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The Michigan Economic Outlook for 2022–2023

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Introduction

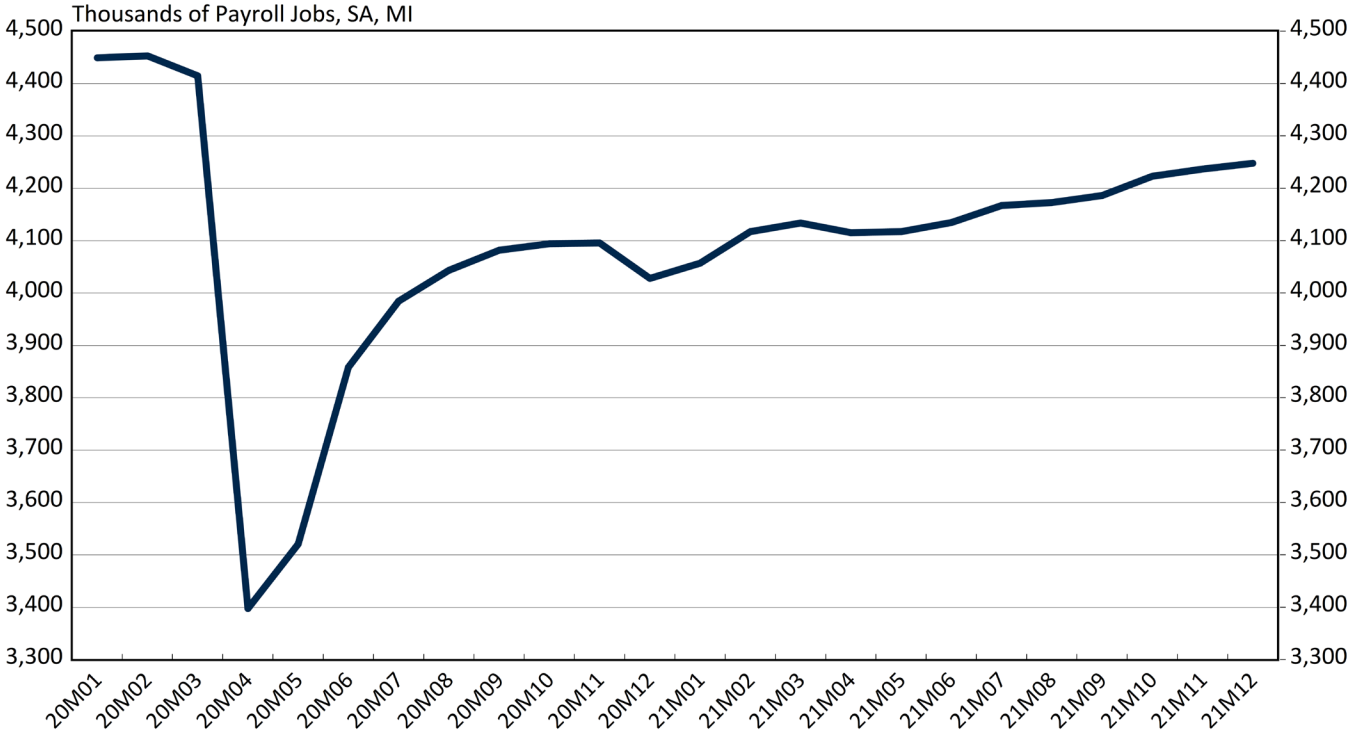
Michigan's labor market ended 2021 on a strong note, gaining an average of 20,400 payroll jobs per month in the fourth quarter. From December 2020 to December 2021, Michigan added nearly 220,000 jobs, and the state has now recovered more than four-fifths of its initial job losses during the COVID-19 pandemic. We are optimistic that with the decline of the Omicron wave of the pandemic and ongoing, if unsteady, improvements in supply chains, 2022 will see the strong recovery of Michigan's labor market continue. We now project Michigan's payroll job count to recover to its pre-pandemic level by the third quarter of 2023.

Figure 1 shows that Michigan has added jobs every month since shedding 18,100 jobs in April 2021. The pace of the job gains has been uneven from month to month, driven by variations in the status of the COVID-19 pandemic and auto supply chains, among other issues. Nonetheless, the underlying momentum of Michigan's economy is evident in the figure.

Unfortunately, some other indicators of Michigan's economic performance, most notably the unemployment rate, have been telling an inconsistent story recently. As currently reported, the state's unemployment rate rose from 4.7 percent in August 2021 to 6.3 percent in September before declining to finish the year at 5.6 percent. The uptick last fall is a statistical anomaly related to revisions in the Bureau of Labor Statistics' (BLS') methodology for estimating Michigan's unemployment rate. Currently, the BLS has implemented its new methodology for estimates of Michigan's unemployment rate from

September through December 2021. The currently published unemployment rates for January through August are based on the older methodology, which produces a spurious apparent increase in the state's unemployment rate in September. This spring, the BLS will release revised estimates for all of 2021 using the most recent methodology, and we expect those figures to show a much smoother path for Michigan's unemployment rate over the past year. In the meantime, we encourage our readers to focus on the state's payroll job count as the best single metric of Michigan's economic recovery.

Figure 1
A Snapshot of Michigan's Labor Market Recovery



The bad news for the local economy, which mirrors the national trend, is that inflation is running at its fastest pace in 40 years. The all-items inflation rate for the Detroit Consumer Price Index (CPI) in December 2021 was 7.0 percent year-over-year, the highest since September, 1981. For historical context, local inflation hit its all-time high of 19.2 percent roughly a year before that, in June 1980. In our experience, though, learning that inflation was even higher back then is not particularly reassuring to most people.

With these trends in mind, we believe one of the most important economic themes to watch in 2022 is whether the Federal Reserve can engineer a "soft landing," in which it brings down inflation

without undermining the recovery in the labor market. The Fed's historical track record in producing such soft landings is mixed, to put it delicately. Michigan's economy is typically more cyclical than the nation's, so we would expect any national economic slowdown to be felt acutely in the state.

Overall, though, we are optimistic that the improving supply side of the economy, along with tighter macroeconomic policy, will lead to a successful soft landing nationally and in Michigan. Although the microchip shortage that has plagued the state's auto industry is not finished, and unpredictable disruptions such as the recent Ambassador Bridge closure remain a risk, we believe that Michigan's auto industry will return to some semblance of normality this year. Supply chains in the construction sector are likely to take longer to heal, but they should also make progress. We expect inflation to remain high in the short-run before beginning to cool off later this year.

In a nutshell, we are forecasting Michigan to return to something resembling the 2019 economy by 2023. Peering around the corner, we can see several long-term trends from prior to the COVID-19 pandemic beginning to reassert themselves in the years ahead. Of course, the new normal will not look exactly like the old normal—the pandemic has brought about many changes in the pattern of economic activity that we expect to persist.

Inputs to the Forecast

Major elements from our U.S. forecast dated February 18, 2022, include the following:

- Real GDP is projected to grow at an annual pace of 2.4 percent in the first quarter of 2022, despite the resurgence of COVID-19 during January. After what we have assumed is the last major wave of COVID-19, mid-2022 sees strong service consumption growth, new home construction investment, and a rebound of spending on new vehicles that will lift real GDP growth to a 4.1 percent pace. We anticipate real GDP growth to moderate to 2.8 percent, amid slowing growth of consumption expenditures and business investment.

- The nation averaged 1.5 million job gains per quarter in 2021 as the labor market recovered from the severe job losses in the initial stage of the pandemic. That performance left the economy 3.3 million jobs shy of pre-pandemic levels at the end of last year. We expect further labor market recovery in 2022, led by continued gains in the service sector. The pace of job gains slows throughout the second half of 2022 and 2023 to 410,000 per quarter by the end of our forecast. Overall, we forecast that total payroll employment will surpass pre-pandemic levels by 2.5 percent at the end of 2023.

- Average wages in the U.S. increased by 6.2 percent in 2021. We expect average wages to continue increasing, by 5.6 percent in 2022 and 4.9 percent in 2023. We would be pleasantly surprised by these numbers under normal circumstances; however, high inflation continues to eat away at the recent nominal wage gains for most workers. We project that headline CPI inflation will increase to 6.1 percent in 2022, outpacing the strong wage gains we are forecasting. Real wage gains are expected to resume in 2023 amid slower, but still elevated, inflation of 3.2 percent.

- Our forecast assumes that the Federal Reserve will end the expansion of its balance sheet by early March and will start to gradually reduce it soon after. As prices rise and the labor market continues to recover, we expect the Fed to begin increasing the target range of the federal funds rate following the March meeting of the Federal Open Market Committee. The target fed funds rate range reaches 1.5–1.75 percent by the end of this year and 2.25–2.5 percent by the end of 2023Q4.

- Inflation is eating away at more than just wage gains, as the Biden economic agenda struggles to pick up support amid rising prices. The federal government has yet to pass a full-year funding bill, and it will most likely rely on another continuing resolution before a more substantial funding bill is in place. The fiscal picture is largely uncertain beyond the continuing resolution, but we believe a compromise is in sight. We expect a much smaller version of Build Back Better to pass this spring, comprising a slimmed-down list of popular provisions—the child tax credits, ACA credits, some climate-related provisions, and a limited return of the SALT deduction—at a 10-year price tag of approximately 700 billion dollars.

