

## **Predominant Purpose Statement (PPS)**

**Draft March 26, 2015**

**DMS ID 6907751 "The Business Dynamics of Multinational Corporations and Global Value Chains"**

### **Persons with FTI Access**

Anthony Caruso – U.S. Census Bureau, Economy Wide Statistics Division (EWD)  
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### **Special Sworn Employees:**

James Fetzer- Bureau of Economic Statistics (BEA)  
Marilyn Ibarra-Caton- BEA  
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Erich Strassner- BEA  
Tom Howells- BEA  
Jeff Young- BEA  
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Additional researchers may be added to this project after it commences as needs dictate. In accordance with the Census Bureau – IRS Criteria Agreement of June 2012, the Census Bureau will notify IRS Statistics of Income of any additions and/or subtractions of Special Sworn Status individuals within five business days of the action.

**Duration** – 60 months

### **Locations**

Suitland Federal Complex

**Funding** – None (internal project)

### **Background**

U.S. multinational enterprises (MNEs) account for less than 1% of all U.S. businesses, however, they accounted for one-fifth of total U.S. employment in private industries in 2011; MNE-associated U.S. exports of goods represented about 55% of total U.S. exports of goods in

2009; and they accounted for about two-thirds of the research and development (R&D) spending by all industrial R&D performers in the United States in 2000.

The importance of U.S. MNEs in the U.S. economy provides impetus to research the creation of new sets of public use statistics to inform policy makers and researchers of the contributing/changing role of U.S. MNEs in the various productivity-enhancing activities such as R&D and trade. These productivity-enhancing activities ultimately contribute to higher average wages for employees of U.S. multinationals (direct effect), as well as multifaceted “spillover” effects to geographically proximate and/or upstream and downstream firms/establishments (indirect effects).

The Census Bureau and the Bureau of Economic Analysis (BEA) will collaborate in joint research better to understand and disseminate information about MNEs—to include information on Global Value Chains (GVCs) and Factoryless Goods Producers (FGPs), which are closely associated with MNEs. Many MNEs are organized by GVCs, which are created when firms break up the production process into discrete tasks, some or all of which are performed in different geographic locations. FGPs are producers that outsource all of their manufacturing. A key feature of the project is that several Census Bureau datasets will be linked to and compared with data from BEA. A major goal is to investigate the feasibility of two potential new products based on linked BEA-Census data on MNEs:

- Extended Supply Use Tables, based primarily on new tabulations produced by the Census Bureau for BEA
- New MNE tables on Business Dynamics Statistics, which will be part of the Census Bureau’s new budget initiative related to the Longitudinal Business Database (LBD).

Several Census Bureau datasets are essential for the work. Census Bureau data from the Economic Censuses, the annual economic surveys, the Annual Capital Expenditures survey, and the Business Research & Development and Innovations Survey are required to measure the domestic production activities and sourcing patterns of U.S. firms. BEA data on the operations of MNEs and U.S. international trade in services and the Census Bureau data on foreign trade are required to measure the international aspects of those sourcing patterns. The Census Longitudinal Business Database is needed to facilitate the construction of a time series panel of data in order to track changes over time. The Standard Statistical Establishment Listing, or Business Register, is required to facilitate record linking.

The research will use data from the Economic Census that have been linked to the foreign trade transactions data. The Economic Census will provide product detail, the revenues from and expenses for contract work, and the responses to the special inquiries that ask whether the establishment designed, engineered, or formulated the product being produced or sold. For multinational enterprises, the BEA data will provide additional detail on whether contract manufacturing services were purchased within the United States or from outside. These data will be used to identify firms that likely purchased manufacturing services from foreign firms. Then,

the product and country detail in the foreign transactions data will be used to identify types of products and patterns of trade consistent with the purchase of such manufacturing services. The data could also be used to identify U.S. firms that provided manufacturing services to foreign firms and the associated products and patterns of trade.

