



DRG US Business Economic Demographic Database (BEDD), September 2019 Update

Context

The process of forecasting the size and growth of the market for enterprise products and services usually begins with forecasting the size and growth of the Total Available Market (**TAM**), the number of buyers or users for that product or service. For most enterprise technology products and services, the user and/or buying decision maker is an employee, the business, or a sub-unit within the business. Daniel Research Group (**DRG**) maintains and continually updates a **Business Economic Demographic Database (BEDD)** that contains the history (from 1998), and a forecast (to 2026) of Employees, Businesses/Government Entities, Establishments/Sites, and Payroll, by Sector (Public and Private), Industry and Size of Business (Employees).

Current Forecast

Based on the current **CBO** forecast, the US economy will experience continued, but steadily declining, growth as measured by GDP and Employment growth rates. However, the **DRG** model forecasts significant changes to the underlying structure of the US Economic Demographics. While the number of employees will increase by 0.6%, the number of Businesses (Firms) will decrease by **-0.8%**, and the number of Sites/Locations (Establishments) will decrease by **-0.4%**. These changes will distribute by Size Class and Industry as follows.

Metric	Sector	Sub-Sector	2018	2023	Change	CAGR
Employees	Private	Businesses	129,050,802	133,390,669	4,339,867	0.7%
	Public	DoD Military	1,397,001	1,398,010	1,009	0.0%
		Federal - Civilian	1,442,679	1,455,049	12,370	0.2%
		Federal - DoD Civilian	745,121	740,115	-5,006	-0.1%
		State and Local	19,652,999	19,730,897	77,898	0.1%
Employees Total		152,288,602	156,714,740	4,426,138	0.6%	
Establishments	Private	Businesses	8,112,808	7,996,356	-116,452	-0.3%
	Public	DoD Military	1,979	1,652	-327	-3.5%
		Federal - Civilian	22,498	26,191	3,693	3.1%
		Federal - DoD Civilian	115,877	65,175	-50,702	-10.9%
		State and Local	212,590	204,785	-7,805	-0.7%
Establishments Total		8,465,752	8,294,159	-171,593	-0.4%	
Firms	Private	Businesses	6,354,755	6,115,505	-239,250	-0.8%
	Public	DoD Military	314	277	-37	-2.4%
		Federal - Civilian	357	337	-20	-1.1%
		Federal - DoD Civilian	155	155		
		State and Local	89,982	82,958	-7,024	-1.6%
Firms Total		6,445,563	6,199,232	-246,331	-0.8%	

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Change to Number of Employees, By Industry, 2018 - 2023	
Industry	Change
Forestry, Fishing, Hunting, Agriculture	-76,401
Mining	33,536
Utilities	-10,256
Construction	506,667
Manufacturing	-192,605
Wholesale	-5,817
Retail	-167,249
Transportation, Warehousing	247,288
Information	-36,425
Finance, Insurance	59,725
Real Estate, Rental, Leasing	93,447
Professional, Scientific, Technical Services	658,950
Management of Companies, Enterprises	74,783
Administrative Support, Waste Management, Remediation Services	270,055
Education	221,163
Health Care, Social Assistance	1,765,142
Arts, Entertainment, Recreation	131,104
Accommodation, Food Services	776,461
Other Services	79,733
National Defense	1,009
Public Administration	-4,172
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	4,426,138

Change to Number of Establishments, By Industry, 2018 - 2023	
Industry	Change
Forestry, Fishing, Hunting, Agriculture	-16,596
Mining	20,678
Utilities	1,383
Construction	-82,071
Manufacturing	-17,510
Wholesale	-35,806
Retail	-97,117
Transportation, Warehousing	-2,908
Information	14,854
Finance, Insurance	-38,340
Real Estate, Rental, Leasing	48,803
Professional, Scientific, Technical Services	47,241
Management of Companies, Enterprises	807
Administrative Support, Waste Management, Remediation Services	-40,473
Education	9,531
Health Care, Social Assistance	100,383
Arts, Entertainment, Recreation	339
Accommodation, Food Services	-25,454
Other Services	-7,709
National Defense	-327
Public Administration	-51,301
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	-171,593

