

# Restoring the Enterprise Statistics Program (ESP) For the 2012 Economic Census

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*This report is released to inform interested parties of research and to encourage discussion.*

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# Restoring the Enterprise Statistics Program (ESP) For the 2012 Economic Census

## Background

From the 1954 through the 1992 economic censuses, the Census Bureau published sets of enterprise statistics reports. As stated in the most recent report of this series (1992),

Essentially, the enterprise statistics program involves aggregating the census data records for establishments that are under common ownership or control and assigning company codes to show various economic characteristics of the firms that own or control the establishments.

Over the years, the number of reports published in each census has varied. In 1954, two reports were published – a company summary report and a report on auxiliary units (central administrative offices and auxiliaries). For 1958, 63, and 67, a report linking census establishment reports with tax return reports was published. Due to limited use, this report was discontinued. However, key tables were provided to the Bureau of Economic Analysis (BEA) for several more censuses. In subsequent economic censuses, tables on mergers and acquisitions and on data items for large companies were published. The last report was published in 1992 and covered the company summary, large company data, and auxiliary units in a single report.<sup>1</sup>

This paper was prepared following the Bureau's decision to restore an enterprise statistics publication program for the 2012 Economic Census. It addresses the various steps necessary to develop a new program and proposes an updated (new) enterprise classification system (ECS) and a set of prototype tables based on data from the 2007 Economic Census. These tables and the underlying enterprise classification system will be used to elicit comments from potential users to formulate the 2012 program. The paper does not address subsequent annual reports that might be based on the 2012 program, but does provide a recommendation for updating the classifications of large enterprises.

There are several major, and related, questions to be addressed to implement the Census Bureau's decision to restore the ESP for 2012. The major questions are:

- Do we need a new enterprise industry classification system and how should it be developed? (Section A)
- What methodology should be used to classify companies? (Section B)
- What prototype tables should be shown? (Section C)
- How should enterprise industry classification be updated in non-census years? (Section D)
- How should the proposal for 2007 be modified for a 2012 report? (Section E)

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<sup>1</sup> The 1992 report is the only one available on the Census Bureau's web site.

## Section A: A New Enterprise Industry Classification System

### Introduction

An important step in the restoration of an ESP is the determination of an enterprise classification system that is designed for enterprises as opposed to establishments. Since the first ESP in 1954, the Census Bureau has recognized the need for a specially designed enterprise classification system (ECS). Other federal statistical agencies also have recognized this need and in the 1970s and 1980s, the Office of Management and Budget (OMB) developed an Enterprise Standard Industrial Classification (ESIC) to supplement the Standard Industrial Classification (SIC).<sup>2</sup> The manual presenting this classification system in 1974 stated its purpose as follows:

This Classification was developed to provide a standard for use with statistics about enterprises (i.e., companies, rather than their individual establishments) by kind of economic activity. Its use will facilitate the collection, tabulation, presentation, and analysis of data relating to enterprises; and will promote uniformity and comparability in the statistical data of federal government agencies. The classification of enterprises, rather than that of their constituent establishments is used for compiling and analyzing financial and related statistics (such as income, expenses, and profits from the income statement; debt, liquidity, -- from the balance sheet items, and other data that may be available only on an enterprise basis.

This statement of purpose focuses on the use of the ESIC on programs that present statistics on companies that are usually collected only at the company level, because government agencies with enterprise programs mostly collect only company level statistics. Although the Census Bureau now has several such programs, the ESP is one of the few, if not the only, government program that presents data from both establishment records and company level data.<sup>3</sup>

### Developing a New ECS

The development of a new enterprise classification system (ECS) resulted from a thorough review of the ECS used for the 1992 ESP, the ECS used for existing federal enterprise statistics programs; the ECS used for other enterprise statistics programs, and the North American Industry Classification System (NAICS) of 6- and 4-digit industries. The review focused on the classification criteria and a classification methodology of each system. The criteria provide the rationale for how the categories and their constituent NAICS industries are determined; the methodology provides the procedures that are used to assign these

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<sup>2</sup> In 1972, OMB introduced the 1968 Standard Enterprise Classification System. After a revision in 1974, it was dropped in the 1980s because of lack of consistent use by the statistical agencies. However, many of the underlying principles for this system are reflected in the 2012 and ECS previously used by the Census Bureau.

<sup>3</sup> Other Bureau establishment-base enterprise programs that show company-level data classified by industry based on economic census establishment records include the Survey of Business Owners and A Profile of U.S. Importing and Exporting Companies.

categories to the covered enterprises. Except for the one enterprise statistics program that directly uses 4-digit NAICS industries, the existing programs use enterprise industry categories that are aggregations of various levels of NAICS industries. A description of these classification criteria and methodology and a detailed analysis of the differences between these systems and the 2012 ECS are available in a separate document, *Comparing the Census Bureau Enterprise Classification System (ECS) with Selected Alternatives*.<sup>4</sup> Summaries of these differences and the differences between the new ECS and the existing systems are presented in of this section of the paper.

### 1992 ECS

The first enterprise classification system to be considered was the system used for the 1992 ESP. It was not selected because, like its predecessors, it was based on the SIC establishment classification system, which was replaced in 1997 by NAICS. In addition to an improved basis for classification incorporated into NAICS, differences between the SIC and NAICS reflected the continued shift in the composition of the U.S. economy from a primarily goods-producing to a primarily services-producing economy, a shift that in part reflected the impact of the emergence of a global economy that saw the reduction in size or elimination of some U.S. industries. For an enterprise classification system, this means that the coverage of the service-producing sector in a SIC-based system like the 1992 ESP system was underrepresented. In addition, since 1992, many large mergers and acquisitions reduced the number of large companies in industries such as petroleum refining, banking, and financial services. Finally, there were changes in the coverage of the economic census so that there were industries in 2012 that were not within scope of the 1992 system.

### NAICS

The next system to be considered, although it is currently used in only one program, was the direct use of NAICS industries at both the 6-digit industry and 4-digit industry levels. The suitability of either of the 6-digit or 4-digit NAICS levels for an ECS was determined from enterprise tabulations of preliminary 2007 Economic Census records using the same type of records, same editing, and same classification rules used for the 1992 ESP. The underlying establishment records used for this part of the review were the preliminary 2007 Economic Census establishment records, both in and out-of-scope, used to select the sample for the Annual Capital Expenditures Survey (ACES).<sup>5</sup> As in the 1992 and previous ESP programs, the establishment records were limited to domestic establishments of firms with paid employees and included records of establishments outside the scope of the 2007 Census of all firms that were primarily within scope of the 2007 economic census. These firms were edited to delete “impossible enterprises and establishments.”<sup>6</sup> In addition, to preserve the concept of operating establishments in previous ESP reports that underlies the basis for determining

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<sup>4</sup> Paper if available upon request from the Census Bureau.

<sup>5</sup> In mid-2011, this file was replaced by the final Economic Census establishment records was used to determine the final ECS described in Section B and for the prototype tables described in Section C of this paper. The incorporation of the final records had little impact on the NAICS tabulations or on the research on patterns of industrial diversification use to develop the final ECS.