Most multinationals are large firms. Therefore, this project relies most heavily on data collected directly by the Census Bureau and BEA, rather than on Federal Tax Information. Linkages will be conducted using Employer Identification Numbers collected by BEA and the Census Bureau. Name and address matching will be used to augment matching where there are differences across the databases.

During the 60-month duration of the project the researchers would develop methods for linking data from the two agencies, conduct numerous comparisons in order better to understand the data collected by each agency, research and develop prototypes for the proposed new tables, and work through thorny issues related to multi-agency disclosure review. Production of any official statistics would take place under a new project or under an approved modification of an existing project. This research will also produce technical and research papers on MNEs, and on topics closely associated with MNEs such as GVCs and FGPs.

### **Criteria**

The predominant purpose of this study is to increase the utility of Title 13, Chapter 5 data of the Census Bureau by meeting the criteria listed below and as described.

#### ***Understanding and/or improving the quality of data produced through a Title 13, Chapter 5 survey, census, or estimate.***

The Census Bureau is publishing new enterprise-level statistics, including statistics on MNEs, based on information from the Business Register's Company Organization Survey (COS), Forms NC-98001 and NC-99001. The survey covers several MNE-related topics: foreign ownership, revenue from sales to foreign subsidiaries, intellectual property, and contract manufacturing services.

Comparisons between Census Bureau and BEA data would help the Census Bureau better to understand the quality of these statistics. Specifically, BEA's data on the operations of U.S. MNEs will allow the activities and locations of foreign affiliates that provide manufacturing services to their parents to be identified. Using the data on foreign affiliates' sales to their U.S. parents could also shed light on the fees that U.S. parents pay for these activities. The Census Bureau cannot currently use BEA data to make improvements to enterprise-level statistics through editing, imputation or replacement; however, BEA data may be used to assess the quality of the data we collect.

***Leading to new or improved methodology to collect, measure, or tabulate a Title 13, Chapter 5 survey, census, or estimate.***

We expect this project to lead directly to improved methodology to measure FGPs, which are often MNEs, in the Economic Census. Currently, the Census Bureau and BEA are working independently better to understand FGPs and to develop an FGP classification for the 2017 North American Industry Classification System (NAICS) revision—which will have a direct bearing on questionnaire content for the 2017 Economic Census. The two agencies share bi-monthly progress reports but do not collaborate directly. The ability to use linked data to compare data on FGPs across the two agencies will accelerate and enhance this important work, in time for questionnaire production for the 2017 Economic Census.

In addition, the Census Bureau currently collects data on exports from selected service industries in the Economic Census. Combined data from the Economic Census and Trade in Services from BEA will present a more comprehensive picture of exports in the U.S. For example, Census is developing prototype tables on Business Dynamics Statistics for exporting firms (BDS-XF). Exporting is currently limited only to goods which is collected by Census, not services. Combining BEA and Census data would allow us to investigate a new joint data product for all exporting firms.

***Preparing estimates of population and characteristics of population as authorized under Title 13, Chapter 5.***

A key goal of this project is to create prototypes for two new data products created from linked Census Bureau and BEA data.

Extended Supply Use Tables: The Census Bureau currently provides a special tabulation to BEA for production of the Supply Use Tables as part of the national accounts. This project will allow Census and BEA to determine methods that can be used to implement the new international standards for classifying, measuring the activities of FGPs and measuring trade in goods and services associated with GVCs. A primary output of this project will be prototype Extended Supply Use Tables derived from combined BEA and Census matched data. In the future, this will likely lead to new special tabulations produced by the Census Bureau as part of its Title 13 programs.

New MNE tables on Business Dynamics Statistics: Although the BEA publishes MNE annual statistics (employment, R&D, value added, capital expenditure, sales etc.) for U.S. parents (as well as foreign affiliates of U.S. parents, and U.S. affiliates of foreign parents), there are currently no statistics on domestic job creation and destruction, plant births and shutdowns of U.S. MNEs. Moreover, BEA data does not allow a comparison of MNEs with the rest of the economy since it only collects information on MNEs. The strength of a BDS-like product for MNEs would allow not only to produce new statistics on job and establishment dynamics, but also a rich comparison with the various segments of the economy such as other domestic establishments, or international traders, etc. A longer term goal of this project is to prototype a BDS-MNE data product.

