The Effects of the Sales and Use Tax Exemption For Qualifying Data Processing Services Center's Purchases and Rentals

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and edited by Terri Lucero, Administrator

Ninth Edition

2010, W.S. 39-15-105(a)(viii)(S) and W.S. 39-16-105(a)(viii)(H), as amended

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Overview

In the Wyoming Legislature 2010 Session Original House Bill No. 67 (Enrolled Act No. 31) was passed and signed by Governor Freudenthal into law on March 5, 2010. This act relates to taxation and revenue and provides for a sales and use tax exemption for the purchases and rentals of qualifying computer equipment including computers, servers, monitors, keyboards, storage devices and other peripherals, racking systems, cabling and trays that are necessary for the operation of a data processing services center when the aggregate purchase of the qualifying equipment exceeds two million dollars in any calendar year. The act provides for a reporting requirement and an effective date. This law took effect upon signature.

Subsequently House Bill No. 117 (Enrolled Act No. 17) was passed and signed by Governor Mead on February 18, 2011. This had the effect of amending and expanding the first Act. As it now reads, subject to meeting the applicable provisions of the exemption, the following purchases by a data processing services center (as defined in W.S. 39-15-101(a)(xliv)) are exempt:

- (I) The sales price paid for the purchase or rental of qualifying prewritten and other computer software, computer equipment including computers, servers, monitors, keyboards, storage devices, containers used to transport and house such computer equipment and other peripherals, racking systems, cabling and trays that are necessary for the operation of a data processing services center when the aggregate purchase of the qualifying equipment exceeds two million dollars (\$2,000,000.00) in any calendar year;
- (II) The sales price paid for the purchase or rental of qualifying uninterruptable power supplies, back-up power generators, specialized heating and air conditioning equipment and air quality control equipment used for controlling the computer environment necessary for the operation of a data processing services center when the aggregate purchase of the qualifying equipment exceeds two million dollars (\$2,000,000.00) in any calendar year;

This exemption is located within the "economic incentive" group of sales and use tax exemptions in the Wyoming statutes [W.S. 39-15-105(a)(viii) and W.S. 39-16-105(a)(viii)]. In order to avail themselves of the exemption a qualifying data processing services center must meet certain requirements.

In addition to having a physical location in the state where the qualifying equipment will be maintained and operated (until it is scheduled for replacement or until it has reached the end of its serviceable life) for Subparagraph (I) the qualifying data processing services center must make, or have made within the five years immediately preceding March 5, 2010, an initial capital investment of not less than five million dollars (\$5,000,000.00) and for Subparagraph (II) the qualifying data processing services center must make, or have made within the five years immediately preceding April 1, 2011, an initial capital investment of not less than fifty million dollars (\$50,000,000.00). Furthermore, the data processing services center must have received certification from the Wyoming Business Council that the business has created or will create a number of jobs in Wyoming that is appropriate to the size and stage of development of the data processing services center as determined by the Wyoming Business Council.

Specific Requirements by Statute

Wyo. Stat. Ann. § 39-15-105(b)

"The Wyoming business council, the department of workforce services and the department of revenue shall jointly report to the joint revenue interim committee on or before December 1 of each year that the exemption is in effect. If requested by the department of revenue, any person utilizing the exemption shall report to the department the amount of sales tax exempted, and the number of jobs created or impacted by the utilization of the exemption."

This report is to evaluate the cumulative effects of the exemption from initiation of the exemption and shall include:

- (i) A history of employment in terms of the numbers of employees, full-time and part time employees, and rate of turnover classified by the 2007 edition, as amended, of the North American Industry Classification System (NAICS) code manufacturing section 31 33 from information collected by the Department of Employment;
- (ii) A history of wages and benefits disaggregated by gender for each job category; and
- (iii) A comprehensive history of taxes paid to the state of Wyoming.

Findings

This year represents the ninth year the Department of Revenue has requested information from companies potentially utilizing the exemption. A cover letter attached to the return instructed the respondents that once completed, the information could be mailed, faxed or emailed back to the Department of Revenue's Excise Tax Division. All of the respondents replied electronically. The Department attempted to contact data processing centers that had not responded twice prior to March 31, 2021 which was the closing date of the survey.