<sup>6</sup> These “impossible” cases were largely enterprises for which there were no in-scope operating establishments – i.e., they consisted only of central offices, auxiliaries, and manufacturers’ sales branches and offices. Also deleted were out-of-scope records of primarily out-of-scope enterprises.

enterprise classification, it was necessary to reclassify establishments known as auxiliaries as defined under the SIC.<sup>7</sup>

NAICS was considered as a potential ECS even though enterprise classification systems have always differed from the establishment classification systems. The *Federal Register* notice on NAICS stated that one of the major purposes of NAICS is “(1) To facilitate the collection, tabulation, presentation, and analysis of data relating to establishments.”<sup>8</sup> Because the focus of NAICS is on the production process and the focus of an enterprise classification system is on the ownership characteristics, NAICS is not always relevant for enterprises. In addition, because the data underlying enterprise-based programs vary in coverage, agencies producing enterprise data have adopted other classification systems that meet this purpose. Nevertheless, from the perspective of providing the most detailed information on enterprise/establishment relationships, an argument can be made for the use of 6-digit NAICS industries as the ECS.

The review of the use of 6-digit NAICS industries resulted in the rejection of the option for operational reasons – there are 1,063 industries within the scope of the 2007 Economic Censuses, and most of them did not meet the minimum size criteria of previous ESP systems.<sup>9</sup> The past use of these size criteria made the resulting publications of manageable size as the reports include tabulations not only of the aggregates for each enterprise industry, but also ownership characteristics such as employment and receipts size, degree of specialization in the primary industry, and the secondary activities of the enterprise in each industry. In addition, reducing the number of industries significantly reduced the number of cells suppressed because of confidentiality.<sup>10</sup> The use of the 4-digit NAICS industry level also was rejected for the opposite reason. In the distributive and service industries, there were a large number of 6-digit NAICS industries that met the minimum size criteria and would be lost in a 4-digit NAICS based ECS. For transportation and warehousing, the use of 4-digit NAICS would have resulted in more industries below the minimum size criteria. A comparison of the ECS category counts for various alternatives is shown in Table 1.

### **Initial 2012 ECS**

After the rejection of the 1992 ECS and NAICS, a new ECS was developed using the 1992 ESP classification criteria and classification methodology with several small modifications and applying them to the same file of 2007 Economic Census establishment records used for the review of NAICS. The result was an ECS where the industry categories consisted of both NAICS 6-digit industries that meet the classification criteria and industry categories that were aggregations of NAICS industries within the NAICS hierarchy. Because these aggregations often required a judgmental allocation of 6-digit NAICS industries, a special

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<sup>7</sup> Another adjustment to the 2007 economic census establishment records was the decision to treat establishments classified in NAICS industry 5211, Monetary Authorities—Central Bank. This industry, which was treated as out of scope for the ESP, covers only the privately owned District Federal Reserve Banks that can't acquire other establishments and engage in highly unique activities.

<sup>8</sup> See *Federal Register* notice of January 7, 2009.

<sup>9</sup> About of 200 of these 6-digit industries had total employment of less than 10,000 in 2007.

<sup>10</sup> In the 2007 Economic Census, the use of noise infusion was limited to nonemployers. See Section E for a note on the possible expansion of this technique in 2012.

analysis was conducted to identify patterns of industrial diversification that might be used to derive more homogenous categories.<sup>11</sup> Then, this new ECS was compared to existing enterprise programs, particularly those used by the Census Bureau to determine the system to be used for both the prototype 2007 ESP tables and the 2012 ESP.

#### 1992 Classification Criteria

The classification criteria used for the 1992 system, which were the same as that used for the 1987 and 1982 programs, were as follows:

- At least 50,000 employees in an industry or receipts of \$2 billion or more,
- An industry specialization ratio of at least 70 percent for nonmanufacturing and 60 percent for manufacturing,
- Compatibility with the SIC system for establishments and the enterprise SIC, and compatibility with the previous Census Bureau ECS.

In addition, the Census Bureau created one industry category to recognize that “patterns of enterprise organization may in some instance result in enterprise industries crossing major groups or divisions. [sic. of the SIC].”<sup>12</sup> In all previous enterprise statistics ECS, category 291, Petroleum Refining (including integrated), was defined to include census (SIC) industries that cut across industry division lines. A company was classified in this category if it: (1) operated establishments both in SIC industry 1311, Crude Petroleum and Natural Gas, and in Industry 2911, Petroleum Refining; and (2) was primarily engaged in both industries, as reflected by its payroll. This category recognized the widespread practice of the larger petroleum extraction and refining companies in vertically integrating their activities. (A company engaged in both industries 1311 and 2911, but primarily engaged in another industry category, was classified in that other category using the standard classification methodology for coding multi-industry companies.<sup>13</sup>) To combine or “roll up” SIC industries to form an enterprise category within the SIC hierarchy, both quantitative and judgmental criteria were used. These combinations reflected the need to have categories that were broad enough so that the resulting tabulations of enterprise characteristics did not result in many cells for which the data was suppressed for confidentiality reasons. They also reflected a need to have categories broad enough so they would not be affected by changes in the underlying establishment industry classification system.

#### Modified Classification Criteria for the New ECS

As previously discussed, the 1992 ECS was rejected primarily because of the switch from SIC to NAICS and changes in the structure of the economy. The later reduced the number of integrated petroleum companies so that the remaining companies could not be shown as a separate industry category. Nevertheless, it was decided to use a slightly modified set of the

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<sup>11</sup> For example, this analysis was designed to identify significant patterns of diversification that might cross NAICS sectors, such as the manufacture of aircraft and computer services, or patterns within 5-digit or 4-digit NAICS industries that would provide information on the industries to aggregate.

<sup>12</sup> As stated by OMB as a classification criteria in the in the 1974 ESIC manual.

<sup>13</sup> Although enterprises in other industries were vertically or horizontally integrated, there were not sufficient numbers of enterprises with the same industry patterns to justify categories that cut across the hierarchy of the establishment classification systems.

1992 classification criteria for the new ECS. The changes to the 1992 ECS criteria are as follows:

- Sales is dropped from the size criteria because it is not a reliable measure of economic activity;
- The use of employment as a size criteria is adjusted to account for industry difference in labor intensity;
- Comparability with past systems is dropped because of the use of NAICS; and
- The higher criteria for the industry specialization for nonmanufacturing companies is dropped because the switch to NAICS increased the scope of this rapidly growing sector.

The adjustment to the employment size criteria raised the minimum size for a category to 100,000 for the following sectors:

Construction  
Retail trade  
Transportation and warehousing, except pipeline transportation  
Administrative and support and waste management and remediation services  
Educational and health services  
Arts entertainment, and recreation  
Accommodation and food services  
Other services (except public administration).<sup>14</sup>

Although comparability with past ESP systems is dropped, the new system continues the unstated criteria of following the hierarchy of the official establishment classification system -- now NAICS.