Change to Number of Firms, By Industry, 2018 - 2023	
Industry	Change
Forestry, Fishing, Hunting, Agriculture	-19,467
Mining	13,106
Utilities	-180
Construction	-81,197
Manufacturing	-18,243
Wholesale	-34,123
Retail	-62,346
Transportation, Warehousing	-4,672
Information	-2,108
Finance, Insurance	-15,636
Real Estate, Rental, Leasing	13,605
Professional, Scientific, Technical Services	24,233
Management of Companies, Enterprises	-1,061
Administrative Support, Waste Management, Remediation Services	-35,823
Education	6,675
Health Care, Social Assistance	-20
Arts, Entertainment, Recreation	233
Accommodation, Food Services	-18,989
Other Services	-9,169
National Defense	-37
Public Administration	-1,112
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	-246,331

Change to Number of Employees, By Company Size, 2018 - 2023	
Company Size	Change
Less than 5	-525,156
5 to 9	-450,989
10 to 19	83,395
20 to 99	404,679
100 to 499	850,446
500 to 999	-29,267
1000 to 2499	116,683
2500 to 4999	-3,988
5000 to 9999	959,559
10000 or more	3,020,776
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	4,426,138

Change to Number of Establishments, By Company Size, 2018 - 2023	
Company Size	Change
Less than 5	-177,442
5 to 9	-73,618
10 to 19	-3,636
20 to 99	-40,657
100 to 499	-17,158
500 to 999	-1,276
1000 to 2499	-47,916
2500 to 4999	17,559
5000 to 9999	35,710
10000 or more	136,841
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	-171,593

Change to Number of Firms, By Company Size, 2018 - 2023	
Company Size	Change
Less than 5	-179,038
5 to 9	-72,921
10 to 19	3,831
20 to 99	3,448
100 to 499	23
500 to 999	-1,410
1000 to 2499	-638
2500 to 4999	-469
5000 to 9999	-44
10000 or more	888
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	-246,331

Overview

History - The historical baseline is constructed from data obtained from sources:

- **Private Sector Businesses**, Census Bureau Statistics of United States Businesses
- **Private Sector Government Owned Businesses**, Census Bureau Statistics of United States Businesses
- **State and Local Government**, Census Bureau Government Employees by Function
- **Federal DoD Military**, Department of Defense Base Structure Reports, Greenbook
- **Federal DoD Civilian**, Department of Defense Base Structure Reports, Greenbook, Office of Professional Management Fedscope
- **Federal non-DoD Civilian**, Office of Professional Management Fedscope

DRGs integrates these various data sources into a unified historical database and applies various trend analysis and forecasting methodologies, including its own qualitative assessments of the factors and trends influencing the economy and the structure of the economy to produce the **BEDD**. The **BEDD** is updated periodically when significant new data becomes available from the various sources.

Forecast

1. **Total Employment** - is forecasted by applying the Annual Employment Growth rate forecast published by the Congressional Budget Office, last updated August 21, 2019
2. **Industry Employment** - is forecasted by applying the industry level employment growth rates published by the Bureau of Labor Statistics, Next update October 2019
3. **Company Size Employment** - within each Industry is forecasted by trend analysis of the distribution of employees within each industry.
4. **Primary Firms** – within each Industry/Size Class are forecasted using the trend in the Employees per Primary Firm ratio. *See discussion below for the definition of Primary Firms and Firms.*
5. **Firms** – within each Industry/Size Class are forecasted using the trend in the Firms per Primary Firm ratio

6. **Establishments (Sites/Locations)** – within each Industry/Size Class are forecasted using the trend in the Establishment per Primary Firm ratio
7. **Payroll** – within each Industry/Size Class are forecasted using the trend in the Payroll per Employee Ratio