For the calendar year ending December 2020, the Department reached out to ten entities that have been identified as data processing service centers in Wyoming. This is two more than last year. Of those, the Department received responses from three. Of the three responses, only two companies made sufficient purchases to utilize the exemption under part (I), but only one of those made sufficient purchases to trigger part (II).

Exemption Cost

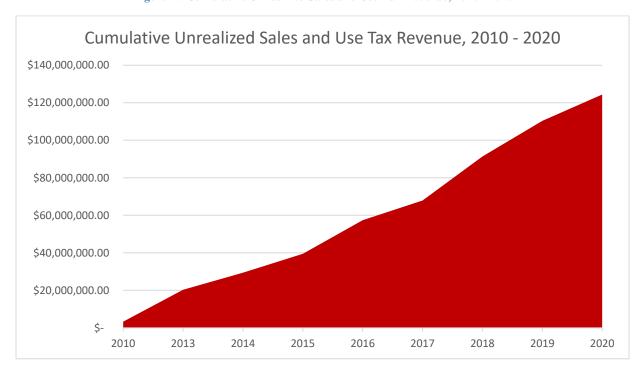
Companies claiming exemption on qualifying prewritten and other computer software, computer equipment including computers, servers, monitors, keyboards, storage devices, containers used to transport and house such computer equipment and other peripherals, racking systems, cabling and trays reported \$255M in exempt purchases in 2020. In addition, \$5.5M in qualifying uninterruptable power supplies, back-up power generators, specialized heating and air conditioning equipment and air quality control equipment used for controlling the computer environment necessary for the operation of a data processing services center was made in 2020.

Applying the statewide average tax rate for 2020, of 5.35% results in \$13.9M in unrealized sales and use tax in 2020. This amount reflects a decrease in the amount of exempt purchases from 2019 and represents 11% of the exemption's total usage since its inception in 2010. Figure 1 describes the total purchases and unrealized tax for each year. Figure 2 graphically represents the cumulative effect of the exemption.

Figure 1: Exempt Purchases and Unrealized Tax Revenue, 2010 – 2020

	Qualifying Exemption (I)	Qualifying Exemption (II)	Total Exempt Purchases	Unrealized Sales and Use Tax
2Q10 - 2Q13	\$ 22,260,014.00	\$ 40,845,160.00	\$ 63,105,174.00	\$ 3,319,332.15
3Q2013 – Yr End	\$ 277,488,171.00	\$ 38,647,960.00	\$ 316,136,131.00	\$ 16,976,510.23
2014	\$ 162,583,622.00	\$ 6,836,331.00	\$ 169,419,953.00	\$ 9,080,909.48
2015	\$ 181,946,836.00	\$ 5,904,642.00	\$ 187,851,478.00	\$ 10,106,409.52
2016	\$ 319,517,743.00	\$ 12,123,508.00	\$ 331,641,251.00	\$ 17,908,627.55
2017	\$ 195,682,743.00	\$ -	\$ 195,682,743.00	\$ 10,488,595.02
2018	\$ 423,514,743.00	\$ 11,903,520.00	\$ 435,418,263.00	\$ 23,469.044.38
2019	\$ 194,099,133.27	\$ 160,458,586.00	\$ 354,557,719.27	\$ 19,039,749.52
2020	\$ 255,055,416.88	\$ 5,508,023.00	\$ 260,563,439.88	\$ 13,940,144.03
Total	\$2,032,148,422.15	\$ 282,227,730.00	\$2,314,376,152.15	\$124,329,321.90

Figure 2: Cumulative Unrealized Sales and Use Tax Revenue, 2010 - 2020



Employment

The total reported employee count is 280. This is an increase of 55 positions from last year. By occupational classification, skilled laborers and unskilled laborers make up the largest percentage of the workforce, accounting for 75.7%, or 212 positions in 2020 for both classifications. Since 2013, skilled and unskilled workers have made up between 72% and 83% of the total workforce. Skilled labor shows an increase of nine positions to 95 positions, while unskilled labor showed an increase to 117 positions, an increase of 31 positions from 2019. The largest occupational classification after labor positions is supervisor/manager. In 2020, supervisors/managers filled 45 positions making up 16.1% of the workforce. Figure 3 details the distribution of the workforce by occupational classification. Figure 4 expresses this information as a percentage of the workforce.