#### Initial New ECS and Review of Other Systems

The use of the modified criteria initially resulted in an ECS of 382 industry categories. About 270 of these categories were 6-digit NAICS industries that met the employment size, industry specialization, and number of multi-industry companies criteria. For various reasons, exceptions to the criteria were made as follows: 17 categories did not meet the employment size criteria, eight did not meet the specialization ratio criteria, five did not meet the number of multi-industry companies, and five did not follow NAICS hierarchy. Next, the initial ECS was compared to categories of alternative systems.

#### Comparison to Existing Systems

The initial 382 categories did not take into account the existing classification systems. As discussed below, taking them into account had only a small impact because these other systems largely reflects the special purposes they were designed to serve and the lack of significant quantitative criteria in the selection of industry categories. (It also reflected the fact the ESP is uniquely developed from the universe of detailed establishment records.)

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<sup>14</sup> The higher cutoff was used to account for significant differences in value-added per employee based on BEA industry data for 2007.



The new ECS, like its predecessors, was based on establishment data from the economic census and data on domestic out-of-scope establishments from the Census Bureau's business register. The categories for the Census Bureau's new ECS were determined by applying the new criteria to the 2007 Economic Census establishment records for firms with paid employees classified at the 6-digit NAICS level.<sup>15</sup> It also should be noted that the core data from the ESP would provide information on the size, structure, and diversification of U.S. enterprises and in changes over time in these characteristics. In contrast, the existing enterprise programs are based on sample surveys, have reporting exceptions based on size, and/or they do not cover all enterprises.<sup>16</sup> As a result, their industry classification systems tend to have limited coverage of industries with many small firms such as construction, wholesale and retail trade, professional and technical services, and health care and social assistance. On the other hand, the ESP covers most industries, although for many small firms, only limited classification information and data are available.<sup>17</sup>

For this review, the systems studied included those used for the following existing programs: The Census Bureau's Annual Capital Expenditures Survey (ACES) and the Quarterly Financial Report (QFR), the National Science Foundation's (NSF) Business Research, Development, and Innovation Survey (BRDIS), the Bureau of Economic Analysis's (BEA) international surveys, and the IRS Statistics of Income (SOI) Division's corporate SOI reports. Systems used by Statistics Canada and Eurostat, the statistical agency of the European Union, and a private sector report on corporate investments also were reviewed. Systems not reviewed were used for programs that provide little or no industry detail, exclude major parts of the business universe, or do not generate tabulations or reports.<sup>18</sup> The first group included Census Bureau enterprise data on companies that import and export, which show imports and exports for only three industry groups, and the Statistics of U.S. Businesses program, which shows data only by enterprise employment size. The second group included the Energy Information Administration's Petroleum Reporting System, and enterprise-based reporting systems used by the Census Bureau for some of its monthly and annual surveys, such as the Service Annual Survey. The third group included the Securities and Exchange Commission (SEC) reporting requirement for publicly held companies to report their company classification (still using the SIC). The classification system used for non-corporate SOI reports was not reviewed because the universe for this SOI report consists primarily of small single-industry firms whose industrial distribution is not representative of all firms.

## **Underlying Differences in Enterprise Programs**

### Industry Coverage

Comparisons of enterprise data among existing enterprise programs are frequently not possible because of differences in industry coverage, even within the same agency. The three

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<sup>15</sup> For non-employer firms, a modified ECS based on industry classification detail available from business tax returns will be used to show their data separately in the ESP publication.

<sup>16</sup> These characteristics are discussed below for each of the alternatives.

<sup>17</sup> These limitations include the use of a sample survey for construction establishments, incomplete NAICS detail for non-employer firms, and the collection of certain data items on a sample basis.

<sup>18</sup> The system used by the Bureau for the Survey of Business Owners is discussed under the use of NAICS.

Census Bureau programs discussed in this section have significantly different industry coverage.

The ESP, which is tied to the coverage of the economic census, does not cover the following industries:

<i>Description</i>	<i>NAICS</i>
Agriculture, forestry and fishing and hunting	11
Rail transportation	482
Funds, trusts, and other financial vehicles	525
Elementary and secondary schools, junior colleges, and colleges, universities and professional schools	6111, 6112, 6113
Religious organizations	8131
Labor unions, political, and similar organizations	81393
U.S. Postal Service	4911
Public administration	92

Activities in these industries that are conducted by enterprises that are primarily engaged in within-scope industries are included in the ESP tabulations, such as a farm owned by a food-processor, a railroad operated by a utility, and a professional school, operated by a hospital. On the other hand, the economic census does cover government hospitals, government-owned liquor stores, and university press publishers.<sup>19</sup> (Federal Reserve Banks (NAICS 5211) are not treated as being within scope in the ESP.)

For the alternatives, the corporate SOI covers all industries in which for-profit corporations are engaged; the ISI covers all industries in which a U.S. entity has a foreign affiliate; BRDIS and ACES cover only nonfarm industries, and the QFR coverage is now limited to mining, manufacturing, trade, information, and professional and technical services (except legal), with an expansion of coverage in process.

#### Entity coverage

There also are important differences in the coverage of enterprises among the alternatives. The SOI tabulations only cover firms required to file corporate income tax returns, and exclude unincorporated firms, including not-for-profit organizations that are covered by the ISI and ACES. BRDIS also excludes not-for-profit organizations as well as enterprises with five or fewer employees. The BEA data on U.S. enterprises with direct investment abroad are limited to those firms with foreign affiliates and with assets, sales, or income over \$300 million, and the QFR exclude small firms.<sup>20</sup> There also are differences in the extent to which the data reflect consolidated U.S. operations and whether foreign activities are included. On level of consolidation, the ISI may be the most fully consolidated -- subsidiaries are owned 10% or more -- and SOI the least consolidated -- subsidiaries are owned 80% or more consolidation is optional. For the other programs, subsidiaries are those owned more than 50%. As to geographic scope, SOI, BRDIS, and ISI are worldwide, while the others are

<sup>19</sup> See Section E for a recommended change in this treatment for the 2012 ESP.

<sup>20</sup> In considering the classification system used by the SOI program, the system used for unincorporated businesses was not treated as an alternative because of its limited coverage of major sectors of the economy.

inside the United States. In the ESP and ACES, although there is no coverage of overseas activities, foreign subsidiaries and establishments may be identified in the Company Organization Survey.

### Classification Criteria

#### *SOI*

For SOI, no specific criteria are used to determine the industry categories, which in most cases are defined as a single 3-, 4-, 5-, or 6-digit NAICS industry. According to *Corporation Source Book of Statistics of Income, 2007*, “A number of similar NAICS industries have been combined in order to keep the number of industries published for Statistics of Income comparable to prior years and to provide reliable statistical estimates.” In its combining NAICS industries, in addition to the industries noted above, SOI category 487005 is defined to include industries in both NAICS 48 and 49.

#### *ISI*

According to BEA’s report on the 2004 benchmark survey of U.S. investment abroad, each U.S. parent or foreign affiliate is classified by industry using the International Survey Industry (ISI) classification system. In the 2007 NAICS-based ISI classification system, there are 201 industries; in the 2002 NAICS-based ISI system, there are 205 industries. For the most part, the ISI classifications are equivalent to NAICS four-digit industries. (No quantitative criteria are used.)