The Forecast of the State Economy

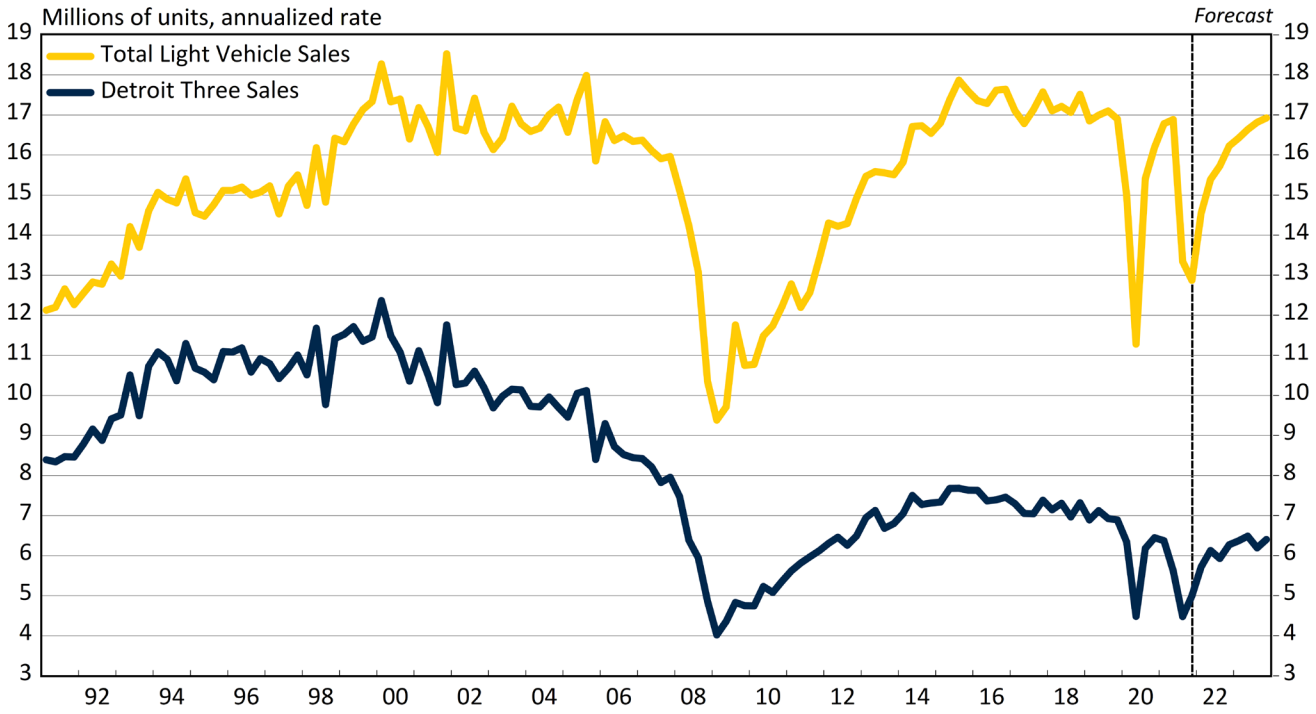
Detroit Three Light Vehicle Sales

Figure 2 shows our quarterly forecast for total U.S. and Detroit Three light vehicle sales. The annualized light vehicle sales pace averaged only 12.9 million units in the final quarter of 2021, amid severe supply-chain shortages in the auto industry. That sales pace jumped to 15 million units in January, as the microchip shortage eased. Unfortunately, production disruptions owing to the Omicron wave's effects on supply chains and the week-long Ambassador Bridge blockade will likely lower output this quarter, delaying dealer lot restocking. We believe production will be able to kick into high gear throughout the remainder of the year, allowing inventories to rebuild slowly. Rising production should support our expected sales pace of 16.2 million units by the final quarter of the year. We expect the sales pace to continue to improve throughout 2023, as production catches up to demand, reaching 16.9 million units by the end of 2023

We expect the Detroit Three's share of the light vehicle market to average 39.3 percent this quarter, as supply constraints dissipate. Despite the recent rebound in the Detroit's three share of the market, we expect the downward long-run trend to reassert itself in the second half of this year as the

vehicle market drives toward balance. We forecast that the Detroit Three's share of the market will decline to 38.7 percent by the end of 2022 and to 37.9 percent by the end of 2023. Translating our forecast into unit sales, we predict Detroit Three light vehicle sales will rebound to 6.0 million units for calendar year 2022 and a pace of 6.3 million units by 2022Q4. We anticipate minor improvements in 2023, leading to a sales pace of 6.4 million units, or 8.5 percent below 2019's level.

Figure 2
Quarterly Light Vehicle Sales, Total U.S. vs. Detroit Three



Payroll Employment

Figure 3 shows our forecast of Michigan's payroll job count on a quarterly basis. The pace of job growth in the state more than doubled from the first half to the second half of 2021, rising from an average of 24,900 quarterly job gains in 2021H1 to 56,700 in 2021H2. We expect an average of 34,700 job gains per quarter this year, followed by an additional 21,300 per quarter in 2023. Our forecast takes Michigan's job count above its pre-pandemic level by the third quarter of 2023. Figure 3 also shows that, despite the speed of the recovery we are forecasting from the pandemic recession, we expect Michigan's payroll job count at the end of our forecast to remain far short of its all-time peak in the second quarter of 2000.

Figure 3
Quarterly Michigan Payroll Employment

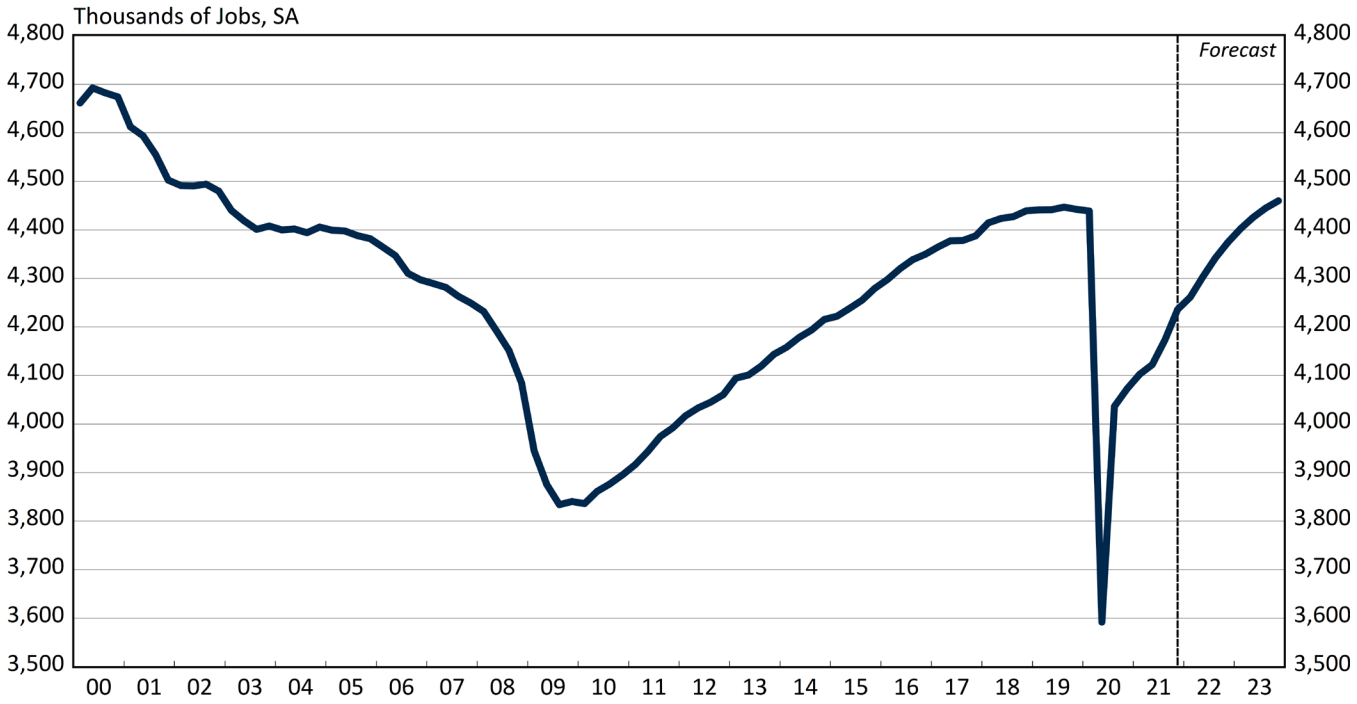


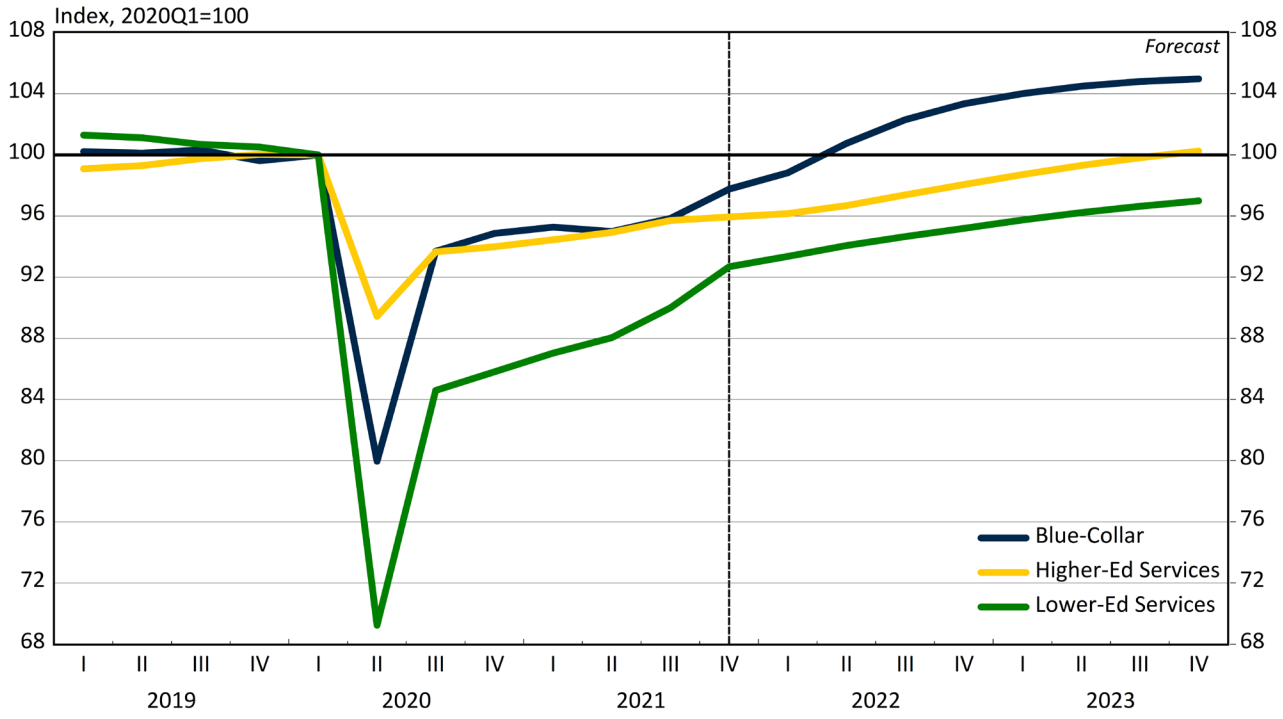
Table 1 below displays our forecast for annual job growth for Michigan's individual industries, while Figure 4 splits the state's industries into three groups: "Blue-Collar Industries," "Lower-Education Services Industries," and "Higher-Education Services Industries."[1] The figure plots the recent history and our quarterly forecast for each of these industry groups as index values, with the first quarter of 2020 normalized to a value of 100. We are forecasting different recoveries across these industry groups.

