6%	2.0%	2.9%	3.4%

Note: figures in dollar millions. Includes estimates of the revenue provisions displayed in Table 4.2.

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Section 5: Expenditure Outlook

For FY 2017-18, total General Fund appropriations are \$31.95 billion, a \$9 million increase over FY 2016-17. 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 shortfalls or increases budget surpluses. Lapses are discussed further in the next section.

The projections in this section represent General Fund appropriations required to maintain the same level of services provided in the FY 2017-18 base year. Unless otherwise noted, the analysis assumes that FY 2017-18 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” appendix section.

From FY 2017-18 to FY 2022-23, General Fund expenditures are projected to increase at an average rate of 3.8 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, healthcare and pension contributions.
- Various inflation adjustments that maintain the purchasing power of funds appropriated in the base year for all future years.

Table 5.2 provides detail based on expenditure category. Notable trends include:

- SERS pension growth stabilizes after FY 2017-18 but records a slight uptick in the final year of the forecast due to technical factors related to the actuarial funding methodology.¹¹
- The growth rate for the state share of school district pension contributions (PSERS) increases for technical reasons in FY 2018-19, but decelerates quickly thereafter.

¹¹ Act 5 of 2017 modifies SERS’ determination of employer normal cost beginning with the 2021 valuation.

- Long-term living expands rapidly due to growth in the 60 or older age cohort, healthcare inflation and reduced support from the Tobacco Settlement Fund.
- Pre-K-12 expenditures grow modestly due to contraction of the school age population.
- Due to a 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 loan from the Workers’ Compensation Security Fund.¹²

Table 5.1
General Fund Expenditures by Agency

Fiscal Year	16-17	17-18	18-19	19-20	20-21	21-22	22-23
Agency							
Education ¹	\$12,801	\$13,243	\$13,885	\$14,330	\$14,639	\$14,930	\$15,239
Human Services	12,380	12,133	12,740	13,757	14,488	15,027	15,602
Criminal Justice ²	2,564	2,460	2,509	2,560	2,607	2,646	2,708
Treasury	1,171	1,132	1,298	1,313	1,361	1,409	1,441
State Police	257	252	281	337	393	447	505
All Other	<u>2,770</u>	<u>2,731</u>	<u>2,803</u>	<u>3,033</u>	<u>2,931</u>	<u>2,987</u>	<u>3,062</u>
Total Expenditures	31,942	31,951	33,516	35,330	36,417	37,447	38,556
Growth Rates							
Education ¹	5.8%	3.5%	4.8%	3.2%	2.2%	2.0%	2.1%
Human Services	7.5	-2.0	5.0	8.0	5.3	3.7	3.8
Criminal Justice ²	6.7	-4.0	2.0	2.0	1.8	1.5	2.3
Treasury	-0.6	-3.3	14.6	1.2	3.6	3.5	2.3
State Police	4.5	-1.8	11.5	19.9	16.4	13.8	12.9
All Other	3.2	-1.4	2.6	8.2	-3.4	1.9	2.5
Total Expenditures	6.0	0.0	4.9	5.4	3.1	2.8	3.0

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.

¹² Act 44 of 2017 amends the Fiscal Code to require repayment of a \$165 million loan 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	16-17	17-18	18-19	19-20	20-21	21-22	22-23
Expenditure Type							
Wages ¹	\$2,634	\$2,504	\$2,583	\$2,629	\$2,676	\$2,723	\$2,772
Pensions - SERS	784	856	872	889	901	899	949
Pensions - PSERS	2,064	2,264	2,530	2,692	2,805	2,899	3,008
Retiree Healthcare	425	343	343	376	403	422	442
Employee Healthcare ²	635	612	633	654	676	698	721
Pre-K-12 Education ³	9,313	9,532	9,879	10,131	10,294	10,460	10,626
Medical Assistance	5,004	4,588	4,890	5,486	5,823	6,063	6,328
Long-Term Living	2,273	2,276	2,407	2,617	2,783	2,895	3,013
Intellectual Disability	1,659	1,842	1,907	1,973	2,042	2,114	2,188
Other Human Services	2,645	2,713	2,806	2,928	3,067	3,167	3,258
Debt Service	1,111	1,075	1,243	1,257	1,304	1,351	1,381
MLF Funding Shift ⁴	0	0	25	73	122	172	222
All Other	<u>3,395</u>	<u>3,346</u>	<u>3,400</u>	<u>3,625</u>	<u>3,522</u>	<u>3,584</u>	<u>3,648</u>
Total Expenditures	31,942	31,951	33,516	35,330	36,417	37,447	38,556
Growth Rates							
Wages ¹		-4.9%	3.1%	1.8%	1.8%	1.8%	1.8%
Pensions - SERS		9.1	1.9	2.0	1.3	-0.1	5.5
Pensions - PSERS		9.7	11.7	6.4	4.2	3.3	3.8
Retiree Healthcare		-19.3	-0.1	9.7	7.2	4.7	4.7
Employee Healthcare ²		-3.7	3.5	3.3	3.3	3.3	3.3
Pre-K-12 Education ³		2.4	3.6	2.5	1.6	1.6	1.6
Medical Assistance		-8.3	6.6	12.2	6.1	4.1	4.4
Long-Term Living		0.1	5.7	8.7	6.3	4.0	4.1
Intellectual Disability		11.1	3.5	3.5	3.5	3.5	3.5
Other Human Services		2.6	3.4	4.4	4.7	3.3	2.9
Debt Service		-3.3	15.6	1.2	3.7	3.6	2.3
MLF Funding Shift ⁴		n.a.	n.a.	197.8	66.9	40.4	29.0
All Other		-1.4	1.6	6.6	-2.9	1.8	1.8
Total Expenditures		0.0	4.9	5.4	3.1	2.8	3.0

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.

Table 5.3
Annual Change in Expenditures: Cost-to-Carry, Required and Discretionary

Fiscal Year	18-19	19-20	20-21	21-22	22-23
Certain Human Services ¹	\$546	\$950	\$664	\$477	\$499
Criminal Justice ²	43	44	43	40	41
MLF Funding Shift	25	49	49	49	50
General Obligation Debt	168	15	46	47	31
All Pension Contributions	282	179	125	92	158
PlanCon ³	<u>111</u>	<u>86</u>	<u>-3</u>	<u>-2</u>	<u>-2</u>
Cost-to-Carry	1,175	1,323	925	703	777
Required	107	109	107	104	108
Discretionary	<u>282</u>	<u>383</u>	<u>55</u>	<u>222</u>	<u>224</u>
Total Change	1,565	1,815	1,087	1,029	1,109

Note: figures in dollar millions.

¹ Includes Medical Assistance, Attendant Care, Services to Persons with Disabilities, Intellectual Disabilities, Home and Community-Based Services, Long-Term Care, CHIP, County Child Welfare, Supplemental Grants, Medicare Drug Program and Autism Services.

² Excludes pensions. Those amounts are included in the pension line item below. Includes the Department of Corrections and the Board of Probation and Parole.

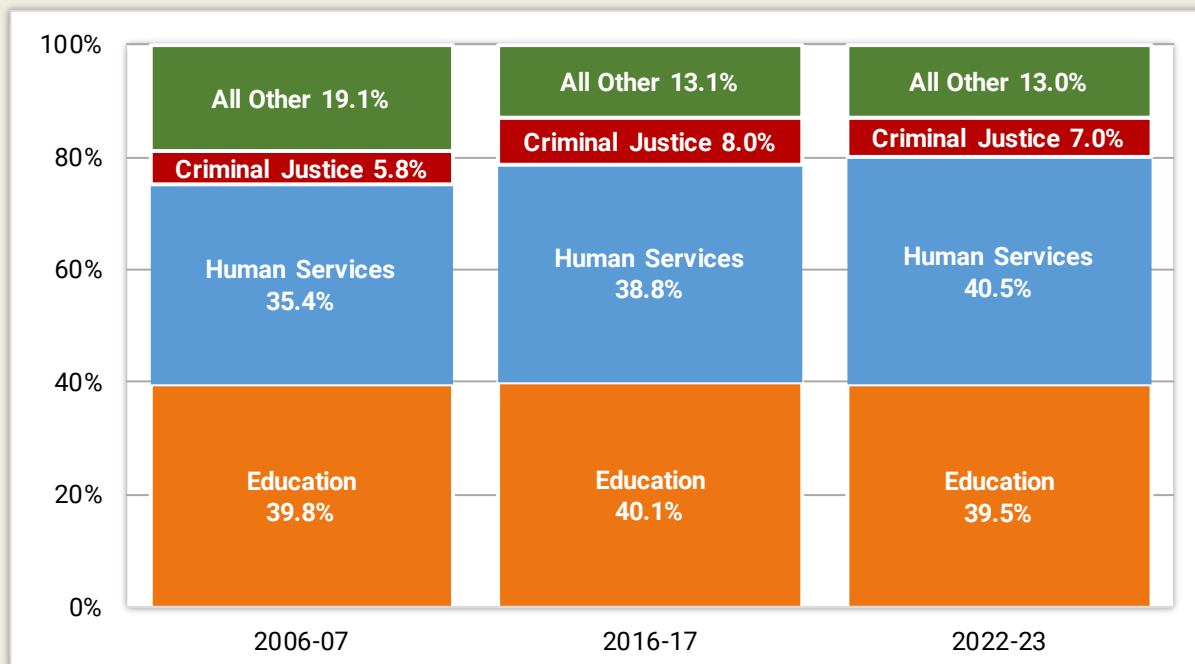
³ Also called the "authority rentals and sinking fund" line item.