#### *BRDIS*

Information on how NSF determined the business activity groupings could not be located.

#### *ACES*

ACES categories were developed (originally on an SIC basis) through an analysis of results of a test survey in the 1990s. This analysis consisted of reviewing these results for the frequency and value of industries reporting capital expenditures. Consideration also was given to industry detail for which respondents could report. In addition, the Bureau of Economic Analysis, a major user of ACES, was consulted on the category detail. In addition, use of detailed categories in several sectors was precluded because of the survey’s sample size.

#### *QFR*

The industry combinations used in the QFR are defined in accordance with the NAICS industry descriptions but information on how Census determined the combinations could not be located.

#### *Other Alternative Systems*

As noted previously, the following alternative enterprise classification systems are not discussed in the detailed comparison paper. Each of these is summarized below.

*Eurostat:* All units – establishments, enterprise groups, etc. are assigned a principle activity using NACE, the Eurostat equivalent of NAICS. NACE has 615 4-digit industry “Classes,”

of which 230 are in manufacturing. NAICS has about 300 4-digit industries (including public administration), of which 86 are in manufacturing.

*Statistics Canada (StatCan):* StatCan uses a rolled-up NAICS-based system that consists of 67 industry groups, but which excludes NAICS 55 (Management of Companies and Enterprises).<sup>21</sup> The NAICS 55 group consists primarily of holding companies whose most significant assets are investments in affiliated companies. StatCan excludes these companies to avoid the double counting of assets, which is one of the data items shown in their enterprise publication. StatCan provides no special details on how the industry categories were selected.

*Global Industry Classification Standard (GICS) Direct:* This market-category based private sector system was released by Morgan Stanley Capital International (MSCI) and Standard and Poor's (S&P) in 2001 to provide the industry classification for more than 26,000 active companies and 29,000 securities, representing approximately 95% of the world's equity market capitalization.<sup>22</sup> It was developed to meet the need of the global financial community's for a reliable, complete and standard industry classification system. Unlike the alternative classification systems discussed previously, GICS is a "market-oriented" and not a production-oriented system. The rationale for this choice was that "In today's economy, for example, drawing the line between goods and services is increasingly difficult and arbitrary, as almost all goods are sold with a service. Thus, the distinction between consumer goods and services has been replaced by the more market-oriented sectors of 'Consumer Discretionary' and 'Consumer Staples,' which both contain goods and services sub-industries." GICS consists of 10 sectors, 24 industry groups, 64 industries and 139 sub-industries.

*Census Bureau's Survey of Business Owners:* 4-digit NAICS industries are used for this sample survey program.

## **The New ECS**

A review of these alternative systems, especially those of other Census Bureau programs, resulted in a net reduction of six categories, so the ECS to be used for 2012 ESP and the prototype 2007 ESP tables will consist of 376 enterprise industry categories.<sup>23</sup> A complete list of the new categories and their constituent NAICS industries and a detailed comparison of these categories to the existing systems of other federal agencies are provided on the ESP web page.

## **Differences in Categories**

### Existing Alternatives

Table 1 shows that except for the alternative of an enterprise classification system based on the detailed 6-digit NAICS industries, the 376 categories in the proposed ECS provides

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<sup>21</sup> Based on information provided by e-mail from StatCan staff.

<sup>22</sup> Based on FAQs provide on the GICS website.

<sup>23</sup> Of these categories, exceptions to the criteria were made for thirty categories as shown in Attachment A

significantly greater detail than other systems, even with the limited industry scope of the economic censuses. Two factors, in particular, explain most of the reasons for the larger number of ECS categories. First, as noted above, the ECS categories were developed for use with establishment records of all private businesses collected for economic census years that are classified at the 6-digit NAICS level, whereas the other systems were designed for use for sample surveys of enterprises. Consequently, the coverage of these programs and/or the underlying sample size has resulted in enterprise classification systems with limited coverage of industries with many small firms such as construction, wholesale and retail trade, professional and technical services, and health care and social assistance. A second, and related, factor that explains the larger number of ESP categories in these sectors is the more rigorous application of quantitative criteria in determining the industry categories, which leads to more categories in sectors where the other programs have the least coverage. For example, SOI, ISI, and BRDIS use systems with about 200 categories fewer than the ECS, and for these low-coverage sectors, these alternatives averaged only 46 categories, as compared with 159 in the ECS.

On the other hand, the number of categories in the alternatives exceeded the number in the ECS in only two cases. There are nine mining categories in ISI, two more than in the ECS, and there are 104 manufacturing categories in BRDIS, 14 more than in the ECS. For mining, the ISI system was designed not only to cover operations in the United States but also the foreign affiliates of U.S. enterprises. For manufacturing, BRDIS categories were designed to cover research and development expenditures, and there are many small industries with significant expenditures for research and development.

For finance and insurance, although the ECS has more categories than the alternatives, it has only one more than the SOI system. In part, the large number of SOI industries represents different forms of corporate organizations, such as stock versus mutual companies, for which the IRS uses separate tax return forms. These types of organizational differences are not recognized by NAICS.

Finally, where there are more categories in an alternative than in the ECS, the explanation may lie with the use for the ECS of employment or payroll as the size criteria to classify enterprises, rather than value added, which is generally considered to be the best measure of an industry's contribution to economic activity.<sup>24</sup> Because value-added per employee differs widely by industry – in large part representing differences in capital intensity - it would have desirable to convert employment to value added. But because to do so at the establishment level would have been beyond then scope of this report, an adjustment was made to the size criteria at the sector level, as described later in this report.<sup>25</sup> Thus, using employment probably explains why NAICS 3253, Agriculture chemical manufacturing, is a separate category in ISI but not in the ECS. For this industry, the ratio of value added to employment

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<sup>24</sup> See *System of National Accounts, 2008*, paragraph 1.17, United Nations Statistical Division. Also, the 2002 NAICS Manual notes that the ideal measure as the “share of current production costs and capital investment.”

<sup>25</sup> As noted, estimating value added for all census establishments would require a new estimating methodology, probably one based on the use of data collected by the Census Bureau in the Business Expenses survey or from data compiled by BEA for the input-output accounts. The development of such a methodology was outside the scope of this report.

is above twice the average for all manufacturing so that using value added as the size criteria might have resulted in the use of this industry as a separate ECS category. Similarly, the reason for the larger number of BRDIS categories is likely that companies were classified based on research and development expenditures, and there is no necessary correlation between these expenditures and establishment activities.

### NAICS Industries

Table 1 also shows the difference in the use of a system based on 6-digit and 4-digit NAICS industries. Where a NAICS industry was not selected as a category, it did not meet either the size or the specialization criteria used for the ECS. On the other hand, in comparing the differences in using the 6-digit or 4-digit NAICS industries, these same criteria resulted in the selection as categories many 6-digit NAICS industries. Of the 376 ECS categories, 161 are the equivalent of a single 6-digit NAICS industry, 27 are the equivalent of a single 5-digit NAICS industry (with multiple 6-digit industries), and 110 were the equivalent of a single 4-digit NAICS industry. (The full table of proposed ECS and the equivalent NAICS industries is provided on the ESP web page.)

