

Good Morning

I am Stephanie Studds, Chief of the Economic Indicator Division at the U.S. Census Bureau.

I am so excited to be here in St. Louis today for the Beyond the Numbers Conference.

I am hoping by the end of the conference, to enhance your knowledge of the federal statistical agencies and the wealth of data that have for our data community.

To set the stage for today, I wanted to share a story from a conference earlier this week. We were asked to “Think outside of the box” and come up with a big goal that would change how the public views federal programs. I thought for a moment while at the same time thinking about something I needed to order at Amazon and it hit me, when I need to buy something I grab my device and I pull up my Amazon app. What if the public thought I need data, let me see what the federal statistical agencies have for me? I am going to be a little selfish and say Census First.

**Slide 2** The Census Bureau is a part of the decentralized U.S. Statistical System. It is one of the three principal federal statistical agencies. Our scope is focused on the population and the economy. I will share in greater detail in just a few minutes but Census does way more to support the data community than the Census every 10 years.

**Slide 3** Census serves as the nation’s leading provider of quality data about people and the economy. However, Census does not stand by itself, we depend heavily on the relationships with our federal statistical partners in the Bureau of Economic Analysis (BEA) who actually coexist in our building with us and the Bureau of Labor Statistics. As I mentioned earlier we are decentralized however our organizations work very closely together to provide the rich data options to our data community.

**Slide 4** BEA focuses on providing a better understanding of the US Economy. We work closely with BEA to provide our indicator, annual and Economic Census data for use in the Gross Domestic Product (GDP) and the National Income and Product Accounts (NIPA).

**Slide 5** BLS focuses on measuring labor market activity, working conditions and pricing changes in the economy. We work closely with BLS and their data to illustrate the labor market and pricing conditions with our indicator data on a monthly basis.

Do we have any of our federal partners in the audience from BEA or BLS? Our three entities see this as a wonderful opportunity to network with you and share our information and next time you’re researching a topic think of us.

Next, I want to share with you the Legal Authority for our Census Programs. The confidentiality of our data and the trust we maintain with our survey respondents is the pinnacle and

core value of our business at the Census Bureau. We are authorized under a number of titles at the Census Bureau. I am only going to focus on two of those today.

**Slide 8** We are authorized under Title 13 of the U.S. Code of Federal Regulations to conduct these surveys. This title protects personally identifiable information from being published. Each of our employees are sworn and trained that you only receive survey information on a need-to-know- basis.

**Slide 9** The IRS under Title 26 authority share Federal Tax Returns on households and businesses with the Census Bureau for statistical purposes. Census uses this information for our Economic Census, annual and indicator programs. This information is also the foundation for the Business Register maintained by the Census Bureau of all businesses in the United States.

**Slide 11** Now that I have provided information about federal statistical agencies, our collection authorities, I now want to talk at a high level about some of the data available in the Economic Directorate of the Census Bureau. If you remember earlier I mentioned that Census does more than the population census every 10 years. There are more than 100 other Demographic and Economic Programs that keep the lights on at Census the other 9 years of the decade. Today, I am going to focus on the Economic Directorate that we call the innovative and interesting directorate.

**Slide 12** We collect, maintain and publish data on some of the following topics: Medical expenditures, construction, services, governments, wholesale, retail, international trade, business expenditures, business dynamics, ecommerce, etc.

**Slide 13** The collection of this data is done through a series of programs conducted on a monthly, quarterly, annual, four or five-year program basis.

**Censuses:** We conduct the Economic Census and the Census of Governments every five years, in years ending in 2 and 7. The censuses provide the most detailed information and serve as the benchmark for our other annual, quarterly, and monthly collections. We are currently conducting the 2017 Economic Census and the Census of Governments. I will talk about both of these programs in more detail in just a bit.

**Current surveys:** We also conduct a host of annual, quarterly, and monthly surveys. The surveys collect data on a number of topics such as wholesale inventories, revenue of businesses such as hospitals, real estate, construction, hair salons, movie theatres, e-commerce activity, and assets of retirement systems for state and local governments.

**Economic indicators:** Some of our most widely used and closely watched collections are the economic indicators. The Census Bureau conducts 13 monthly or quarterly indicators, which provide a snapshot of how the U.S. economy and broad industries are doing. The economic

indicators provide timely estimates that are used by our federal counterparts in estimating GDP and formulating economic policy.