Table 5.3 decomposes the annual increase in projected expenditures into three categories: (1) cost-to-carry, (2) required and (3) discretionary. The cost-to-carry concept represents increases in funding for programs or line items that must be funded due to state or federal law, debt obligations or the care of individuals under the jurisdiction of an agency. For the purpose of this report, the following agencies or expenditures are included: (1) most programs administered by DHS, (2) Criminal Justice, (3) the MLF funding shift (which would yield a cut in services if excluded), (4) general obligation debt service, (5) pension contributions and (6) PlanCon (also called authority rentals and sinking fund requirements) debt service. The analysis projects that cost-to-carry expenditures will comprise the majority (roughly 70 percent) of the increase in General Fund expenditures for most years.

The second category is required expenditures. Policymakers exercise some control over this category, but it is likely that these agencies and programs would receive future funding increases. Required expenditures include all remaining DHS and State Police expenditures (including compensation) and wage and healthcare benefits across all other agencies.

The final category is discretionary expenditures. This category includes the basic and special education subsidies, as well as funds for non-personnel expenses such as office supplies, rent, utilities, furniture, computers and travel. Policymakers exercise considerable discretion over these items. The forecast generally assumes these expenditures grow with inflation. This category includes the repayment of the \$165 million loan to the Workers' Compensation Security Fund in FY 2019-20.

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.

Figure 5.1 displays the changing composition of General Fund expenditures for FY 2006-07 (decade earlier), FY 2016-17 (latest actual) and FY 2022-23 (final forecast year). Over the past decade, the share of General Fund expenditures for DHS and Criminal Justice increased by 3.4 and 2.2 percentage points, respectively. Moving to FY 2022-23, the forecast projects that the share of General Fund expenditures for DHS programs will increase by 1.7 percentage points, while Criminal Justice and Education decline by 1.0 and 0.6 percentage points, respectively. The relative increase in DHS funding levels is driven by technical factors and economic and demographic projections.

Expenditure Extrapolators

Table 5.4 lists the economic and demographic forecasts used to extrapolate General Fund expenditures from the FY 2017-18 base year through FY 2022-23. 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). It is noted that numerous factors could cause actual expenditures to deviate from the projections in this report. For example, policymakers often elect to “flat fund” certain agencies or programs, which may result in an implicit reduction in real service levels due to the lack of an inflation adjustment.

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.

Table 5.4
General Fund Expenditure Extrapolators

Fiscal Year	18-19	19-20	20-21	21-22	22-23
Demographic Groups					
Age 5 to 14	-0.3%	-0.3%	-0.3%	-0.4%	-0.4%
Age 20 to 64	-0.2	-0.2	-0.2	-0.2	-0.2
Age 65 and Older	2.5	2.5	2.6	2.7	2.7
All Residents	0.4	0.4	0.4	0.4	0.4
Personnel Expenses					
Wages ¹	3.0	2.0	2.0	2.0	2.0
Pensions - SERS ²	-1.1	0.2	-0.5	-1.9	3.6
Retiree Healthcare	0.0	10.0	7.5	5.0	5.0
Employee Healthcare	3.6	3.6	3.6	3.6	3.6
Non-Personnel Expenses	2.1	2.1	2.1	2.1	2.1

¹ Includes an average employee turnover factor.

² Growth in employer contribution rates only.

Sources: Demographic projections from the Pennsylvania State Data Center. Other forecasts by IFO.

Wage compensation comprises roughly eight 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 published 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 2.0 percent per annum for most years. (See Table 5.4.)

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.

Based on recent historical trends, the forecast assumes that employee healthcare inflation exceeds general inflation by 1.5 percentage points. The retiree healthcare extrapolator assumes that contributions revert to historical levels. For FY 2017-18 and FY 2018-19, contributions are much lower compared to amounts from the prior two years. The analysis assumes those contributions must revert to historical levels to provide a sufficient fund balance in the Pennsylvania Employees Benefit Trust Fund (PEBTF) to meet future obligations.

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 a relevant inflation measure. Two exceptions are the basic and special education subsidies. For those amounts, the relevant extrapolator is 1.8 percent, which represents an average pay increase (3.75 percent per annum), a general turnover factor (-1.71 percent) and a demographic component (-0.3 to -0.4 percent).

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

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 2022-23. Combined payments to SERS and the Public School Employees' Retirement System (PSERS) from General Fund appropriations are projected to be \$3.12 billion (9.8 percent of appropriations) in FY 2017-18 and \$3.96 billion (10.3 percent) by FY 2022-23.

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 (56.5 percent for FY 2016-17).

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 these 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 plan 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
2014-15	20.50%	21.40%	28.1%	26.4%
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	32.86	34.18	-1.1	4.9
2019-20	32.93	35.62	0.2	4.2
2020-21	32.78	36.13	-0.5	1.4
2021-22	32.17	36.56	-1.9	1.2
2022-23	33.34	37.25	3.6	1.9

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

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 transfers from other state funds. For FY 2016-17, agencies making employer contributions from General Fund appropriations made additional contributions of \$298 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.

Table 5.6
Employer Pension Contributions - State General Fund Share

Fiscal Year	16-17	17-18	18-19	19-20	20-21	21-22	22-23
SERS ¹	\$784	\$856	\$872	\$889	\$901	\$899	\$949
PSERS	<u>2,064</u>	<u>2,264</u>	<u>2,530</u>	<u>2,692</u>	<u>2,805</u>	<u>2,899</u>	<u>3,008</u>
Total	2,848	3,120	3,402	3,581	3,706	3,798	3,957
Growth Rate	19.5%	9.7%	11.7%	6.4%	4.2%	3.3%	3.8%

Note: figures in dollar millions.

¹ Excludes any pension expenses related to the Motor License Fund shift to the General Fund.

Human Services

The Department of Human Services (DHS) provides access to medical and other services to the Commonwealth's most vulnerable residents. For FY 2017-18, expenditures of \$12.13 billion are supported by General Fund appropriations. 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 2017-18, base year appropriations for DHS are \$12.13 billion, a \$247 million decrease (-2.0 percent) from the prior fiscal year. (See Table 5.7.) The decline does not reflect lower program costs, but rather the use of prior year monies and non-appropriated sources to manage current year appropriations. For example, FY 2017-18 and FY 2018-19 expenditures are offset by unexpected collections from the former managed care gross receipts tax (GRT) and increases in the current Managed Care Organization (MCO) assessment fee (which replaced the GRT). In future years, the expenditures supported by these sources are expected to return to a long-term growth trend. The DHS expenditure projections generally assume that (1) service populations expand from the base year based on the relevant demographic forecast and (2) the average cost to supply services grows with a relevant inflation factor. As discussed in this subsection, adjustments also are made for other factors that will affect expenditures in the forecast period. By FY 2022-23, the forecast projects that General Fund expenditures will be \$15.60 billion, an average increase of 5.2 percent per annum.

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, 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 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 5.7 percent per annum through FY 2022-23.

The basic components of the forecast are identified in the following bullets. Additional factors that affect expenditure projections for FY 2017-18 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. No inflation adjustment is provided for LTL programs for FY 2018-19.
- Increases in the service population track the growth in total population (0.4 percent per annum) for MA and Intellectual Disabilities programs and the age 60 or older population (2.0 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 2017-18, an amount that is held constant through FY 2022-23. The Tobacco Settlement Fund is projected to supply \$266 million in FY 2017-18, but the forecast assumes a \$50 million reduction for FY 2019-20 and an additional \$50 million reduction for FY 2020-21 and thereafter based on the fund balance and debt service requirements from the securitization of certain fund revenues. In the forecast, the General Fund absorbs any reduction in support from these special funds. In particular, the Lottery Fund may be unable to support funding for DHS programs at current levels, based on current projections. 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.¹³

¹³ 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.

Table 5.7
General Fund Expenditures - Department of Human Services

Fiscal Year	16-17	17-18	18-19	19-20	20-21	21-22	22-23
Wages ¹	\$409	\$351	\$361	\$368	\$374	\$381	\$388
Pensions	138	154	157	160	162	162	171
Retiree Healthcare	95	67	67	73	79	83	87
Employee Healthcare ²	157	141	146	152	157	163	169
All Other	11,581	11,419	12,009	13,004	13,715	14,239	14,787
Medical Assistance	5,004	4,588	4,890	5,486	5,823	6,063	6,328
Long-Term Living	2,273	2,276	2,407	2,617	2,783	2,895	3,013
Intellectual Disabilities	1,659	1,842	1,907	1,973	2,042	2,114	2,188
Human Services Programs	88	87	89	91	93	95	97
Mental Health	673	663	685	708	732	756	782
Child Development	433	452	460	468	477	485	494
Income Maintenance	216	237	243	248	254	260	266
Human Services Support	1,224	1,263	1,318	1,363	1,409	1,456	1,504
Children's Health Insurance	<u>10</u>	<u>11</u>	<u>11</u>	<u>50</u>	<u>102</u>	<u>115</u>	<u>116</u>
Total	12,380	12,133	12,740	13,757	14,488	15,027	15,602
Growth Rate	7.5%	-2.0%	5.0%	8.0%	5.3%	3.7%	3.8%

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.

