

## **The U.S. and Michigan Economic Outlook for 2020–2022: an Interim Update**

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The COVID-19 pandemic has caused substantial economic disruption since we released our regularly scheduled economic outlooks for the U.S. and Michigan economies in February. Those forecasts assumed that the pandemic would be contained in the United States with relatively limited disruption to the real economy. The fast-moving events of the past few weeks have invalidated that assumption, so we have produced an updated set of interim forecasts reflecting a revised set of assumptions.

We present two scenarios in this update. The first scenario assumes that the mitigation measures that have been taken to date are effective at slowing the spread of the disease relatively quickly, resulting in a sharp but short-lived contraction in economic activity; we call this the “effective mitigation scenario.” The second scenario assumes that the mitigation measures taken so far prove insufficient in the near term, resulting in severe financial stress and a larger and more prolonged contraction in economic activity; we call this the “prolonged fallout scenario.”

In a news conference on March 15<sup>th</sup>, Federal Reserve chairman Jerome Powell stated, “The economic outlook is evolving on a daily basis and it is depending on the spread of the

virus... That is not something that is knowable.”<sup>1</sup> The Federal Reserve accordingly cancelled the publication of its March quarterly economic forecast summary. We are not epidemiologists, and we agree with chair Powell that the course of the disease remains highly uncertain. We have also developed these scenarios quickly in order to share them with our readers promptly, so this forecast update does not adhere to our normal integrity standards.<sup>2</sup> In light of those considerations, this update is limited to a short textual summary of the most important elements of our two forecast scenarios. We have also included a limited set of tables summarizing the two scenarios’ implications for the U.S. and Michigan economies at the back of this document.

We have based much of our analysis of the COVID-19 pandemic’s impacts on the U.S. and Michigan economies on the Congressional Budget Office’s (CBO’s) 2005 study “[A Potential Influenza Pandemic: Possible Macroeconomic Effects and Policy Issues](#).” In both scenarios, we have assumed that the disease’s severity would be between that of the Spanish flu of 1918–19 and the milder pandemics of 1957 and 1968. In the effective mitigation scenario, we have assumed that the drastic nonpharmaceutical interventions (NPIs) currently being implemented across the country, such as quarantines and social distancing, will work quickly enough to allow for their discontinuation in a month or two, facilitating a quick economic rebound. In the prolonged fallout scenario, we have assumed that NPIs will have to remain in place substantially longer, causing contagion of the economic malaise into parts of the economy that have not been directly affected.

Standard economic modeling suggests that a pandemic acts as both a *negative supply shock* and a *negative demand shock* to the economy; see, for instance chapter 25 of Folland, Goodman, and Stano’s [The Economics of Health and Health Care](#), 7<sup>th</sup> ed. (Routledge 2016), for

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<sup>1</sup> Howard Schneider, Lindsay Dunsmuir, and Ann Saphir, March 15, 2020. [Fed slashes rates, global central banks coordinate to cushion coronavirus blow](#), Reuters.

<sup>2</sup> For instance, our updated outlook for the Michigan economy does not incorporate the recent baseline revision to the state’s payroll employment figures nor the recently released preliminary job count for January, both of which offer little guidance to the relative impacts of Covid-19 on the Michigan economy.

a concise introduction. The pandemic's supply side effects on the economy include production stoppages; forced closures of many public places; cancellations of major sporting events, concerts, and other large gatherings; and lost work time from infections, quarantines, caregiving, and work site closures. We have assumed that infected workers who eventually recover from the disease will miss an average of 5 days of work in the effective mitigation scenario and 10 days of work in the prolonged fallout scenario. Production and supply chain disruptions from large-scale pandemic mitigation measures have the potential to greatly exceed those of the disease-driven supply effects.

We expect the pandemic's effects on the demand side of the economy to be large as well. We expect economic sectors that feature substantial social interaction, such as transportation and warehousing and accommodation and food services, to be most affected. We estimate that they will contract by approximately 20 percent in 2020q2 in the effective mitigation scenario, with monthly data expected to show deeper contraction at the peak. In the prolonged fallout scenario, these sectors contract by approximately 50 percent in the second quarter, although again the monthly data may show greater impacts. Several other sectors, including retail trade, will also see substantial reductions in demand. A small number of sectors will add modestly to GDP, most notably healthcare services, drug purchases, and food consumption at home.

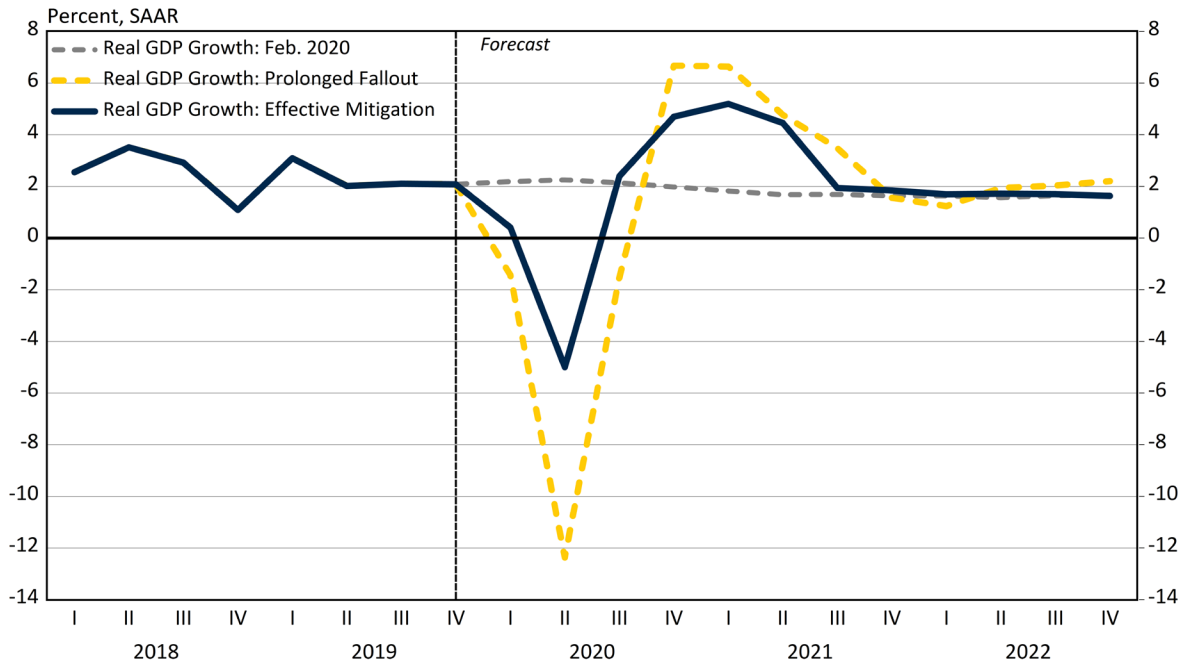
It is worth noting that very economically disruptive containment and mitigation measures may be an optimal response even to a less deadly virus in purely economic terms, because the lifetime discounted present value of output loss from preventable mortality is large. Of course, there are large non-economic benefits to these measures as well. Governments can and should help to spread the costs of the measures over time and across society to lessen the burden on the economically vulnerable.

Our two scenarios differ in the assumed policy reactions. Both scenarios feature federal funds rates near the zero lower bound and substantial quantitative easing. The prolonged fallout

scenario induces a heftier policy response, which includes large direct payments to households in the second and third quarters of 2020, large personal and corporate tax relief, a significant ramp-up in subsidies to private businesses most affected by the epidemic, and sizeable federal aid to states.

Figure 1 displays our forecast for quarterly real GDP growth through 2022 in our February outlook and our two updated scenarios. Real GDP growth in the second quarter of 2020 is negative 5 percent at an annual rate in our effective mitigation scenario and negative 12 percent in our prolonged fallout scenario. Real GDP returns to growth territory in the third quarter in the former scenario but contracts by an additional 1.5 percent annualized rate in the latter, with growth resuming in the fourth quarter. On an annual basis, real GDP growth in 2020 registers approximately 0.5 percent in the effective mitigation scenario and negative 1.8 percent in the prolonged fallout scenario, or roughly four percentage points lower than in our February outlook. Real GDP then grows by about 1.5 percentage points faster than in our February outlook in both updated scenarios until the second half of 2021, when the three projections stabilize at 2 percent growth. The level of real GDP in the effective mitigation scenario catches up to our previous forecast level by mid-2021, but in the prolonged fallout scenario it runs substantially below our previous forecast level throughout our forecast horizon.

**Figure 1**  
**Quarterly U.S. Real GDP Growth, 2018q1–2022q4**  
**Updated Scenarios vs. February Forecast**



Although as recently as the past week, we thought there was a reasonable chance that the U.S. economy could avoid a recession, we now expect an official recession to be declared in both of the scenarios we considered.<sup>3</sup> Nonetheless, we do believe that it remains possible for events to unfold in a more positive direction than the two scenarios we have presented here. It is possible that wide-spread testing, if it can be implemented in the coming weeks, will reveal a large number of asymptomatic cases across all age ranges, reducing estimates of the disease's severity upon contraction. Such a turn of events would allow discontinuation of the most economically disruptive mitigation measures. If events unfold in a more positive direction than we currently foresee and the economy does manage to avoid a recession, we will be delighted to be mistaken in our recession call.

<sup>3</sup> Recessions in the United States are declared by the National Bureau of Economic Research's [Business Cycle Dating Committee](#). Although a common rule of thumb is that a recession features two consecutive quarters of declining real GDP, the Committee does not require such an observation to declare a recession.

Figure 2 displays our forecast of Michigan’s quarterly payroll employment count in our two forecast scenarios and our previous February outlook. In the effective mitigation scenario, the state’s payroll employment count declines by approximately 155,000 jobs from the first to third quarters of 2020. In the prolonged fallout scenario, the decline is 400,000 jobs. Although in the former scenario, the state’s job count returns to its forecast path from our previous forecast by early 2022, it remains well below our previous expectations in the latter scenario.