**Reimbursable surveys:** With our Reimbursable surveys, we are contracted by other government agencies to conduct surveys on their behalf. Other agencies see Census as having the data collection and methodology infrastructure in place.

**Slide 14** The Economic Census provides comprehensive, detailed, and authoritative information on the structure and functions of the U.S. economy. The census publishes the most detailed industry data available and accounts for approximately 85 percent of gross domestic product.

The Economic Directorate is also the owner of the Business Register. This is a frame of all U.S. Businesses. There are approximately 25 million businesses held and maintained in the business register on annual basis. In the years ending in 2 and 7 the Economic Census does a direct collection for all of the business sectors. The frame for the census data collection is taken from the business register. We select approximately 4.5 million businesses every five years which includes most large businesses and a sample of smaller businesses. During years not ending in 2 and 7 we use our Annual Company Organization Survey to collect business entity changes for about 80-100,000 companies.

The most detailed economic information that the Census Bureau provides is available from our censuses. For example, while some of the current economic programs at Census provide information down to the county level, the Economic Census is the only Census Bureau program which provides information down to the place level (also known as cities, towns, villages, etc.).

The censuses help to answer:

- What industries exist?
- Where are they located?
- What inputs they consume?
- What outputs they produce?
- And, what markets they serve?

**Slide 15 –** Industries covered and just to give you a sense of the complexity of the Economic Census the instrument for 2017 was all electronic (internet collection) except for island areas. There are over 800 paths for collection and we collect approximately 125,000 data items.

Through our collections, we are able to issue a rich array of highly detailed industry, geographic, and product statistics.

Extensive and detailed data products include:

- Over 950 detailed industries across 18 industrial sectors (NAICS)
- Geographic area series reports for nearly 21,000 geographic areas including the U.S. Territories
- Data for over 7,900 goods and services products released on a NAPCS basis
- Specialized content on various characteristics, including U.S. enterprises, characteristics of business owners, commodity transportation flow, business expenses, and other topics.

Overall, more than 1,600 data products are released.

**Slide 16** – We also conduct other surveys related to the Census. The Annual Business Survey is conducted on an annual basis but has been modernized to collect rotating sections on the questionnaires for hot topics, such as robotics. Also the Commodity Flow Survey which is one of our partial reimbursable programs I mentioned earlier with the Bureau of Transportation Statistics and provides a census of trucking shipments.

**Slide 17** - In addition to the censuses, the Census Bureau also produces current economic statistics, which cover most economic sectors and provide key measures of national economic activity.

Current economic statistics are published quarterly and annually. Compared to the census, the current economic statistics ask a lot fewer questions and therefore provide less detailed information at the geographic and product/service levels. They also make more extensive use of sampling, mostly on the national level, with the exception of manufacturing which is done on a state level. The trade-off here is that the current economic statistics provide more timely, more current estimates than the five-year census.

As you can see these statistics are done roughly by sectors such as Manufacturing, Retail, Wholesale, and Service. This information may be collected at the establishment, company or enterprise level. Several special topics within our surveys are collected as well such as research and development, capital expenditures, and robotics.

Just to note our surveys cover domestic trade only. Our import/export data for our International Trade programs we receive data from the U.S. Customs and Border Patrol.

**Slide 18** The Economic Indicator Programs are near and dear to my heart. I am the chief of this

area and work with some incredibly driven people in the Census Bureau. These are some of our most widely used and closely watched collections by the private and public communities. Listed on this slides are the 13 monthly or quarterly indicators published by the Census Bureau. These indicators – particularly the ones in bold – are closely watched and are the releases that move markets with a release at 8:30am. These data are actively used to analyze market trends and provide a pulse on the overall economy.

These indicators are provided to the Council of Economic Advisors at the White House the evening before their official release to be included in the morning briefing to the President. There is a press lock-up for most of these the morning of the release and then a briefing at the Department of Commerce to the Deputy Secretary from 8-8:30 am upon the atomic clock release at 8:30:00.

There has also been modernization to the programs in the production of advance report releases to reduce revisions in GDP and other large accounts. This is widely used in the private and public sectors.