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 2023), 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 prior fiscal year appropriations to pay current fiscal year expenses. This method of temporarily reducing current year appropriations (e.g., Medicare Part D and MA capitation) could create a potential snap back for future fiscal years.

- Unexpected receipts from the former managed care gross receipts tax (replaced by the MCO assessment), which temporarily reduce MA capitation appropriations.
- Increases to the MCO Assessment fee in July 2017 (\$15.07 per member per month) and January 2018 (\$19.87). The fee revenue qualifies for federal match and helps to offset General Fund expenditures for MA capitation.
- 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.
- Commencement of Community HealthChoices (CHC), which 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.¹⁴ The forecast includes (1) the initial program costs for the final two phases, (2) the overlap of costs incurred under the prior fee-for-service model prior to the implementation of CHS and (3) a change in the case mix to reflect a modest shift from institutional to community services.
- Extension of the Children’s Health Insurance Program (CHIP) by the U.S. Congress. The forecast assumes that a reduction in the federal matching rates will occur beginning in FY 2019-20.

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 also 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 2016-17 to 1.69 million by FY 2022-23. (See Table 5.8.) Holding the ratio of public school students to teachers constant (14.2), the total number of public school staff is also projected to fall from 147,700 in FY 2016-17 to 144,700 in FY 2022-23.

¹⁴ Currently, implementation is scheduled to occur in three phases: January 2018 (southwest zone), January 2019 (southeast zone) and January 2020 (rest of the state).

Most PDE appropriations (roughly 90 percent) are dedicated to Pre-K-12 purposes. For FY 2017-18, Pre-K-12 appropriations are \$11.80 billion, \$419 million (3.7 percent) higher than FY 2016-17 appropriations. (See Table 5.10.) 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.

Table 5.8
Pennsylvania K-12 Enrollments and Staff Projections: Public Schools

School Year	16-17	17-18	18-19	19-20	20-21	21-22	22-23
Traditional Schools ¹	1,588.9	1,582.1	1,576.8	1,571.4	1,565.7	1,559.5	1,552.8
Charter Schools	<u>133.8</u>	<u>134.4</u>	<u>134.8</u>	<u>135.0</u>	<u>135.0</u>	<u>135.0</u>	<u>135.0</u>
Total Schools²	1,722.6	1,716.5	1,711.7	1,706.4	1,700.6	1,694.4	1,687.8
Growth Rate	-0.5%	-0.4%	-0.3%	-0.3%	-0.3%	-0.4%	-0.4%
Administrative	7.3	7.3	7.2	7.2	7.2	7.2	7.1
Teachers	121.2	120.7	120.4	120.0	119.6	119.2	118.7
Coordinators	15.7	15.7	15.6	15.6	15.5	15.5	15.4
Other	<u>6.8</u>	<u>6.8</u>	<u>6.8</u>	<u>6.8</u>	<u>6.7</u>	<u>6.7</u>	<u>6.7</u>
Total Staff³	147.7	147.2	146.8	146.3	145.8	145.3	144.7
Pupil / Teacher Ratio ⁴	14.2	14.2	14.2	14.2	14.2	14.2	14.2

Note: thousands of students or staff.

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.

³ Detail does not sum to total due to individuals who appear in more than one category.

⁴ Includes teachers and excludes administrative, coordinators and other positions.

Source: FY 2016-17 from the Department of Education. Projections by IFO.

Demographic projections presented earlier in this report show that the 5-14 year age cohort will contract by 0.3 percent per annum through FY 2022-23. Despite this contraction, Pre-K-12 expenditures expand at a faster pace (2.9 percent per annum) to \$13.64 billion, due to strong growth in state reimbursements for school district retirement contributions (5.8 percent per annum) and the authority rentals and sinking fund appropriation (49.3 percent per annum) included in the “All Other” line.¹⁵ The basic

¹⁵ The “authority rentals and sinking fund” appropriation, also known as PlanCon, provides funds to reimburse school districts for school construction costs. The estimate reflects the projected debt service on funds previously borrowed. The appropriation also supports roughly \$11

education and special education subsidies expand at a rate of 1.8 percent per annum to maintain a current level of service.

Post-Secondary

For FY 2015-16, there were 351,709 full-time students enrolled at PASSHE universities, state-related universities or community colleges within Pennsylvania. This figure has declined every year since FY 2009-10 when there were 372,341 full-time students enrolled in these three institutional categories. The upper half of Table 5.9 displays the annual growth rates of full-time college students within these three categories of post-secondary institutions. Since FY 2011-12, community colleges have 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 5.9 display the annual growth rates for all students, both full- and part-time.¹⁶) By contrast, state-related universities have recorded modest gains.

For FY 2017-18, PDE's post-secondary appropriations are \$1.32 billion, \$16 million (1.2 percent) higher than FY 2016-17 appropriations. (See Table 5.10.) 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 5.9), 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 \$1.47 billion in FY 2022-23.

million in annual charter school lease reimbursements. The projection increases from \$30 million in FY 2017-18 to \$227 million in FY 2019-20, then declines to \$221 million by FY 2022-23.

¹⁶ The strong growth rate for FY 2009-10 is a result of a small change in the number of post-secondary institutions included in the data. See table footnote for more information.

Table 5.9
Annual Growth in Post-Secondary Student Enrollment

Fiscal Year Ending (FYE)	2009	2010	2011	2012	2013	2014	2015	2016
Selected PA Post-Secondary Institutional Categories¹								
State System of Higher Education	2.1%	3.9%	2.2%	-2.0%	-2.5%	-2.4%	-2.0%	-2.4%
Community Colleges	7.0	7.4	-0.1	-2.1	-5.8	-4.0	-4.5	-4.0
State-Related Universities	3.0	2.5	1.0	-0.9	2.6	0.5	1.6	1.0
Combined	3.8	4.2	1.0	-1.6	-1.3	-1.5	-1.0	-1.3
Total PA Post-Secondary²	2.3	7.0	0.8	-2.4	-3.0	-2.1	-2.2	n.a.
Total U.S. Post-Secondary²	5.8	5.6	2.1	-1.6	-2.5	-1.7	-1.6	n.a.

¹ Includes full-time enrollment only.

² Includes all Title IV institutions in the United States. Growth rate for FYE 2010 is artificially inflated due to a change in reporting. Prior to FYE 2010, the data only included Title IV primarily post-secondary institutions.

Sources: Selected PA Post-Secondary Institutional Categories: Executive Budget, various years. Total PA and U.S. Post-Secondary Enrollment: National Center for Education Statistics.

Other and Summary

PDE also receives appropriations to provide subsidies to libraries and to cover expenses related to personnel costs. For FY 2017-18, those amounts are \$119 million and increase to \$133 million by FY 2022-23 (2.2 percent per annum). Overall, PDE's appropriation for FY 2017-18 is \$13.24 billion, a \$442 million (3.5 percent) increase from the prior fiscal year. The forecast projects that expenditures will increase to \$15.24 billion (2.8 percent per annum) by FY 2022-23.

**Table 5.10
General Fund Expenditures - Department of Education**

Fiscal Year	16-17	17-18	18-19	19-20	20-21	21-22	22-23
Pre-K through Grade 12							
Basic Education Subsidy	\$5,895	\$5,995	\$6,158	\$6,261	\$6,363	\$6,465	\$6,566
School Employees' Retirement	2,064	2,264	2,530	2,692	2,805	2,899	3,008
Special Education Subsidy	1,097	1,122	1,152	1,171	1,191	1,210	1,229
Pupil Transportation	549	549	559	569	579	589	599
School Employees' Social Sec.	492	500	508	519	529	540	551
Early Intervention	252	264	268	273	278	283	289
Ready To Learn Block Grant	250	250	254	259	263	268	273
All Other ¹	<u>782</u>	<u>857</u>	<u>983</u>	<u>1,084</u>	<u>1,097</u>	<u>1,110</u>	<u>1,124</u>
Total Pre-K through Grade 12	11,381	11,801	12,413	12,827	13,104	13,363	13,639
Post-Secondary							
State-Related Universities	562	565	576	588	601	613	626
Community Colleges ²	284	288	294	300	306	313	319
PASSHE-State Universities	444	453	462	472	482	492	502
Thaddeus Stevens Coll. of Tech.	13	14	15	15	15	16	16
Other Post-Secondary	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>4</u>	<u>4</u>	<u>4</u>
Total Post-Secondary	1,307	1,323	1,350	1,378	1,407	1,437	1,467
General Government Operations	24	26	27	27	28	29	30
Libraries ³	62	62	63	65	66	67	69
All Other	<u>26</u>	<u>31</u>	<u>32</u>	<u>33</u>	<u>33</u>	<u>34</u>	<u>35</u>
Grand Total	12,801	13,243	13,885	14,330	14,639	14,930	15,239
Growth Rate	5.8%	3.5%	4.8%	3.2%	2.2%	2.0%	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

In the most recent Executive Budget, the Department of Corrections (DOC) and the Pennsylvania Board of Probation and Parole (PBPP) were combined into a single agency referred to as the Department of Criminal Justice.¹⁷ 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 their 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. The projections in this report follow the convention used by the Executive Budget and assume further savings from the consolidation of the two agencies.