**Requested Datasets**

## **FTI Datasets**

Only the following Federal Tax return Information (FTI) items from the following files will be needed by the researcher(s) to conduct this project.

### **Annual Capital Expenditures Survey (ACES), 1997-2012, and 2013-2018 as available**

<b>FTI:</b>	<b>Description:</b>
TE	Total Employment
TVS	Total Value of Shipments (IRS Receipts)
SW	Salaries and Wages (IRS Payroll)
LFO	Legal Form of Organization
EIN	Employer Identification Number
ST	State
COU	County
CFN	Census File Number (contains EIN)
IND	Industry Classification (NAICS)

### **Annual Retail Trade Survey (ARTS), 1997-2012, and 2013-2018 as available**

<b>FTI:</b>	<b>Description:</b>
TE	Total Employment
TVS	Total Value of Shipments (IRS Receipts)
SW	Salaries and Wages (IRS Payroll)
LFO	Legal Form of Organization
EIN	Employer Identification Number
ST	State
COU	County
CFN	Census File Number (contains EIN)
IND	Industry Classification (NAICS)

### **Annual Wholesale Trade Survey (AWTS), 1997-2012, and 2013-2018 as available**

<b>FTI:</b>	<b>Description:</b>
TE	Total Employment
TVS	Total Value of Shipments (IRS Receipts)
SW	Salaries and Wages (IRS Payroll)
LFO	Legal Form of Organization
EIN	Employer Identification Number
ST	State
COU	County
CFN	Census File Number (contains EIN)
IND	Industry Classification (NAICS)

**Annual Survey of Manufactures (ASM), 1998-2011, and 2013-2018 as available (non economic census years)**

<b>FTI:</b>	<b>Description:</b>
TE	Total Employment
TVS	Total Value of Shipments (IRS Receipts)
SW	Salaries and Wages (IRS Payroll)
LFO	Legal Form of Organization
EIN	Employer Identification Number
ST	State
COU	County
CFN	Census File Number (contains EIN)
IND	Industry Classification (NAICS)

**Business Expenses Survey (BES), 1997 and 2002**

<b>FTI:</b>	<b>Description:</b>
TE	Total Employment
TVS	Total Value of Shipments (IRS Receipts)
SW	Salaries and Wages (IRS Payroll)
LFO	Legal Form of Organization
EIN	Employer Identification Number
ST	State
COU	County
CFN	Census File Number (contains EIN)
IND	Industry Classification (NAICS)

**Business R&D and Innovation Survey (BRDIS and SIRD), 1997-2012, and 2013-2018 as available**

<b>FTI:</b>	<b>Description:</b>
TE	Total Employment
TVS	Total Value of Shipments (IRS Receipts)
SW	Salaries and Wages (IRS Payroll)
LFO	Legal Form of Organization
EIN	Employer Identification Number
ST	State
COU	County
CFN	Census File Number (contains EIN)
IND	Industry Classification (NAICS)

**Census of Construction Industries (CCN), 1997, 2002, 2007, and 2012 and 2017 as available**

<b>FTI:</b>	<b>Description:</b>
TE	Total Employment

TVS	Shipments/Sales/Receipts (IRS Receipts)
SW	Annual Payroll (IRS Payroll)
LFO	Legal Form of Organization
EIN	Employer Identification Number
ST	State
COU	County
CFN	Census File Number (contains EIN)
IND	Industry Classification (NAICS)

**Census of Finance, Insurance, and Real Estate (CFI), 1997, 2002, 2007, and 2012 and 2017 as available**

<b>FTI:</b>	<b>Description:</b>
TE	Total Employment
TVS	Shipments/Sales/Receipts (IRS Receipts)
SW	Annual Payroll (IRS Payroll)
LFO	Legal Form of Organization
EIN	Employer Identification Number
ST	State
COU	County
CFN	Census File Number (contains EIN)
IND	Industry Classification (NAICS)