Michigan's **blue-collar industries** are already approaching a full recovery from the pandemic. In the fourth of quarter of 2021, these industries employed 2.2 percent fewer workers than prior to the pandemic, and we are projecting them to make a complete recovery by next quarter. We expect the state's manufacturing sector to recover to its pre-pandemic employment level by the end of this year and to grow more slowly in 2023. Still, manufacturing employment does not recover to its recent cyclical peak, reached at the end of 2018, in our forecast period. We are forecasting stronger job growth in the state's

[1] The blue-collar industries comprise mining; construction; manufacturing; and wholesale trade, transportation, and utilities. The higher-education services industries (which generally require employees to hold a Bachelor's Degree or higher educational level) comprise information; finance; professional, scientific, and technical services; management of companies and enterprises; private education and health services; and government. The lower-education services industries (which typically do not require a college education) comprise retail trade; leisure and hospitality; administrative support services and waste management; and other services.

construction and wholesale trade, transportation, and utilities (WTU) sectors. By the end of 2023, the construction sector reaches its highest statewide employment level since 2002, while Michigan's WTU sector sets an all-time employment high in our forecast.

Figure 4
Annual Job Growth in Michigan
Blue-Collar, Higher-Education Services, and Lower-Education Services Industries



Although the pandemic led to relatively few job losses in Michigan's **higher-education services industries**, their recovery has also been tepid so far. Through the fourth quarter of 2021, they had recovered just over three-fifths of their initial job losses. The higher-education services industries currently stand 4.1 percent below their pre-pandemic employment level, and we do not expect them to make a full recovery until the fourth quarter of 2023. Health services and government both weigh on the recovery in higher-education services. Considering their discouraging progress so far, we do not expect a full recovery in either of those sectors by the end of 2023. In contrast, we expect both professional and technical services and management of companies and enterprises to set new all-time employment highs over the next two years.

Table 1
Forecast of Payroll Jobs in Michigan by Major Industry Division
(Thousands of Jobs)

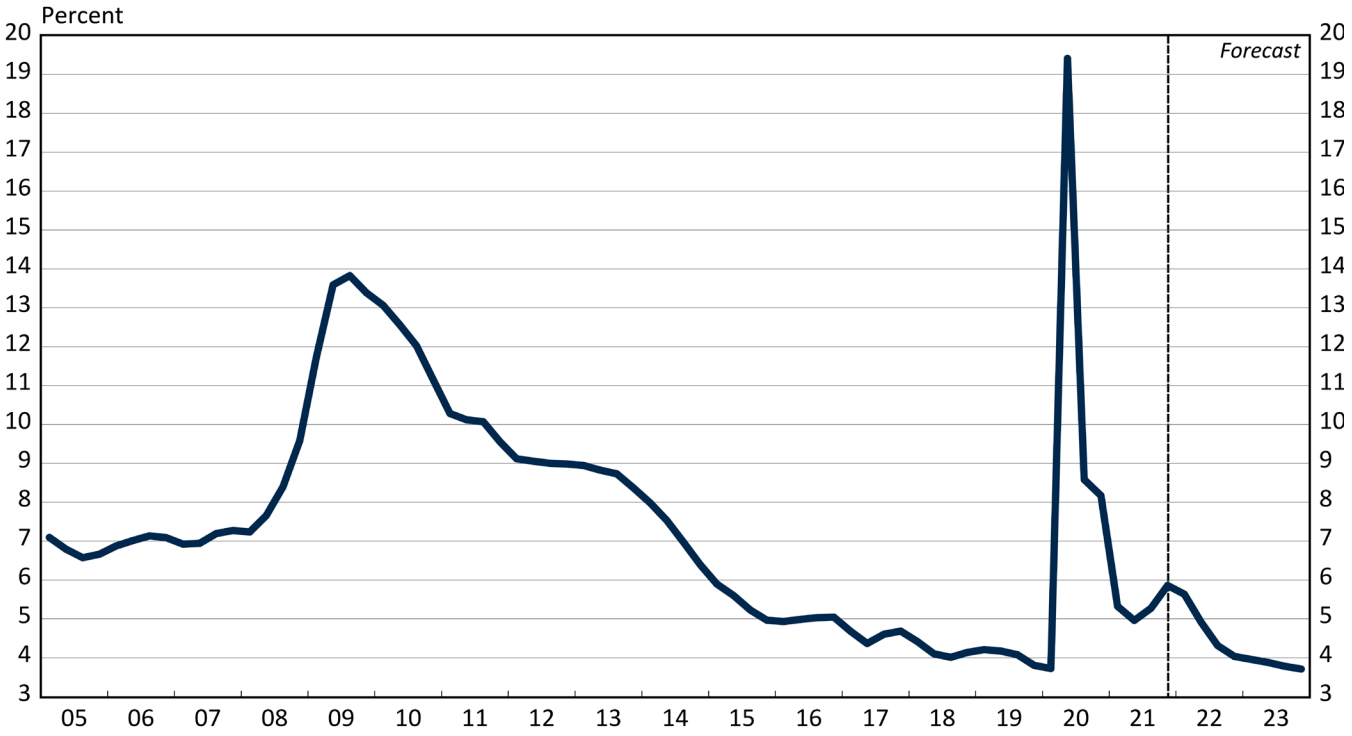
		Forecast Employment Change			
	2020	'20–'21	'21–'22	'22–'23	'20–'23
Total Jobs	**4035.1**	**123.6**	**161.6**	**112.9**	**398.1**
Total Government	581.5	-2.1	13.5	14.8	26.2
Total Private	3453.6	125.7	148.1	98.2	372.0
Natural resources and mining	6.5	0.5	0.1	-0.1	0.5
Construction	164.9	11.4	7.6	10.5	29.4
Manufacturing	557.2	17.6	35.3	18.2	71.2
Transportation equipment manufacturing	164.7	10.5	14.2	6.3	31.0
Other manufacturing	392.4	7.1	21.1	11.9	40.2
Trade, transportation, and utilities	747.5	32.5	20.5	6.1	59.1
Retail trade	428.4	18.4	2.8	-2.4	18.8
Wholesale trade, trans., and utilities	319.0	14.1	17.7	8.5	40.3
Information	50.4	-0.6	1.4	0.5	1.3
Financial activities	223.3	2.3	1.1	2.7	6.1
Professional and business services	596.5	30.4	31.6	17.3	79.3
Professional, scientific & technical services	287.1	13.8	10.4	6.1	30.4
Management of companies & enterprises	68.9	2.5	2.2	2.9	7.7
Admin & support & waste mgmt.	240.5	14.1	19.1	8.2	41.3
Private education and health services	639.3	3.3	7.1	21.0	31.4
Leisure and hospitality	324.6	25.2	38.5	18.5	82.2
Other services	143.6	3.0	4.9	3.5	11.5
Addendum: Percent Change in Total Jobs	**-9.2**	**3.1**	**3.9**	**2.6**	**9.9**

Michigan's **lower-education services industries** were hit the hardest at the start of the pandemic, and they remain further from full recovery than the other two groups. Still, we have been encouraged by the acceleration of employment growth in these industries over the past six months. We expect growth to continue at a brisk pace this year, with an average of 8,400 job gains per quarter. Growth slows down to an average pace of 6,000 jobs per quarter in 2023 as these industries get closer to full recovery. Despite that growth, Michigan's lower-education services industries end next year with employment 3.0 percent below their pre-pandemic level. An important factor in these industries' incomplete recovery is our forecast that the retail trade sector is likely to resume its secular employment downtrend over the next two years. An additional impediment to full recovery, though, is that these industries are climbing out of a deeper hole than the blue-collar and higher-education services industries. It will take significant time to heal from the dislocation that the pandemic has caused in the lower-education services industries.

Unemployment and Labor Force Participation Rates

Figure 5 shows currently reported history and our forecast for Michigan's quarterly unemployment rate.[2] It averaged 5.9 percent in the fourth quarter of 2021, down 2.3 percentage points from a year earlier. We expect the unemployment rate to decline sharply over the course of 2022, to an average of 4 percent in the fourth quarter. The pace of decline will moderate during 2023, as the economy nears full employment. We project that the unemployment rate will fall to 3.7 percent by the end of our forecast, roughly on par with pre-pandemic levels.