Table 5.11
Populations - Department of Corrections and Board of Probation and Parole

	2011	2012	2013	2014	2015	2016	2017	2018
Inmate Population	51,638	51,184	51,512	50,756	49,914	49,301	48,510	48,050
Annual Change	317	-454	328	-756	-842	-613	-791	-460
Percent Change	0.6%	-0.9%	0.6%	-1.5%	-1.7%	-1.2%	-1.6%	-0.9%
Parolee Population	34,745	35,982	37,971	39,726	41,226	41,500	42,057	42,473
Annual Change	1,972	1,237	1,989	1,755	1,500	274	557	416
Percent Change	6.0%	3.6%	5.5%	4.6%	3.8%	0.7%	1.3%	1.0%

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 5.11 displays a time series of inmates under the jurisdiction of the DOC and parolees under the supervision of the PBPP. From 2011 to 2017, the inmate population has decreased at a rate of 1.0 percent per annum, while the parolee population expanded at a rate of 3.2 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 can yield significant cost savings. For FY 2017-18, the average cost of an inmate is roughly \$47,300 (includes all costs, including indirect costs and overhead), more than ten times the average cost of a parolee (\$4,000).

¹⁷ See Governor's Executive Budget, Fiscal Year 2017-18.

Based on population projections published by the Criminal Justice Projections Committee, the IFO assumes that from FY 2017-18 to FY 2022-23, the inmate population declines at an average rate of 0.9 percent per annum and the parolee population increases by 0.5 percent per annum.¹⁸

For FY 2017-18, total appropriations for the Department of Criminal Justice are \$2.46 billion, \$104 million (-4.0 percent) less than the combined FY 2016-17 appropriations for DOC and PBPP. The majority of the \$104 million reduction in total appropriations is attributable to the DOC. Specifically, reductions in Medical Care (-\$5 million, includes personnel costs), Inmate Education and Training (-\$2 million), State Correctional Institutions (-\$86 million) and the discontinuation of a transfer to the Justice Reinvestment Fund (-\$10 million) comprise nearly all of the reduction. The large decline for State Correctional Institutions was generally attributable to the closing of SCI Pittsburgh, which was projected to save the Commonwealth \$81 million this fiscal year.¹⁹

Table 5.12 displays the combined expenditures for both agencies. The forecast projects that expenditures for the Department of Criminal Justice will grow by 1.9 percent per annum from FY 2017-18 to FY 2022-23.

Table 5.12
General Fund Expenditures - Department of Criminal Justice¹

Fiscal Year	16-17	17-18	18-19	19-20	20-21	21-22	22-23
Wages ²	\$1,200	\$1,161	\$1,192	\$1,210	\$1,229	\$1,248	\$1,267
Pensions	352	379	384	391	395	394	414
Retiree Healthcare	160	130	129	141	150	157	163
Employee Healthcare ³	255	254	261	269	276	284	292
Inmate Medical Care	147	145	147	149	151	153	154
All Other	449	390	395	401	406	411	416
Total	2,564	2,460	2,509	2,560	2,607	2,646	2,708
Growth Rate	6.7%	-4.0%	2.0%	2.0%	1.8%	1.5%	2.3%

Note: figures in dollar millions.

¹ FY 2016-17 includes the Department of Corrections and the Board of Probation and Parole.

² Includes wages, salaries, bonuses and payroll taxes (Medicare and Social Security).

³ Includes all non-pension benefits such as health and life insurance and other miscellaneous benefits.

¹⁸ Population Projections, Criminal Justice Projections Committee. October 2017.

¹⁹ FY 2017-18 Budget Request, Pennsylvania Department of Criminal Justice. March 2017.

Treasury

The Pennsylvania Department of Treasury is responsible for the receipt and disbursement of funds on behalf of the Commonwealth, as well as the deposit, investment and safe keeping of monies and securities belonging to the state of Pennsylvania. Treasury invests those funds in pooled money accounts, bonds and various securities. Treasury also manages debt issuances on behalf of the Commonwealth to provide funding for long-term budget projects and to meet short-term cash flow needs.

Debt Issuances

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 5.13 displays the projected amount of new debt that will be issued over the forecast period.

Table 5.13
Debt Service Payments

Fiscal Year	16-17	17-18	18-19	19-20	20-21	21-22	22-23
Projected Bond Issues ¹	n.a.	\$835	\$960	\$1,055	\$1,085	\$1,115	\$1,160
New Debt Service ²	n.a.	2	83	158	240	325	416
Existing Debt Service ³	<u>n.a.</u>	<u>1,073</u>	<u>1,160</u>	<u>1,099</u>	<u>1,064</u>	<u>1,025</u>	<u>965</u>
Total Debt Service⁴	\$1,111	1,075	1,243	1,257	1,304	1,351	1,381
Growth Rate	-1.4%	-3.3%	15.6%	1.2%	3.7%	3.6%	2.3%

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 2017 and is adjusted to account for General Fund debt service payments that originate from non-General Fund sources.

³ Debt service related to bonds issued before November 2017 and adjusted to account for General Fund debt service payments that originate from non-General Fund sources.

⁴ Debt service for FY 2017-18 is \$45 million below the appropriated amount due to anticipated cost savings related to debt refinancing in the current year.

General obligation bonds are issued to meet cash flow needs, and are dedicated for specific projects. Each year, these 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 debt service obligations created by bond issuances are the primary component (roughly 95 percent) of Treasury’s General Fund expenditures. The amount of debt service associated 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 held steady over the short-term, certain maturities in recent bond issues have required underwriting from a municipal bond insurance policy to increase the desirability of those maturities among investors. 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 reflected in the Commonwealth’s November 2017 bond issuance, which was the first issuance to receive a reduced rating since February 2015. (See Table 5.14.)

Table 5.14
Pennsylvania Bond Ratings

Bond Issue	Assigned 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-

¹ Certain maturities were insured by a municipal bond insurance policy and therefore received a higher rating by 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).

Forecast

Table 5.15 details baseline debt service projections for the Department of Treasury. These projections assume a drop in borrowing for both the buildings and structures category and the Redevelopment Assistance Capital Projects program in FY 2017-18. Following this initial decline, borrowing for both categories is expected to steadily increase over the next four years. Interest rates are also expected to rise over the forecast period. The interest rate assumptions are related to an anticipated overall 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 2017-18 would increase borrowing costs by roughly \$1 billion over the next 20 years (through FY 2037-38). The impact of any change is linear, so that an increase of 1.0 percentage point would raise costs by roughly \$2 billion. Total Treasury expenditures are projected to increase from \$1.13 billion in FY 2017-18 to \$1.41 billion in FY 2022-23, an average increase of 4.9 percent per annum.

Table 5.15
General Fund Expenditures - Department of Treasury

Fiscal Year	16-17	17-18	18-19	19-20	20-21	21-22	22-23
Wages ¹	\$14	\$16	\$16	\$17	\$17	\$17	\$18
Pensions	5	7	7	7	7	7	8
Retiree Healthcare	4	3	3	3	3	4	4
Employee Healthcare ²	7	6	6	7	7	7	7
Debt Service	1,111	1,075	1,243	1,257	1,304	1,351	1,381
All Other	<u>30</u>	<u>25</u>	<u>22</u>	<u>23</u>	<u>23</u>	<u>23</u>	<u>24</u>
Total	1,171	1,132	1,298	1,313	1,361	1,409	1,441
Growth Rate	-0.6%	-3.3%	14.6%	1.2%	3.6%	3.5%	2.3%

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.

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 2017-18, the MLF appropriation to the State Police is capped at \$801.7 million (same as the FY 2016-17 amount). Beginning in FY 2018-19, 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 2017-18, the MLF appropriation to the State Police is \$778 million, which is \$23 million below the capped amount for that fiscal year. That reduction 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 absorbs future cost increases and backfills funds previously supplied by the MLF. State Police expenditures grow at an average rate of 2.3 percent per annum prior to the MLF funding shift, and 14.9 percent per annum after the shift. Table 5.16 itemizes the impact of Act 85 on the General Fund for FY 2018-19 and future years.

Table 5.16
General Fund Expenditures - State Police

Fiscal Year	16-17	17-18	18-19	19-20	20-21	21-22	22-23
Wages ¹	\$102	\$93	\$95	\$96	\$97	\$98	\$99
Pensions	48	52	53	54	54	53	56
Retiree Healthcare	35	36	36	39	42	45	47
Employee Healthcare ²	29	28	29	30	31	32	33
All Other	<u>43</u>	<u>43</u>	<u>44</u>	<u>44</u>	<u>45</u>	<u>46</u>	<u>47</u>
Sub-Total	257	252	257	264	270	275	283
Growth Rate	4.5%	-1.8%	1.7%	2.8%	2.4%	1.8%	2.9%
MLF Funding Shift ³	0	0	25	73	122	172	222
Total	257	252	281	337	393	447	505
Growth Rate	4.5%	-1.8%	11.5%	19.9%	16.4%	13.8%	12.9%

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 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 2.6 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).
- For FY 2017-18, the Department of Labor and Industry (included in “All Others” in Table 5.17) has \$69 million appropriated. However, in FY 2019-20, the appropriation increases significantly due to the repayment of \$165 million loan to the Workers’ Compensation Security Fund.
- Appropriations to the Department of Conservation and Natural Resources (DCNR) reflect a shift of reliance from the Oil and Gas Lease Fund to the General Fund. For FY 2017-18, DCNR’s General Fund appropriation is \$106 million, and its appropriation from the Oil and Gas Lease Fund is \$61 million. (See Appendix for further detail.)