**Figure 2**  
**Quarterly Michigan Payroll Employment, 2018q1–2022q4**  
**Updated Scenarios vs. February Forecast**

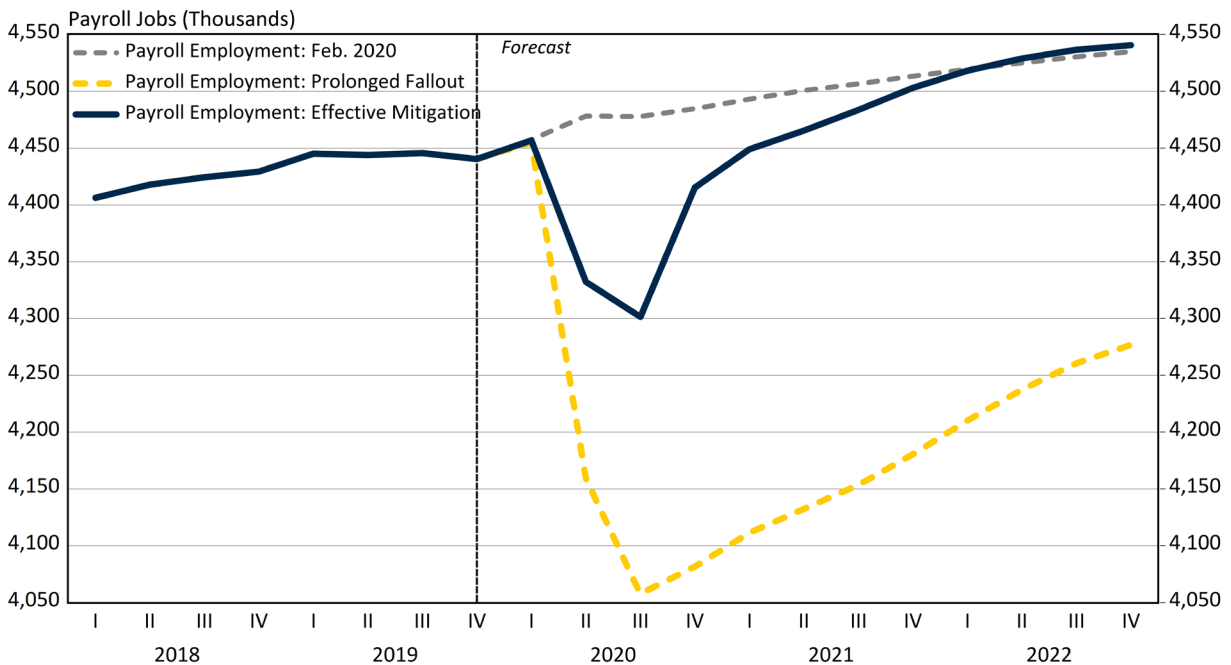
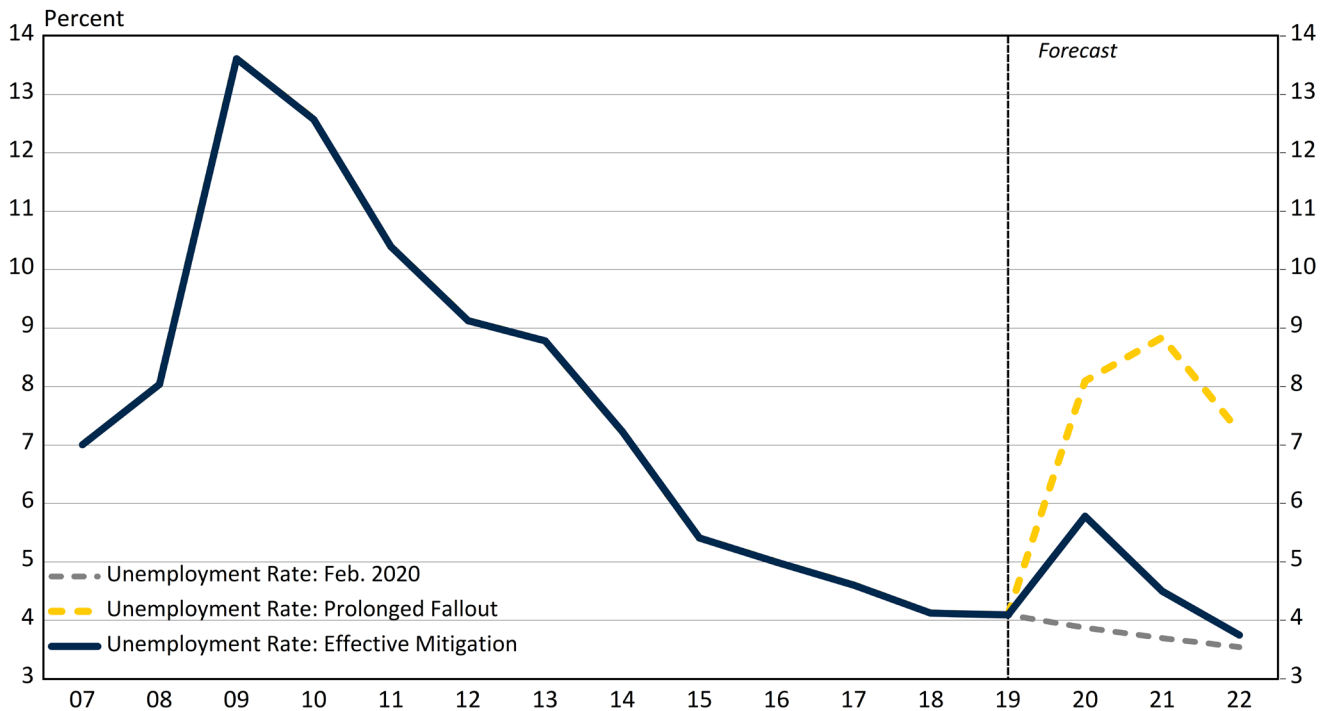


Figure 3 displays our forecast for Michigan’s unemployment rate on an annual basis in our two forecast scenarios and our previous February outlook. In the effective mitigation scenario, the state’s unemployment rate rises from 4.1 percent in 2019 to 5.8 percent in 2020, before declining back to 4.5 percent in 2021. In the prolonged fallout scenario, the state’s unemployment rate jumps to 8.1 percent in 2020 and 8.8 percent in 2021 before beginning to decline; it reaches a peak quarterly rate of 10.0 percent in the third quarter of 2020.

**Figure 3**  
**Annual Michigan Unemployment Rate, 2007–2022**  
**Updated Scenarios vs. February Forecast**



We would like to conclude this update by reiterating a few key points. First, the scenarios we have presented remain difficult to characterize in terms of likelihood. There is very limited economic information available, and the epidemiological situation is still evolving quickly. Second, protecting people’s lives at the expense of short-term economic pain is justified on public health grounds and by long-term economic logic. Third, it is imperative for the federal and state governments to mitigate the pandemic’s economic damage to vulnerable people’s livelihoods. In particular, the U.S. government is the only entity with the fiscal capacity to spread the economic burden across time and segments of society. Finally, we hope that our readers will exercise great care and remain in good health during these challenging times.





**U.S. Economic Outlook for 2020-2022**

RSQE Forecast, Interim Update  
19 March 2020

I N D E X   O F   T A B L E S

Table 1: Gross Domestic Product in Chained Dollars—Effective Mitigation Scenario  
Table 2: Gross Domestic Product in Chained Dollars—Prolonged Fallout Scenario

Forecast Based on MQEM  
The Michigan Quarterly Econometric Model of the U.S. Economy

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

**Table 1**  
Gross Domestic Product in Chained Dollars—Effective Mitigation  
(Billions of Chained (2012) Dollars, SAAR)

|                                    | Actual   |          | Forecast |          |          |          |          |          |          |          |
|------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|                                    | 2019q4   | 2020q1   | 2020q2   | 2020q3   | 2020q4   | 2021q1   | 2021q2   | 2021q3   | 2021q4   | 2022q1   |
| GDP                                | 19219.77 | 19239.54 | 18994.42 | 19107.42 | 19328.24 | 19574.58 | 19789.09 | 19884.28 | 19975.52 | 20059.74 |
| Consumption                        | 13411.94 | 13375.93 | 13068.89 | 13274.72 | 13480.54 | 13682.02 | 13885.43 | 13967.09 | 14045.47 | 14118.74 |
| Durables                           | 1803.18  | 1820.81  | 1830.90  | 1851.91  | 1874.64  | 1899.16  | 1924.78  | 1949.21  | 1969.47  | 1985.82  |
| Vehicles & Parts                   | 548.61   | 550.71   | 545.12   | 546.88   | 552.18   | 559.58   | 567.34   | 573.39   | 576.14   | 575.51   |
| Furn & HH Equipment                | 413.81   | 416.18   | 419.26   | 424.44   | 428.08   | 431.35   | 434.91   | 438.68   | 442.12   | 445.49   |
| Rec Goods & Vehicles               | 590.16   | 599.69   | 611.76   | 624.71   | 637.18   | 649.52   | 662.24   | 675.58   | 689.11   | 703.34   |
| Other                              | 267.58   | 272.51   | 275.90   | 278.99   | 281.67   | 284.21   | 286.86   | 289.63   | 292.35   | 294.73   |
| Nondurables                        | 3036.02  | 3048.61  | 3095.11  | 3108.24  | 3122.24  | 3131.62  | 3141.06  | 3158.01  | 3174.85  | 3190.65  |
| Food                               | 996.47   | 1004.68  | 1023.72  | 1023.33  | 1022.50  | 1021.44  | 1020.35  | 1023.78  | 1027.20  | 1030.11  |
| Clothing & Footwear                | 413.83   | 414.01   | 417.42   | 420.13   | 422.87   | 425.13   | 427.51   | 430.12   | 432.65   | 435.25   |
| Gasoline & Oil                     | 427.58   | 423.55   | 418.97   | 421.41   | 424.17   | 426.70   | 428.99   | 429.51   | 430.17   | 430.98   |
| Fuel Oil & Coal                    | 26.44    | 25.75    | 25.60    | 25.38    | 25.32    | 25.16    | 25.11    | 25.02    | 24.90    | 24.80    |
| Other                              | 1154.92  | 1161.87  | 1186.21  | 1194.82  | 1204.34  | 1210.47  | 1216.63  | 1226.41  | 1236.09  | 1245.14  |
| Services                           | 8630.89  | 8573.99  | 8243.24  | 8407.77  | 8570.36  | 8731.62  | 8893.90  | 8938.51  | 8983.09  | 9026.49  |
| Private Investment                 | 3362.96  | 3391.39  | 3412.30  | 3342.94  | 3368.91  | 3444.33  | 3499.97  | 3555.00  | 3594.91  | 3622.25  |
| Nonresidential                     | 2732.39  | 2731.72  | 2714.05  | 2701.99  | 2711.69  | 2752.60  | 2800.52  | 2849.37  | 2886.21  | 2910.38  |
| Structures                         | 496.16   | 487.48   | 477.88   | 468.29   | 460.81   | 457.03   | 458.35   | 462.27   | 466.31   | 470.18   |
| Equipment                          | 1259.95  | 1255.81  | 1237.27  | 1223.68  | 1230.34  | 1263.84  | 1296.61  | 1327.98  | 1347.62  | 1354.84  |
| Info Processing                    | 512.84   | 514.44   | 513.80   | 520.26   | 526.81   | 535.44   | 544.21   | 552.43   | 559.38   | 566.42   |
| Industrial Equipment               | 236.83   | 234.76   | 233.82   | 234.00   | 234.02   | 234.60   | 236.45   | 238.96   | 241.68   | 244.17   |
| New Vehicles                       | 348.78   | 345.72   | 337.00   | 334.68   | 337.58   | 344.10   | 353.20   | 361.24   | 366.20   | 364.66   |
| Other Equipment                    | 177.38   | 177.58   | 171.16   | 156.70   | 155.10   | 171.61   | 183.55   | 195.04   | 199.94   | 200.63   |
| Intellectual Property              | 989.25   | 1002.53  | 1013.21  | 1024.94  | 1037.26  | 1051.72  | 1067.92  | 1083.33  | 1097.38  | 1110.36  |
| Residential                        | 602.07   | 610.52   | 609.70   | 606.74   | 606.84   | 615.70   | 625.46   | 634.94   | 640.98   | 645.09   |
| Priv Inventory Change              | 6.48     | 24.82    | 69.15    | 9.21     | 27.46    | 55.78    | 53.66    | 50.34    | 47.55    | 46.91    |
| Farm                               | -11.13   | -10.96   | 0.14     | 0.14     | 0.14     | 0.14     | -1.71    | -3.46    | -4.96    | -4.96    |
| Nonfarm                            | 15.21    | 35.78    | 69.00    | 9.07     | 27.32    | 55.64    | 55.37    | 53.79    | 52.51    | 51.87    |
| Net Exports                        | -901.98  | -891.94  | -882.35  | -918.04  | -931.49  | -963.99  | -1013.00 | -1062.90 | -1095.98 | -1115.55 |
| Exports                            | 2532.40  | 2538.55  | 2482.21  | 2480.72  | 2505.53  | 2539.29  | 2572.58  | 2592.17  | 2607.31  | 2618.06  |
| Imports                            | 3434.38  | 3430.49  | 3364.56  | 3398.76  | 3437.02  | 3503.27  | 3585.58  | 3655.07  | 3703.29  | 3733.61  |
| Government Purchases               | 3332.39  | 3350.76  | 3380.60  | 3389.23  | 3392.81  | 3392.37  | 3391.20  | 3392.02  | 3393.62  | 3394.87  |
| Federal                            | 1295.66  | 1299.69  | 1310.20  | 1309.40  | 1310.74  | 1311.94  | 1312.18  | 1312.58  | 1312.66  | 1312.05  |
| Defense                            | 784.29   | 789.61   | 796.06   | 798.95   | 800.51   | 801.74   | 802.14   | 803.00   | 803.68   | 803.80   |
| Nondefense                         | 511.14   | 509.97   | 514.04   | 510.52   | 510.33   | 510.32   | 510.18   | 509.76   | 509.19   | 508.48   |
| State & Local                      | 2035.77  | 2049.98  | 2069.27  | 2078.55  | 2080.78  | 2079.20  | 2077.82  | 2078.24  | 2079.74  | 2081.54  |
| ADDENDA                            |          |          |          |          |          |          |          |          |          |          |
| Final Sales to Domestic Purchasers | 20070.16 | 20063.04 | 19771.36 | 19969.56 | 20186.82 | 20435.60 | 20693.04 | 20832.04 | 20953.10 | 21054.55 |
| Unemployment Rate (%)              | 3.53     | 3.62     | 4.09     | 4.39     | 4.32     | 4.06     | 3.67     | 3.39     | 3.23     | 3.17     |