Figure 5
Quarterly Michigan Unemployment Rate



Although we expect Michigan's labor force participation rate to rise during the forecast, we do not expect it to make a full recovery by the end of 2023. Even though the tight labor market continues to draw workers back into the labor force, it is not enough to offset the recent early retirements combined with

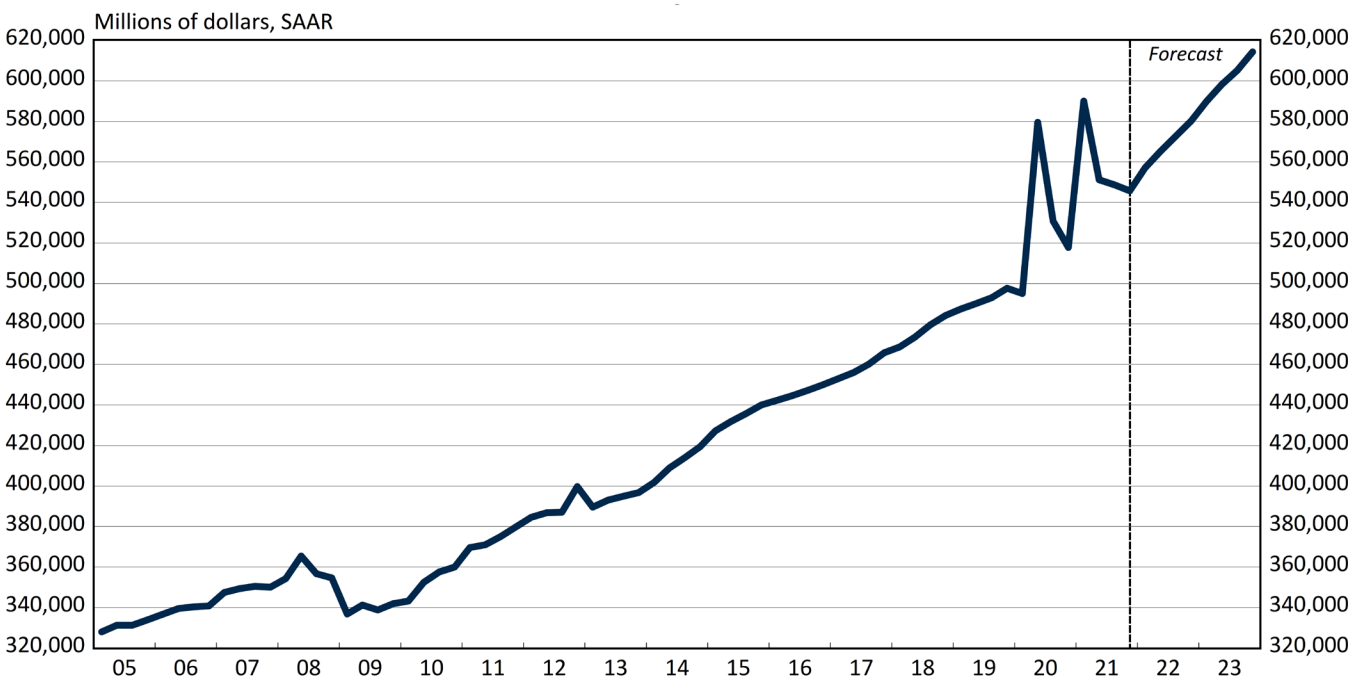
[2] The BLS has recently revised the state's unemployment rate to adjust for a distortion related to an alternate methodology it has been using since April 2020 to deal with data abnormalities that have arisen during the pandemic. This revision led to an increased unemployment rate in September 2021, but we believe that these revisions do not reflect an increase in Michigan's underlying rate of joblessness. We expect it to publish revised data for all of 2021 after its annual benchmarking process this spring.

the slow growth of Michigan's working-age population. These offsetting factors leave the state's labor force participation rate 1.3 percentage points shy of its 2019 average of just under 62 percent.

Personal Incomes and Inflation

Figure 6 shows our quarterly forecast for Michigan personal income at an annualized rate. State personal income fell 7.0 percent from the first to the third quarters of 2021, when the currently available data ends. Personal incomes in the first quarter of the year were boosted by the economic impact payments, alongside other elements of federal income support. The phase-out of those programs over the course of 2021 led to the decline in personal incomes, which we estimate continued at a slower pace, 0.5 percent, in the fourth quarter.

Figure 6
Quarterly Michigan Personal Income

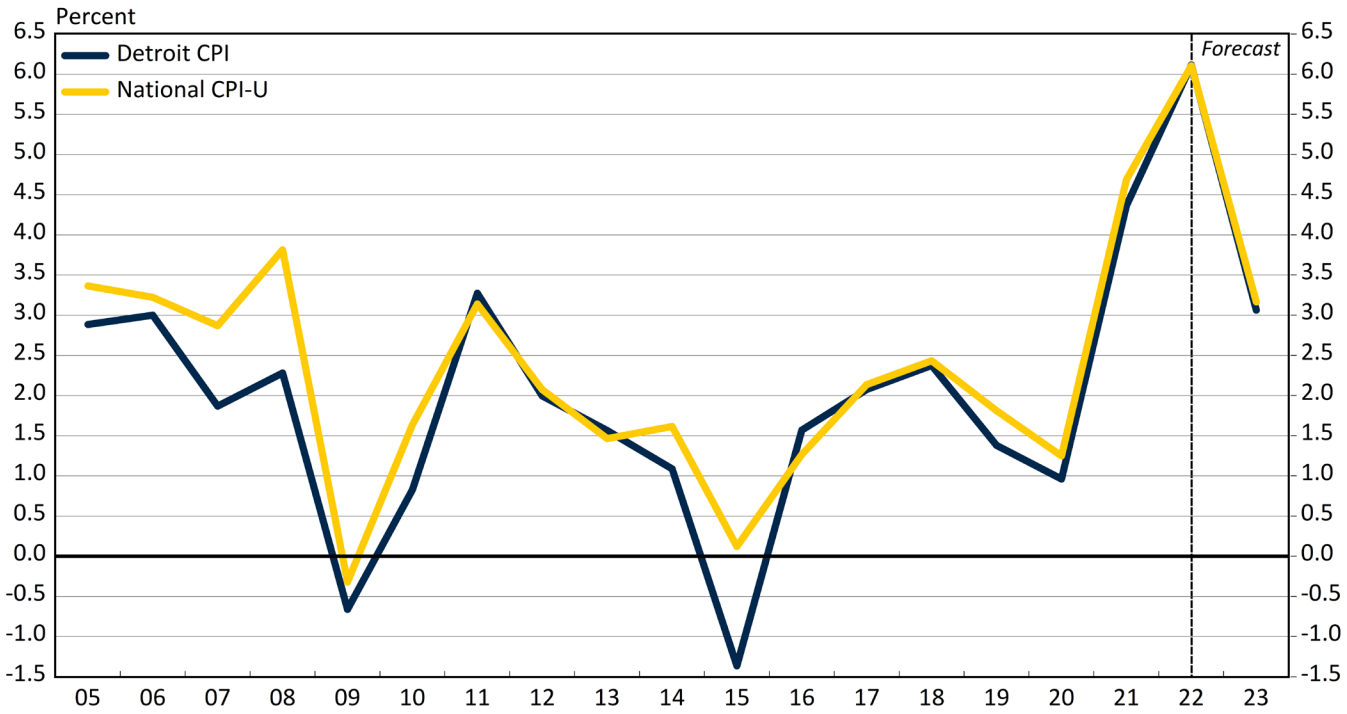


The good news is that we expect personal income to grow briskly during 2022 and 2023. Measured on a fourth-quarter-to-fourth-quarter basis, we are forecasting state personal income to grow 6.3 percent during 2022 and 5.9 percent during 2023. Personal income is propelled by the large increase in wage and salary income that we are forecasting, driven by the tight labor market and rapid nominal growth of the economy. Michigan wage and salary income rises 8.9 percent from the end of 2021 to the

end of 2022 and another 6.0 percent from then to the end of 2023. One caveat to these projections is that we expect personal income to grow much more slowly this year on a calendar-year basis, just 1.8 percent, because it is starting from a lower level than it did in 2021.

Figure 7 shows the history and our forecast of annual national and Detroit CPI inflation from 2005 to 2023. Local inflation registered 4.4 percent for calendar 2021, but it was running even higher at the end of the year: local prices increased by 7.0 percent from December 2020 to December 2021. We expect inflation to remain high to start this year, but we see several reasons to expect prices to begin to cool off as the year wears on. First, supply chains are already showing tangible signs of improvement in some high-frequency indicators. We expect the recovery of supply chains to follow a nonlinear process, with setbacks on the way toward normal, but overall, the trend should be toward improvement. Second, fiscal policy has turned highly contractionary; our forecast calls for the federal budget deficit to shrink from 13.2 percent of GDP in fiscal 2021 to 3.3 percent in 2023. Third, monetary policy will turn sharply tighter this year: we expect the target rate for the federal funds rate to climb from 0–0.25 percent currently to 1.50–1.75 percent by the end of the year.

Figure 7
National and Local Inflation



We project local inflation to register 6.1 percent in 2022, the fastest calendar-year rate since 1981. In light of the trends discussed above, though, we expect local inflation to drop to 3.1 percent in 2023, a hair below the national rate of 3.2 percent. Those levels would still be higher than the Federal Reserve would prefer, but they would represent substantial progress toward the Fed's inflation target.

Combining our forecasts for personal income growth, taxes, and inflation produces our forecast for state real disposable income. It falls by a whopping 5.6 percent this year, as rising prices outstrip incomes and taxes grow at a brisk rate. Real disposable income then returns to a growth rate of 2.5 percent in 2023, with strong growth in nominal income and the slowdown in inflation.