Figure 3: Workforce Distribution by Occupational Classification 2013 - 2020

	2013	2014	2015	2016	2017	2018	2019	2020
Supervisor / Manager	11	18	20	28	25	27	30	45
Administrative Svcs	20	4	3	3	2	2	4	15
Customer Svc	2	2	2	11	13	15	19	8
Skilled Labor	45	33	55	72	91	91	86	95
Unskilled Labor	38	49	64	95	66	85	86	117

Figure 4: Workforce Distribution as a Percentage of Workforce, 2013 – 2020

	2013	2014	2015	2016	2017	2018	2019	2020
Supervisor / Manager	9.5%	17.0%	13.9%	13.4%	12.7%	12.3%	13.0%	16.1%
Administrative Svcs	17.2%	3.8%	2.1%	1.4%	1.0%	0.9%	2.0%	5.4%
Customer Svc	1.7%	1.9%	1.4%	5.3%	6.6%	6.8%	8.0%	2.9%
Skilled Labor	38.8%	31.1%	38.2%	34.4%	46.2%	41.4%	38.0%	33.9%
Unskilled Labor	32.8%	46.2%	44.4%	45.5%	33.5%	38.6%	38.0%	41.8%

In 2015, women occupied 9% of the workforce which has increased slowly over time where women now occupy 10.4% of the workforce. By occupational classification in 2020 this breaks down to two administrative positions, zero customer service positions, three positions as skilled labor and 23 as unskilled labor. Historically, women have held few managerial/supervisory positions, but in 2015 and 2016 that changed rising to three and dropped after that to zero where it has remained until 2020 where one woman now holds that role. Between 2013 and 2017 women held between three to seven unskilled labor positions. However, in 2019 the amount of women in unskilled labor positions increased to 16 and rose even higher to total 23 in 2020. Men started out holding 16 positions in administrative support in 2013. That number dropped to zero from 2014 until 2019 when men filled two administrative positions before rising to a high of 13 in 2020. Figures 5 and 6 on page 6 detail the workforce distribution by occupational classification and gender from 2013 – 2020.

Figure 5: Workforce Distribution by Occupational Classification and Gender, 2013 – 2018

	20	13	2014		2015		20 ⁻	16	2017		2018	
	М	F	М	F	М	F	М	F	М	F	М	F
Supervisor / Manager	10	1	16	2	17	3	25	3	25	0	27	0
Administrative Svcs	16	4	0	4	0	3	0	3	0	2	0	2
Customer Svc	2	0	2	0	2	0	8	3	12	1	12	3
Skilled Labor	40	5	30	3	53	2	69	3	79	12	75	16
Unskilled Labor	35	3	44	5	59	5	88	7	63	3	85	0
Total	103	13	92	14	131	13	190	19	179	18	199	21
Percentage	88.8%	11.2%	86.8%	13.2%	91.0%	9.0%	90.9%	9.1%	90.9%	9.1%	90.5%	9.5%

Figure 6: Workforce Distribution by Occupational Classification and Gender, 2019 - 2020

	20	19	20	20								
	М	F	М	F	М	F	М	F	М	F	M	F
Supervisor / Manager	30	0	44	1								
Administrative Svcs	2	2	13	2								
Customer Svc	17	2	8	0								
Skilled Labor	80	6	92	3								
Unskilled Labor	70	16	94	23								
Total	199	26	251	29								
Percentage	88.4%	11.6%	89.6%	10.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Wage Earnings