BEDD Structure

Taxonomies and Metrics

Industries (20 in Private Sector, 22 in Public Sector)	Years (29)
Forestry, Fishing, Hunting, Agriculture	1998 to 2026
Mining	Sectors and Sub-Sectors (6)
Utilities	Private – Privately Owned Businesses
Construction	Private – Government Owned Businesses *
Manufacturing	Public – States and Local Government
Wholesale	Public – Federal DoD Military
Retail	Public – Federal DoD Civilian
Transportation, Warehousing	Public – Federal non-DoD Civilian
Information	Business Size Class (10) (Employees)
Finance, Insurance	Less than 5
Real Estate, Rental, Leasing	5 to 9
Professional, Scientific, Technical Services	10 to 19
Management of Companies, Enterprises	20 to 99
Admin. Support, Waste Mgmt., Remediation	100 to 499
Education	500 to 999
Health Care, Social Assistance	1000 to 2499
Arts, Entertainment, Recreation	2500 to 4999
Accommodation, Food Services	5000 to 9999
Other Services	10000 or more
Auxiliaries & Unclassified	Metrics (5)
National Defense	Employees
Public Administration	Firms
	Primary Firms (Industry Unique)
	Establishments (Sites)
	Annual Payroll

* Private – Government Owned Businesses are excluded when aggregating to the total US economy.

Application

Enterprise product/service market size and forecast models require business demographic data as inputs for many types of models.

- **Usage/Adoption models** need this data to size the **Total Available Market** that is can be penetrated
- **Initial Sales models** need this data to estimate the **number of potential buying units**
- **Recurring Sales models** need this data to compute **installed bases, Replacement Rates, and After Markets.**

The objective of these models is to provide a high confidence forecast of near- and medium-term demand, and therefore often require considerable historic data that transcends anomalous economic shocks and contain information that allows identification of the long-term trends and cycles influencing demand. Obtaining this historic and forecast data is often time consuming and challenging, especially where there are significant contextual criteria such as business size, industry, and legal form of ownership (public vs. private).

DRG can provide you with the exact data needed to support your model development effort thereby considerably shortening the time spent in research and discovery, allowing your analysts to develop and deliver their forecasts sooner.

Challenges

DRG has been designing, developing, and applying enterprise products and services market size and forecast models for over three decades, and has considerable experience in using business demographic data in these models. One of the most difficult challenges often encountered is reconciling data from different government sources and accounting for definitional differences and methodologies. **DRG** has solved three of the most common problems in building its U.S. Business Demographic Baseline and Forecast.

How Many Businesses Are in an Industry? Firms and Primary Firms

Many forecasters will use the data available from the U.S. Census Bureau – Statistics of United States Business to estimate the number of business in an industry and size class. However, this may often lead to overestimating the size of the market. The methodology employed by the U.S. Census Bureau to construct this data allows firms to be counted in more than one industry. As a result, the total number of firms by industry is larger than the total number of firms by Employment Size Class.

DRG has developed a proprietary algorithm (**MatrixSolver™**) that removes the industry double counting and produces the Primary Firm metric, while preserving the Employment Size Class constraints. The sum of Primary Firms by industry will equal the sum of Firms by Employment Size Class and therefore is often a better estimate of the number of Firms in the economy.

Depending on context, either Firms or Primary Firms can be used in forecasting. If the target market includes any firm with some business activity in the specified industry, then Firms should be the selected metric. If the target market were limited to Firms whose primary business is the specified industry, then Primary Firms would be the appropriate metric. For example, in 2018 there were 13,411 Firms with 100 to 499 Employees that had some business activity in the Manufacturing Industry. However, there were only 11,711 Firms whose primary business is Manufacturing.

Sum of Data	2018	2019	2020	2021	2022	2023	Change
Annual Payroll (\$1,000)	126,099,780	128,951,984	129,599,998	129,879,459	130,095,163	130,354,018	4,254,237
Employees	2,377,140	2,400,005	2,381,947	2,357,735	2,333,007	2,309,636	-67,504
Establishments	22,918	23,088	22,873	22,585	22,308	22,050	-868
Firms	13,411	13,483	13,325	13,124	12,930	12,743	-668
Primary Firms	11,711	11,825	11,738	11,615	11,489	11,372	-339