**Slide 19** – I have discussed all of our programs to this point and just to provide more clarification on how our data collections work, the Economic Census is the whole universe of businesses and very detailed geographic and product level data. The current annual programs are sampled as well from the business register. The businesses selected are part of the census. There will be births and deaths of companies augmented into this sample throughout its survey life cycle. This annual program will not have the depth of the geographic and product level for data publication as done by the Economic Census. The indicator programs are sampled from the annual program, there is far less detail in the geographic and product level detail however it is published within 30 days of the closeout of the month which provides the most up to the minute view of the economy.

**Slide 20** - Let me talk a little bit more about our Census programs in the Census of Governments.

This Census provides data about the organization, employment, and finances of the public sector of the U.S. economy. It’s the only source of comprehensive and uniformly classified data on economic activities of state and local government activities. The Census of Governments covers about 90,000 state and local governments, including thousands of subordinate agencies.

**Slide 21** – These are just a few of our reimbursable sponsors that we work with at Census

**Slide 23** - Now that I have provided a brief overview of our programs and the types of data available, I would like to now share all of the options Census offers to access and learn more about the data.

**Slide 24** When you think “Census First”, the place to go is [www.census.gov](http://www.census.gov). Our main portal page has rapidly changing content about ongoing and upcoming events and begins your journey into the world of data. As you will notice, our Acting Director, Ron Jarmin visited Alaska as this will soon be the official kickoff for the 2020 Census as we begin the count in remote Alaska via dog sleds in January 2019. You will notice in the right side of the panel; we maintain the Population clock as we call it the “POP clock.” Also you will notice the indicator dashboard which shows the last four releases of our Principal Economic Indicators and with the click of a button takes you to the data, press releases, calendars, etc.

**Slide 25** – Press Release – All of our data releases include to the best of our ability a standardized press release. Our stakeholders and press constituents begged us to get more standardized in the content and placement of our information since we do so many releases a year. Our own communications directorate as well as other organizations “Tweet” and “Retweet” postings based on information and highlights provided in our press releases. This is an example of what a press release would look like. This is the press release for our Advance Report. As I mentioned earlier, we modernized our economic indicators to provide an early look at the data in the form of an advance report to minimize revisions to GDP and provide earlier insight to the markets for our private and public customer base. This report provides early glimpse at International Trade as well as our inventories for wholesale and retail.

**Slide 26** – Webinars are the pride and joy of the Economic and Demographic programs. You should see our webinar series as the recipe book to our data casserole. Our webinars provide the recipe ingredients to how we make our data. The webinars contain information about what is included or not included in the data (recipe ingredients), what methodology is used (measurement system), and our baking time (how often we release the product). Our site provides links to all of our previously completed webinars that you can replay, our upcoming webinar dates and times, and the ability to for you to provide topics of interest for us to work on for our upcoming webinar series. These webinars are truly the foundation to understanding our data collection, our methodology, and dissemination of the products. We are already planning and executing our webinar series for 2019. Based on our user feedback, we are going to do more topic based (healthcare across all of our programs), sessions that include cross sector topics such as insurance, healthcare and pharmacies, and finally some very much needed cross work that inlays possible uses of business and household data. Our webinars typically host 400 to over 1,000 people in each of our segments.

**Slide 27** – FRED – this new collaboration is near and dear to Adeline and myself. Last year, Adeline came into my office and said Steph, we have a problem on the horizon, our America’s Economy Mobile App is going to reach its end-of-life by the end of the year. So, we started brainstorming our options internally to collaborate with an external Census Team or spend

millions within Census to build a mobile app. Our team and associate director started to talk about FRED and a number of people in the team had the app downloaded to their phones. So, I decided to look up a number for FRED and see if I could make a call and talk to someone about their app. One phone call in I found my good friend Yvetta who opened a whole new world for us. She quickly rounded up her small team and I got mine and we began to work through all of the data the indicators had available, what FRED already had in their application and how we could add even more and share our new found collaboration with all of our data users. Thank goodness we started collaborating quickly with Yvetta and her team because our app reached its end-of-life sooner than we could have every anticipated. With smarter government mindset the FRED collaboration was a huge win for the Census Bureau. Our downloads in just six months are more than 50% higher than they were at through our app. Adeline and I met with the FRED Team yesterday to begin to plan our roadmap for even more data being released via FRED. I cannot thank the St. Louis Federal Reserve and the FRED Team enough. This has been a phenomenal opportunity.

**Slide 28** The time series and trend charts application contains the economic indicator and other survey programs datasets. This application allows you to customize the data within the datasets and create visualizations and do custom exports in a variety of formats.