**Table 1**  
Gross Domestic Product in Chained Dollars—Effective Mitigation  
(Billions of Chained (2012) Dollars, SAAR)

|                                    | Forecast |          |          | Calendar Years |          |          |          | Percent Changes |         |         |
|------------------------------------|----------|----------|----------|----------------|----------|----------|----------|-----------------|---------|---------|
|                                    | 2022q2   | 2022q3   | 2022q4   | 2019           | 2020     | 2021     | 2022     | 2019-20         | 2020-21 | 2021-22 |
| GDP                                | 20145.47 | 20230.66 | 20312.72 | 19072.51       | 19167.41 | 19805.87 | 20187.15 | 0.50            | 3.33    | 1.93    |
| Consumption                        | 14194.61 | 14271.65 | 14348.56 | 13279.60       | 13300.02 | 13895.00 | 14233.39 | 0.15            | 4.47    | 2.44    |
| Durables                           | 2002.56  | 2019.31  | 2035.62  | 1765.66        | 1844.56  | 1935.66  | 2010.83  | 4.47            | 4.94    | 3.88    |
| Vehicles & Parts                   | 574.39   | 573.36   | 571.75   | 541.10         | 548.72   | 569.11   | 573.75   | 1.41            | 3.72    | 0.82    |
| Furn & HH Equipment                | 449.55   | 453.36   | 456.95   | 406.20         | 421.99   | 436.76   | 451.34   | 3.89            | 3.50    | 3.34    |
| Rec Goods & Vehicles               | 717.57   | 732.08   | 747.21   | 569.74         | 618.33   | 669.11   | 725.05   | 8.53            | 8.21    | 8.36    |
| Other                              | 297.44   | 300.14   | 302.91   | 263.51         | 277.27   | 288.26   | 298.81   | 5.22            | 3.96    | 3.66    |
| Nondurables                        | 3206.26  | 3222.88  | 3239.70  | 3005.49        | 3093.55  | 3151.39  | 3214.87  | 2.93            | 1.87    | 2.01    |
| Food                               | 1033.14  | 1036.20  | 1039.34  | 988.61         | 1018.56  | 1023.19  | 1034.70  | 3.03            | 0.45    | 1.12    |
| Clothing & Footwear                | 437.51   | 440.26   | 442.86   | 407.21         | 418.61   | 428.85   | 438.97   | 2.80            | 2.45    | 2.36    |
| Gasoline & Oil                     | 431.52   | 432.45   | 433.41   | 424.06         | 422.03   | 428.84   | 432.09   | -0.48           | 1.61    | 0.76    |
| Fuel Oil & Coal                    | 24.64    | 24.52    | 24.39    | 26.39          | 25.51    | 25.05    | 24.59    | -3.30           | -1.83   | -1.84   |
| Other                              | 1254.44  | 1263.92  | 1273.60  | 1142.73        | 1186.81  | 1222.40  | 1259.28  | 3.86            | 3.00    | 3.02    |
| Services                           | 9072.23  | 9118.23  | 9164.27  | 8560.83        | 8448.84  | 8886.78  | 9095.30  | -1.31           | 5.18    | 2.35    |
| Private Investment                 | 3640.53  | 3657.12  | 3670.36  | 3421.22        | 3378.88  | 3523.55  | 3647.56  | -1.24           | 4.28    | 3.52    |
| Nonresidential                     | 2931.55  | 2950.47  | 2968.23  | 2749.79        | 2714.86  | 2822.17  | 2940.16  | -1.27           | 3.95    | 4.18    |
| Structures                         | 473.50   | 475.93   | 477.02   | 516.84         | 473.61   | 460.99   | 474.16   | -8.36           | -2.66   | 2.86    |
| Equipment                          | 1361.55  | 1367.13  | 1372.23  | 1272.42        | 1236.77  | 1309.01  | 1363.94  | -2.80           | 5.84    | 4.20    |
| Info Processing                    | 573.54   | 580.76   | 588.06   | 516.96         | 518.83   | 547.87   | 577.20   | 0.36            | 5.60    | 5.35    |
| Industrial Equipment               | 246.36   | 248.23   | 249.81   | 240.98         | 234.15   | 237.92   | 247.14   | -2.84           | 1.61    | 3.87    |
| New Vehicles                       | 363.89   | 363.12   | 361.98   | 350.45         | 338.74   | 356.19   | 363.41   | -3.34           | 5.15    | 2.03    |
| Other Equipment                    | 200.34   | 199.36   | 198.59   | 179.85         | 165.13   | 187.54   | 199.73   | -8.18           | 13.57   | 6.50    |
| Intellectual Property              | 1121.44  | 1132.39  | 1144.25  | 971.06         | 1019.49  | 1075.09  | 1127.11  | 4.99            | 5.45    | 4.84    |
| Residential                        | 646.25   | 645.98   | 644.19   | 593.53         | 608.45   | 629.27   | 645.38   | 2.51            | 3.42    | 2.56    |
| Priv Inventory Change              | 43.56    | 42.65    | 41.43    | 65.33          | 32.66    | 51.83    | 43.64    | NA              | NA      | NA      |
| Farm                               | -4.96    | -4.96    | -4.96    | -11.92         | -2.63    | -2.50    | -4.96    | NA              | NA      | NA      |
| Nonfarm                            | 48.52    | 47.61    | 46.39    | 74.32          | 35.29    | 54.33    | 48.60    | NA              | NA      | NA      |
| Net Exports                        | -1125.53 | -1136.90 | -1148.28 | -954.19        | -905.96  | -1033.97 | -1131.56 | NA              | NA      | NA      |
| Exports                            | 2628.06  | 2637.43  | 2646.77  | 2531.92        | 2501.75  | 2577.84  | 2632.58  | -1.19           | 3.04    | 2.12    |
| Imports                            | 3753.59  | 3774.33  | 3795.06  | 3486.11        | 3407.71  | 3611.81  | 3764.15  | -2.25           | 5.99    | 4.22    |
| Government Purchases               | 3396.22  | 3398.72  | 3401.48  | 3299.36        | 3378.35  | 3392.30  | 3397.82  | 2.39            | 0.41    | 0.16    |
| Federal                            | 1311.62  | 1311.21  | 1310.88  | 1275.67        | 1307.51  | 1312.34  | 1311.44  | 2.50            | 0.37    | -0.07   |
| Defense                            | 803.94   | 804.04   | 804.15   | 773.65         | 796.28   | 802.64   | 803.98   | 2.93            | 0.80    | 0.17    |
| Nondefense                         | 507.93   | 507.45   | 507.02   | 501.89         | 511.22   | 509.86   | 507.72   | 1.86            | -0.26   | -0.42   |
| State & Local                      | 2083.27  | 2086.10  | 2089.13  | 2022.50        | 2069.65  | 2078.75  | 2085.01  | 2.33            | 0.44    | 0.30    |
| ADDENDA                            |          |          |          |                |          |          |          |                 |         |         |
| Final Sales to Domestic Purchasers | 21152.18 | 21248.22 | 21341.40 | 19910.85       | 19997.70 | 20728.45 | 21199.09 | 0.44            | 3.65    | 2.27    |
| Unemployment Rate (%)              | 3.16     | 3.15     | 3.13     | 3.66           | 4.10     | 3.59     | 3.15     | NA              | NA      | NA      |