With regard to NAICS, it is important to note that, with only a few exceptions, the categories used by the ECS and the alternatives discussed in this section follow the NAICS hierarchy. This means that the categories either are specific 6-, 5-, or 4-digit NAICS industries or are "roll ups" of the industries. Roll up categories are formed by combining a 6-digit NAICS industries with NAICS industries with same 5-digit code, then the same 4-digit code, etc. (Seven ECS categories are the equivalent of a 3-digit NAICS subsector.) Despite the use of the NAICS hierarchy as the foundation of the roll-up process, the SOI and ISI systems each have a few categories that violate the hierarchy principle. As discussed in the attachments on each system, most of these violations relate the treatment of activities of integrated petroleum refining companies (NAICS 32411) and Management of companies and enterprises (NAICS 5511). For example, ISI category 3242, Integrated petroleum refining and extraction is used to classify firms engaged in both petroleum refining and oil and gas extraction. In addition, BEA has a separate category for petroleum tanker operations (ISI 4833), which covers parts of several NAICS 6-digit industries in 483, and petroleum pipeline transportation (ISI 4863), which covers parts of NAICS 6-digit industries in 486.

The ECS has two categories that deviate from the NAICS hierarchy – both of which involve holding companies, which are classified in NAICS 5511, Management of companies and enterprises.<sup>26</sup> This NAICS industry group (and sector) consists of 6-digit industries 551111, Bank holding companies; 551112, Other holding companies; and 551114, Corporate, Subsidiary, and Regional Managing Offices. Enterprises classified in 551111 are included with category 522A, Commercial Banking, and enterprises classified in NAICS 551112 are included with ECS category 561A, Office Administrative Services. (There is no ECS category for NAICS 551114 because establishments classified in this industry provide

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<sup>26</sup> For the 1992 ESP, there was separate ECS for enterprises primarily engaged in integrated petroleum refining and extraction. This category was dropped for 2012 because mergers and acquisitions among these enterprises since 2000 had substantially reduced the number of integrated enterprises.

services only to other establishments of the same enterprise.<sup>27)</sup> There were several reasons for the deviations for holding companies. First, the 6-digit industries did not meet the ECS size criteria. Enterprises classified in 551111 had only six thousand employees with only four thousand of the total of 18 thousand at establishments classified in the industry. For 551112, enterprises classified in this industry had only 47 thousand employees with only 35 thousand of the total of 90 thousand at establishments classified in the industry. Second, to roll them up to the 4-digit industry group level (NAICS 5511) would have resulted in a sector with only one category. Third, the ECS deviations also have been made in other enterprise classification systems. The ECS treatment is the same as that adopted by BEA for its international survey industry classification system and is similar to that adopted by Statistics Canada, in its enterprise classification system -- StatCan simply excludes enterprises classified in NAICS 55 from its program to “avoid double counting of assets.” In addition, a review of the detailed establishment records of selected enterprises indicated that many of the establishments classified in 551111 and 551112 should have classified in 551114.

Finally, for the ESP, establishments that would have been classified as “auxiliaries” under the SIC system are treated as non-operating establishments. Under NAICS, auxiliaries, or establishments providing specialized services to other establishment of the same enterprise, such as warehousing and research and development, are classified in the corresponding NAICS industry. In the ESP, non-operating establishments, which include corporate offices and manufacturer’s sales branches and offices, are ignored in the process of calculating the primary enterprise industry. With this treatment, data for these establishments are recoded from NAICS industries such as 49311, General warehousing and storage, and 5417, Scientific research and development services, to establishment industry 551114. For the alternative classification systems, it would be rare for a covered enterprise to consist solely of offices and/or auxiliaries so that there are no enterprises classified in NAICS 551114 or to the industry of the service provided by the auxiliaries.<sup>28</sup> Thus, although these systems showed a category for enterprises classified in 551114, the category was not actually used.

**Table 1. – Number of Categories for Alternative Enterprise Classifications**

2007 NAICS	NAICS Title	ECS	SOI	ISI	BRDIS	ACES	QFR	NAICS6	NAICS4
	All industries	376	195	201	205	132	42	1063	275
11	Agriculture, Forestry, Fishing and Hunting*	0	3	5	0	2	0	0	0
21	Mining, Quarrying, and Oil and Gas Extraction	7	5	9	6	6	1	29	5
22	Utilities	4	4	3	3	3	0	10	3
23	Construction	22	6	3	3	3	0	31	10
31-33	Manufacturing	90	65	77	104	37	24	471	86

<sup>27</sup> U.S. establishments operating as a central offices or auxiliary only for establishments outside the U.S. are usually classified in wholesale trade.

<sup>28</sup> For the ECS, all establishment records of companies without an operating establishment were deleted because for this contract it was not possible to review these records to correct the establishment classifications.

2007 NAICS	NAICS Title	ECS	SOI	ISI	BRDIS	ACES	QFR	NAICS6	NAICS4
42	Wholesale Trade	43	18	19	3	3	3	71	19
44-45	Retail Trade	41	18	12	8	7	4	75	27
48-49	Transportation and Warehousing*	17	8	13	11	11	0	54	26
51	Information	14	11	12	12	10	6	32	12
52	Finance and Insurance*	19	18	10	10	8	0	35	8
53	Real Estate and Rental and Leasing	12	8	4	5	5	0	24	8
54	Professional, Scientific, and Technical Services	26	9	9	11	9	4	47	9
55	Management of Companies and Enterprises	0	2	2	1	1	0	2	1
56	Administrative and Support and Waste Management and Remediation Services	18	4	9	7	6	0	44	11
61-62	Education and Health Services*	29	7	5	11	11	0	53	22
71	Arts, Entertainment, and Recreation	10	2	3	3	3	0	25	9
72	Accommodation and Food Services	9	2	2	2	2	0	15	7
81	Other Services (except Public Administration)*	15	5	3	5	5	0	45	12
92	Public Administration*	0	0	1	0	0	0	0	0

\* Includes one or more industries outside the scope of the Economic Census or ESP.

\*\* In scope of Economic Census only.

## Section B: Methodology for Assigning Enterprise Industry Classification

### Introduction

Even if all enterprise statistics programs used the same enterprise industry categories, there would be inconsistencies in the data in the resulting tabulations. The major sources of these inconsistencies result from the differences in the classification methodologies, both from the use of different measures and different methods used to select a primary category. These details are included in *Comparing the Census Bureau Enterprise Classification System (ECS) with Selected Alternatives*. (There also could be inconsistencies if there were difference in how the categories are updated, as discussed in Section D.)