Between 2013 and 2020 wages have been inconsistent. For example; supervisor/managers earned an hourly average wage of \$51.61 in 2013. This dipped to \$34.60 by 2016. However, by 2018 it had recovered to \$53.14 and decreased in 2020 to \$40.87. Similarly, administrative positions have fluctuated beginning at \$26.81 in 2013, dropping to under \$24.00 for 2014-2015 and then climbing to \$27.10 in 2016. Administrative wages reflect increases and declines between 2017 and 2020. From \$26.23 in 2017 to \$25.29 in 2020. In contrast unskilled labor positions earned an hourly wage of \$15.72 in 2013 and saw a high of \$23.45 in 2017 before dropping to \$18.45 in 2020. Customer service positions saw the most change, beginning in 2013 at \$28.88 per hour and increased until 2016 where the average wage was \$44.37. In 2017, wages dropped to \$43.51. 2018 saw wages increase to \$59.87. In 2019 wages decreased to \$59.54 and decreased further in 2020 to \$48.34. Figure 7 on page 7 details the average hourly wage per occupational classification and per year.

Figure 7: Average Wage per Occupational Classification, 2013 - 2020

	2013	2014	2015	2016	2017	2018	2019	2020
Supervisor / Manager	\$ 51.61	\$ 37.49	\$ 36.23	\$ 34.60	\$ 50.88	\$ 53.14	\$ 46.11	\$40.87
Administrative Services	\$ 26.81	\$ 23.99	\$ 23.48	\$ 27.10	\$ 26.23	\$ 27.32	\$ 23.41	\$25.29
Customer Service	\$ 28.88	\$ 29.00	\$ 31.30	\$ 44.37	\$ 43.51	\$ 59.87	\$ 59.54	\$48.34
Skilled Labor	\$ 32.74	\$ 34.28	\$ 23.68	\$ 32.20	\$ 28.27	\$ 28.70	\$ 29.62	\$43.00
Unskilled Labor	\$ 15.72	\$ 17.99	\$ 23.13	\$ 23.23	\$ 23.45	\$ 21.53	\$ 22.09	\$18.45

Figure 8 graphically represents the average hourly wage per occupational classification, per year. It may be important to note that the average hourly wage earned by customer service and skilled labor positions are higher than that earned by supervisor/managers.

Average Wage Per Year \$70.00 \$60.00 \$50.00 \$40.00 \$30.00 \$20.00 \$10.00 \$-2013 2014 2015 2016 2017 2018 2019 2020 ■ Administrative Services **■** Customer Service ■ Skilled Labor Unskilled Labor Supervisor / Manager

Figure 8: Average Wage by Occupational Classification, 2013 – 2020

Looking at gender, men and women frequently do not hold similar positions. Men have dominated the number of supervisory or managerial positions since 2013 and there were no women in those positions between 2017 and 2019. 2020 shows one woman compared to 44 men in a managerial position. Similarly, there were only woman in administrative positions from 2014 through 2018. In 2019, only two men held administrative positions and in 2020 this increased to 13 positions. Customer service positions, originally held only by men, only saw the addition of women starting in 2016. In 2020, women held no customer service positions. The employment classification that has had the most consistent employment by both genders is skilled and unskilled labor. Men

continue to hold the majority in both skilled and unskilled labor positions. Figure 9 depicts the wage difference for skilled labor and Figure 10 depicts the same for unskilled labor.

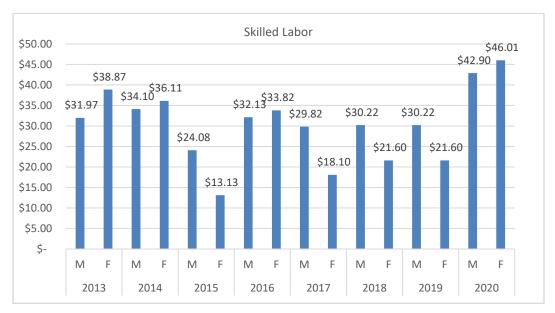
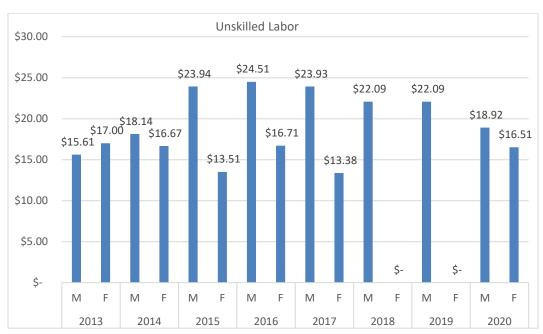