Table 5.17
General Fund Expenditures - All Other Agencies

Fiscal Year	16-17	17-18	18-19	19-20	20-21	21-22	22-23
Legislature ¹	\$362	\$381	\$391	\$402	\$413	\$422	\$434
Judiciary	356	356	365	374	383	391	403
PHEAA	321	322	321	321	321	321	321
Health	215	186	190	194	199	203	208
Revenue	179	185	190	195	199	204	209
Executive Offices	184	181	185	190	195	199	204
Environmental Protection	148	148	152	156	160	163	168
Community & Economic Dev.	146	145	149	152	155	159	162
Agriculture	144	144	147	151	154	157	161
Military & Veterans Affairs	146	144	147	151	155	158	162
General Services	119	117	120	123	126	129	133
Cons. & Natural Resources	107	106	121	125	129	133	138
All Others	<u>343</u>	<u>318</u>	<u>325</u>	<u>498</u>	<u>341</u>	<u>349</u>	<u>358</u>
Total	2,770	2,731	2,803	3,033	2,931	2,987	3,062
Growth Rate	3.2%	-1.4%	2.6%	8.2%	-3.4%	1.9%	2.5%

Note: figures in dollar millions.

¹ Includes government support agencies.

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Section 6: Fiscal Outlook

The data and analysis presented in this report facilitate an assessment of the Commonwealth's fiscal outlook over the next five fiscal years. Previous sections discussed demographic and economic trends that are relevant to the outlook. The report uses those trends to make projections of revenues and expenditures on the basis of current law and policy. This section combines those projections to identify any long-term structural surplus or deficit. A structural imbalance implies that the imbalance remains after unusual economic conditions or other factors (e.g., one-time revenue transfers) are no longer relevant. By definition, a structural imbalance cannot be eliminated by temporary measures.

The Commonwealth has operated with a long-term structural imbalance in the General Fund for several years, largely due to the 2008-09 recession and the tepid recovery. In prior budgets, the imbalances were addressed by a mix of policy choices that included (1) revenue enhancements, transfers and accelerations, (2) expenditure reductions, shifts and deferrals and (3) increased reliance on special funds and federal funds.

Table 6.1 (next page) displays a condensed General Fund financial statement with projected ending balances through FY 2022-23. The estimates reflect the revenue and expenditure policies embedded in the FY 2017-18 budget and present the results of IFO extrapolations based on economic and demographic trends. Overall, the results reflect improvement compared to the ending balances projected in a previous report.²⁰ For example, the ending balances in this report indicate a net gain of approximately \$1 billion annually for FY 2018-19 through FY 2021-22.

The IFO's estimate for the FY 2017-18 ending balance is \$79 million, an amount that incorporates the deficit carried over from the prior year, the IFO's revenue estimate and the appropriations enacted for the current fiscal year. The current-year balance (ignoring lapses and the beginning balance) is \$1.41 billion, but declines to -\$593 million without the revenues from borrowing and one-time transfers (see below). The following bullets provide detail for FY 2017-18:

- Revenues (before refunds) increase by \$3.03 billion from the prior year. Base revenues increase by \$727 million (2.3 percent), and new revenues of \$2.30 billion are derived from borrowing, transfers, gaming expansion, tax law changes and the impact of a recent court decision.
 - Borrowing and one-time transfers account for \$2.00 billion: (1) \$1.50 billion from securitizing Tobacco Settlement Fund revenues, (2) \$300

²⁰ *Economic and Budget Outlook; Fiscal Years 2016-17 to 2021-22*, Independent Fiscal Office, November 2016.

million from special fund transfers as authorized by the Fiscal Code and (3) \$200 million from a transfer by the Joint Underwriting Association.

- Non-recurring licenses and fees related to gaming expansion generate \$103 million.
- A recent decision by the Pennsylvania Supreme Court regarding the net operating loss deduction under the corporate net income tax increases revenue by \$207 million, after accounting for the effect of a recent tax law change.
- Base revenue estimates are reduced by \$94 million (compared to the IFO's official estimate). The main reasons for the adjustments are (1) income shifting motivated by potential federal tax changes (-\$90 million) and (2) recognition of insurance premiums tax guarantee association credits (-\$33 million). An additional \$29 million is added for various revenue sources.
- Increased fees of approximately \$62 million reduce the appropriated General Fund spending in the base year, and those reductions are carried forward to all future years.
- DHS appropriations decline from the prior year (-\$247 million, -2.0 percent) based on extensive use of (1) funds appropriated to the previous fiscal year and (2) various one-time funds. These savings reverse in the next fiscal year.

Table 6.1
General Fund Balance Sheet

Fiscal Year	16-17	17-18	18-19	19-20	20-21	21-22	22-23
Beginning Balance ¹	\$5	-\$1,538	--	--	--	--	--
Current Year Revenues	31,670	34,700	\$33,708	\$34,665	\$35,888	\$36,953	\$37,707
Less Refund Reserve	-1,350	-1,342	-1,305	-1,325	-1,370	-1,415	-1,465
Net Revenue	30,320	33,358	32,403	33,340	34,518	35,538	36,242
State Expenditures ²	-31,942	-31,951	-33,516	-35,330	-36,417	-37,447	-38,556
Current Year Balance	-1,622	1,407	-1,113	-1,990	-1,899	-1,909	-2,314
Adjustment for Lapses ³	79	210	125	125	125	125	125
Preliminary Ending Balance	-1,538	79	-988	-1,865	-1,774	-1,784	-2,189

Note: figures in dollar millions.

¹ Includes adjustments. Beginning balance omitted for FY 2018-19 and thereafter.

² Based on appropriations and executive authorizations.

³ Current year lapses plus prior year lapses.

For FY 2018-19, the analysis finds a potential shortfall of slightly less than \$1.0 billion based on a decline in revenues and an increase in expenditures.

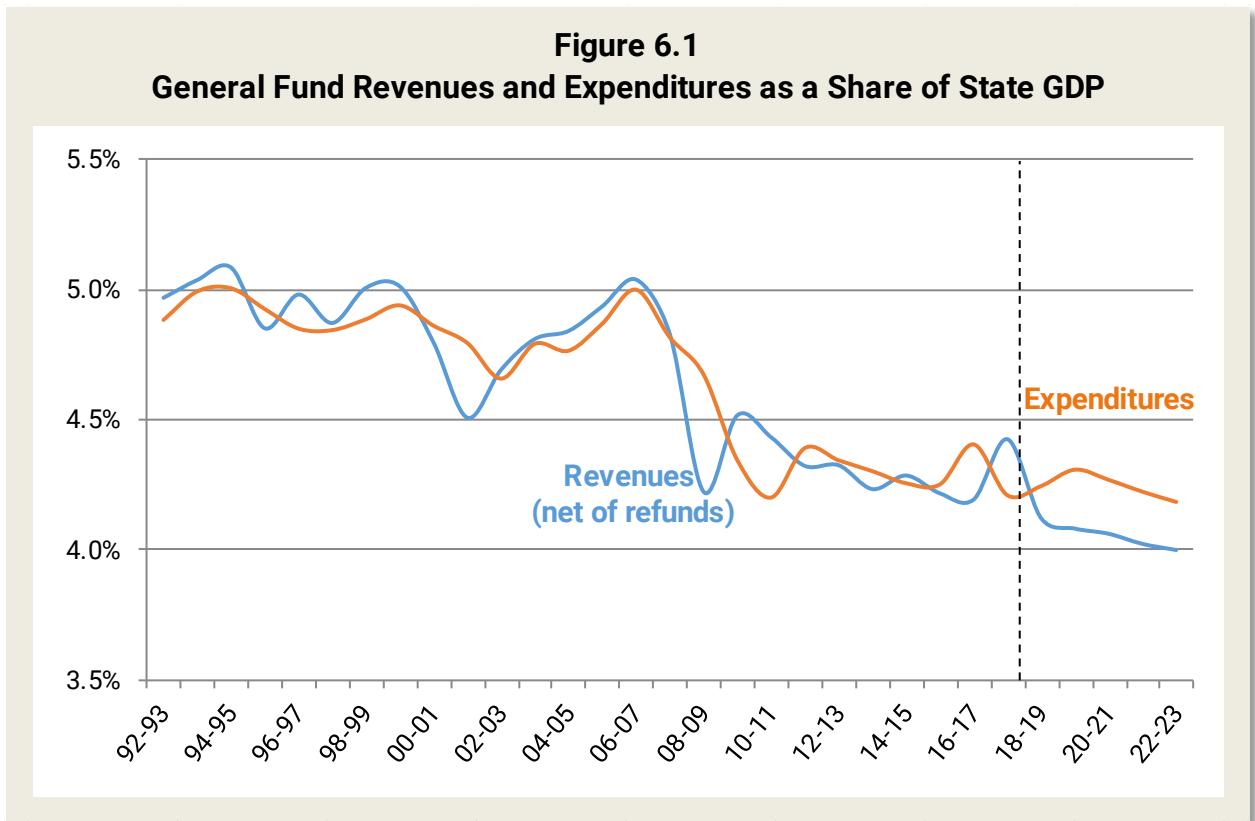
- Revenues (before refunds) decline by \$992 million as follows:
 - Base revenues increase by \$1.10 billion (3.4 percent).
 - The 2017 tax changes, gaming expansion and NOL court decision account for \$216 million of revenue, a decline of \$87 million from the prior year.
 - The borrowing and fund transfers utilized in the prior year are not available in FY 2018-19 (-\$2.00 billion).
- Expenditures increase by \$1.56 billion (4.9 percent) as follows:
 - Department of Education (\$642 million, 4.8 percent). The major line item increases are for the state share of school employees' retirement, basic and special education funding, and authority rentals and sinking fund requirements (PlanCon).
 - Department of Human Services (\$607 million, 5.0 percent). The increase is motivated by the expiration and reversal of the methods that temporarily reduce FY 2017-18 appropriations. However, the forecast restrains growth by assuming no inflation adjustment for long-term living programs in this fiscal year.
 - General obligation debt service (\$168 million, 15.6 percent).
 - All other (\$148 million, 2.7 percent).