The State Revenue Outlook

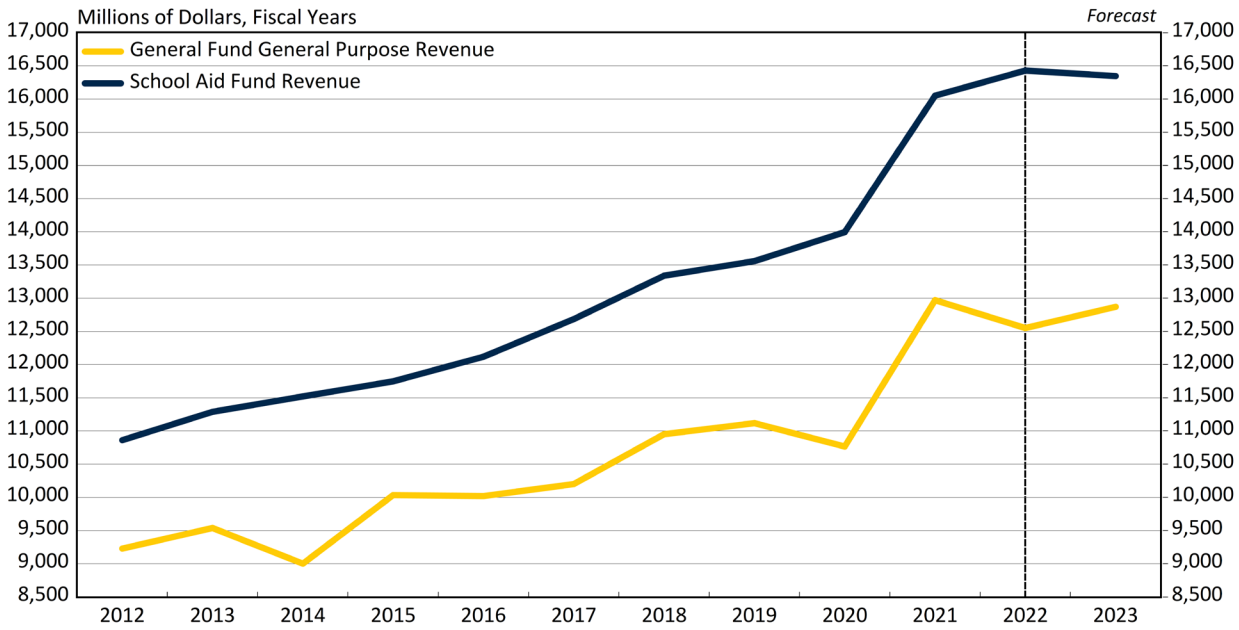
At January's Consensus Revenue Estimating Conference (CREC) in Lansing, state officials agreed on preliminary revenue forecasts for fiscal years 2022–24 while also presenting preliminary book closing figures for fiscal 2021. Michigan experienced explosive tax revenue growth in fiscal 2021, with General Fund General Purpose (GFGP) and School Aid Fund (SAF) revenues each climbing by over $2 billion from their fiscal 2020 levels. Nearly half of those increases came from combined sales and use tax payments; a third came from net income tax revenue; the corporate income tax contributed about one-seventh; and the lottery tax, state education property tax, and the real estate transfer tax combined for most of the remainder.

The January CREC projections call for combined GFGP and SAF revenue to fall by nearly $500 million in fiscal 2022 before gaining it all back and more in fiscal 2023, with growth of $611 million. Based in part on strong returns in the most recent monthly data, RSQE's own revenue forecast drops by only $41 million in fiscal 2022 before gaining $236 million in fiscal 2023, ending the forecast period a bit higher than the CREC projections. That performance would put combined GFGP and SAF tax revenues in fiscal 2023 roughly $4.5 billion higher than the fiscal 2019 level.

As can be seen in Figure 8, we are forecasting state revenue collections to remain elevated in fiscal 2022–23, but also to begin realigning with their historical trend lines. We expect this process to happen a bit more quickly for GFGP revenue, which draws a greater share of personal income tax revenue and a smaller share of sales and use tax revenue relative to the SAF.

We now summarize our state revenue forecast in more detail. Table 2 breaks down the recent history for state revenues, as well as our forecast for fiscal years 2022–23. The upper portion details GFGP revenues, and the lower portion summarizes SAF revenues. A more detailed itemization of our tax revenue forecast is provided in the additional tables at the back of this report.

Figure 8
Michigan Tax Revenues, General and School Aid Funds



Net Personal Income Tax Revenue

- Net personal income tax revenue (gross collections minus refunds) grew by 12.9 percent in fiscal 2021 thanks to two main factors. First, the economic recovery added back 137,100 payroll jobs during fiscal 2021, which helped to boost withholding by 5.2 percent. Second, unemployed workers who collected the expanded unemployment insurance (UI) during the pandemic were required to pay income tax on those benefits.

- We expect net personal income tax revenue to stay mostly flat in fiscal 2022 as the lost revenue from the expiration of expanded UI benefits is roughly offset by gains from the ongoing economic recovery. Net personal income tax revenue then grows by 4.7 percent in fiscal 2023, roughly in line with its historical trend.[3]

- Both quarterly and annual personal income tax payments grew approximately 40 percent in fiscal 2021 after falling slightly in fiscal 2020. We expect both quarterly and annual payments to plunge dramatically in fiscal 2022, but that is partly due to the state's new "flow-through entity tax", which was signed into law on December 20, 2021 and is retroactive to January 1, 2021. The flow-through entity tax is optional and allows certain flow-through entities, such as partnerships and S corporations, to pay taxes at the "entity level" and serves as a workaround to the SALT cap on

[3] RSQE's tax revenue forecast is based on current law and does not consider recent proposals to lower the personal and corporate income tax rates.

federal tax returns. Due to the timing of the new tax rules, we expect the flow-through entity tax to reduce both quarterly and annual payments in fiscal 2022, but it should primarily shift collections away from quarterly payments in the long-run.

- Overall net personal income tax revenue should be largely unaffected by the new flow-through entity tax. Still, the share of personal income taxes flowing to the GFGP and SAF could be affected if taxpayers overpay with the new flow-through tax to maximize SALT deductions. In that case, refunds would likely increase and the SAF would garner a greater share of personal income tax revenue.[4] The flow-through entity tax is still too new to judge exactly how the components of the personal income tax will be affected, but we will, of course, continue to monitor the incoming data.

Consumption Tax Revenue

- GFGP consumption tax revenue in Michigan is driven by distributions from the sales and use taxes, with smaller contributions from excise taxes on cigarettes and alcohol.
- In fiscal 2020, GFGP consumption tax revenue grew by 1.4 percent thanks to resilient Michigan consumer spending and the shift of expenditures from untaxed services to taxable goods.
- Gross sales and use tax revenue grew by an astonishing 18.7 percent in fiscal 2021. Consumer spending on taxable goods continues to be remarkably robust, and we forecast a more moderate rise of 2.6 percent for gross sales and use tax revenue in fiscal 2022. As consumers shift expenditures progressively back into services, gross sales and use tax revenue will ease back to more normal levels. We forecast gross sales and use tax revenue to decline by 3 percent in fiscal 2023.
- Combining the General Fund's share of gross sales and use tax revenue with the excise taxes on cigarettes and alcohol, GFGP consumption tax revenue soared by 29.9 percent in fiscal 2021. As spending patterns slowly normalize, we forecast GFGP consumption tax revenue to retract in each of fiscal 2022 and 2023 but to remain nearly $500 million above fiscal 2020's level.

Business Tax Revenue

- Business tax revenue comes primarily from the state's corporate income tax (CIT), insurance company premiums, and oil and gas severance tax payments. Certain businesses continue to pay taxes and claim credits under the previously used Michigan Business Tax (MBT) instead of the CIT. Variability in the timing of when MBT refunds are claimed often leads to swings in the state's overall business tax revenue. All business tax revenue accrues to the General Fund.
- Business tax revenue fell by 1.5 percent in fiscal 2020, but then rebounded and surpassed all expectations in fiscal 2021 with growth of over 50 percent. Most of that growth came from a sharp rise in corporate income tax payments.
- As with personal income and consumption tax revenue, total business tax revenue is projected to return to its historical trend over the next two years. We expect declines of 19.3 percent in fiscal 2022 and 4.6 percent in fiscal 2023.

[4] The SAF receives its contribution from the personal income tax before earmarks and refunds.

Total General Fund Revenue

- Combined GFGP and SAF revenue managed a slight gain of 0.3 percent in fiscal 2020. GFGP revenue on its own fell by 3.2 percent, though, due mostly to increases in personal income tax refunds and earmarks, which reduced the GFGP's share of personal income tax revenue.[5]
- In fiscal 2021, exceptionally strong collections from the personal income tax, sales and use taxes, as well as the corporate income tax combined for a total GFGP revenue gain of 20.5 percent, or roughly $2.2 billion.
- We forecast most of the GFGP's revenue sources either to stay flat or to begin declining back toward their historical trends in fiscal 2022, resulting in an overall loss of $418 million, or 3.2 percent. That still leaves total GFGP revenue about $1.4 billion above fiscal 2019's level. GFGP revenue growth picks up again by 2.5 percent in fiscal 2023 with the gains from the personal income tax.

Total School Aid Fund Revenue

- Almost half of total SAF revenue comes from sales and use tax collections, while a fifth derives from the personal income tax, and about 15 percent comes from the state education property tax. The other taxes listed in Table 4 at the back of this report all contribute smaller amounts.
- School Aid Fund revenue grew by 3.2 percent in fiscal 2020 thanks to the strength of gross personal income tax collections and consumer spending that held sales and use tax revenue steady.
- In fiscal 2021, the remarkable growth of sales, use, and gross personal income tax revenue helped to boost total SAF revenue by over $2 billion. Over half of that growth came from gross sales and use tax revenue gains, while a fifth came from increased gross personal income tax revenue. In fact, the only SAF component to post a loss in fiscal 2021 was the tax on tobacco, which fell by $14.6 million.
- We project modest growth of 2.3 percent for the SAF in fiscal 2022, which is lifted by 4.5 percent growth in sales tax contributions. We expect total SAF revenue to retreat by 0.5 percent in fiscal 2023 as sales and use tax revenue descend back toward trend levels. We expect the SAF contribution from the income tax to stay roughly flat over 2022–23.
- As house prices in Michigan continue to rise, we project that revenue growth from the state education property tax will pick up speed, from 3.7 percent in fiscal 2021 to 5.5 percent in fiscal 2022 and 5.9 percent in fiscal 2023. We forecast that real estate transfer tax revenue, which jumped by 46.2 percent in fiscal 2021, will continue to post strong growth in fiscal 2022, rising 12.1 percent before falling by 8.9 percent in fiscal 2023.

[5] In fiscal 2020, the GFGP earmark from gross income tax revenue to the Michigan Transportation Fund increased by $204 million. This earmark expanded by another $132 million in fiscal 2021 to a total of $600 million, where it remains for fiscal 2022 and fiscal 2023 as well.