Figure 9: Average Wage for Skilled Labor Positons, year over year, by Gender





Survey respondents report similar if not slightly higher average wages than the statewide average in administrative, customer service and skilled labor positions. In 2020, the Wyoming Department of Workforce Services ("DWS") reported persons in managerial positions earned an average of \$47.94/hour, while survey responses indicated an average of \$40.87/hour. Similarly, DWS

reported skilled laborers earned an average wage of \$30.57/hour, whereas survey responses indicated a wage of \$43.00/hour. DWS reported unskilled labor at \$21.08/hour, and the survey responses indicated \$18.45/hour. While this has remained relatively constant throughout the period, we would be remiss if we did not point out the exceptional difference for those in administrative or customer service positions. DWS reported persons in these positions earned an average of \$18.74/hour and \$16.75/hour respectively. Survey responses indicates those in administrative positions earned \$25.29/hour and customer service positions earned \$48.34/hour. Unfortunately, it is unclear if the occupational classifications as reported by DWS and that of survey responses are of similar duties and responsibilities. Figures 11 and 12 demonstrate the average annual wage per responses versus the Wyoming average year after year.

Figure 11: Average Annual Wage per Occupational Classification as reported by Survey Responses compared to Average Statewide Wage for Similar Occupational Classification, 2013 through 2018.

		2013	2014	2015	2016	2017	2018
Managerial	Response	\$ 51.61	\$ 37.49	\$ 36.23	\$ 34.60	\$ 50.88	\$ 53.14
11-3021	WY Average	\$ 39.83	\$ 40.05	\$ 40.24	\$ 42.52	\$ 42.71	\$ 45.29
Administrative	Response	\$ 26.81	\$ 23.99	\$ 23.48	\$ 27.10	\$ 26.23	\$ 27.32
43-3031	WY Average	\$ 16.81	\$ 17.31	\$ 17.37	\$ 17.44	\$ 17.94	\$ 18.34
Customer Service	Response	\$ 28.88	\$ 29.00	\$ 31.30	\$ 44.37	\$ 43.51	\$ 59.87
43-4051	WY Average	\$ 13.13	\$ 13.52	\$ 13.80	\$ 14.32	\$ 15.03	\$ 15.73
Skilled Labor	Response	\$ 32.74	\$ 34.28	\$ 23.68	\$ 32.20	\$ 28.27	\$ 28.70
15-0000	WY Average	\$ 27.19	\$ 27.34	\$ 27.71	\$ 28.43	\$ 28.52	\$ 29.48
Unskilled Labor	Response	\$ 15.72	\$ 17.99	\$ 23.13	\$ 23.23	\$ 23.45	\$ 21.53
49-2011	WY Average	\$ 19.42	\$ 18.96	\$ 18.43	\$ 17.48	\$ 18.53	\$ 20.21

Figure 12: Average Annual Wage per Occupational Classification as reported by Survey Responses compared to Average Statewide Wage for Similar Occupational Classification, 2019 through 2020.

		2019	2020		
Managerial	Response	\$ 46.11	\$ 40.87		
11-3021	WY Average	\$ 46.29	\$ 47.94		
Administrative	Response	\$ 19.50	\$ 25.29		
43-3031	WY Average	\$ 18.34	\$ 18.74		
Customer Service	Response	\$ 59.54	\$ 48.34		
43-4051	WY Average	\$ 16.43	\$ 16.75		
Skilled Labor	Response	\$ 30.22	\$ 43.00		
15-0000	WY Average	\$ 30.54	\$ 30.57		
Unskilled Labor	Response	\$ 22.09	\$ 18.45		
49-2011	WY Average	\$ 21.53	\$ 21.08		

¹ Wyoming Occupational Employment and Wages March 2021 as reported by the Wyoming Department of Workforce Services', Research and Planning Section (https://doe.state.wy.us/LMI/LEWISMarch2019ECI/toc000.htm) retrieved 08/20/2021.