The potential disparity between revenues and expenditures reaches -\$1.87 billion in FY 2019-20 and increases to -\$2.19 billion by FY 2022-23. Over the last four years of the forecast, expenditures increase at an average rate of 3.6 percent per annum and net revenues increase at an average rate of 3.2 percent.²¹ The 2017 tax and revenue legislation provides \$140 million in FY 2019-20 and \$72 million by FY 2022-23, and these estimates are reflected in the growth rates.

The disparity between revenues and expenditures is characterized as potential due to the Commonwealth's balanced budget requirement. Each year, state officials consider changes in law or policy to bring the budget into balance. The size of the projected disparity reflects the difficult choices that policymakers will confront in future budgets. The projected imbalance for FY 2018-19 (-\$0.99 billion) cannot occur because policymakers have various methods to address the imbalance. If policymakers adopt temporary measures, then the long-term imbalance would be largely unaffected. If they enact permanent changes to revenue or spending levels, then those changes would have implications for all future years.

²¹ The computation excludes a new transfer (\$480 million) from sales and use tax to the Public Transportation Trust Fund that begins in FY 2022-23.

A useful convention to depict long-term budget trends is to display the main components of the General Fund financial statement relative to the total size of the Pennsylvania economy. Figure 6.1 displays actual and projected revenues and expenditures as a share of the state economy (nominal gross domestic product, or GDP) from FY 1992-93 to FY 2022-23. For the period prior to the 2008-09 recession, revenues and expenditures averaged between 4.5 and 5.0 percent of state GDP. However, the recession resulted in a permanent downward shift, and the share for both revenues and expenditures have steadily declined. By the end of the forecast, the shares approach 4.0 percent of state GDP because General Fund revenues and large appropriations for PDE and Criminal Justice expand at a slower rate than the state economy.



Appendix

Demographics

Table A.1
Pennsylvania Population Projections 2015 to 2025

Age	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
0-4	715	712	703	700	697	695	694	693	693	693	694
5-9	736	732	727	725	723	721	718	715	711	707	703
10-14	760	754	753	750	748	746	744	741	739	736	734
15-19	829	823	828	842	854	862	866	867	865	859	850
20-24	857	841	829	833	840	848	859	872	887	904	923
25-29	864	869	859	844	832	824	819	818	821	827	837
30-34	798	809	847	861	870	874	872	865	852	833	810
35-39	739	755	769	779	790	803	817	833	850	869	889
40-44	757	726	716	719	724	731	739	750	763	778	796
45-49	839	832	798	781	768	757	748	742	739	739	741
50-54	930	903	877	861	845	829	812	795	778	761	743
55-59	950	949	938	930	919	906	891	873	853	830	805
60-64	839	855	877	889	897	901	901	897	890	879	864
65-69	696	729	732	743	756	769	782	796	811	826	841
70-74	500	508	555	580	605	627	648	667	685	701	715
75-79	367	373	387	399	414	431	451	473	498	525	555
80-84	283	280	279	281	286	292	300	310	321	335	350
85+	334	334	335	338	340	343	346	349	352	356	360
Total	12,792	12,784	12,808	12,858	12,907	12,957	13,007	13,058	13,108	13,159	13,209

Note: thousands of residents.

Source: Pennsylvania State Data Center with adjustments 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 supplied by the Pennsylvania State Data Center. 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 six years, the Pennsylvania economy generated an average of 45,000 to 50,000 net jobs per year. The forecast assumes that trend continues through 2023. 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, 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 section 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 2017 and 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 2017. 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 1.8 to 2.2 percent per annum for 2017 through 2023. Historically, the Pennsylvania economy

has expanded at a rate that is approximately 0.3 to 0.5 percentage points lower than the nation. That differential is largely driven by slower demographic growth in Pennsylvania.

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 2.3 percent per annum from 2016 to 2023. 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 1.1 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 (4.0 percent) of total wages.

Data Sources

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 2017).²²

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.

²² Cash Income was referred to as Current Income in previous documents.

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 2015). 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.²³ 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>.

²³ This assumption is based upon the paper by Saebblehaus 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

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Payroll Employment ¹	5,616	5,621	5,686	5,726	5,740	5,788	5,834	5,887	5,945	6,000	6,054	6,107	6,159	6,209	6,261
Change		5	65	40	14	47	47	52	58	55	54	53	52	51	51
Growth Rate		0.1%	1.2%	0.7%	0.2%	0.8%	0.8%	0.9%	1.0%	0.9%	0.9%	0.9%	0.8%	0.8%	0.8%
Residents: Age 20 to 69 ¹	8,074	8,130	8,188	8,228	8,243	8,263	8,269	8,269	8,242	8,241	8,240	8,240	8,241	8,242	8,244
Employ / Population	69.6%	69.1%	69.4%	69.6%	69.6%	70.0%	70.6%	71.2%	72.1%	72.8%	73.5%	74.1%	74.7%	75.3%	75.9%
Real Output per Worker ¹	102.2	104.9	105.1	106.0	107.5	108.6	110.5	110.8	111.6	112.7	113.8	115.0	116.3	117.6	118.9
Growth Rate		2.6%	0.1%	0.9%	1.4%	1.1%	1.8%	0.2%	0.8%	1.0%	1.0%	1.0%	1.1%	1.1%	1.1%
Real GDP ²	574.0	589.7	597.3	607.2	617.1	628.7	644.9	652.0	663.7	676.2	689.1	702.4	716.2	730.0	744.1
Growth Rate		2.7%	1.3%	1.6%	1.6%	1.9%	2.6%	1.1%	1.8%	1.9%	1.9%	1.9%	2.0%	1.9%	1.9%
Philadelphia CPI-U	223.3	227.7	233.8	238.1	240.9	244.1	243.9	245.3	249.5	254.4	259.8	265.2	270.8	276.5	282.3
Growth Rate		2.0%	2.7%	1.8%	1.2%	1.3%	-0.1%	0.6%	1.7%	2.0%	2.1%	2.1%	2.1%	2.1%	2.1%
Wages-Salaries ²	254.5	259.8	270.0	280.1	285.3	296.3	308.4	312.5	324.2	336.6	349.8	363.5	377.7	392.3	407.5
Growth Rate		2.1%	3.9%	3.7%	1.8%	3.9%	4.1%	1.3%	3.8%	3.8%	3.9%	3.9%	3.9%	3.9%	3.9%
Average Wage ¹	45.3	46.2	47.5	48.9	49.7	51.2	52.9	53.1	54.5	56.1	57.8	59.5	61.3	63.2	65.1
Growth Rate		2.0%	2.7%	3.0%	1.6%	3.0%	3.2%	0.4%	2.7%	2.9%	3.0%	3.0%	3.0%	3.0%	3.0%

¹ Thousands of units or dollars.

² Billions of dollars.

Potential Impact of Recession

As noted earlier, the economic forecast used for this report assumes that the Pennsylvania economy expands at a rate that is consistent with full employment, historic productivity growth rates and the Federal Reserve's target rate of inflation. Due to these assumptions, the economic forecast is best viewed as a controlled simulation that assumes the state economy does not encounter a boom or bust period.

However, it is possible that the national and state economies will endure at least a mild recession during the next five fiscal years. The November edition of the *Wall Street Journal* Economic Forecasting Survey places the average chance of a recession during the next year at 15 percent.²⁴ If that probability holds for all years through 2022, then the chance that a recession does not occur during the next five fiscal years is roughly 44 percent, while the chance of a mild recession in at least one fiscal year is 56 percent.²⁵

Given this likelihood, a pertinent question for policymakers is how a recession might impact General Fund revenues. Table A.3 provides selected economic and revenue growth rates from the latest two recessions. The first recession (the "dot com" recession) was relatively mild as real state GDP growth declined moderately to 1.0 percent in 2002, while wage and salary growth declined to 2.8 percent (2002) and 1.8 percent (2003). Payroll employment contracted by 41,600 (2002) and 30,800 (2003). By contrast, the more recent housing and financial market recession was severe. Real GDP (-2.9 percent) and wages (-2.2 percent) paid to workers contracted in 2009, while employment fell by 184,200 jobs.

During both recessions, most General Fund revenues declined. (See bottom of Table A.3.) While the reduction in withholding tax revenues was modest, non-withholding and corporate net income tax revenues declined significantly. Certain revenue sources contracted for two consecutive fiscal years prior to recovery.

This analysis does not include a recession during the five-year forecast window, and it is unclear how a recession might impact projected General Fund revenues. The impact would depend on the type, duration and severity of the recession. The impact might also be temporary or permanent. For the latest recession, researchers believe that size of the national and state economies endured a permanent reduction that was not later fully reversed during recovery. It is also possible that economic growth could rebound from a recession and temporarily exceed historical averages, prior to reversion to a long-term expansion path. In that event, some of the lost revenues would be recaptured.