**Table 2**  
Gross Domestic Product in Chained Dollars—Prolonged Fallout  
(Billions of Chained (2012) Dollars, SAAR)

|                                    | Actual   |          | Forecast |          |          |          |          |          |          |          |
|------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|                                    | 2019q4   | 2020q1   | 2020q2   | 2020q3   | 2020q4   | 2021q1   | 2021q2   | 2021q3   | 2021q4   | 2022q1   |
| GDP                                | 19219.77 | 19150.73 | 18528.79 | 18458.16 | 18758.58 | 19062.51 | 19285.86 | 19451.29 | 19526.46 | 19586.48 |
| Consumption                        | 13411.94 | 13293.08 | 12621.08 | 12838.92 | 13200.97 | 13507.90 | 13742.05 | 13922.44 | 14010.65 | 14066.78 |
| Durables                           | 1803.18  | 1817.11  | 1776.22  | 1748.58  | 1777.28  | 1805.22  | 1851.83  | 1888.64  | 1922.22  | 1934.32  |
| Vehicles & Parts                   | 548.61   | 547.48   | 518.51   | 496.47   | 496.52   | 498.35   | 517.00   | 528.30   | 536.93   | 534.95   |
| Furn & HH Equipment                | 413.81   | 416.18   | 410.88   | 403.22   | 415.24   | 420.57   | 428.39   | 434.29   | 439.90   | 442.18   |
| Rec Goods & Vehicles               | 590.16   | 599.69   | 599.53   | 605.96   | 621.25   | 639.78   | 655.62   | 672.20   | 689.11   | 699.98   |
| Other                              | 267.58   | 272.51   | 270.38   | 270.62   | 274.63   | 279.95   | 283.99   | 288.18   | 292.35   | 295.88   |
| Nondurables                        | 3036.02  | 3063.02  | 3166.03  | 3160.47  | 3155.62  | 3146.34  | 3149.91  | 3154.57  | 3171.46  | 3169.65  |
| Food                               | 996.47   | 1015.20  | 1076.54  | 1063.10  | 1049.11  | 1034.79  | 1028.00  | 1023.78  | 1027.20  | 1028.26  |
| Clothing & Footwear                | 413.83   | 414.01   | 413.31   | 417.02   | 420.79   | 424.08   | 427.51   | 430.12   | 432.65   | 436.17   |
| Gasoline & Oil                     | 427.58   | 419.09   | 396.58   | 404.60   | 412.94   | 421.07   | 425.77   | 429.51   | 430.17   | 428.76   |
| Fuel Oil & Coal                    | 26.44    | 25.75    | 25.60    | 25.38    | 25.32    | 25.16    | 25.11    | 25.02    | 24.90    | 24.16    |
| Other                              | 1154.92  | 1168.24  | 1218.45  | 1219.25  | 1220.80  | 1218.76  | 1222.71  | 1226.41  | 1236.09  | 1231.86  |
| Services                           | 8630.89  | 8487.39  | 7808.00  | 8033.08  | 8350.25  | 8621.00  | 8801.49  | 8938.51  | 8983.09  | 9028.06  |
| Private Investment                 | 3362.96  | 3388.37  | 3364.42  | 3105.14  | 3058.32  | 3087.60  | 3144.47  | 3222.13  | 3276.69  | 3325.42  |
| Nonresidential                     | 2732.39  | 2728.73  | 2638.25  | 2538.86  | 2479.66  | 2480.24  | 2521.76  | 2569.45  | 2623.07  | 2664.32  |
| Structures                         | 496.16   | 487.44   | 468.72   | 443.77   | 422.29   | 407.02   | 401.78   | 401.31   | 405.10   | 411.38   |
| Equipment                          | 1259.95  | 1253.07  | 1176.89  | 1102.08  | 1064.06  | 1076.11  | 1114.97  | 1152.21  | 1189.49  | 1211.36  |
| Info Processing                    | 512.84   | 514.44   | 491.81   | 482.07   | 476.08   | 476.08   | 478.47   | 484.48   | 494.27   | 504.26   |
| Industrial Equipment               | 236.83   | 234.68   | 228.75   | 223.26   | 217.38   | 213.41   | 212.55   | 213.88   | 217.16   | 220.97   |
| New Vehicles                       | 348.78   | 343.34   | 313.18   | 290.69   | 279.45   | 277.15   | 294.50   | 307.10   | 318.43   | 321.50   |
| Other Equipment                    | 177.38   | 177.58   | 161.84   | 130.51   | 118.17   | 134.86   | 150.74   | 165.35   | 176.82   | 182.42   |
| Intellectual Property              | 989.25   | 1002.12  | 1003.97  | 1003.08  | 1004.17  | 1011.29  | 1022.93  | 1036.79  | 1051.67  | 1065.42  |
| Residential                        | 602.07   | 609.93   | 608.35   | 589.71   | 569.12   | 569.74   | 575.45   | 582.29   | 585.74   | 600.82   |
| Priv Inventory Change              | 6.48     | 25.40    | 96.86    | -60.30   | -22.86   | 7.54     | 18.82    | 44.63    | 44.15    | 34.73    |
| Farm                               | -11.13   | -10.96   | 0.14     | 0.14     | 0.14     | 0.14     | -1.71    | -3.46    | -4.96    | -4.96    |
| Nonfarm                            | 15.21    | 36.36    | 96.72    | -60.44   | -23.00   | 7.40     | 20.52    | 48.09    | 49.11    | 39.69    |
| Net Exports                        | -901.98  | -898.80  | -870.87  | -854.87  | -839.80  | -847.18  | -903.30  | -988.99  | -1051.28 | -1083.92 |
| Exports                            | 2532.40  | 2518.50  | 2398.98  | 2338.63  | 2332.62  | 2382.74  | 2440.62  | 2475.99  | 2507.00  | 2530.56  |
| Imports                            | 3434.38  | 3417.30  | 3269.85  | 3193.50  | 3172.42  | 3229.92  | 3343.92  | 3464.99  | 3558.28  | 3614.49  |
| Government Purchases               | 3332.39  | 3352.61  | 3395.34  | 3361.07  | 3344.86  | 3323.71  | 3302.49  | 3280.23  | 3262.34  | 3244.23  |
| Federal                            | 1295.66  | 1300.01  | 1312.91  | 1312.97  | 1315.86  | 1318.66  | 1320.34  | 1321.37  | 1310.93  | 1299.61  |
| Defense                            | 784.29   | 789.94   | 798.64   | 802.10   | 804.65   | 806.86   | 807.90   | 808.77   | 803.86   | 798.35   |
| Nondefense                         | 511.14   | 509.97   | 514.21   | 510.99   | 511.37   | 511.98   | 512.63   | 512.80   | 507.35   | 501.62   |
| State & Local                      | 2035.77  | 2051.50  | 2081.18  | 2047.28  | 2028.45  | 2004.86  | 1982.29  | 1959.38  | 1951.79  | 1944.84  |
| ADDENDA                            |          |          |          |          |          |          |          |          |          |          |
| Final Sales to Domestic Purchasers | 20070.16 | 19979.13 | 19268.87 | 19332.52 | 19593.82 | 19878.05 | 20134.36 | 20343.06 | 20465.86 | 20559.16 |
| Unemployment Rate (%)              | 3.53     | 3.74     | 4.83     | 5.78     | 5.91     | 5.65     | 5.22     | 4.75     | 4.50     | 4.45     |

**Table 2**  
Gross Domestic Product in Chained Dollars—Prolonged Fallout  
(Billions of Chained (2012) Dollars, SAAR)

|                                    | Forecast |          |          | Calendar Years |          |          |          | Percent Changes |         |         |
|------------------------------------|----------|----------|----------|----------------|----------|----------|----------|-----------------|---------|---------|
|                                    | 2022q2   | 2022q3   | 2022q4   | 2019           | 2020     | 2021     | 2022     | 2019-20         | 2020-21 | 2021-22 |
| GDP                                | 19680.95 | 19779.95 | 19887.99 | 19072.51       | 18724.07 | 19331.53 | 19733.84 | -1.83           | 3.24    | 2.08    |
| Consumption                        | 14136.43 | 14211.83 | 14290.78 | 13279.60       | 12988.51 | 13795.76 | 14176.45 | -2.19           | 6.22    | 2.76    |
| Durables                           | 1952.65  | 1969.06  | 1984.74  | 1765.66        | 1779.80  | 1866.98  | 1960.19  | 0.80            | 4.90    | 4.99    |
| Vehicles & Parts                   | 535.55   | 534.41   | 531.65   | 541.10         | 514.74   | 520.14   | 534.14   | -4.87           | 1.05    | 2.69    |
| Furn & HH Equipment                | 446.83   | 451.46   | 456.25   | 406.20         | 411.38   | 430.79   | 449.18   | 1.27            | 4.72    | 4.27    |
| Rec Goods & Vehicles               | 711.23   | 723.00   | 736.02   | 569.74         | 606.61   | 664.18   | 717.55   | 6.47            | 9.49    | 8.04    |
| Other                              | 299.92   | 303.77   | 307.76   | 263.51         | 272.04   | 286.12   | 301.83   | 3.24            | 5.18    | 5.49    |
| Nondurables                        | 3171.20  | 3177.97  | 3187.90  | 3005.49        | 3136.28  | 3155.57  | 3176.68  | 4.35            | 0.61    | 0.67    |
| Food                               | 1029.45  | 1030.73  | 1032.40  | 988.61         | 1050.99  | 1028.44  | 1030.21  | 6.31            | -2.15   | 0.17    |
| Clothing & Footwear                | 439.26   | 443.11   | 446.82   | 407.21         | 416.28   | 428.59   | 441.34   | 2.23            | 2.96    | 2.98    |
| Gasoline & Oil                     | 427.86   | 427.86   | 428.00   | 424.06         | 408.30   | 426.63   | 428.12   | -3.72           | 4.49    | 0.35    |
| Fuel Oil & Coal                    | 23.65    | 23.38    | 23.18    | 26.39          | 25.51    | 25.05    | 23.59    | -3.30           | -1.83   | -5.81   |
| Other                              | 1230.50  | 1232.41  | 1236.89  | 1142.73        | 1206.68  | 1225.99  | 1232.91  | 5.60            | 1.60    | 0.56    |
| Services                           | 9078.57  | 9131.39  | 9185.35  | 8560.83        | 8169.68  | 8836.02  | 9105.84  | -4.57           | 8.16    | 3.05    |
| Private Investment                 | 3376.20  | 3426.23  | 3474.18  | 3421.22        | 3229.06  | 3182.73  | 3400.51  | -5.62           | -1.43   | 6.84    |
| Nonresidential                     | 2700.08  | 2734.31  | 2766.33  | 2749.79        | 2596.38  | 2548.63  | 2716.26  | -5.58           | -1.84   | 6.58    |
| Structures                         | 418.00   | 424.49   | 429.11   | 516.84         | 455.56   | 403.80   | 420.75   | -11.86          | -11.36  | 4.20    |
| Equipment                          | 1229.82  | 1247.13  | 1262.79  | 1272.42        | 1149.02  | 1133.20  | 1237.78  | -9.70           | -1.38   | 9.23    |
| Info Processing                    | 514.44   | 523.53   | 531.44   | 516.96         | 491.10   | 483.33   | 518.42   | -5.00           | -1.58   | 7.26    |
| Industrial Equipment               | 224.94   | 229.03   | 233.06   | 240.98         | 226.02   | 214.25   | 227.00   | -6.21           | -5.21   | 5.95    |
| New Vehicles                       | 325.92   | 330.04   | 332.83   | 350.45         | 306.67   | 299.29   | 327.57   | -12.49          | -2.40   | 9.45    |
| Other Equipment                    | 183.43   | 184.34   | 186.00   | 179.85         | 147.03   | 156.94   | 184.05   | -18.25          | 6.75    | 17.27   |
| Intellectual Property              | 1076.39  | 1087.03  | 1099.22  | 971.06         | 1003.33  | 1030.67  | 1082.01  | 3.32            | 2.72    | 4.98    |
| Residential                        | 616.51   | 630.77   | 641.84   | 593.53         | 594.28   | 578.30   | 622.48   | 0.13            | -2.69   | 7.64    |
| Priv Inventory Change              | 32.22    | 32.28    | 36.57    | 65.33          | 9.77     | 28.78    | 33.95    | NA              | NA      | NA      |
| Farm                               | -4.96    | -4.96    | -4.96    | -11.92         | -2.63    | -2.50    | -4.96    | NA              | NA      | NA      |
| Nonfarm                            | 37.18    | 37.24    | 41.53    | 74.32          | 12.41    | 31.28    | 38.91    | NA              | NA      | NA      |
| Net Exports                        | -1102.15 | -1121.71 | -1143.84 | -954.19        | -866.09  | -947.69  | -1112.91 | NA              | NA      | NA      |
| Exports                            | 2548.88  | 2562.40  | 2574.19  | 2531.92        | 2397.18  | 2451.59  | 2554.01  | -5.32           | 2.27    | 4.18    |
| Imports                            | 3651.03  | 3684.11  | 3718.03  | 3486.11        | 3263.27  | 3399.28  | 3666.91  | -6.39           | 4.17    | 7.87    |
| Government Purchases               | 3234.76  | 3226.49  | 3227.73  | 3299.36        | 3363.47  | 3292.19  | 3233.30  | 1.94            | -2.12   | -1.79   |
| Federal                            | 1288.18  | 1276.66  | 1273.77  | 1275.67        | 1310.44  | 1317.83  | 1284.56  | 2.73            | 0.56    | -2.52   |
| Defense                            | 792.65   | 787.06   | 785.74   | 773.65         | 798.83   | 806.85   | 790.95   | 3.26            | 1.00    | -1.97   |
| Nondefense                         | 495.96   | 490.11   | 488.56   | 501.89         | 511.64   | 511.19   | 494.06   | 1.94            | -0.09   | -3.35   |
| State & Local                      | 1946.46  | 1949.34  | 1953.32  | 2022.50        | 2052.10  | 1974.58  | 1948.49  | 1.46            | -3.78   | -1.32   |
| ADDENDA                            |          |          |          |                |          |          |          |                 |         |         |
| Final Sales to Domestic Purchasers | 20670.53 | 20785.66 | 20908.32 | 19910.85       | 19543.58 | 20205.33 | 20730.92 | -1.84           | 3.39    | 2.60    |
| Unemployment Rate (%)              | 4.45     | 4.43     | 4.38     | 3.66           | 5.07     | 5.03     | 4.43     | NA              | NA      | NA      |