Table 2
State Revenues by Fiscal Year
(Millions of dollars, except as noted)

	Actual		RSQE Forecast	
	2020	2021[P]	2022	2023
General Fund General Purpose				
Personal income tax	6,870	7,723	7,709	8,233
(% change)	(-5.3)	(12.4)	(-0.2)	(6.8)
Consumption taxes	2,362	3,068	3,019	2,856
(% change)	(1.4)	(29.9)	(-1.6)	(-5.4)
Sales	1,311	1,498	1,541	1,511
Use	748	1,263	1,187	1,051
Other consumption	303	307	291	293
Business taxes	1,021	1,585	1,279	1,220
(% change)	(-1.5)	(55.3)	(-19.3)	(-4.6)
MBT/SBT/Corporate income	551	1,210	867	802
Other business	470	376	412	418
Other GFGP taxes	108	164	156	164
GFGP tax revenue	10,360	12,541	12,163	12,473
(% change)	(-3.5)	(21.0)	(-3.0)	(2.5)
Nontax revenue	407	429	389	398
GFGP revenue	10,767	12,970	12,552	12,871
(% change)	(-3.2)	(20.5)	(-3.2)	(2.5)
School Aid Fund				
SAF taxes	12,815	14,632	15,149	15,086
(% change)	(2.6)	(14.2)	(3.5)	(-0.4)
Lottery transfer	1,180	1,420	1,280	1,260
(% change)	(10.2)	(20.3)	(-9.8)	(-1.6)
Earmarked state SAF revenue	13,995	16,052	16,429	16,346
(% change)	(3.2)	(14.7)	(2.3)	(-0.5)
Addendum				
Combined GFGP and SAF revenue	24,763	29,022	28,981	29,217
(% change)	(0.3)	(17.2)	(-0.1)	(0.8)
Gross sales and use taxes	10,135	12,031	12,347	11,975
(% change)	(0.9)	(18.7)	(2.6)	(-3.0)

[P] Preliminary

The Michigan Economic Outlook for 2021-2023

RSQE Forecast, 25 February 2022

The State of Michigan

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Forecast Based on
The Econometric Model of the State of Michigan

RSQE
Research Seminar in Quantitative Economics
The University of Michigan
Ann Arbor, Michigan 48109

Table 1
Michigan Personal Income
(Millions of Current Dollars, SAQR)

	Actual	Forecast							
	2021q3	**2021q4**	**2022q1**	**2022q2**	**2022q3**	**2022q4**	**2023q1**	**2023q2**	**2023q3**
Personal Income	137178.22	136439.44	139283.90	141315.63	143190.00	145052.19	147486.28	149568.16	151292.95
Wage and Salary	67593.85	69076.33	71087.13	72547.98	73853.05	75211.46	76209.83	77406.98	78279.79
Private	58915.11	60373.13	62302.78	63600.81	64736.95	65953.69	66813.91	67854.91	68609.65
Government	8678.74	8703.20	8784.35	8947.17	9116.10	9257.78	9395.92	9552.07	9670.14
Other Labor Income	15107.87	15288.88	15689.18	16014.82	16314.63	16629.82	16929.48	17209.71	17431.45
Proprietors' Income	9499.84	9337.27	9435.96	9647.37	9819.97	9954.31	10075.54	10187.53	10292.85
Property Income	22301.77	22644.11	22958.70	23432.85	23964.97	24464.53	24929.45	25383.85	25808.54
Transfer Payments	33095.30	30757.18	31146.96	30937.43	30707.95	30472.57	31338.73	31559.33	31790.05
Residence Adjustment	659.13	659.13	659.13	659.13	659.13	659.13	659.13	659.13	659.13
Less:									
Social Ins Contribution	11079.55	11323.45	11693.15	11923.98	12129.70	12339.63	12655.88	12838.36	12968.84
Less:									
Federal Pers Taxes	13207.64	13646.26	14548.52	14863.33	15146.95	15409.59	15793.62	16031.55	16221.42
Mich Witholding	2870.45	2896.26	2859.00	2888.28	2979.88	2973.85	3030.50	3061.36	3110.51
Equals:									
Disp Personal Income	121100.13	119896.92	121876.40	123564.01	125063.17	126668.76	128662.16	130475.26	131961.05
ADDENDA:									
Consumer Price Index									
Detroit 1982-84=100	249.76	255.24	259.77	262.18	264.54	266.58	268.58	270.46	272.27
Real Disposable Income									
Millions of 1982-84 $	48487.38	46973.45	46917.01	47128.76	47276.32	47516.06	47904.95	48242.35	48467.62

RSQE Forecast

Table 1
Michigan Personal Income
(Millions of Current Dollars, SAQR)

25 February 2022

	Forecast	Calendar Years				Percent Changes		
	2023q4	**2020**	**2021**	**2022**	**2023**	**2020-21**	**2021-22**	**2022-23**
Personal Income	153593.10	530808.56	558932.30	568841.71	601940.49	5.30	1.77	5.82
Wage and Salary	79749.99	242644.06	265720.54	292699.63	311646.59	9.51	10.15	6.47
Private	69953.93	209617.95	231518.78	256594.23	273232.40	10.45	10.83	6.48
Government	9796.07	33026.11	34201.75	36105.41	38414.19	3.56	5.57	6.39
Other Labor Income	17786.16	56190.94	59906.92	64648.46	69356.80	6.61	7.91	7.28
Proprietors' Income	10371.80	34495.76	37213.13	38857.61	40927.72	7.88	4.42	5.33
Property Income	26197.48	88455.49	89129.65	94821.05	102319.32	0.76	6.39	7.91
Transfer Payments	32015.88	146541.45	148080.10	123264.92	126703.99	1.05	-16.76	2.79
Residence Adjustment	659.13	2470.55	2605.57	2636.53	2636.53	5.47	1.19	0.00
Less:								
Social Ins Contribution	13187.36	39989.68	43723.61	48086.47	51650.45	9.34	9.98	7.41
Less:								
Federal Pers Taxes	16499.87	43872.49	51664.07	59968.39	64546.46	17.76	16.07	7.63
Mich Witholding	3115.28	10632.58	11372.79	11701.00	12317.64	6.96	2.89	5.27
Equals:								
Disp Personal Income	133977.94	476303.49	495895.43	497172.34	525076.40	4.11	0.26	5.61
ADDENDA:								
Consumer Price Index								
Detroit 1982-84=100	274.04	237.72	248.10	263.27	271.33	4.36	6.12	3.06
Real Disposable Income								
Millions of 1982-84 $	48890.63	200495.01	200114.80	188838.15	193505.55	-0.19	-5.64	2.47

Table 2
Employment in Michigan
(Thousands of Persons, Seasonally Adjusted)

	Actual	Forecast							
	2021q3	**2021q4**	**2022q1**	**2022q2**	**2022q3**	**2022q4**	**2023q1**	**2023q2**	**2023q3**
Total Employment	4483.64	4479.72	4509.56	4553.45	4595.72	4629.72	4655.41	4675.37	4691.30
Wage and Salary	4173.70	4235.93	4261.28	4303.04	4342.19	4374.69	4402.32	4425.74	4445.00
Private	3586.53	3650.63	3674.98	3712.39	3746.91	3775.30	3799.21	3819.31	3835.65
Nat. Res. & Mining	7.00	7.07	7.14	7.17	7.13	7.11	7.08	7.06	7.04
Construction	176.93	178.40	179.00	181.88	185.61	188.92	191.54	193.66	195.34
Manufacturing	571.90	585.00	592.25	607.12	617.60	623.53	626.59	628.44	629.32
Trans. Equipment	171.37	181.13	182.00	188.55	192.72	194.46	195.17	195.72	196.06
Other Mfg.	400.53	403.87	410.25	418.57	424.88	429.06	431.42	432.73	433.26
Trade, Trans. & Util.	779.30	791.13	796.85	800.28	801.71	803.11	804.88	806.32	807.24
Information	49.80	50.63	50.99	51.07	51.27	51.45	51.58	51.67	51.73
Financial Activities	225.07	226.37	226.00	226.17	226.74	227.50	228.36	229.11	229.70
Prof. & Bus. Serv.	628.20	644.27	651.50	655.64	660.99	666.07	670.69	674.56	677.75
Edu. & Health Serv.	644.00	640.83	641.50	646.54	652.43	658.13	663.57	668.64	673.24
Lesiure & Hospitality	356.67	377.13	380.00	385.64	391.27	396.33	400.93	405.12	408.91
Other Services	147.67	149.80	149.75	150.87	152.15	153.15	154.00	154.72	155.38
Government	587.17	585.30	586.30	590.65	595.28	599.39	603.11	606.44	609.35
Non Wage and Salary	309.94	243.79	248.27	250.41	253.52	255.02	253.09	249.63	246.31
Labor Force	4733.28	4758.60	4778.86	4788.83	4803.03	4824.49	4847.33	4864.36	4875.88
Unemployment	249.64	278.88	269.30	235.38	207.31	194.77	191.92	188.99	184.57
Unemployment Rate (%)	5.27	5.86	5.64	4.92	4.32	4.04	3.96	3.89	3.79
ADDENDA: U.S. DATA (Billions of chained 2009 $, except where noted)									
Gross Domestic Prod	19478.89	19805.96	19925.11	20126.85	20331.52	20488.26	20601.60	20717.55	20835.48
Business Fixed Invest	2884.85	2899.34	2998.04	3071.07	3129.66	3180.65	3212.09	3245.38	3273.72
Gross Vehicle Product	477.27	511.20	570.19	591.99	611.57	622.69	627.36	629.00	631.92
Personal Cons Expend									
New Autos + Trucks	285.85	285.84	312.39	316.48	311.50	309.98	310.32	311.58	313.83
Light Vehicle Sales (mil)	13.35	12.87	14.55	15.39	15.73	16.23	16.42	16.64	16.82
Unemployment Rate (%)	5.09	4.22	3.85	3.54	3.31	3.17	3.13	3.08	3.08
Personal Consumption									
Deflator, 2009=100	116.26	118.10	119.71	120.87	121.93	122.90	123.82	124.69	125.54
Consumer Price Index									
1982-84=100	273.63	277.78	283.18	286.97	289.55	290.49	293.33	296.27	298.25

RSQE Forecast

Table 2
Employment in Michigan
(Thousands of Persons, Seasonally Adjusted)