**Economic Census of Island Areas (CIA), 1997, 2002, 2007, and 2012 and 2017 as available**

<b>FTI:</b>	<b>Description:</b>
EIN	Employer Identification Number
CFN	Census File Number (Includes EIN)
LFO	Legal Form of Organization
IND	Industry Classification (SIC/NAICS)
ST	State
COU	County
TE	Total Employment
SW	Annual Payroll (IRS Payroll)
TVS	Shipments/Sales/Receipts (IRS Receipts)

**Census of Manufactures (CMF), 1997, 2002, 2007, and 2012 and 2017 as available**

<b>FTI:</b>	<b>Description:</b>
TE	Total Employment
TVS	Total Value of Shipments (IRS Receipts)
SW	Salaries and Wages (IRS Payroll)
LFO	Legal Form of Organization
EIN	Employer Identification Number

ST	State
COU	County
CFN	Census File Number (contains EIN)
IND	Industry Classification (NAICS)

**Census of Mining (CMI), 1997, 2002, 2007, and 2012 and 2017 as available**

<b>FTI:</b>	<b>Description:</b>
TE	Total Employment
TVS	Shipments/Sales/Receipts (IRS Receipts)
SW	Annual Payroll (IRS Payroll)
LFO	Legal Form of Organization
EIN	Employer Identification Number
ST	State
COU	County
CFN	Census File Number (contains EIN)
IND	Industry Classification (NAICS)

**Census of Retail Trade (CRT), 1997, 2002, 2007, and 2012 and 2017 as available**

<b>FTI:</b>	<b>Description:</b>
TE	Total Employment
TVS	Shipments/Sales/Receipts (IRS Receipts)
SW	Annual Payroll (IRS Payroll)
LFO	Legal Form of Organization
EIN	Employer Identification Number
ST	State
COU	County
CFN	Census File Number (contains EIN)
IND	Industry Classification (NAICS)

**Census of Services (CSR), 1997, 2002, 2007, and 2012 and 2017 as available**

<b>FTI:</b>	<b>Description:</b>
TE	Total Employment
TVS	Shipments/Sales/Receipts (IRS Receipts)
SW	Annual Payroll (IRS Payroll)
LFO	Legal Form of Organization
EIN	Employer Identification Number
ST	State
COU	County
CFN	Census File Number (contains EIN)
IND	Industry Classification (NAICS)

**Census of Transportation, Communications, and Utilities (CUT), 1997, 2002, 2007, and 2012 and 2017 as available**



<b>FTI:</b>	<b>Description:</b>
TE	Total Employment
TVS	Shipments/Sales/Receipts (IRS Receipts)
SW	Annual Payroll (IRS Payroll)
LFO	Legal Form of Organization
EIN	Employer Identification Number
ST	State
COU	County
CFN	Census File Number (contains EIN)
IND	Industry Classification (NAICS)

**Census of Wholesale Trade (CWH), 1997, 2002, 2007, and 2012 and 2017 as available**

<b>FTI:</b>	<b>Description:</b>
TE	Total Employment
TVS	Shipments/Sales/Receipts (IRS Receipts)
SW	Annual Payroll (IRS Payroll)
LFO	Legal Form of Organization
EIN	Employer Identification Number
ST	State
COU	County
CFN	Census File Number (contains EIN)
IND	Industry Classification (NAICS)

**Longitudinal Foreign Trade Transactions Database (LFTTD), 1997-2013, and 2014-2018 as available**

<b>FTI:</b>	<b>Description:</b>
EIN	Employer Identification Number
NM	Business Name

**Longitudinal Business Database (LBD), 1997-2012, and 2013-2018 as available**

<b>FTI:</b>	<b>Description:</b>
TE	Total Employment
SW	Salaries and Wages (IRS Payroll)
LFO	Legal Form of Organization
ST	State
COU	County
ZIP	Zip Code
CFN	Census File Number (contains EIN)
IND	Industry Classification (SIC/NAICS)