# **The Michigan Economic Outlook for 2020-2022**

RSQE Forecast, Interim Update  
19 March 2020

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- Table 4: Employment in Michigan—Prolonged Fallout Scenario

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—Effective Mitigation  
(Millions of Current Dollars, SAQR)

|                         | Actual    | Forecast  |           |           |           |           |           |           |           |           |           |
|-------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                         | 2019q4    | 2020q1    | 2020q2    | 2020q3    | 2020q4    | 2021q1    | 2021q2    | 2021q3    | 2021q4    | 2022q1    | 2022q2    |
| Personal Income         | 128026.14 | 128491.10 | 126071.20 | 125494.80 | 127256.70 | 128855.70 | 130862.10 | 132557.20 | 134310.30 | 135734.50 | 137131.00 |
| Wage and Salary         | 63175.75  | 63404.98  | 61766.14  | 61422.14  | 63450.65  | 64626.43  | 66165.74  | 67213.04  | 68333.53  | 69025.79  | 69831.88  |
| Private                 | 54874.67  | 55030.43  | 53236.99  | 52825.44  | 54844.73  | 55953.07  | 57422.60  | 58416.19  | 59477.57  | 60102.28  | 60840.93  |
| Government              | 8301.08   | 8374.55   | 8529.15   | 8596.70   | 8605.93   | 8673.36   | 8743.14   | 8796.85   | 8855.95   | 8923.51   | 8990.95   |
| Other Labor Income      | 15266.42  | 15340.64  | 14814.21  | 14559.10  | 14854.74  | 14961.74  | 15132.22  | 15225.82  | 15366.11  | 15450.93  | 15573.55  |
| Proprietors' Income     | 8682.57   | 8692.72   | 8449.48   | 8433.90   | 8391.68   | 8477.85   | 8624.91   | 8768.68   | 8887.46   | 8986.44   | 9082.00   |
| Property Income         | 23780.56  | 23677.70  | 22934.57  | 22607.80  | 22435.37  | 22555.34  | 22741.39  | 23109.29  | 23461.25  | 23778.99  | 24058.70  |
| Transfer Payments       | 26751.04  | 27102.73  | 27516.20  | 27799.72  | 27790.29  | 28152.96  | 28337.93  | 28528.68  | 28709.55  | 29102.24  | 29303.12  |
| Residence Adjustment    | 629.35    | 634.78    | 640.27    | 645.80    | 651.38    | 657.00    | 662.68    | 668.40    | 674.17    | 680.00    | 685.87    |
| Less:                   |           |           |           |           |           |           |           |           |           |           |           |
| Social Ins Contribution | 10259.55  | 10362.45  | 10049.69  | 9973.69   | 10317.40  | 10575.57  | 10802.75  | 10956.68  | 11121.74  | 11289.92  | 11404.06  |
| Less:                   |           |           |           |           |           |           |           |           |           |           |           |
| Federal Pers Taxes      | 11698.03  | 11592.58  | 11254.43  | 11126.18  | 11346.78  | 10842.28  | 11055.35  | 11156.99  | 11324.68  | 11827.98  | 11981.04  |
| Mich Withholding        | 2508.04   | 2562.42   | 2487.52   | 2489.92   | 2524.65   | 2610.00   | 2668.97   | 2731.60   | 2727.37   | 2795.02   | 2822.51   |
| Equals:                 |           |           |           |           |           |           |           |           |           |           |           |
| Disp Personal Income    | 113820.07 | 114336.10 | 112329.20 | 111878.70 | 113385.30 | 115403.50 | 117137.80 | 118668.60 | 120258.30 | 121111.50 | 122327.50 |
| ADDENDA:                |           |           |           |           |           |           |           |           |           |           |           |
| Consumer Price Index    |           |           |           |           |           |           |           |           |           |           |           |
| Detroit 1982-84=100     | 238.86    | 238.90    | 237.37    | 237.83    | 238.89    | 240.51    | 242.02    | 243.09    | 244.00    | 244.90    | 245.95    |
| Real Disposable Income  |           |           |           |           |           |           |           |           |           |           |           |
| Millions of 1982-84 \$  | 47650.77  | 47859.41  | 47323.10  | 47042.25  | 47463.46  | 47983.79  | 48400.59  | 48815.85  | 49285.36  | 49453.46  | 49735.93  |

**Table 1**  
Michigan Personal Income—Effective Mitigation  
(Millions of Current Dollars, SAQR)

|                         | Forecast  |           | Calendar Years |           |           |           |           | Percent Changes |         |         |         |
|-------------------------|-----------|-----------|----------------|-----------|-----------|-----------|-----------|-----------------|---------|---------|---------|
|                         | 2022q3    | 2022q4    | 2018           | 2019      | 2020      | 2021      | 2022      | 2018-19         | 2019-20 | 2020-21 | 2021-22 |
| Personal Income         | 138274.80 | 139478.30 | 484029.84      | 503099.80 | 507313.80 | 526585.30 | 550618.60 | 3.94            | 0.84    | 3.80    | 4.56    |
| Wage and Salary         | 70408.41  | 71029.96  | 240365.37      | 247413.99 | 250043.91 | 266338.74 | 280296.04 | 2.93            | 1.06    | 6.52    | 5.24    |
| Private                 | 61355.60  | 61915.13  | 208546.81      | 214637.49 | 215937.59 | 231269.43 | 244213.94 | 2.92            | 0.61    | 7.10    | 5.60    |
| Government              | 9052.81   | 9114.83   | 31818.56       | 32776.50  | 34106.33  | 35069.30  | 36082.10  | 3.01            | 4.06    | 2.82    | 2.89    |
| Other Labor Income      | 15655.69  | 15749.95  | 57885.98       | 59644.09  | 59568.69  | 60685.89  | 62430.11  | 3.04            | -0.13   | 1.88    | 2.87    |
| Proprietors' Income     | 9175.85   | 9259.88   | 32565.04       | 34002.16  | 33967.79  | 34758.89  | 36504.17  | 4.41            | -0.10   | 2.33    | 5.02    |
| Property Income         | 24311.15  | 24584.82  | 91960.76       | 94448.98  | 91655.44  | 91867.27  | 96733.66  | 2.71            | -2.96   | 0.23    | 5.30    |
| Transfer Payments       | 29513.93  | 29720.73  | 97776.34       | 105309.64 | 110208.94 | 113729.12 | 117640.02 | 7.70            | 4.65    | 3.19    | 3.44    |
| Residence Adjustment    | 691.79    | 697.77    | 2367.80        | 2488.65   | 2572.22   | 2662.25   | 2755.43   | 5.10            | 3.36    | 3.50    | 3.50    |
| Less:                   |           |           |                |           |           |           |           |                 |         |         |         |
| Social Ins Contribution | 11482.05  | 11564.77  | 38891.44       | 40207.71  | 40703.23  | 43456.74  | 45740.80  | 3.38            | 1.23    | 6.76    | 5.26    |
| Less:                   |           |           |                |           |           |           |           |                 |         |         |         |
| Federal Pers Taxes      | 12095.31  | 12200.36  | 44059.58       | 45838.30  | 45319.97  | 44379.30  | 48104.69  | 4.04            | -1.13   | -2.08   | 8.39    |
| Mich Withholding        | 2865.98   | 2838.50   | 9595.03        | 10151.27  | 10064.50  | 10737.94  | 11322.00  | 5.80            | -0.85   | 6.69    | 5.44    |
| Equals:                 |           |           |                |           |           |           |           |                 |         |         |         |
| Disp Personal Income    | 123313.50 | 124439.50 | 430375.24      | 447110.23 | 451929.30 | 471468.20 | 491192.00 | 3.89            | 1.08    | 4.32    | 4.18    |
| ADDENDA:                |           |           |                |           |           |           |           |                 |         |         |         |
| Consumer Price Index    |           |           |                |           |           |           |           |                 |         |         |         |
| Detroit 1982-84=100     | 247.07    | 248.16    | 232.26         | 235.47    | 238.25    | 242.41    | 246.52    | 1.38            | 1.18    | 1.75    | 1.70    |
| Real Disposable Income  |           |           |                |           |           |           |           |                 |         |         |         |
| Millions of 1982-84 \$  | 49911.29  | 50145.49  | 185294.89      | 189877.28 | 189688.22 | 194485.59 | 199246.17 | 2.47            | -0.10   | 2.53    | 2.45    |