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Benefits

Consistent with every year surveyed, all companies employing in this field reported a full benefits package including medical and dental insurance, a prescription plan, and a vision plan. Also, a retirement savings plans for full time employees was offered by 100% of respondents. Part time employees did not receive any benefit package.

Turnover

In 2020, respondents reported no turnover in Administrative or customer service positions. Supervisor/manager positions reported a 13.7% turnover rate while skilled labor reported an 8.9% turnover rate and unskilled labor 6.1% turnover rate. The Department of Workforce Services published the 2020 third quarter turnover rate of 43.5% for all industries. As of the writing of this report, no other turnover rates have been published in order to make a comparison across all industries for 2020.

Survey Costs

Due to the limited number of businesses contacted for this report, the cost to mail was nominal. As a result, the primary expense associated with this report is the time spent following up with the respondents and reviewing and analyzing the data received as well as the preparation of this report. The Department estimates office personnel expended 40 to 50 hours over the course of several weeks on this endeavor.

Wyoming Business Council Regional Project Assessment System (RPAS)

The Department of Revenue requested this information from the Wyoming Business Council.

The Wyoming Business Council informed the Department that they have determined the RPAS component is redundant to the REMI model provided by A&I and therefore did not provide the report. Additionally, the person responsible for the RPAS report moved on to another opportunity so the Business Council is without the capability to provide the RPAS report this year.

REMI Analyses: Economic Impacts

The analyses of the economic impacts of the sales and use tax exemptions for purchases and rentals of qualifying computer equipment necessary for the operation of a data processing center was prepared using the Regional Economic Models, Inc. (REMI) PI+ model. REMI PI+ is the next generation Policy Insight model built exclusively for Wyoming. It is an integrated model that combines the best features of the input-output, general equilibrium, econometric, and economic geography methodologies. PI+ is also a dynamic rather than a static model allowing for year-by-year analysis of the total regional effects of any specific policy.

Table 2: Economic Impact of Sales & Use Tax Exemption Removal for Data Centers

Category						Average
(Change from Baseline)	2021	2022	2023	2024	2025	2021-2030
Total Employment - Jobs	-41	-49	-55	-58	-60	-57
Information	-6	-8	-9	-10	-11	-11
Finance & Insurance	-2	-2	-3	-3	-3	-3
Retail Trade	-7	-7	-8	-8	-8	-8
Construction	-8	-9	-9	-9	-8	-7
All Other	-18	-23	-26	-28	-30	-28
Population - Individuals	-22	-32	-39	-46	-51	-50
Wages and Salaries	-\$2.3	-\$2.6	-\$2.8	-\$3.0	-\$3.1	-\$3.0
Personal Income	-\$4.3	-\$4.7	-\$5.0	-\$5.2	-\$5.4	-\$5.4
Disposable Personal Income	-\$3.9	-\$4.1	-\$4.4	-\$4.7	-\$4.9	-\$4.8
Gross Domestic Product	-\$4.0	-\$5.0	-\$5.7	-\$6.2	-\$6.5	-\$6.3
Output	-\$6.7	-\$8.4	-\$9.5	-\$10.3	-\$10.9	-\$10.4
Sales & Use Tax Revenue	-\$0.15	-\$0.16	-\$0.17	-\$0.18	-\$0.19	-\$0.17
Property Tax Revenue	-\$0.05	-\$0.05	-\$0.06	-\$0.06	-\$0.07	-\$0.06
Note: All dollar amounts are expressed	as millions of	fixed (2020	0) dollars.			