Readers can use the growth rates from Table A.3 to gauge the potential impact of a mild, moderate or severe recession. For FY 2018-19, the economic simulation used by this

²⁴ The monthly survey polls approximately 75 professional economists regarding their projections for a dozen economic indicators. See <http://projects.wsj.com/econforecast/#ind=gdp&r=20>.

²⁵ The non-recession likelihood is equal to 0.85 raised to the fifth power, and the likelihood of recession is the residual.

report yields \$33.71 billion of General Fund revenues. Each 1.0 percentage point reduction in projected revenue growth produces a \$337 million reduction in revenues. If the assumed non-recession General Fund growth rate was 3.0 percent, and one assumes that a recession causes General Fund revenues to decline by 2.0 percent, then the computed impact would be \$1.7 billion (5.0 times \$337 million) revenue reduction. If the recession affects multiple years, then the computation should reflect that outcome.

Table A.3
Economic and Revenue Impact of Mild and Severe Recession

CY Economics	Mild Recession			Severe Recession		
	2001	2002	2003	2008	2009	2010
Real GDP	1.6%	1.0%	2.2%	1.5%	-2.9%	2.7%
Wages-Salaries	6.0%	2.8%	1.8%	2.7%	-2.2%	2.1%
Employment (000s)	-9.0	-41.6	-30.8	1.2	-184.2	5.3

FY Revenues	Mild Recession			Severe Recession		
	00-01	01-02	02-03	07-08	08-09	09-10
PIT						
Withholding	6.5%	-0.2%	1.9%	3.7%	-0.2%	0.7%
Non-Withholding	4.6%	-17.9%	-9.0%	13.3%	-22.5%	-11.8%
SUT						
Non-Motor Vehicle	2.6%	0.1%	2.3%	-0.4%	-3.0%	-2.0%
Motor Vehicle	2.9%	7.6%	7.2%	-5.8%	-12.8%	3.8%
Corp. Net Income	-13.8%	-11.5%	-1.5%	-3.0%	-18.1%	-9.5%
Other Tax Revenue	<u>-1.9%</u>	<u>-1.8%</u>	<u>5.1%</u>	<u>2.5%</u>	<u>-9.0%</u>	<u>2.8%</u>
Total Tax Revenue	1.4%	-2.6%	1.9%	2.3%	-7.3%	-1.5%

Note: FY 2002-03 growth rate controls for cigarette tax increase.

Revenues

Table A.4
General Fund Revenues

FY Ending	Amounts (\$ millions)						Regional CPI-U (levels)	Nominal State GDP (\$ billions)
	Corporate Net	Other Corporate	Sales and Use	Personal Income	All Other	General Fund		
1997	\$1,697	\$2,212	\$6,037	\$5,746	\$1,629	\$17,321	164.7	\$347.6
1998	1,703	2,295	6,152	6,236	1,736	18,123	167.4	364.7
1999	1,725	2,363	6,606	6,684	1,850	19,227	170.1	382.2
2000	1,860	2,333	7,018	7,066	1,980	20,257	174.2	399.6
2001	1,603	2,260	7,204	7,492	2,003	20,562	178.9	417.3
2002	1,419	2,183	7,293	7,139	2,027	20,060	183.1	432.0
2003	1,397	2,354	7,520	7,106	2,938	21,315	186.9	447.3
2004	1,678	2,673	7,729	7,734	3,015	22,828	192.7	470.2
2005	1,921	2,830	8,000	8,747	2,810	24,309	200.4	495.1
2006	2,302	2,888	8,334	9,524	2,806	25,854	208.2	516.2
2007	2,493	2,984	8,591	10,262	3,121	27,449	214.4	542.9
2008	2,418	3,040	8,497	10,908	3,066	27,928	220.4	569.7
2009	1,980	2,854	8,136	10,199	2,361	25,530	223.7	576.7
2010	1,791	2,788	8,029	9,969	5,071	27,648	225.5	585.3
2011	2,132	2,761	8,590	10,436	3,579	27,497	230.8	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	239.5	648.8
2014	2,502	2,397	9,130	11,437	3,142	28,607	242.5	672.3
2015	2,811	2,305	9,493	12,107	3,875	30,593	244.0	696.6
2016	2,842	2,295	9,795	12,506	3,463	30,902	244.6	716.7
2017	2,751	2,063	10,005	12,664	4,186	31,670	247.4	738.6
2018	3,018	2,030	10,230	13,223	6,199	34,700	252.0	766.9
2019	3,168	1,988	10,581	13,852	4,119	33,708	257.1	797.5
2020	3,236	2,015	10,929	14,392	4,093	34,665	262.5	829.9
2021	3,311	2,038	11,247	15,170	4,122	35,888	268.0	863.8
2022	3,409	2,081	11,577	15,718	4,168	36,953	273.7	899.1
2023	3,514	2,140	11,428	16,410	4,216	37,707	279.4	935.8
Average Annual Growth Rates								
1997 to 2007	3.9%	3.0%	3.6%	6.0%	6.7%	4.7%	2.7%	4.6%
2007 to 2017	1.0%	-3.6%	1.5%	2.1%	3.0%	1.4%	1.4%	3.1%
2017 to 2023	4.2%	0.6%	2.2%	4.4%	0.1%	3.0%	2.1%	4.0%

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

Expenditures

**Table A.5
General Fund Expenditures**

FY Ending	Amount (\$ millions)					General Fund	Regional CPI-U (levels)	Nominal State GDP (\$ billions)
	Education ¹	Human Services	Criminal Justice ²	Treasury	All Other			
1997	\$7,027	\$5,363	\$894	\$586	\$2,596	\$16,467	164.7	\$347.6
1998	7,214	5,553	977	649	2,838	17,230	167.4	364.7
1999	7,511	5,853	1,042	788	3,069	18,263	170.1	382.2
2000	7,640	6,189	1,130	656	3,680	19,295	174.2	399.6
2001	8,041	6,480	1,161	414	3,766	19,862	178.9	417.3
2002	8,277	6,669	1,151	586	3,747	20,429	183.1	432.0
2003	8,509	6,530	1,247	393	3,721	20,400	186.9	447.3
2004	8,754	7,440	1,299	713	3,680	21,885	192.7	470.2
2005	9,407	7,886	1,331	450	3,980	23,054	200.4	495.1
2006	9,687	8,918	1,358	769	3,933	24,665	208.2	516.2
2007	10,461	9,304	1,420	900	4,212	26,298	214.4	542.9
2008	11,060	8,617	1,600	923	4,768	26,968	220.4	569.7
2009 ³	11,273	8,590	1,606	955	4,660	27,084	223.7	576.7
2010 ³	10,588	8,577	1,593	976	3,209	24,942	225.5	585.3
2011 ³	10,455	8,780	1,663	1,023	3,146	25,067	230.8	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	239.5	648.8
2014	11,114	11,045	1,998	1,117	3,121	28,395	242.5	672.3
2015	11,564	11,362	2,134	1,144	3,069	29,200	244.0	696.6
2016	12,103	11,516	2,235	1,177	3,096	30,127	244.6	716.7
2017	12,801	12,380	2,564	1,171	3,027	31,942	247.4	738.6
2018	13,243	12,133	2,460	1,132	2,984	31,951	252.0	766.9
2019	13,885	12,740	2,509	1,298	3,084	33,516	257.1	797.5
2020	14,330	13,757	2,560	1,313	3,370	35,330	262.5	829.9
2021	14,639	14,488	2,607	1,361	3,323	36,417	268.0	863.8
2022	14,930	15,027	2,646	1,409	3,434	37,447	273.7	899.1
2023	15,239	15,602	2,708	1,441	3,566	38,556	279.4	935.8
Average Annual Growth Rates								
1997 to 2007	4.1%	5.7%	4.7%	4.4%	5.0%	4.8%	2.7%	4.6%
2007 to 2017	2.0%	2.9%	6.1%	2.7%	-3.3%	2.0%	1.4%	3.1%
2017 to 2023	2.9%	3.9%	0.9%	3.5%	2.8%	3.2%	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.

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.6 displays a history and forecast for special funds that augment General Fund expenditures.

Table A.6
Other Fund Disbursements to the General Fund

Fiscal Year	Lottery ¹	Tobacco ²	Oil & Gas ³	Total
2006-07	\$249	\$170	\$4	\$423
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	96	690
2016-17	308	297	50	655
2017-18	308	297	71	676
2018-19	308	297	50	655
2019-20	308	247	50	605
2020-21	308	197	50	555
2021-22	308	197	50	555
2022-23	308	197	50	555

Note: figures in dollar millions.

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

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

³ Includes General Government, State Parks and State Forests.

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 2017-18 through FY 2022-23. These forecasts inform the projection of General Fund appropriations found in the 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 both General and Lottery Fund appropriations. Lottery monies fund most of the budget for the Department of Aging, and it does not receive any General Fund appropriations.

For FY 2016-17, Lottery Fund expenditures (\$1.85 billion) exceeded receipts (\$1.73 billion). The ending balance for FY 2016-17 is estimated to be -\$19 million based on a beginning balance of \$27 million and the elimination of the \$75 million reserve. (See Table A.7.) For future fiscal years, the negative ending balance and modest net revenue growth call into question the ability of the Lottery Fund to support General Fund appropriations for DHS programs at current levels (discussed later).