**Table 2**  
 Employment in Michigan—Effective Mitigation  
 (Thousands of Persons, Seasonally Adjusted)

|   | Actual   |          | Forecast |          |          |          |          |          |          |          |          |
|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|   | 2019q4   | 2020q1   | 2020q2   | 2020q3   | 2020q4   | 2021q1   | 2021q2   | 2021q3   | 2021q4   | 2022q1   | 2022q2   |
| Total Employment  | 4759.55  | 4762.88  | 4639.97  | 4600.28  | 4702.39  | 4736.86  | 4750.62  | 4765.78  | 4782.42  | 4795.50  | 4805.30  |
| Wage and Salary   | 4440.40  | 4456.88  | 4332.39  | 4301.40  | 4415.25  | 4448.94  | 4465.38  | 4483.65  | 4503.03  | 4518.10  | 4528.90  |
| Private   | 3826.93  | 3842.88  | 3713.19  | 3682.25  | 3800.04  | 3833.01  | 3848.92  | 3867.66  | 3887.53  | 3902.35  | 3913.05  |
| Nat. Res. & Mining  | 7.20     | 7.20     | 6.89     | 6.79     | 7.11     | 7.07     | 7.09     | 7.11     | 7.12     | 7.13     | 7.12     |
| Construction  | 172.93   | 173.16   | 165.27   | 163.59   | 169.48   | 171.40   | 172.25   | 175.31   | 178.92   | 180.93   | 182.35   |
| Manufacturing   | 620.90   | 633.00   | 605.92   | 600.27   | 626.28   | 628.95   | 632.42   | 636.02   | 639.36   | 640.96   | 641.92   |
| Trans. Equipment  | 183.23   | 194.00   | 184.18   | 181.43   | 188.77   | 190.13   | 191.24   | 193.66   | 195.74   | 196.04   | 196.12   |
| Other Mfg.  | 437.67   | 439.00   | 421.74   | 418.83   | 437.50   | 438.82   | 441.18   | 442.36   | 443.61   | 444.92   | 445.80   |
| Trade, Trans. & Util.   | 795.60   | 796.00   | 746.88   | 738.66   | 784.10   | 787.33   | 788.69   | 791.68   | 795.93   | 798.96   | 801.37   |
| Information   | 57.53    | 57.43    | 57.43    | 56.47    | 56.15    | 56.81    | 56.91    | 56.90    | 56.91    | 56.92    | 56.90    |
| Financial Activities  | 225.67   | 226.00   | 224.81   | 223.98   | 225.84   | 227.28   | 228.16   | 228.99   | 229.97   | 230.66   | 231.00   |
| Prof. & Bus. Serv.  | 660.40   | 661.95   | 649.46   | 633.54   | 637.43   | 656.28   | 663.57   | 667.70   | 671.49   | 674.54   | 676.86   |
| Edu. & Health Serv.   | 672.07   | 672.79   | 680.35   | 683.68   | 679.00   | 681.71   | 682.47   | 684.51   | 685.73   | 687.75   | 689.26   |
| Lesiure & Hospitality   | 445.93   | 446.50   | 415.06   | 414.40   | 446.31   | 448.27   | 449.61   | 451.43   | 453.61   | 455.51   | 457.05   |
| Other Services  | 168.70   | 168.84   | 161.14   | 160.89   | 168.35   | 167.91   | 167.76   | 168.01   | 168.51   | 168.98   | 169.22   |
| Government  | 613.47   | 614.00   | 619.19   | 619.15   | 615.22   | 615.92   | 616.46   | 615.99   | 615.50   | 615.75   | 615.85   |
| Non Wage and Salary   | 319.15   | 306.00   | 307.59   | 298.89   | 287.13   | 287.92   | 285.24   | 282.13   | 279.39   | 277.40   | 276.40   |
| Labor Force   | 4956.41  | 4962.00  | 4960.00  | 4961.00  | 4970.00  | 4978.59  | 4981.76  | 4984.32  | 4987.38  | 4990.20  | 4993.35  |
| Unemployment  | 196.86   | 199.12   | 320.03   | 360.72   | 267.62   | 241.73   | 231.15   | 218.53   | 204.97   | 194.70   | 188.06   |
| Unemployment Rate (%)   | 3.97     | 4.01     | 6.45     | 7.27     | 5.38     | 4.86     | 4.64     | 4.38     | 4.11     | 3.90     | 3.77     |
| ADDENDA: U.S. DATA<br>(Billions of chained 2012 \$, except where noted) |          |          |          |          |          |          |          |          |          |          |          |
| Gross Domestic Prod   | 19219.77 | 19239.54 | 18994.42 | 19107.42 | 19328.24 | 19574.58 | 19789.09 | 19884.28 | 19975.52 | 20059.74 | 20145.47 |
| Business Fixed Invest   | 2732.39  | 2731.72  | 2714.05  | 2701.99  | 2711.69  | 2752.60  | 2800.52  | 2849.37  | 2886.21  | 2910.38  | 2931.55  |
| Gross Vehicle Product   | 544.58   | 575.81   | 554.46   | 546.70   | 551.99   | 563.78   | 579.50   | 592.66   | 600.49   | 597.37   | 594.28   |
| Personal Cons Expend  |          |          |          |          |          |          |          |          |          |          |          |
| New Autos + Trucks  | 279.46   | 281.18   | 274.66   | 275.23   | 279.73   | 285.05   | 291.99   | 297.02   | 300.10   | 298.07   | 297.59   |
| Light Vehicle Sales (mil)   | 16.72    | 16.67    | 16.11    | 15.98    | 16.11    | 16.31    | 16.62    | 16.83    | 16.93    | 16.77    | 16.71    |
| Unemployment Rate (%)   | 3.53     | 3.62     | 4.09     | 4.39     | 4.32     | 4.06     | 3.67     | 3.39     | 3.23     | 3.17     | 3.16     |

**Table 2**  
**Employment in Michigan—Effective Mitigation**  
 (Thousands of Persons, Seasonally Adjusted)

|   | Forecast |          | Calendar Years |          |          |          |          | Percent Changes |         |         |         |
|---|----------|----------|----------------|----------|----------|----------|----------|-----------------|---------|---------|---------|
|   | 2022q3   | 2022q4   | 2018           | 2019     | 2020     | 2021     | 2022     | 2018-19         | 2019-20 | 2020-21 | 2021-22 |
| Total Employment  | 4812.49  | 4816.72  | 4698.46        | 4746.71  | 4676.38  | 4758.92  | 4807.50  | 1.03            | -1.48   | 1.76    | 1.02    |
| Wage and Salary   | 4536.55  | 4540.60  | 4419.43        | 4443.78  | 4376.48  | 4475.25  | 4531.04  | 0.55            | -1.51   | 2.26    | 1.25    |
| Private   | 3920.69  | 3924.63  | 3812.88        | 3833.45  | 3759.59  | 3859.28  | 3915.18  | 0.54            | -1.93   | 2.65    | 1.45    |
| Nat. Res. & Mining  | 7.12     | 7.11     | 7.19           | 7.19     | 7.00     | 7.10     | 7.12     | 0.00            | -2.73   | 1.50    | 0.28    |
| Construction  | 183.48   | 184.28   | 169.34         | 173.03   | 167.87   | 174.47   | 182.76   | 2.18            | -2.98   | 3.93    | 4.75    |
| Manufacturing   | 641.86   | 640.39   | 629.51         | 630.83   | 616.36   | 634.19   | 641.28   | 0.21            | -2.29   | 2.89    | 1.12    |
| Trans. Equipment  | 196.19   | 195.51   | 193.02         | 192.43   | 187.10   | 192.69   | 195.96   | -0.31           | -2.77   | 2.99    | 1.70    |
| Other Mfg.  | 445.67   | 444.89   | 436.49         | 438.40   | 429.27   | 441.49   | 445.32   | 0.44            | -2.08   | 2.85    | 0.87    |
| Trade, Trans. & Util.   | 802.82   | 803.50   | 792.07         | 793.96   | 766.41   | 790.91   | 801.66   | 0.24            | -3.47   | 3.20    | 1.36    |
| Information   | 56.85    | 56.78    | 55.86          | 57.23    | 56.87    | 56.88    | 56.86    | 2.46            | -0.63   | 0.02    | -0.04   |
| Financial Activities  | 231.16   | 231.21   | 218.89         | 223.28   | 225.16   | 228.60   | 231.01   | 2.00            | 0.84    | 1.53    | 1.05    |
| Prof. & Bus. Serv.  | 678.55   | 679.75   | 660.24         | 662.08   | 645.59   | 664.76   | 677.43   | 0.28            | -2.49   | 2.97    | 1.91    |
| Edu. & Health Serv.   | 691.09   | 692.67   | 678.78         | 673.47   | 678.96   | 683.60   | 690.19   | -0.78           | 0.81    | 0.68    | 0.96    |
| Lesiure & Hospitality   | 458.38   | 459.44   | 434.43         | 442.86   | 430.57   | 450.73   | 457.60   | 1.94            | -2.78   | 4.68    | 1.52    |
| Other Services  | 169.39   | 169.49   | 166.55         | 169.51   | 164.80   | 168.04   | 169.27   | 1.78            | -2.78   | 1.97    | 0.73    |
| Government  | 615.86   | 615.97   | 606.55         | 610.33   | 616.89   | 615.97   | 615.86   | 0.62            | 1.07    | -0.15   | -0.02   |
| Non Wage and Salary   | 275.94   | 276.11   | 279.03         | 302.92   | 299.90   | 283.67   | 276.46   | 8.56            | -1.00   | -5.41   | -2.54   |
| Labor Force   | 4996.23  | 4998.98  | 4900.59        | 4949.31  | 4963.25  | 4983.01  | 4994.69  | 0.99            | 0.28    | 0.40    | 0.23    |
| Unemployment  | 183.74   | 182.26   | 202.13         | 202.60   | 286.87   | 224.09   | 187.19   | 0.23            | 41.60   | -21.88  | -16.47  |
| Unemployment Rate (%)   | 3.68     | 3.65     | 4.12           | 4.09     | 5.78     | 4.50     | 3.75     | NA              | NA      | NA      | NA      |
| ADDENDA: U.S. DATA<br>(Billions of chained 2012 \$, except where noted) |          |          |                |          |          |          |          |                 |         |         |         |
| Gross Domestic Prod   | 20230.66 | 20312.72 | 18638.16       | 19072.51 | 19167.41 | 19805.87 | 20187.15 | 2.33            | 0.50    | 3.33    | 1.93    |
| Business Fixed Invest   | 2950.47  | 2968.23  | 2692.30        | 2749.79  | 2714.86  | 2822.17  | 2940.16  | 2.14            | -1.27   | 3.95    | 4.18    |
| Gross Vehicle Product   | 592.60   | 590.96   | 559.15         | 557.68   | 557.24   | 584.11   | 593.80   | -0.26           | -0.08   | 4.82    | 1.66    |
| Personal Cons Expend  |          |          |                |          |          |          |          |                 |         |         |         |
| New Autos + Trucks  | 297.64   | 297.40   | 281.19         | 276.98   | 277.70   | 293.54   | 297.68   | -1.50           | 0.26    | 5.71    | 1.41    |
| Light Vehicle Sales (mil)   | 16.68    | 16.63    | 17.21          | 16.89    | 16.22    | 16.67    | 16.70    | -1.88           | -3.98   | 2.80    | 0.16    |
| Unemployment Rate (%)   | 3.15     | 3.13     | 3.89           | 3.66     | 4.10     | 3.59     | 3.15     | NA              | NA      | NA      | NA      |