**Services Annual Survey (SAS), 1997-2013 and 2014-2017 as available**

<b>FTI:</b>	<b>Description:</b>
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TE	Total Employment
TVS	Total Value of Shipments (IRS Receipts)
SW	Salaries and Wages (IRS Payroll)
LFO	Legal Form of Organization
EIN	Employer Identification Number
ST	State
COU	County
CFN	Census File Number (contains EIN)
IND	Industry Classification (NAICS)

**Standard Statistical Establishment Listing (SSL, or Business Register), 1997-2012, and 2013-2018 as available**

<b>FTI:</b>	<b>Description:</b>
ADD	Mailing Address
SW	Salaries and Wages (IRS Payroll)
LFO	Legal Form of Organization
ST	State
COU	County
ZIP	Zip Code
CFN	Census File Number (contains EIN)
IND	Industry Classification (SIC/NAICS)
TVS	Shipments (IRS Receipts)
TE	Total Employment
NM	Business Name

**Census Bureau Datasets**

None

**User Provided Datasets**

- BEA, Annual and Benchmark Surveys of US Direct Investment Abroad (USDIA)
- BEA, Annual and Benchmark Surveys of Foreign Direct Investment in the United States (FDIUS)
- BEA, Quarterly and Benchmark Surveys of Transactions in Selected Services and Intellectual Property with Foreign Persons
- Private External Datasets on Multinationals (e.g. WorldBase, Lexis-Nexis)

**Need and Use of FTI**

<b>FTI</b>	<b>Datasets that include the FTI</b>	<b>Description</b>
ADD	SSL	Mailing Address

This field will be used for name and address matching between the SSL and the name and address information in the BEA data. The address will be standardized and used as one component of the matching routine. This variable will be used for linkage when there are mismatches using the EIN variable.

CFN ACES, ARTS, AWTS, ASM, BES, BRDIS, CCN, CFI, CIA, CMF, CMI, CRT, CSR, CUT, CWH, LBD, SAS, SSL Census File Number (contains EIN)

This field is used to link establishments across the Census datasets, particularly in early years prior to the Business Register redesign in 2001.

COU ACES, ARTS, AWTS, ASM, BES, BRDIS, CCN, CFI, CIA, CMF, CMI, CRT, CSR, CUT, CWH, LBD, SAS, SSL County

County will be used to construct regions for subnational tabulations of business dynamics, counties can be aggregated up the MSA or other higher levels for disclosure avoidance reasons. Greater geographic detail is one possible path to expand the program.

EIN ACES, ARTS, AWTS, ASM, BES, BRDIS, CCN, CFI, CIA, CMF, CMI, CRT, CSR, CUT, CWH, LBD, LFTTD, SAS, SSL Employer Identification Number

This field is necessary to link businesses over time and across Census datasets, and to link BEA firm level data to the Census Bureau's Business Register. That link file can then be used to match to all Census Bureau datasets using other internal census identifiers like CFN and SURVUID.

IND ACES, ARTS, AWTS, ASM, BES, BRDIS, CCN, CFI, CIA, CMF, CMI, CRT, CSR, CUT, CWH, LBD, SAS, SSL Industry (NAICS)

This field will be used for constructing industry level statistics in the extended supply use tables and business dynamics statistics tables. Industry controls will be used in regression estimates, and cross-industry differences in business dynamics and firm level heterogeneity in contract manufacturing and global engagement will be examined.

LFO ACES, ARTS, AWTS, ASM, BES, BRDIS, CCN, CFI, CIA, CMF, CMI, CRT, CSR, CUT, CWH, LBD, SAS, SSL Legal Form of Organization

Differences in business dynamics across legal forms will be examined.

NM SSL, LFTTD Business Name

Necessary for name and address matching between SSL and BEA data. It will be used as one component of the matching routine.