Gross ticket sales (excluding sales from new legislation and policy initiatives) are projected to grow at an average rate of 2.4 percent per annum for FY 2017-18 through FY 2022-23:

- Instant ticket sales grow by 3.3 percent per annum, based on trends in disposable current income and the 18 or older population, who may legally purchase tickets.
- Multi-state lottery sales grow by 2.8 percent per annum based on demographic and income trends.
- All other game (in-state lottery, numbers and raffle) sales decline by 1.0 percent per annum. Numbers games are projected to decline by 2.2 percent per annum, while in-state lottery sales are projected to increase by 1.4 percent per annum.

The forecast projects that net revenues (gross ticket sales less prizes, commissions, transfers and other amounts) will grow at an average rate of 1.1 percent per annum from FY 2017-18 to FY 2022-23. It assumes that the \$75 million balance sheet reserve eliminated for FY 2016-17 will not be restored.

The forecast also reflects the following assumptions:

- Beginning in FY 2017-18, the Lottery Fund will be affected by recent legislative and policy changes. Act 42 of 2017, which authorized expanded gaming in Pennsylvania, also permits the Lottery to offer Keno and internet-based instant games on mobile devices (iLottery). In addition, officials recently announced the introduction of virtual sports games. Estimates for the net impact of these games, along with the impact on the Lottery Fund of the new Category 4 casinos authorized in Act 42, are included in Table A.7.
- A Pharmaceutical Assistance Fund supplemental appropriation of approximately \$30 million will be required for FY 2017-18 based on the enactment of House Bill 118, which provides for dispensing fees.
- Expenditures that are funded through disbursements from the Lottery Fund, with the exception of those for DHS, are based on the growth in the relevant service populations and an inflationary adjustment.

The forecast projects that total expenditures will increase by 1.9 percent per annum from FY 2017-18 through FY 2022-23. The department details are as follows:

- Department of Aging appropriations grow by 4.2 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 growth will be lower than the rate of healthcare inflation 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 0.8 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 grow by 3.0 percent per annum. The revenues are earmarked for the Older Pennsylvanians Shared Ride program and a transfer to the Public Transportation Trust Fund. The forecast for those transfers is based on historical cost trends for state assisted shared ride vehicles and free transit for older Pennsylvanians.
- The DHS appropriations for Home and Community-Based Services, Medical Assistance - Transportation Services and Medical Assistance - Long-Term

Care are held flat for the purposes of the forecast. The negative annual fund balances projected for FY 2018-19 through FY 2022-23 suggest the inability of the fund to support appropriations at current levels without legislative or policy changes. Such changes could include additional measures to boost net income or the movement of appropriations currently supported by the Lottery Fund to the General Fund.

**Table A.7
Lottery Fund Financial Statement**

Fiscal Year	16-17	17-18	18-19	19-20	20-21	21-22	22-23
Beginning Balance	\$27	-\$19	--	--	--	--	--
Reserve from Prior Year	75	--	--	--	--	--	--
Total	102	-19	--	--	--	--	--
Gross Ticket Sales	4,001	4152	\$4,262	\$4,370	\$4,476	\$4,580	\$4,682
Less Field Paid Prizes & Comm.	-2441	-2551	-2627	-2701	-2774	-2846	-2916
Transfers, Earnings and Lapses	<u>172</u>	<u>201</u>	<u>145</u>	<u>142</u>	<u>140</u>	<u>138</u>	<u>136</u>
Net Revenue	1,732	1,802	1,780	1,811	1,842	1,872	1,902
Funds Available	1,834	1,783	1,780	1,811	1,842	1,872	1,902
Aging	544	534	556	579	603	628	655
Human Services	308	308	308	308	308	308	308
Revenue	822	840	835	846	856	866	875
Transportation	<u>179</u>	<u>179</u>	<u>184</u>	<u>190</u>	<u>196</u>	<u>202</u>	<u>208</u>
Total Expenditures	1,853	1,861	1,883	1,923	1,963	2,004	2,046
Current Year Reserve	0	0	0	0	0	0	0
New Legislation and Policy Initiatives	0	14	63	46	54	53	55
Ending Balance	-19	-64	-40	-66	-67	-79	-89

Note: figures in dollar millions. Beginning balance omitted for FY 2018-19 and thereafter.

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 2016-17, expenditures (\$388 million) exceed receipts (\$375 million), which reduced the fund balance from \$136 million at the beginning of the fiscal year to an estimated \$123 million at the end of the year (excludes federal funds).

Tobacco Settlement Fund revenue projections for FY 2017-18 through FY 2022-23 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, and an increase in the annual payments is expected to largely offset the loss of these funds beginning in 2018.

The expenditure forecast reflects the following assumptions:

- As permitted by Act 43 of 2017, the Commonwealth Financing Authority will issue thirty-year bonds with a principal amount of \$1.5 billion backed by proceeds from the Master Settlement Agreement. The forecast further assumes that principal payments will begin in FY 2018-19, and that interest will be capitalized until FY 2019-20, at which time interest payments will begin. Funds to make the principal and interest payments will be transferred to the Commonwealth Financing Authority.
- The Department of Health expenditures are based on the FY 2017-18 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.
- Appropriations for the Department of Human Services are held flat, with the exception of Medical Assistance – Long-Term Care, which is reduced as necessary to maintain a small fund balance. Reductions in this line item are absorbed by the General Fund.

**Table A.8
Tobacco Settlement Fund Financial Statement**

Fiscal Year	16-17	17-18	18-19	19-20	20-21	21-22	22-23
Beginning Balance	\$136	\$123	\$110	\$73	\$18	\$13	\$8
Gross Settlements	348	350	350	350	350	350	350
Strategic Contributions	21	0	0	0	0	0	0
Interest and Other	<u>6</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total Revenues	375	350	350	350	350	350	350
Funds Available	511	473	460	423	368	363	358
Executive Offices	29	0	0	0	0	0	0
Community & Economic Dev.	3	3	0	0	0	0	0
Health	59	63	63	63	63	63	63
Human Services	297	297	297	247	197	197	197
Comm. Financing Authority	<u>0</u>	<u>0</u>	<u>27</u>	<u>95</u>	<u>95</u>	<u>95</u>	<u>95</u>
Total Expenditures	388	363	387	405	355	355	355
Ending Balance	123	110	73	18	13	8	3

Note: figures in dollar millions. Excludes federal funds.

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 2016-17, revenues (\$80 million) exceeded expenditures (\$75 million), which increased the fund balance from \$24 million at the beginning of the fiscal year to \$29 million at the end of the year.

For FY 2017-18, General Fund appropriations (\$106 million) supplied the majority of DCNR funding. Appropriations from the OGLF include \$11 million to state park and state forest programs, \$50 million for DCNR's general government operations and a \$35

million transfer to the Marcellus Legacy Fund.²⁶ Based on revenues of \$82 million, the fund balance is projected to be \$5 million at the end of the fiscal year.

The forecast projects that royalty revenues will remain low in FY 2017-18, but eventually return to a level closer to the historical baseline. The reduction in royalty revenues is due to the dramatic reduction in the price of natural gas in recent years. Industry analysts have extended their projections of low prices until at least 2018, and possibly later. Several scheduled pipeline expansions have been delayed or cancelled, extending the market oversupply in relation to accessible demand. The forecast assumes that the price will remain depressed until additional pipeline capacity becomes available near the end of the decade.

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 the gas extracted from state lands.²⁷ 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.
- Under current law, at least \$85 million of available funds are needed each fiscal year to meet the statutory obligations of the OGLF. The current revenue forecast suggests that there may be sufficient funds to continue the appropriations for state parks and state forest operations in future years. However, for the purpose of this financial statement and the DCNR forecast, the analysis assumes that the only expenditures from the fund are the \$50 million appropriation to support DCNR's general government operations and the transfer to the Marcellus Legacy Fund. The positive fund balances may

²⁶ Section 1603-E of the Fiscal Code authorizes an executive authorization of up to \$50 million to DCNR, but the 2017-18 General Appropriations Act included this amount as an appropriation from the OGLF.

²⁷ Natural gas production on state lands is assumed to grow at the same rate as total state production (4.3 percent per annum from CY 2018 to 2023).

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.²⁸

Table A.9
Oil and Gas Lease Fund Financial Statement

Fiscal Year	16-17	17-18	18-19	19-20	20-21	21-22	22-23
Beginning Balance	\$24	\$29	--	--	--	--	--
Royalties	71	75	\$89	\$97	\$106	\$115	\$120
Rents, Interest and Other	<u>9</u>	<u>7</u>	<u>7</u>	<u>7</u>	<u>7</u>	<u>7</u>	<u>7</u>
Total Revenues	80	82	96	103	113	121	127
Funds Available	103	111	96	103	113	121	127
Cons. and Natural Resources	50	71	50	50	50	50	50
Transfers to Other Funds	<u>25</u>	<u>35</u>	<u>35</u>	<u>35</u>	<u>35</u>	<u>35</u>	<u>35</u>
Total Expenditures	75	106	85	85	85	85	85
Ending Balance	29	5	11	18	28	36	42

Note: figures in dollar millions. Beginning balance omitted for FY 2018-19 and thereafter.

²⁸ Pennsylvania Environmental Defense Foundation v. Commonwealth, 161 A.3d 911 (Pa. Cmwlth. 2017)