**Table 3**  
Michigan Personal Income—Prolonged Fallout  
(Millions of Current Dollars, SAQR)

|                         | Actual    |           | Forecast  |           |           |           |           |           |           |           |           |
|-------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                         | 2019q4    | 2020q1    | 2020q2    | 2020q3    | 2020q4    | 2021q1    | 2021q2    | 2021q3    | 2021q4    | 2022q1    | 2022q2    |
| Personal Income         | 128026.14 | 128394.90 | 121519.00 | 118613.10 | 117890.80 | 117564.10 | 119745.00 | 121542.90 | 123414.40 | 124477.00 | 126194.30 |
| Wage and Salary         | 63175.75  | 63307.17  | 57826.77  | 55946.17  | 55938.74  | 56144.97  | 57877.43  | 59110.59  | 60365.73  | 61250.94  | 62389.09  |
| Private                 | 54874.67  | 54932.64  | 49437.91  | 47542.93  | 47553.15  | 47687.31  | 49373.30  | 50578.76  | 51794.19  | 52629.08  | 53734.01  |
| Government              | 8301.08   | 8374.53   | 8388.86   | 8403.24   | 8385.60   | 8457.66   | 8504.13   | 8531.82   | 8571.54   | 8621.86   | 8655.08   |
| Other Labor Income      | 15266.42  | 15336.27  | 12965.99  | 12456.42  | 12296.85  | 12937.16  | 13140.81  | 13250.43  | 13411.67  | 14062.52  | 14273.58  |
| Proprietors' Income     | 8682.57   | 8678.18   | 6608.39   | 6058.85   | 5740.69   | 5752.72   | 5874.77   | 6030.59   | 6167.79   | 6276.11   | 6384.47   |
| Property Income         | 23780.56  | 23679.79  | 22466.57  | 21817.52  | 21498.57  | 21608.54  | 21823.48  | 22129.28  | 22469.76  | 22785.35  | 23046.46  |
| Transfer Payments       | 26751.04  | 27105.55  | 27806.80  | 28242.29  | 28318.31  | 28627.72  | 28760.07  | 28911.25  | 29051.35  | 29400.61  | 29565.40  |
| Residence Adjustment    | 629.35    | 634.78    | 640.27    | 645.80    | 651.38    | 657.00    | 662.68    | 668.40    | 674.17    | 680.00    | 685.87    |
| Less:                   |           |           |           |           |           |           |           |           |           |           |           |
| Social Ins Contribution | 10259.55  | 10346.88  | 6795.75   | 6553.91   | 6553.77   | 8163.97   | 8394.27   | 8557.65   | 8726.07   | 9978.56   | 10150.53  |
| Less:                   |           |           |           |           |           |           |           |           |           |           |           |
| Federal Pers Taxes      | 11698.03  | 11583.44  | 10486.61  | 10062.08  | 9963.65   | 8552.23   | 8730.63   | 8781.35   | 8958.49   | 8880.91   | 9084.11   |
| Mich Withholding        | 2508.04   | 2558.28   | 2321.44   | 2257.65   | 2212.13   | 2252.08   | 2319.66   | 2387.61   | 2395.13   | 2466.17   | 2508.27   |
| Equals:                 |           |           |           |           |           |           |           |           |           |           |           |
| Disp Personal Income    | 113820.07 | 114253.10 | 108711.00 | 106293.40 | 105715.00 | 106759.80 | 108694.70 | 110373.90 | 112060.80 | 113129.90 | 114602.00 |
| ADDENDA:                |           |           |           |           |           |           |           |           |           |           |           |
| Consumer Price Index    |           |           |           |           |           |           |           |           |           |           |           |
| Detroit 1982-84=100     | 238.86    | 238.90    | 235.27    | 235.13    | 236.02    | 237.47    | 238.68    | 239.81    | 240.88    | 241.66    | 242.49    |
| Real Disposable Income  |           |           |           |           |           |           |           |           |           |           |           |
| Millions of 1982-84 \$  | 47650.77  | 47824.67  | 46206.49  | 45206.82  | 44791.26  | 44957.55  | 45540.81  | 46026.37  | 46520.59  | 46813.01  | 47260.14  |

**Table 3**  
Michigan Personal Income—Prolonged Fallout  
(Millions of Current Dollars, SAQR)

|                         | Forecast  |           | Calendar Years |           |           |           |           | Percent Changes |         |         |         |
|-------------------------|-----------|-----------|----------------|-----------|-----------|-----------|-----------|-----------------|---------|---------|---------|
|                         | 2022q3    | 2022q4    | 2018           | 2019      | 2020      | 2021      | 2022      | 2018-19         | 2019-20 | 2020-21 | 2021-22 |
| Personal Income         | 127550.20 | 128906.90 | 484029.84      | 503099.80 | 486417.80 | 482266.40 | 507128.40 | 3.94            | -3.32   | -0.85   | 5.16    |
| Wage and Salary         | 63192.25  | 63974.97  | 240365.37      | 247413.99 | 233018.85 | 233498.72 | 250807.25 | 2.93            | -5.82   | 0.21    | 7.41    |
| Private                 | 54502.49  | 55248.31  | 208546.81      | 214637.49 | 199466.63 | 199433.56 | 216113.89 | 2.92            | -7.07   | -0.02   | 8.36    |
| Government              | 8689.77   | 8726.66   | 31818.56       | 32776.50  | 33552.23  | 34065.16  | 34693.37  | 3.01            | 2.37    | 1.53    | 1.84    |
| Other Labor Income      | 14424.08  | 14568.83  | 57885.98       | 59644.09  | 53055.53  | 52740.07  | 57329.01  | 3.04            | -11.05  | -0.59   | 8.70    |
| Proprietors' Income     | 6492.76   | 6591.46   | 32565.04       | 34002.16  | 27086.10  | 23825.86  | 25744.80  | 4.41            | -20.34  | -12.04  | 8.05    |
| Property Income         | 23273.07  | 23530.14  | 91960.76       | 94448.98  | 89462.45  | 88031.06  | 92635.02  | 2.71            | -5.28   | -1.60   | 5.23    |
| Transfer Payments       | 29746.76  | 29927.62  | 97776.34       | 105309.64 | 111472.95 | 115350.39 | 118640.39 | 7.70            | 5.85    | 3.48    | 2.85    |
| Residence Adjustment    | 691.79    | 697.77    | 2367.80        | 2488.65   | 2572.22   | 2662.25   | 2755.43   | 5.10            | 3.36    | 3.50    | 3.50    |
| Less:                   |           |           |                |           |           |           |           |                 |         |         |         |
| Social Ins Contribution | 10270.52  | 10383.87  | 38891.44       | 40207.71  | 30250.31  | 33841.96  | 40783.48  | 3.38            | -24.76  | 11.87   | 20.51   |
| Less:                   |           |           |                |           |           |           |           |                 |         |         |         |
| Federal Pers Taxes      | 9156.64   | 9281.62   | 44059.58       | 45838.30  | 42095.78  | 35022.70  | 36403.28  | 4.04            | -8.16   | -16.80  | 3.94    |
| Mich Withholding        | 2559.18   | 2543.97   | 9595.03        | 10151.27  | 9349.49   | 9354.47   | 10077.59  | 5.80            | -7.90   | 0.05    | 7.73    |
| Equals:                 |           |           |                |           |           |           |           |                 |         |         |         |
| Disp Personal Income    | 115834.40 | 117081.30 | 430375.24      | 447110.23 | 434972.50 | 437889.20 | 460647.60 | 3.89            | -2.71   | 0.67    | 5.20    |
| ADDENDA:                |           |           |                |           |           |           |           |                 |         |         |         |
| Consumer Price Index    |           |           |                |           |           |           |           |                 |         |         |         |
| Detroit 1982-84=100     | 243.17    | 243.75    | 232.26         | 235.47    | 236.33    | 239.21    | 242.77    | 1.38            | 0.37    | 1.22    | 1.49    |
| Real Disposable Income  |           |           |                |           |           |           |           |                 |         |         |         |
| Millions of 1982-84 \$  | 47634.69  | 48032.89  | 185294.89      | 189877.28 | 184029.24 | 183045.32 | 189740.73 | 2.47            | -3.08   | -0.53   | 3.66    |