**Slide 29** – The Census Business Builder was created to allow entrepreneurs to research potential markets where they want open their businesses and/or create a business plan. The small business edition provides information for a single kind of business in one geographic area at a time. For example, a hair salon in St. Louis you could all of the hair salons for this geographic location. There is also a regional analyst version which allows the user to view data for all sectors and for a region they can define from one or more counties or cities.

**Slide 30** USA Trade on line is our key application for access to our international trade data. We have trained thousands of people to use USA Trade on line but my favorite story was about a Congressional staffer who needed to get information on aluminum in 9 minutes. She called the number at Census in our Marketing Area, she was switched to my area in EID with 9 minutes we got her the data she needed for the Congressman but then we went on to teach her how to use the tool so in the future she could pull down whatever she needed without our help.

- A rich dataset containing more than 18,000 import and 9,000 export commodity codes
  - Data are available in Harmonized System (HS) and NAICS classification systems
  - Data are available by US district, state, and port as well as by trading partner country and world region
  - Export variables include value, quantity, shipping weight, & method of transportation
  - Import statistics include value, quantity, CIF value, calculated duty,

- shipping weight & method of transportation
- Historical data available - 1992 for annual and 2002 for monthly
- A wide variety of data users including small businesses, government agencies, universities and news outlets make UTO their source for international trade data
- Features include:
  - Create and download reports in multiple formats
  - Calculation of variables
  - Report table formatting - sorting, filtering, ranking...etc.
  - Customized product, country, state, district and port groupings
  - Report sharing allows for easy collaboration

**Slide 31** The industry statistics portal allows our data users to find survey related topics they are looking for and the latest data available. For example, a user can look up cat food and find which surveys collect data on that topic.

**Slide 32** The Census Bureau released its API for data in alignment with Digital Government Strategy. Our data users and their developers come to the API to create custom applications that reach our economic and housing data statistics and extract it in their preferred formats. We have a number of large industry data mining companies who begin the pull from the API the minute it is released with their programs, they ingest it, combine it with other data and then create commercial market products.

**Slide 34 –** Now that we have talked about our traditional survey collections and the programs, I would like to share some of the challenges facing the Census Bureau, our new innovative solutions, and new upcoming data products. So in addition to thinking Census First for data you can also think of us from an emerging data perspective for information and research.

**Slide 35 –** Like all statistical groups, the Census Bureau is experiencing greater demand for data, more timely data, more granular data while at the same time our respondents are suffering from survey fatigue, our collection costs are increasing and our economic landscape is changing.

**Slide 36 –** So what is Census doing about all of this – I am going to share just a few key projects with you now. Some of these are still in pilot or research mode at this time.

**Slide 37** We are working with a third party data aggregator that captures point of sale data for over 1,300 retailers and 300,000 stores and ecommerce platforms worldwide. We began our work with NPD for 3 large retailers and we compared the reported Economic Census data to what was provided by NPD for the location and the product level data. The results were remarkable and when overlaying our data we matched within less 1% difference such that we



have moved forward to purchase 100 retailers over the next two years. We will receive a monthly file from NPD so that the data can be used for non-response or removal of companies from our monthly and annual surveys and use the NPD data in its place. In order to meet the needs of the Economic Census, parallel work is going on in 2017 to collect product data from our respondents and compare that with the mapping of over 1800 products that NPD has done. The ultimate goal is to use this data to reduce respondent burden, reduce collection costs, and maintain the high quality data for our customers. There have been a number of papers presented by our team on this topic that are available.

**Slide 38** We have been working diligently to create automated pipelines to receive already available data and reduce the human footprint of our analysts at Census. We had a civic digital fellow that over the summer worked to automate an RSS feed of data from the Securities and Exchange Commission website to the Census Bureau for approximately 400-500 large companies per quarter. This work created a way for us to receive, parse, and automate through machine learning the placement and the load of the data. This reduced human keying of data by 18% each quarter. We are now continuing to enhance this work to do more of this for our Quarterly Financial Reporting program and share the infrastructure for use by other programs.