The economic impact of the **removal of the sales tax exemption** for purchases and rentals of qualifying computer equipment necessary for the operation of a data processing center was modeled in REMI as an increase in the production costs for the data center industry of \$15.0 million per year beginning in 2020 (see Table 2). This exemption removal would result in an average annual loss of 57 jobs and a decrease in GDP of \$6.3 million per year over the period of 2021 to 2030 when compared to the baseline scenario.

The information, finance & insurance, retail trade, and construction sectors will incur the majority of the job losses. Direct job losses are attributed to information, while indirect job losses are attributed to the finance & insurance and construction sectors. The retail trade sector will be adversely impacted from the decline in disposable personal income.

Key Definitions

Total Employment comprises estimates of the number of non-farm jobs, full-time plus part-time, by place of work. Full-time and part-time jobs are counted at equal weight. Includes direct, indirect, and induced jobs.

Population reflects mid-year estimates of people, including survivors from the previous year, births, special populations, and three types of migrants (economic, international, and retired).

Wages and Salaries are the monetary remuneration of employees, including the compensation of corporate officers; commissions, tips, and bonuses; voluntary employee contributions to certain deferred compensation plans, such as 401(k) plans; and receipts in kind that represent income. Wages and salaries disbursements are affected by changes in Wage Rate and Employment.

Personal Income is the income that is received by all persons from all sources. It is calculated as the sum of wage and salary disbursements, supplements to wages and salaries, proprietors' income with inventory valuation and capital consumption adjustments, rental income of persons with capital consumption adjustment, personal dividend income, personal interest income, and personal current transfer receipts, less contributions for government social insurance.

Disposable Personal Income equals personal income minus personal taxes.

Gross Domestic Product or **GDP** is the market value of goods and services produced by labor and property. It is often referred to as "value added" and is equal to its gross output (sales or receipts and other operating income, plus inventory change) minus its intermediate inputs (consumption of goods and services purchased from other industries or imported).

Output is the amount of production, including all intermediate goods purchased as well as value-added (compensation and profit). Output can also be thought of as sales or supply or simply price multiplied by quantity (P×Q).

About the REMI PI+Model

The REMI PI+ model incorporates aspects of four major modeling approaches: **Input-Output**, **General Equilibrium**, **Econometric**, and **Economic Geography**. Each of these methodologies has distinct advantages as well as limitations when used alone. The REMI integrated modeling approach builds on the strengths of each of these approaches.

The REMI model at its core has the inter-industry relationships found in **Input-Output models**. As a result, the industry structure of a particular region is captured within the model, as well as transactions between industries. Changes that affect industry sectors that are highly interconnected to the rest of the economy will often have a greater economic impact than those for industries that are not closely linked to the regional economy.

General Equilibrium is reached when supply and demand are balanced. This tends to occur in the long run, as prices, production, consumption, imports, exports, and other changes occur to stabilize the economic system. For example, if real wages in a region rise relative to the U.S., this will tend to attract economic migrants to the region until relative real wage rates equalize. The general equilibrium properties are necessary to evaluate changes such as tax policies that may have an effect on regional prices and competitiveness.

REMI is sometimes called an "**Econometric model**," as the underlying equations and responses are estimated using advanced statistical techniques. The estimates are used to quantify the structural relationships in the model. The speed of economic responses is also estimated, since different adjustment periods will result in different policy recommendations and even different economic outcomes.

The **New Economic Geography** features represent the spatial dimension of the economy. Transportation costs and accessibility are important economic determinants of interregional trade and the productivity benefits that occur due to industry clustering and labor market access. Firms benefit having access to a large, specialized labor pool and from having access to specialized intermediate inputs from supplying firms. The productivity and competitiveness benefits of labor and industry concentrations are called agglomeration economies, and are modeled in the economic geography equations.

The primary national, state, and county data source for REMI PI+ is the Bureau of Economic Analysis (BEA) State Personal Income (SPI) and Local Area Personal Income (LAPI) series (which also include employment and total population at both the state and county level). REMI also relies on numerous other data sources including the Bureau of Labor Statistics, Energy Information Administration, Center for Disease Control and Prevention, National Center for Health Statistics, and the Department of Defense. *Source: remi.com*.