**Table 4**  
 Employment in Michigan—Prolonged Fallout  
 (Thousands of Persons, Seasonally Adjusted)

|   | Actual   |          |          |          |          | Forecast |          |          |          |          |          |
|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|   | 2019q4   | 2020q1   | 2020q2   | 2020q3   | 2020q4   | 2021q1   | 2021q2   | 2021q3   | 2021q4   | 2022q1   | 2022q2   |
| Total Employment  | 4759.55  | 4760.89  | 4490.37  | 4386.30  | 4393.04  | 4414.42  | 4428.44  | 4443.21  | 4465.32  | 4498.90  | 4530.98  |
| Wage and Salary   | 4440.40  | 4454.89  | 4159.30  | 4057.84  | 4081.75  | 4111.31  | 4132.42  | 4153.46  | 4180.54  | 4210.26  | 4237.33  |
| Private   | 3826.93  | 3840.89  | 3540.36  | 3439.93  | 3468.64  | 3498.33  | 3519.73  | 3542.32  | 3570.87  | 3601.31  | 3629.27  |
| Nat. Res. & Mining  | 7.20     | 7.22     | 6.98     | 6.70     | 7.02     | 6.96     | 7.00     | 7.04     | 7.10     | 7.15     | 7.16     |
| Construction  | 172.93   | 173.12   | 161.76   | 155.79   | 153.75   | 148.92   | 144.29   | 144.60   | 147.54   | 150.41   | 153.36   |
| Manufacturing   | 620.90   | 631.00   | 571.15   | 552.55   | 560.10   | 562.43   | 565.77   | 569.28   | 576.46   | 583.80   | 589.69   |
| Trans. Equipment  | 183.23   | 192.00   | 165.30   | 156.15   | 161.19   | 165.77   | 166.25   | 170.45   | 174.66   | 177.18   | 178.93   |
| Other Mfg.  | 437.67   | 439.00   | 405.85   | 396.40   | 398.91   | 396.66   | 399.52   | 398.83   | 401.79   | 406.62   | 410.76   |
| Trade, Trans. & Util.   | 795.60   | 796.00   | 711.09   | 693.88   | 706.16   | 713.56   | 717.66   | 724.23   | 733.68   | 743.90   | 753.05   |
| Information   | 57.53    | 57.43    | 52.42    | 50.50    | 49.77    | 49.82    | 49.90    | 49.93    | 49.96    | 50.03    | 50.11    |
| Financial Activities  | 225.67   | 226.00   | 213.69   | 210.98   | 210.74   | 210.90   | 210.89   | 211.07   | 212.02   | 213.28   | 214.45   |
| Prof. & Bus. Serv.  | 660.40   | 661.93   | 619.99   | 570.85   | 561.74   | 572.70   | 584.56   | 595.10   | 599.95   | 604.57   | 609.55   |
| Edu. & Health Serv.   | 672.07   | 672.79   | 675.34   | 675.28   | 675.91   | 676.62   | 677.37   | 678.15   | 678.96   | 680.07   | 681.07   |
| Lesiure & Hospitality   | 445.93   | 446.50   | 374.52   | 370.60   | 386.12   | 396.65   | 401.83   | 402.95   | 404.91   | 407.26   | 409.54   |
| Other Services  | 168.70   | 168.89   | 153.41   | 152.79   | 157.34   | 159.76   | 160.43   | 159.97   | 160.29   | 160.84   | 161.28   |
| Government  | 613.47   | 614.00   | 618.94   | 617.92   | 613.11   | 612.97   | 612.69   | 611.14   | 609.67   | 608.95   | 608.07   |
| Non Wage and Salary   | 319.15   | 306.00   | 331.08   | 328.46   | 311.29   | 303.11   | 296.02   | 289.75   | 284.78   | 288.64   | 293.65   |
| Labor Force   | 4956.41  | 4962.00  | 4906.94  | 4876.35  | 4869.71  | 4870.09  | 4868.01  | 4866.42  | 4868.71  | 4879.33  | 4891.80  |
| Unemployment  | 196.86   | 201.12   | 416.56   | 490.05   | 476.68   | 455.67   | 439.57   | 423.21   | 403.40   | 380.43   | 360.82   |
| Unemployment Rate (%)   | 3.97     | 4.05     | 8.49     | 10.05    | 9.79     | 9.36     | 9.03     | 8.70     | 8.29     | 7.80     | 7.38     |
| ADDENDA: U.S. DATA<br>(Billions of chained 2012 \$, except where noted) |          |          |          |          |          |          |          |          |          |          |          |
| Gross Domestic Prod   | 19219.77 | 19150.73 | 18528.79 | 18458.16 | 18758.58 | 19062.51 | 19285.86 | 19451.29 | 19526.46 | 19586.48 | 19680.95 |
| Business Fixed Invest   | 2732.39  | 2728.73  | 2638.25  | 2538.86  | 2479.66  | 2480.24  | 2521.76  | 2569.45  | 2623.07  | 2664.32  | 2700.08  |
| Gross Vehicle Product   | 544.58   | 572.14   | 509.55   | 464.97   | 450.26   | 450.27   | 485.66   | 510.63   | 530.77   | 535.75   | 540.63   |
| Personal Cons Expend  |          |          |          |          |          |          |          |          |          |          |          |
| New Autos + Trucks  | 279.46   | 279.03   | 253.45   | 238.40   | 232.24   | 230.68   | 245.78   | 254.70   | 262.27   | 263.05   | 266.16   |
| Light Vehicle Sales (mil)   | 16.72    | 16.53    | 14.83    | 13.78    | 13.32    | 13.15    | 13.92    | 14.35    | 14.70    | 14.69    | 14.82    |
| Unemployment Rate (%)   | 3.53     | 3.74     | 4.83     | 5.78     | 5.91     | 5.65     | 5.22     | 4.75     | 4.50     | 4.45     | 4.45     |

**Table 4**  
**Employment in Michigan—Prolonged Fallout**  
 (Thousands of Persons, Seasonally Adjusted)

|  | Forecast |          | Calendar Years |          |          |          |          | Percent Changes |         |         |         |
|--|----------|----------|----------------|----------|----------|----------|----------|-----------------|---------|---------|---------|
|  | 2022q3   | 2022q4   | 2018           | 2019     | 2020     | 2021     | 2022     | 2018-19         | 2019-20 | 2020-21 | 2021-22 |
| Total Employment   | 4558.90  | 4578.95  | 4698.46        | 4746.71  | 4507.65  | 4437.85  | 4541.93  | 1.03            | -5.04   | -1.55   | 2.35    |
| Wage and Salary  | 4260.61  | 4276.74  | 4419.43        | 4443.78  | 4188.44  | 4144.43  | 4246.24  | 0.55            | -5.75   | -1.05   | 2.46    |
| Private  | 3653.55  | 3670.56  | 3812.88        | 3833.45  | 3572.45  | 3532.81  | 3638.67  | 0.54            | -6.81   | -1.11   | 3.00    |
| Nat. Res. & Mining   | 7.16     | 7.15     | 7.19           | 7.19     | 6.98     | 7.03     | 7.16     | 0.00            | -2.93   | 0.67    | 1.82    |
| Construction   | 156.32   | 159.11   | 169.34         | 173.03   | 161.11   | 146.34   | 154.80   | 2.18            | -6.89   | -9.17   | 5.78    |
| Manufacturing  | 594.41   | 596.76   | 629.51         | 630.83   | 578.70   | 568.48   | 591.16   | 0.21            | -8.26   | -1.77   | 3.99    |
| Trans. Equipment   | 180.78   | 181.68   | 193.02         | 192.43   | 168.66   | 169.28   | 179.64   | -0.31           | -12.35  | 0.37    | 6.12    |
| Other Mfg.   | 413.63   | 415.08   | 436.49         | 438.40   | 410.04   | 399.20   | 411.52   | 0.44            | -6.47   | -2.64   | 3.09    |
| Trade, Trans. & Util.  | 760.40   | 764.37   | 792.07         | 793.96   | 726.78   | 722.28   | 755.43   | 0.24            | -8.46   | -0.62   | 4.59    |
| Information  | 50.17    | 50.21    | 55.86          | 57.23    | 52.53    | 49.90    | 50.13    | 2.46            | -8.22   | -5.00   | 0.45    |
| Financial Activities   | 215.48   | 216.31   | 218.89         | 223.28   | 215.35   | 211.22   | 214.88   | 2.00            | -3.55   | -1.92   | 1.73    |
| Prof. & Bus. Serv.   | 614.18   | 618.17   | 660.24         | 662.08   | 603.63   | 588.08   | 611.62   | 0.28            | -8.83   | -2.58   | 4.00    |
| Edu. & Health Serv.  | 682.22   | 683.32   | 678.78         | 673.47   | 674.83   | 677.77   | 681.67   | -0.78           | 0.20    | 0.44    | 0.58    |
| Lesiure & Hospitality  | 411.59   | 413.29   | 434.43         | 442.86   | 394.43   | 401.59   | 410.42   | 1.94            | -10.93  | 1.81    | 2.20    |
| Other Services   | 161.62   | 161.87   | 166.55         | 169.51   | 158.11   | 160.11   | 161.40   | 1.78            | -6.73   | 1.27    | 0.81    |
| Government   | 607.05   | 606.18   | 606.55         | 610.33   | 615.99   | 611.62   | 607.56   | 0.62            | 0.93    | -0.71   | -0.66   |
| Non Wage and Salary  | 298.29   | 302.20   | 279.03         | 302.92   | 319.21   | 293.42   | 295.69   | 8.56            | 5.37    | -8.08   | 0.78    |
| Labor Force  | 4902.52  | 4909.51  | 4900.59        | 4949.31  | 4903.75  | 4868.31  | 4895.79  | 0.99            | -0.92   | -0.72   | 0.56    |
| Unemployment   | 343.62   | 330.57   | 202.13         | 202.60   | 396.10   | 430.46   | 353.86   | 0.23            | 95.51   | 8.67    | -17.80  |
| Unemployment Rate (%)  | 7.01     | 6.73     | 4.12           | 4.09     | 8.10     | 8.84     | 7.23     | NA              | NA      | NA      | NA      |
| ADDENDA: U.S. DATA<br>(Billions of chained 2012 \$,<br>except where noted) |          |          |                |          |          |          |          |                 |         |         |         |
| Gross Domestic Prod  | 19779.95 | 19887.99 | 18638.16       | 19072.51 | 18724.07 | 19331.53 | 19733.84 | 2.33            | -1.83   | 3.24    | 2.08    |
| Business Fixed Invest  | 2734.31  | 2766.33  | 2692.30        | 2749.79  | 2596.38  | 2548.63  | 2716.26  | 2.14            | -5.58   | -1.84   | 6.58    |
| Gross Vehicle Product  | 546.02   | 549.59   | 559.15         | 557.68   | 499.23   | 494.33   | 543.00   | -0.26           | -10.48  | -0.98   | 9.84    |
| Personal Cons Expend   |          |          |                |          |          |          |          |                 |         |         |         |
| New Autos + Trucks   | 269.48   | 271.65   | 281.19         | 276.98   | 250.78   | 248.36   | 267.58   | -1.50           | -9.46   | -0.97   | 7.74    |
| Light Vehicle Sales (mil)  | 14.98    | 15.07    | 17.21          | 16.89    | 14.61    | 14.03    | 14.89    | -1.88           | -13.48  | -3.99   | 6.13    |
| Unemployment Rate (%)  | 4.43     | 4.38     | 3.89           | 3.66     | 5.07     | 5.03     | 4.43     | NA              | NA      | NA      | NA      |