25 February 2022

	Forecast	Calendar Years				Percent Changes		
	2023q4	**2020**	**2021**	**2022**	**2023**	**2020-21**	**2021-22**	**2022-23**
Total Employment	4703.61	4360.72	4475.20	4572.11	4681.43	2.63	2.17	2.39
Wage and Salary	4459.94	4035.11	4158.71	4320.30	4433.25	3.06	3.89	2.61
Private	3848.14	3453.61	3579.28	3727.40	3825.58	3.64	4.14	2.63
Nat. Res. & Mining	7.01	6.54	7.03	7.14	7.05	7.39	1.61	-1.26
Construction	196.69	164.90	176.27	183.85	194.31	6.89	4.30	5.69
Manufacturing	629.08	557.17	574.81	610.12	628.36	3.17	6.14	2.99
Trans. Equipment	195.93	164.74	175.27	189.43	195.72	6.39	8.08	3.32
Other Mfg.	433.15	392.43	399.54	420.69	432.64	1.81	5.29	2.84
Trade, Trans. & Util.	807.77	747.46	779.98	800.49	806.55	4.35	2.63	0.76
Information	51.76	50.42	49.83	51.20	51.69	-1.16	2.74	0.96
Financial Activities	230.16	223.27	225.55	226.60	229.33	1.02	0.47	1.20
Prof. & Bus. Serv.	680.27	596.48	626.92	658.55	675.82	5.10	5.05	2.62
Edu. & Health Serv.	677.17	639.25	642.57	649.65	670.65	0.52	1.10	3.23
Lesiure & Hospitality	412.28	324.57	349.78	388.31	406.81	7.77	11.01	4.76
Other Services	155.95	143.56	146.55	151.48	155.01	2.08	3.36	2.33
Government	611.80	581.50	579.43	592.91	607.67	-0.36	2.33	2.49
Non Wage and Salary	243.67	325.61	316.49	251.81	248.18	-2.80	-20.44	-1.44
Labor Force	4884.90	4839.37	4728.51	4798.80	4868.12	-2.29	1.49	1.44
Unemployment	181.28	478.64	253.31	226.69	186.69	-47.08	-10.51	-17.65
Unemployment Rate (%)	3.71	9.97	5.36	4.73	3.84	NA	NA	NA
ADDENDA: U.S. DATA (Billions of chained 2009 $, except where noted)								
Gross Domestic Prod	20944.58	18384.69	19427.20	20217.94	20774.81	5.67	4.07	2.75
Business Fixed Invest	3299.10	2671.06	2866.90	3094.86	3257.57	7.33	7.95	5.26
Gross Vehicle Product	634.13	486.52	521.96	599.11	630.60	7.28	14.78	5.26
Personal Cons Expend								
New Autos + Trucks	317.06	280.68	325.17	312.59	313.20	15.85	-3.87	0.20
Light Vehicle Sales (mil)	16.93	14.47	14.97	15.47	16.70	3.46	3.34	7.93
Unemployment Rate (%)	3.09	8.10	5.35	3.47	3.10	NA	NA	NA
Personal Consumption								
Deflator, 2009=100	126.36	111.21	115.52	121.35	125.10	3.88	5.05	3.09
Consumer Price Index								
1982-84=100	298.81	258.81	270.97	287.55	296.66	4.70	6.12	3.17

Table 3
State of Michigan GFGP Revenue by Fiscal Years
(Millions of Current Dollars, NSA)

	Actual	Forecast							
	2021q3	**2021q4**	**2022q1**	**2022q2**	**2022q3**	**2022q4**	**2023q1**	**2023q2**	**2023q3**
NET PERS INCOME TAX	2665.80	3404.77	2524.73	3392.87	2562.04	2823.69	2859.05	3930.48	2827.00
Less: School Aid	780.36	993.88	776.90	970.78	764.16	828.36	830.45	1074.64	804.39
Camp Fund	0.60	0.00	0.00	0.00	0.80	0.00	0.00	0.00	0.80
MI Trans Fund	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00
Renew MI Fund	17.25	17.25	17.25	17.25	17.25	17.25	17.25	17.25	17.25
GFGP INCOME TAX	1717.59	2243.63	1580.58	2254.84	1629.84	1828.08	1861.35	2688.59	1854.55
CONSUMPTION TAXES									
Sales	395.22	413.87	321.56	417.70	388.26	392.59	308.94	420.93	388.85
Cigarette Excise	45.96	41.45	39.15	44.17	43.13	42.76	40.07	44.92	43.68
Beer and Wine	14.47	13.49	11.01	13.51	14.93	12.17	11.20	13.67	15.10
Liquor Specific	20.70	20.90	14.99	16.05	18.04	18.63	15.24	16.87	19.07
Use	315.23	319.83	269.67	299.55	297.73	253.93	238.32	278.87	279.97
GFGP CONSUM TAXES	791.58	809.54	656.38	790.98	762.09	720.08	613.76	775.25	746.67
BUSINESS TAXES									
Single Business	1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Michigan Business	-489.60	0.00	0.00	0.00	-594.30	0.00	0.00	0.00	-527.60
Corporate Income	1698.10	0.00	0.00	0.00	1461.60	0.00	0.00	0.00	1330.00
Insur Co Premium	354.80	0.00	0.00	0.00	380.00	0.00	0.00	0.00	390.00
Oil + Gas Severance	7.30	9.30	7.46	7.45	7.38	7.57	6.70	6.80	6.96
GFGP BUSINESS TAXES	1571.70	9.30	7.46	7.45	1254.68	7.57	6.70	6.80	1199.36
OTHER GFGP TAXES	164.30	0.00	0.00	0.00	156.00	0.00	0.00	0.00	164.00
TOTAL GFGP TAXES	4245.17	3062.47	2244.43	3053.27	3802.61	2555.73	2481.81	3470.64	3964.58
NONTAX REVENUE	429.30	0.00	0.00	0.00	389.10	0.00	0.00	0.00	398.10
TOTAL GFGP REVENUE	4674.47	3062.47	2244.43	3053.27	4191.71	2555.73	2481.81	3470.64	4362.68
ADDENDA:									
Pers Income Adjusted	115162.46	117005.72	119830.10	122302.16	124611.76	126919.25	128803.43	130847.20	132471.75
Total Employment	4483.64	4479.72	4509.56	4553.45	4595.72	4629.72	4655.41	4675.37	4691.30
Wage + Salary Income	67593.85	69076.33	71087.13	72547.98	73853.05	75211.46	76209.83	77406.98	78279.79

Table 3
State of Michigan GFGP Revenue by Fiscal Years
(Millions of Current Dollars, NSA)

	Forecast	Fiscal Years				Percent Changes		
	2023q4	**2020**	**2021**	**2022**	**2023**	**2020-21**	**2021-22**	**2022-23**
NET PERS INCOME TAX	3026.89	10500.30	11853.40	11884.40	12440.21	12.89	0.26	4.68
Less: School Aid	874.97	3092.90	3461.00	3505.71	3537.84	11.90	1.29	0.92
Camp Fund	0.00	0.60	0.60	0.80	0.80	0.00	33.33	0.00
MI Trans Fund	150.00	468.00	600.00	600.00	600.00	28.21	0.00	0.00
Renew MI Fund	17.25	69.00	69.00	69.00	69.00	0.00	0.00	0.00
GFGP INCOME TAX	1984.67	6869.80	7722.80	7708.89	8232.58	12.42	-0.18	6.79
CONSUMPTION TAXES								
Sales	400.91	1310.70	1498.40	1541.39	1511.31	14.32	2.87	-1.95
Cigarette Excise	43.13	179.33	177.02	167.91	171.43	-1.29	-5.15	2.10
Beer and Wine	12.31	51.40	51.50	52.93	52.14	0.19	2.79	-1.51
Liquor Specific	19.69	72.00	78.60	69.98	69.81	9.17	-10.97	-0.25
Use	243.31	748.40	1262.80	1186.78	1051.08	68.73	-6.02	-11.43
GFGP CONSUM TAXES	719.35	2361.83	3068.32	3018.99	2855.76	29.91	-1.61	-5.41
BUSINESS TAXES								
Single Business	0.00	0.00	1.10	0.00	0.00	--	-100.00	--
Michigan Business	0.00	-553.70	-489.60	-594.30	-527.60	-11.58	21.38	-11.22
Corporate Income	0.00	1104.80	1698.10	1461.60	1330.00	53.70	-13.93	-9.00
Insur Co Premium	0.00	456.80	354.80	380.00	390.00	-22.33	7.10	2.63
Oil + Gas Severance	7.39	12.80	20.80	31.60	28.02	62.50	51.92	-11.32
GFGP BUSINESS TAXES	7.39	1020.70	1585.20	1278.90	1220.42	55.31	-19.32	-4.57
OTHER GFGP TAXES	0.00	107.80	164.30	156.00	164.00	52.41	-5.05	5.13
TOTAL GFGP TAXES	2711.41	10360.13	12540.62	12162.78	12472.76	21.05	-3.01	2.55
NONTAX REVENUE	0.00	407.30	429.30	389.10	398.10	5.40	-9.36	2.31
TOTAL GFGP REVENUE	2711.41	10767.43	12969.92	12551.88	12870.86	20.46	-3.22	2.54
ADDENDA:								
Pers Income Adjusted	134764.56	423482.93	446655.47	483749.73	519041.63	5.47	8.30	7.30
Total Employment	4703.61	4436.28	4469.91	4534.61	4662.95	0.76	1.45	2.83
Wage + Salary Income	79749.99	242459.96	259500.23	286564.50	307108.06	7.03	10.43	7.17

Table 4
State of Michigan SAF and Transportation Tax Revenue by Fiscal Years
(Millions of Current Dollars, NSA)