**Slide 39** There are several projects going on in our construction area but I am going to share 2. The first is pilot programs with use of 3<sup>rd</sup> party building permit data to reduce our field data collection costs. We spend millions in field collection on an annual basis for our construction programs. Through these pilot projects we are hoping to find a way to ascertain building permits data for the 20,000 plus offices nationwide via a third party and not send staff into the field. These permits are critical as they provide the frame for many of our construction programs. If we can find a solution, we would reduce or negate field costs for this part of the program hence saving the tax payers money.

The second project came as a result of the recent natural disasters with hurricanes, wild fires and flooding. There is a need for more data related to repairs and improvements for homes, buildings, and infrastructure. Census is working with academia and private organizations to help us ascertain if we could develop a hybrid approach to collecting and producing a timely and relevant data series. This is not completely new for us. We did have programs that did this type of collection in the past but due to budget constraints was cut. Our goal now would be a new and innovative way to use administrative, third party, and some collected data to provide the information.

**Slide 40 – Advance Releases** – as I have mentioned a couple of times, the Census Bureau has been working towards earlier releases of our data to the public in the form of an advance. As you saw earlier in the press release the information for international trade and inventories, we are now working to produce a total manufacturing which would encompass our total durables and non-durables at the time of the advance release as well as the release of an advance for

construction. Advances are important to provide high level numbers to reduce revisions to GDP as well as provide insight to the private and public sector on the current state of the economy as quickly as we can.

**Slide 41** Business Formation Statistics – new program moving from research to production. The BFS was soft launched in February of this year providing a measure of the number of business formations. This program takes the IRS application forms for new businesses and through a modeling approach illustrates in the next 4 quarters how many of the business will actually have payroll associated with them.

This is also kicking off a new approach to creating economic indicators with OMB. It has been since 2004 that Census has put forth an OMB package for a new Principal Economic Indicator. This would be a leading indicator as it is looking forward.

**Slide 42 – Jobs to Jobs (J2J)** another new program moving from research to production. This is a new set of statistics on worker reallocation in the US. The initial data release included national data on hires and separations associated with job change from hires and separations to non-employment. The 2019 future releases will contain the origin and destination and job characteristics of workers changing jobs.

**Slide 43 –** The Quarterly Workforce Indicator provides information on employment, job creation, earnings, and other measures of employment. The report is based on detailed firm characteristics and worker demographics. The report tabulates data at the national, state, metropolitan areas, county, and workforce investment board areas.

**Slide 44** E-Commerce. About a year ago, the census bureau had been working with the National Retail Federation on a more detailed annual release. During the call, NRF asked about when they would be getting a more detailed table from the indicator side. We hit the mute button on the conference call and we shocked at this new request. Evidently at a dinner, we promised a timelier and granular set of tables on ecommerce. So we jumped in and decided we need a short term and long term track to provide our data users what they needed. In the short term we set up a team to deliver a beta product on ecommerce to our constituents while at the same time in the long term looking to redefine Ecommerce and new more granular product tables. What we found was our data users don’t want more geographic data with e commerce they want product level detail. So with our NPD work I just mentioned our census detail work we have been able to start putting together a framework for the new publications. But as we are finding no two organizations define e-commerce the same way. And if you ask the shopping centers what they want to know it is way different than the retailers.

**Slide 45 –** Seasonal Adjustment – Our Economic Indicator and Methodological areas have been working with seasonal adjustment in our programs for many years. One area we wanted to

tackle was the holiday influence. Take Easter for example, the date of Easter changes each year, where it falls in the retail calendar and the effect it can have on the data and its associated trends. There was extensive research done to implement an Easter Day regressor which takes into account the economic activity and changes due to the holiday. An example for this would be the purchase of shoes. There are spikes in the data leading up to Easter with no purchases on Easter Sunday. We are also doing a lot of research and possible implementation for other holidays such as Super Bowl Sunday, Cyber Monday, and the Chinese New Year. We are looking at the purchase of food, alcohol, and TVs leading up to Super Bowl Sunday and the effect it has on the daily data.

I know I have provided a lot of information during this session. I hope you found it as exciting as I do. In closing, one of my mentors always said, Steph remember if you can only take away 3 things what would they be – (1) There is a wealth of data held by the three principal statistical agencies that is available to you; (2) The agencies are always available to help; (3) We want to remain relevant so the feedback from stakeholder like yourselves is critical to all of us. I am so looking forward to talking with you all and hoping that you will remember to call us to help you with your data needs.

Again, I cannot thank you enough for this truly awesome opportunity.