Metric: Annual Growth Rate	2018	2019	2020	2021	2022	2023	CAGR
Annual Payroll (\$1,000)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%
Employees	3.2%	2.3%	0.5%	0.2%	0.2%	0.2%	-0.6%
Establishments	1.8%	1.0%	-0.8%	-1.0%	-1.0%	-1.0%	-0.8%
Firms	1.6%	0.7%	-0.9%	-1.3%	-1.2%	-1.2%	-1.0%
Primary Firms	1.4%	0.5%	-1.2%	-1.5%	-1.5%	-1.4%	-0.6%

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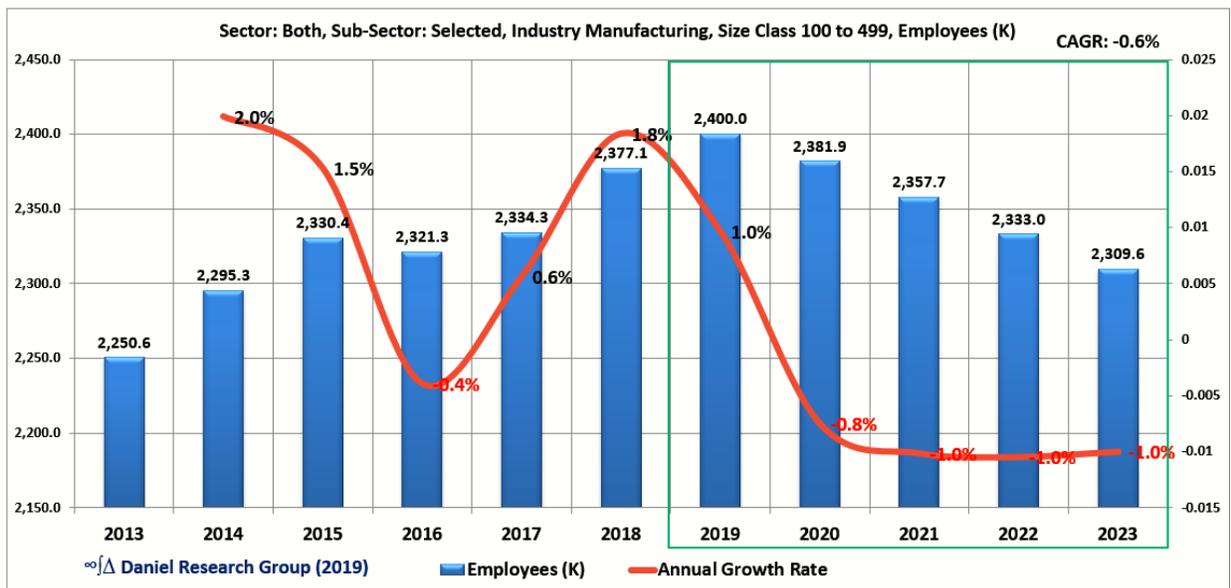
Tiling the Plane - Private and Public Sectors

One of **DRGs** primary objectives in constructing the Baseline and Forecast was to build a data set describing the U.S. business structure that met the criteria of being mutually exclusive and exhaustive. All employed persons, the organizations they are employed by, and the places they work, are accounted for only once.

This required finding solutions for two problems.

1. The U.S. Census Bureau uses different taxonomies to structure the data for Public and Private sectors.
2. The Private Sector data provided by the U.S. Census Bureau includes some Public Sector data.