SW ACES, ARTS, AWTS, ASM, BES, BRDIS, CCN, CFI, CMF, CIA, CMI, CRT, CSR, CUT, CWH, LBD, SAS, SSL  
Salary and Wages/Annual Payroll  
(IRS Payroll)

This is a primary measure of firm and establishment total labor costs that will be tabbed in extended supply use tables by several firm types derived using BEA multinational data.

ST ACES, ARTS, AWTS, ASM, BES, BRDIS, CCN, CFI, CIA, CMF, CMI, CRT, CSR, CUT, CWH, LBD, SAS, SSL  
State

State will be used to construct state level measures of business dynamics. It will also be used in combination with city, street address, and zip code to determine the employee's county of residence.

TE ACES, ARTS, AWTS, ASM, BES, BRDIS, CCN, CFI, CIA, CMF, CMI, CRT, CSR, CUT, CWH, LBD, SAS, SSL  
Total Employment

Employment is a primary measure of firm and establishment size, and in differenced form will measure firm growth.

TVS ACES, ARTS, AWTS, ASM, BES, BRDIS, CCN, CFI, CIA, CMF, CMI, CRT, CSR, CUT, CWH, LBD, SAS, SSL  
Total Value of Shipments

Total value of shipments is used as a measure of firm and establishment revenue and sales. Revenue can be used as an alternative measure of firm size. Labor productivity (sales per worker) will be compared when including vs. excluding contract labor inputs.

ZIP LBD, SSL  
Zipcode

ZIP will be used in combination with city, street address, and state to improve the quality of name and address matching.

### **Project Completion**

The researcher(s) will provide the Census Bureau with annual progress reports on this multi-year project. After this project is completed, the researcher(s) will produce a CES Working Paper and related research papers for conference presentation and/or journal publication. They will also produce a CES technical memorandum summarizing the key findings pertinent to Census Bureau Title 13, Chapter 5 programs. In addition, the researcher(s) will produce a Post Project Certification (PPC) summarizing whether and how the criteria described in the project proposal's Predominant Purpose Statement (PPS), as well as any others, were or were not met.

## Project Timeline

The proposed duration of the project is 5 years.

Task	Year				
	1	2	3	4	5
Link BEA and Census data for 2012	X				
Link BEA and Census data for 2007, 2002	X	X			
Recommendations for new data collections related to factory-less goods producers in the 2017 Economic Census	X				
Submit annual progress report to Census Bureau	X				
Summary report of ESP findings comparing USDIA and FDIUS to BR and COS		X			
Use linked data sets to analyze the types of firms that tend to import manufacturing services		X			
Use linked data sets to construct a supply and use table for 2012 following initial specifications		X			
Draft paper discussing findings from supply and use table for 2012 following initial specifications		X			
Construct supply and use tables for other years and following alternative specifications		X	X		
Use linked data sets to evaluate different methods for estimating import use matrices by industry		X	X		
Submit annual progress report to Census Bureau		X			
Create prototype BDS-MNE tables for internal review			X	X	
Create prototype enhanced BDS-XF tables for internal review			X	X	
Draft paper on proposed methods to estimate import use matrices by industry			X		
Link BEA and Census data for 1997			X	X	
Draft paper comparing the results from different specifications of supply and use tables and providing recommendations for preferred specification			X		
Evaluate discrepancies between BEA and Census data on imports of manufacturing services			X		
Create prototype BDS-MNE tables for external use and review			X	X	X
Submit annual progress report to Census Bureau			X		
Finalize paper on proposed methods to estimate import use matrices by industry				X	
Finalize paper comparing the results from different specifications of supply and use tables and providing recommendations for preferred specification				X	
Prepare internal report on the state of data collection on imported manufacturing services and provide recommendations for any additional data collection that may be needed				X	
Submit annual progress report to Census Bureau				X	
Create prototype enhanced BDS-XF tables for external use and review				X	X
Revise paper on proposed methods to estimate import use matrices by industry to address referee reports from journal					X
Revise paper comparing the results from different specifications of supply and use tables and providing recommendations for preferred specification to address referee reports from journal					X

Link BEA and Census data for 2017					X
Submit Post-Project Certification document					X