For ESP, ACES and BRDIS, the primary industry category is selected based on payroll. However, for ACES and BRDIS, the categories assigned based on payroll are only used to select the sample and for non respondents. Otherwise, categories are assigned based on the



respondent reporting of capital expenditures (ACES) or research and development (BRDIS). For SOI and ISI, sales or receipts is used. To select the primary industry, for all alternatives except SOI, the “filter-down” method is used in which first the primary sector is selected and then, from within this sector, the largest category is selected. SOI categories are based on the respondent’s selection of largest principle business activity.<sup>29</sup>

Without the research effort to estimate value added for each establishment for the 2012 Economic Census as discussed in Section E of this paper, there is no better alternative for the 2012 ESP than to determine the industry category for each company using the payroll-based methodology used for the 1992 and previous enterprise statistics programs. In addition, the use of detailed establishment records that form the basis for the ESP is generally considered to produce more reliable results than a method based on company values for business segment.

More detailed information on the ESP and alternative systems is provided below.

#### 2007 Prototype Tables and 2012 ESP

For these programs, the Census Bureau will classify enterprises based on payroll data by establishment – payroll is used as proxy for value added, which is not available for all industries. For each enterprise, the classification methodology starts by excluding non-operating establishments -- establishments classified as manufacturing sales branches and offices, central offices, (NAICS 551114), and “auxiliaries.” From the remaining establishments, a primary NAICS sector is selected. If the primary sector is outside the scope of the 2007 economic censuses, the records of the establishments in these sectors are deleted and a primary in-scope sector is selected also based on payroll. The primary enterprise industry category is the category in that sector with the largest aggregate payroll. (This is the same method used for the previous enterprise statistics program.) From the remaining domestic establishments, a primary NAICS sector is selected and from within that sector, the primary ECS is selected. This methodology is the same as that used for the 1992 ESP.

Establishment payroll data is used as the determining data item to determine enterprise industry classification of multi-establishment, multi-industry companies. Payroll was chosen because it was determined to be the most meaningful economic measure common to all economic censuses divisions. (The preferred item, value added, was not available for all industries.) There are only three data items common to all economic censuses establishment reports: employment, annual payroll, and receipts or sales (dollar volume of business). The employment data cover different time periods for different industries and are affected by seasonality. Sales and receipts may not accurately reflect the relative economic impact of companies in different industries. For example, sales and receipts of a wholesale broker represent gross sales made rather than commissions received and might be greater than those of a hotel—yet a hotel’s sales and receipts would have more of an impact. Annual payroll, therefore, has been determined to be the best economic measure, i.e., the item represents a full calendar year and is a good indicator of relative economic impact.

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<sup>29</sup> As noted earlier, the methodologies used for the 2012 ESP and NAICS are identical so no information is provided in this section on NAICS.

## SOI

Each corporation is assigned an SOI category based on the principal business activity information provided on the corporation income tax return. In the instructions for the return, IRS states:

“This list of principal business activities and their associated codes is designed to classify an enterprise by the type of activity in which it is engaged to facilitate the administration of the produce the finished product, but retains title to the principal product or service of the Internal Revenue Code. Using the list of activities and codes below, determine from which activity the company derives entries the largest percentage of its total receipts. If the company purchases raw materials and supplies them to produce the finished product, but retains title to the product, the company is considered a manufacturer and must use one of the manufacturing codes (311110-339900).

## ISI Program

Each U.S. parent or foreign affiliate is classified by industry based on its sales (or for holding companies, based on its total income) in a three-step procedure. First, a given U.S. parent or foreign affiliate is classified in the NAICS sector that accounted for the largest percentage of its sales. Second, within the sector, the U.S. parent or foreign affiliate is classified in the three-digit subsector in which its sales were largest; a three-digit subsector consists of all four-digit industries that have the same first three digits in their four-digit ISI code. Third, within its three-digit sub-sector, the U.S. parent or foreign affiliate is classified in the four-digit industry in which its sales were largest.

## BRDIS

For BRDIS, NSF classifies enterprises based on research and development expenditures reported by firms on their survey forms, where they report these expenditures for each of the 205 business activity categories used for the survey. The enterprise classification is the activity with the largest expenditure.<sup>30</sup>

## ACES

To select the ACES category, a method similar to the ECS method is used. A filter-down process using payroll of operating establishments – excluding establishments classified as manufacturing sales branches and offices, central offices, (NAICS 551114), and “auxiliaries.” All private establishments outside the scope of the economic census are included. However, in the filter-down process there are several differences: ACES treats educational services, health care and social assistance, and management of companies and enterprises as sectors; within the largest sector, a primary 6-digit NAICS industry is selected from with the largest 3-digit, 4-digit, and 5-digit NAICS industries and then recoded to an ACE category.

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<sup>30</sup> Nonrespondents are classified using payroll data reported to the Census Bureau, who conducts the survey, with a step-wise process in which the largest sector is selected first, followed by the largest 2-, 3-, 4- or 5-digit NAICS industry code. In this process, certain corporate, subsidiary, and regional managing offices and auxiliaries are excluded.

### QFR

Each corporation in the QFR is required to provide a breakdown of gross receipts by source industry. These data are analyzed to determine the classification of each corporation. A reporting corporation is initially classified into the NAICS sector accounting for more gross receipts than any other NAICS sector. To be in scope for the QFR, more gross receipts of the reporting corporation must be accounted for by either (not a combination of) the NAICS Manufacturing sector; Mining sector; Wholesale Trade sector; Retail Trade sector; Information sector; or Professional and Technical Services sector, than by any other NAICS sector. After a corporation is assigned to a sector, it is further classified by the 3-digit NAICS subsector accounting for more gross receipts than any other 3-digit subsector within the sector. In certain cases, corporations are further classified into 4-digit industry groups. QFR data are published for these subsectors and industry groups, except when statistical criteria are not satisfied.

### Eurostat

Eurostat determines the primary activity of an enterprise group or enterprise using the value added of the establishments, or local units, and uses a “top-down” method to determine the primary activity. However, in contrast to the “filter down” method used for the ECS and other alternatives, which select the largest category within the largest sector, the Eurostat method first determines the largest section (sector), then the largest division in the sector, largest group in division, and then the largest class in the group.<sup>31</sup>

### StatCan

StatCan determines the primary activity using the value added or a close approximate of the establishments. It selects the 6-digit industry with the largest value added and does not use the “top-down” or “filter-down” method to determine the primary activity. The Canadian version of NAICS consists of 928 individual 6-digit industries, in contrast to the 1,063 for the United States. The two versions have the same number of 4-digit industry groups.

### GICS

Company classifications are assigned by Morgan Stanley Capital International (MSCI) and Standard and Poor’s (S&P) based primarily on revenues, although they also may use earnings or “market perception.” GIC classifications are assigned at the company level, but subsidiaries that file separate financials to a government agency are usually considered a separate entity and classified independently. Classifications are reviewed annually but a GIC will be changed whenever there is a major corporate action that redefines a company’s primary activity.

### Survey of Business Owners

Most companies are assigned a detailed NAICS industry classification based on the establishment industry with most sales and receipts. Large multi-establishment companies are assigned a NAICS code using the ACES classification, which is determined as described above. For sample cases based on administrative records, detailed NAICS industries may not

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<sup>31</sup> For additional details, see *NACE Rev.2*, Chapter 2, Eurostat Methodologies and Working Papers.

be assigned because of a lack of information. (This program covers firms with and without paid employees.)