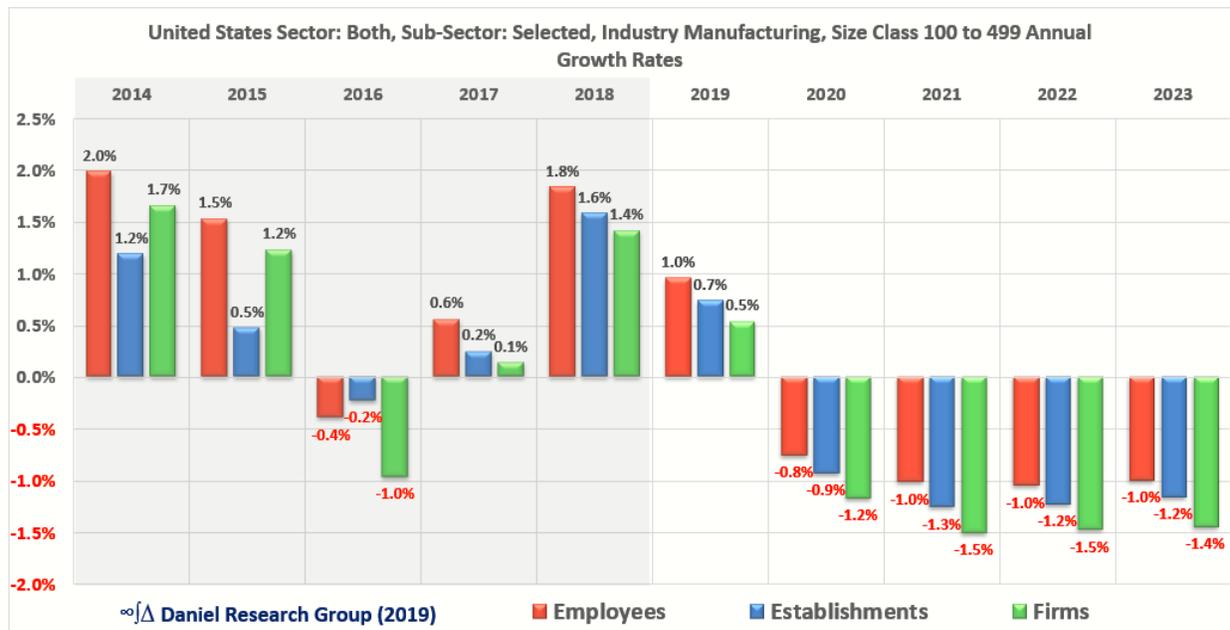
DRG solved both problems, the former by application of additional data from the U.S. Census Bureau detailing Legal Form of Ownership, and the latter by analyzing, and then mapping, the Public sector data into the Private sector taxonomies. Additionally, data from the U.S. Department of Defense pertaining to both civilian and Uniformed Military personal, bases, and other sites was added to complete the database.



Understanding the Future - Forecast Methodology

DRG uses a combination of U.S. Government projections and its own analysis and methodologies to complete the historic Baseline and create the Forecast.

1. Total Employment projections are obtained from the U.S. Congressional Budget Office
2. Industry Employment projections are obtained from the Bureau of Labor Statistics and are used to calibrate independent industry growth forecasts derived from **DRG** trend analysis.
3. Employment, Primary Firms, Firms, Establishments, and Payrolls within Size Classes for each industry are computed by application of various **DRG** modeling methodologies.



The resulting final **DRG** U.S. Business Demographic Baseline and Forecast database total employment time-series will match those published by the Bureau of Labor Statistics for past years, and match employment projections based on the Labor Force projections from the Congressional Budget Office. Industry and Employment Size Class distributions will align with those derived from the U.S. Census Bureau data.

Availability

The **DRG** U.S. Business Demographic Baseline and Forecast database is available for client use under a number of licensing and deliverable arrangements. Clients may license the entire database, or request custom subsets. The database or subsets may also be incorporated into custom market sizing and forecasting models designed and developed for clients. Additional data at more granular levels in the industry taxonomy, or other metrics can be provided upon request. The Baseline and Forecast is **updated periodically** when new data is released from the various U.S. government sources.

About Daniel Research Group

Daniel Research Group offers consulting and market research services to clients whose products and services are primarily technology based or enabled. The primary focus is on providing results, solutions, consulting and training to clients that have strategic and tactical decisions that require Forecast, Segmentation, Market Share, and other market modeling requirements.

The full range of traditional market research data gathering and analysis services support these engagements, including quantitative and qualitative surveys, focus groups, demographic and firmographic data acquisition and analysis, as well as input from technology and industry experts. While the emphasis is on delivering data and actionable recommendations, **DRG** often designs and develops custom models and modeling tools for client use, as well as providing training and education in these areas.

For more information about the **DRG** U.S. Business Demographic Baseline and Forecast, availability, prices, or development methodology please contact Daniel Research Group.

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