	Actual	Forecast							
	2021q3	**2021q4**	**2022q1**	**2022q2**	**2022q3**	**2022q4**	**2023q1**	**2023q2**	**2023q3**
SAF TAXES									
Sales	1861.48	1886.19	1633.08	1812.26	1803.58	1816.45	1566.15	1795.89	1798.92
Use	224.39	221.35	200.00	214.94	214.03	195.47	187.66	207.93	208.48
Income	780.36	993.88	776.90	970.78	764.16	828.36	830.45	1074.64	804.39
Mich Business	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liquor Excise	20.70	20.90	14.99	16.05	18.04	18.63	15.24	16.87	19.07
Tobacco	87.92	73.94	69.84	78.78	83.00	75.96	71.44	80.10	83.95
State Education Property	2264.40	0.00	0.00	0.00	2388.56	0.00	0.00	0.00	2530.54
Real Estate Transfer	145.60	142.80	120.89	137.01	149.05	120.56	105.63	126.73	148.12
Ind and Comm Facilities	41.90	0.00	0.00	0.00	40.00	0.00	0.00	0.00	40.00
Casino	181.10	0.00	0.00	0.00	227.00	0.00	0.00	0.00	232.40
Other SAF Taxes	76.30	0.00	0.00	0.00	77.00	0.00	0.00	0.00	86.00
TOTAL SAF TAXES	5684.15	3339.06	2815.69	3229.81	5764.41	3055.43	2776.57	3302.14	5951.88
Lottery Transfer	1419.80	0.00	0.00	0.00	1280.00	0.00	0.00	0.00	1260.00
EARMARKED STATE SAF REVENUE	7103.95	3339.06	2815.69	3229.81	7044.41	3055.43	2776.57	3302.14	7211.88
TRANSPORTATION TAXES									
Diesel	59.80	62.70	54.76	61.18	65.72	62.70	58.03	64.76	69.45
Gasoline	303.00	289.60	286.73	313.12	323.34	310.04	301.86	328.21	339.69
Motor Vehicle Registrati	1403.00	0.00	0.00	0.00	1445.03	0.00	0.00	0.00	1497.74

Table 4
State of Michigan SAF and Transportation Tax Revenue by Fiscal Years
(Millions of Current Dollars, NSA)

	Forecast	Fiscal Years				Percent Changes		
	2023q4	**2020**	**2021**	**2022**	**2023**	**2020-21**	**2021-22**	**2022-23**
SAF TAXES								
Sales	1837.90	6048.70	6828.10	7135.10	6977.41	12.89	4.50	-2.21
Use	191.87	612.10	888.70	850.31	799.54	45.19	-4.32	-5.97
Income	874.97	3092.90	3461.00	3505.71	3537.84	11.90	1.29	0.92
Mich Business	0.00	0.00	0.00	0.00	0.00	--	--	--
Liquor Excise	19.69	72.00	78.60	69.98	69.81	9.17	-10.97	-0.25
Tobacco	76.24	336.60	322.03	305.55	311.45	-4.33	-5.12	1.93
State Education Property	0.00	2182.90	2264.40	2388.56	2530.54	3.73	5.48	5.94
Real Estate Transfer	121.91	335.40	490.30	549.75	501.03	46.18	12.13	-8.86
Ind and Comm Facilities	0.00	40.90	41.90	40.00	40.00	2.44	-4.53	0.00
Casino	0.00	67.00	181.10	227.00	232.40	170.30	25.35	2.38
Other SAF Taxes	0.00	27.00	76.30	77.00	86.00	182.59	0.92	11.69
TOTAL SAF TAXES	3122.58	12815.50	14632.43	15148.97	15086.02	14.18	3.53	-0.42
Lottery Transfer	0.00	1179.90	1419.80	1280.00	1260.00	20.33	-9.85	-1.56
EARMARKED STATE SAF REVENUE	3122.58	13995.40	16052.23	16428.97	16346.02	14.70	2.35	-0.50
TRANSPORTATION TAXES								
Diesel	66.14	220.60	234.00	244.36	254.94	6.07	4.43	4.33
Gasoline	325.80	1079.80	1113.40	1212.79	1279.80	3.11	8.93	5.53
Motor Vehicle Registrati	0.00	1346.50	1403.00	1445.03	1497.74	4.20	3.00	3.65

Table 5
Selected State of Michigan Tax Revenues by Fiscal Years
(Millions of Current Dollars, NSA)

	Actual	Forecast							
	2021q3	**2021q4**	**2022q1**	**2022q2**	**2022q3**	**2022q4**	**2023q1**	**2023q2**	**2023q3**
NET PERS INCOME TAX	2665.80	3404.77	2524.73	3392.87	2562.04	2823.69	2859.05	3930.48	2827.00
Withheld	2737.46	3186.41	2823.00	2767.54	2841.82	3271.76	2992.34	2933.39	2966.40
Quarterly	458.66	464.77	90.40	187.42	65.71	-21.81	176.70	290.25	161.48
Flow-Through Entity	0.00	479.44	298.38	298.38	298.38	196.88	196.88	196.88	196.88
Annual	84.58	43.30	50.87	823.54	3.24	31.95	121.63	1092.54	53.38
Less: Refunds	614.89	769.15	737.93	684.01	647.11	655.09	628.50	582.57	551.14
Less: School Aid	780.36	993.88	776.90	970.78	764.16	828.36	830.45	1074.64	804.39
Camp Fund	0.60	0.00	0.00	0.00	0.80	0.00	0.00	0.00	0.80
MI Trans Fund	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00
Renew MI Fund	17.25	17.25	17.25	17.25	17.25	17.25	17.25	17.25	17.25
GFGP INCOME TAX	1717.59	2243.63	1580.58	2254.84	1629.84	1828.08	1861.35	2688.59	1854.55
GROSS SALES TAX	2558.43	2588.85	2246.13	2487.85	2473.19	2488.25	2155.11	2465.77	2467.08
Less: Local Dist	271.85	258.91	263.49	229.89	253.35	251.10	251.92	220.86	251.21
School Aid	1861.48	1886.19	1633.08	1812.26	1803.58	1816.45	1566.15	1795.89	1798.92
Comp Trans	27.63	27.63	25.75	25.75	25.75	25.85	25.85	25.85	25.85
Health Init	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25
GFGP SALES TAX	395.22	413.87	321.56	417.70	388.26	392.59	308.94	420.93	388.85
GROSS USE TAX	662.50	664.10	599.99	644.82	642.08	586.40	562.97	623.80	625.45
Less: School Aid	224.39	221.35	200.00	214.94	214.03	195.47	187.66	207.93	208.48
Local Dist	122.88	130.32	130.32	130.32	130.32	137.00	137.00	137.00	137.00
GFGP USE TAX	315.23	319.83	269.67	299.55	297.73	253.93	238.32	278.87	279.97
GROSS CIGARETTE TAX	243.02	204.02	192.70	217.38	229.01	210.36	197.11	221.00	231.64
Less: School Aid	87.92	73.94	69.84	78.78	83.00	75.96	71.44	80.10	83.95
Medicaid Trust Fund	89.27	75.73	71.53	80.69	85.00	78.34	73.15	82.02	85.97
Other Funds	19.87	12.90	12.18	13.74	17.88	13.30	12.46	13.97	18.04
GFGP CIGARETTE TAX	45.96	41.45	39.15	44.17	43.13	42.76	40.07	44.92	43.68

Table 5
Selected State of Michigan Tax Revenues by Fiscal Years
(Millions of Current Dollars, NSA)

	Forecast	Fiscal Years				Percent Changes		
	2023q4	**2020**	**2021**	**2022**	**2023**	**2020-21**	**2021-22**	**2022-23**
NET PERS INCOME TAX	3026.89	10500.30	11853.40	11884.40	12440.21	12.89	0.26	4.68
Withheld	3427.36	10511.50	11062.70	11618.77	12163.89	5.24	5.03	4.69
Quarterly	-29.50	1208.40	1706.00	808.31	606.61	41.18	-52.62	-24.95
Flow-Through Entity	204.75	0.00	0.00	1374.58	787.52	--	--	-42.71
Annual	71.92	1298.10	1781.60	920.95	1299.49	37.25	-48.31	41.10
Less: Refunds	647.64	2517.71	2696.89	2838.20	2417.30	7.12	5.24	-14.83
Less: School Aid	874.97	3092.90	3461.00	3505.71	3537.84	11.90	1.29	0.92
Camp Fund	0.00	0.60	0.60	0.80	0.80	0.00	33.33	0.00
MI Trans Fund	150.00	468.00	600.00	600.00	600.00	28.21	0.00	0.00
Renew MI Fund	17.25	69.00	69.00	69.00	69.00	0.00	0.00	0.00
GFGP INCOME TAX	1984.67	6869.80	7722.80	7708.89	8232.58	12.42	-0.18	6.79
GROSS SALES TAX	2517.74	8308.90	9407.20	9796.02	9576.21	13.22	4.13	-2.24
Less: Local Dist	250.56	850.40	961.20	1005.65	975.10	13.03	4.62	-3.04
School Aid	1837.90	6048.70	6828.10	7135.10	6977.41	12.89	4.50	-2.21
Comp Trans	26.13	90.12	110.52	104.88	103.40	22.64	-5.10	-1.41
Health Init	2.25	9.00	9.00	9.00	9.00	0.00	0.00	0.00
GFGP SALES TAX	400.91	1310.70	1498.40	1541.39	1511.31	14.32	2.87	-1.95
GROSS USE TAX	575.60	1826.40	2623.70	2550.99	2398.62	43.65	-2.77	-5.97
Less: School Aid	191.87	612.10	888.70	850.31	799.54	45.19	-4.32	-5.97
Local Dist	140.43	465.90	491.50	521.30	548.00	5.49	6.06	5.12
GFGP USE TAX	243.31	748.40	1262.80	1186.78	1051.08	68.73	-6.02	-11.43
GROSS CIGARETTE TAX	211.94	904.20	890.15	843.11	860.12	-1.55	-5.29	2.02
Less: School Aid	76.24	336.60	322.03	305.55	311.45	-4.33	-5.12	1.93
Medicaid Trust Fund	79.20	329.80	326.99	312.95	319.48	-0.85	-4.29	2.09
Other Funds	13.36	61.95	64.11	56.69	57.77	3.49	-11.57	1.90
GFGP CIGARETTE TAX	43.13	179.33	177.02	167.91	171.43	-1.29	-5.15	2.10