## Section C: 2007 Prototype Tables

### Introduction

As reported in the 1992 ESP publication, the purpose of the ESP is to provide tabulations featuring various characteristics of the firms that own or control the establishments reported in the economic census. Seven of the 2007 prototype tables cover two of these characteristics – employment size and extent and nature of industrial diversification. The tables do not cover sales and receipts size, legal form of organization, extent and nature of merger and acquisition activities, or geographic location because 2007 data were not available (sales-size) or the data were not extracted from the establishment records used to develop the new enterprise classification system. On the other hand, a table on firms with no paid employees by industry is included for the first time.

The prototype tables for a restored enterprise statistics program were prepared using the final 2007 Economic Census records for establishments with and without paid employees as well as using related records of domestic establishments primarily engaged in industries not covered in the 2007 Economic Census (out-of-scope).<sup>32</sup> In addition, not all important data items collected on the 2007 establishment report forms, such as value added and inventories, were selected for the prototype tables. Such items were excluded because they were not collected on all 2007 Economic Census establishment report forms and the prototype tables show data for all industries covered in 2007.

The content of the initial set of prototype tables developed for this 2007 report was limited to information on employment size and selected measures of the extent and nature of industrial diversification. The limitations related to both an effort to keep the prototype tables relatively small and to minimize the amount of work necessary to conduct disclosure analysis. Two of the prototype tables were reduced in size by showing full level detail for each sector, but only the number of companies is shown for each industry category to eliminate the need for disclosure analysis. Tables on sales and receipts size were not prepared because of the lack of enterprise sales data. Tables of legal form of organization, foreign operations, foreign ownership, and mergers and acquisitions were not included because the information necessary to prepare them was not extracted from the detailed files primarily to reduce the cost of the contract under which this paper was prepared. Tables on geographic location also were not prepared primarily to avoid extensive disclosure analysis. Tables on extent and nature of diversification were limited because of disclosure considerations, the size of the report, as well as table design considerations. For example, the table showing the diversification of enterprises classified in each ECS category (Table B3) is not presented in a

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<sup>32</sup> Data for these firms are not included in the other prototype tables of this enterprise statistic report or in most 2007 Economic Censuses reports because they are not available at the same level of industry coding as the data for firms with paid employees. The number of and sales and receipts by these firms by industry are published annually by the Census Bureau in a separate *Nonemployer Statistics* report.

matrix format that would also have shown information about the ownership of establishments classified in each industry.

The final set of 2007 prototype tables, which also were designed to facilitate disclosure analysis, consisted of eight tables. The first seven tables present data on firms with paid employees; the last table presents data on nonemployers. The three tables beginning with the letter “A” present establishment data by characteristic of their owning companies. The remaining four tables, which begin with the letter “B,” present enterprise data by characteristics of the establishment they own. The data on nonemployer firms are presented in Table C.<sup>33</sup> The full set of 2007 tables with data that have been subjected to the Census Bureau’s disclosure analysis are available in a separate file as shown in the last section of this paper.

The remainder of this section provides details on the following aspects of the eight prototype tables for the 2007 enterprise statistics report: Firms covered, industries covered, data items included, underlying micro data, and basic tables.

### **Firms Covered**

The Census Bureau has used two main sources of information to compile the economic censuses since 1954. Federal income tax returns provide all of the information for firms with no paid employees (nonemployers); Census Bureau forms, supplemented with information from tax returns, provide the information for firms with paid employees.<sup>34</sup>

For the 2007 Economic Census, with one exception, the industry, geography, and special subject reports cover only firms with paid employees. The exception is the “Economy-Wide Key Statistics” table, which shows establishment counts and sales and receipts for both firms with paid employees and for nonemployer firms. This limited presentation of combined data primarily reflects the fact that because information for nonemployer firms are derived only from Federal income tax returns, there is limited information on industry classification and complete NAICS detail is not available.<sup>35</sup>

For the proposed prototype 2007 enterprise statistics report, the data in the basic tables also cover only firms with paid employees. Table C shows the number of establishments and companies and the sales and receipts of firms with no paid employees. Because of the limited level of industry coding for nonemployer firms, this table shows the data for nonemployer firms either for the equivalent ECS category or for ECS categories grouped to match the available level of industry coding. The exclusion of data for nonemployers from

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<sup>33</sup> Data for these firms are not included in the other prototype tables of this enterprise statistic report or in most 2007 Economic Censuses reports because they are not available at the same level of industry coding as the data for firms with paid employees. A separate *Nonemployer Statistics* report is published annually by the Census Bureau and presents the number of and sales and receipts by these firms by NAICS industry.

<sup>34</sup> For firms with paid employees, tax returns are used as substitutes for Census forms for small businesses. The annual Census Bureau report *Nonemployer Statistics* describes the derivation of the nonemployer data.

<sup>35</sup> These tables for firms with paid employees also show the detailed types of data collected on economic census forms such as product sales and receipts, inventories, capital expenditures, and purchased services. Only sales and receipts are available from the income tax returns.

the basic enterprise tables has the greatest impact on the number of establishments and companies, which for nonemployer firms are assumed to be the same – i.e., they are assumed to operate only a single establishment. Because nonemployer firms have no paid employees, the exclusion of these firms from the basic tables has no impact on information on the major measures of diversification and firm size.<sup>36</sup>

For industries covered in the 2007 Economic Census, there were 28.6 million firms, of which those with paid employees accounted for about 25 percent. For sales and receipts, these firms with paid employees accounted for 97 percent of the total.

### **Industries Covered**

The 2007 Economic Census covered all private establishments, except those primarily engaged in the following NAICS industries:<sup>37</sup>

<u>NAICS</u>	<u>Description</u>
11	Agriculture, forestry and fishing and hunting
482	Rail transportation
525	Funds, trusts, and other financial vehicles
6111	Elementary and secondary schools
6112	Junior colleges
6113	Colleges, universities, and professional schools
8131	Religious organizations
81393	Labor unions, political, and similar labor organizations
81394	Political organizations
814	Private Households

The 2007 Economic Census also covered selected activities of government. These establishments consisted of hospitals, liquor stores, university press publishers, and Federal Reserve Banks. Except for the Federal Reserve banks, which were not covered at the time of the last (1992) enterprise statistics report, covered government establishments are included in the prototype 2007 enterprise tables. (See the section on “Changes for 2012” for a recommendation to review treatment as the focus of the enterprise report is on the private sector.)

In addition to excluding Federal Reserve banks (NAICS 5211) as within scope for the prototype 2007 enterprise statistics report, two changes were made to the industry classification 2007 Economic Census establishment records. Establishments providing certain service activities for other establishments of the same company were classified as

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<sup>36</sup> The prototype tables do not include distributions by firm sales size because net sales and receipts for large companies were not available for 2007. These data are scheduled for collection for 2012. Consequently, it would important for a 2012 enterprise statistics report to show distributions for all firms.

<sup>37</sup> As in previous enterprise statistics reports, establishments classified in these industries were excluded from the 2007 enterprise statistics report except when they were owned by firms that were primarily engaged in in-scope industries. Employment and payroll data for these activities were obtained from the Report of Company Organization (Company Organization Survey) and included in the Bureau’s business register.

“auxiliaries” and not in the industry that covers these services, such as warehousing and storage and research and development. (This change makes the treatment of these establishments consistent with that of central administrative offices (NAICS 551114), which is to consider them as “non-operating” establishments and not considered in assigning an enterprise industry classification.)

## **Data Items Included**

Ideally, the enterprise report should show data items for enterprises from two sources – economic census establishment reports and special enterprise-level surveys.

### Data from Establishment Reports

Other than counts of companies and establishments, only three data items are collected at the establishment level for all in-scope industries -- employees, annual payroll, and sales or receipts.<sup>38</sup> (For out of scope establishments, only employment and payroll data are collected.) Other data items, including inventories and cost of materials, are collected from establishments, but only for selected industries. These items are excluded from the enterprise report because of the difficulty of estimating them for establishment in the other industries. Another set of data items, mainly business expenses, is collected in sample surveys for groups of establishments of the same company. These items also are excluded from the enterprise report because the items are not available for all in-scope industries and because of the difficulty of allocating the collected values to the NAICS industry level.

For sales or receipts, aggregating establishment records cannot routinely be used to estimate enterprise sales.<sup>39</sup> For example, estimating enterprise sales by aggregating establishment sales and receipts for multiunit firms even where all of the operating establishments (in-scope establishments except for central administrative offices and auxiliaries and manufacturers' sales branches and sales offices) are classified in the same 6-digit North American Industry Classification System (NAICS) industry, will result in overstating enterprise sales because of intra-firm transfers or because one plant includes the sales force that handles all the sales and reports total enterprise sales. For more diverse enterprises, summing the establishment detail will lead to significant duplication due to summing these transfers. Thus, for sales and receipts of firms with paid employees, the presentation in the 2007 prototype enterprise statistics reports is limited to certain levels of industry detail in tables A1 and A2A, which feature establishment data and in tables B1, B2A, and B3 that feature company data. The limitations in Tables A1 and A2A reflect the lack of sales and receipts data for establishment not covered in the 2007 Economic Census. The limitations in tables B1, B2A, and B3 reflect the lack of unduplicated net sales and receipts for large multi-establishment firms and the lack of a methodology to estimate reliably net sales and receipts. Net sales and receipts for

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<sup>38</sup> See Attachment B for the definitions of these data items.

<sup>39</sup> For most single-unit firms, the reported establishment data is the correct amount. However, where the census bureau specifies that respondents should exclude sales tax, such as for retail trade, sales taxes should be added. Also, business receipts obtained from income tax returns include such sales taxes. There appear to be no specific instructions on the 2012 ROO form regarding sales taxes, but it is likely that GAAP also asks that these taxes be included.

firms with no paid employees are shown in Table C because for single establishment firms, net company sales is almost always the same as establishment sales.

### Data from Enterprise Surveys

In some previous economic censuses, enterprise data were collected and used in the enterprise statistics report on net unduplicated sales and receipts and on data items collected only from the establishment reports for selected industries. Such data were not collected in 2007.<sup>40</sup> For the 2012 Economic Census, the Report of Organization will include data on net sales and receipts as well as on royalties and licenses fees for the use of intellectual property; and research and development.

### Data by Company Characteristics

Employment size for each enterprise is determined by summing the employment for all establishments of the company. In Table B2A, establishment data for each enterprise category are shown for four enterprise size classes – more detailed size classes but only for the number of companies are shown in Table B2B. The primary industry specialization of each company is calculated as the ratio of the sum of establishments classified in the same enterprise category as the owning company divided by the sum of all operating establishment of the owning company; data for manufactures' sales office and sales branches, central administrative offices, and auxiliaries are excluded from the calculation of the industry specialization ratio. For each enterprise industry category In Table A2A, the establishment data are shown separately for companies whose establishments are classified in a single industry category (100% industry specialization or single-industry companies) and for those whose operating establishments are classified in more than one industry category (under 100% specialization or multi-industry companies). Industry specialization provides a summary measure of the extent to which a company operates in multiple industries. In Table A2A, it shows the extent to which establishments in a category are owned by diversified or non-diversified firms.<sup>41</sup>

### **Underlying Micro Data**

The underlying micro data used for the research under this contract started with the preliminary 2007 Economic Census establishment records, both in and out-of-scope, used to select the sample for the Annual Capital Expenditures Survey (ACES). In mid 2011, this file was replaced by the final Economic Census establishment records. The data shown in the prototype tables and the data used to finalize the proposed enterprise industry classification system described in section C of this report are the final 2007 establishment records.<sup>42</sup>

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<sup>40</sup> The Census Bureau also collects enterprise-level data for new capital expenditures and research and development expenditures. Because these data are collected on a sample basis, integrating these data into the underlying establishment data file used for the ESP will require the development of new methodologies. At the establishment level, data for inventories and business expenses are collected for certain industry sectors. Integrating these data into the establishment data file used for the ESP also will require new methodologies.

<sup>41</sup> Because most of the enterprise industry categories consist of more than one NAICS industry, a single-industry company can have establishments in more than one NAICS industry; it also can have more than one establishment.

<sup>42</sup> In the development of the enterprise classification, most of the research on patterns of industrial diversification was conducted using the preliminary records.



As in past ESP programs, the establishment records were edited to identify “impossible enterprises and establishments.”<sup>43</sup> However, unlike past Economic Census, it was not possible to correct the establishment data records to resolve the discrepancies because the ESP editing of the 2007 was not conducted during the data processing phase. Thus, it was necessary to drop certain records from the micro data file used for the prototype 2007 tables and cause the data in these tables to differ from the published 2007 Economic Census reports.<sup>44</sup>

In addition, to preserve the concept of operating establishments that underlies the basis for determining enterprise classification, it was necessary to reclassify establishments known as auxiliaries as defined under the previous Standard Industry Classification (SIC) system.

Another part of the 2007 ESP that differs from previous programs was that one industry within the scope of the Economic Census was considered as out-of-scope. The exception was made for NAICS industry 5211, Monetary Authorities—Central Bank, which covers the privately owned District Federal Reserve Banks. There are too few of these banks and they are unique in nature.

## **Basic Tables**

The prototype 2007 enterprise statistics report will have eight tables and related classification information. The complete tables are available on the ESP website. The prototype tables were designed to show potential users of the enterprise data the major types of information that would be included in a full program. To reduce the size of these tables and number of suppressed cells, statistics in several tables are limited. For example, in Table B2A, statistics have been limited to the number of companies and establishments and employment at the “all industries” and sector levels, and number of companies and employment at the total industry category level.

The prototype tables capture most of the types of data shown in previous enterprise statistics reports. Some types of data were omitted from the prototype tables because of the limited time to develop them – e.g., geographic distributions and legal form of organization. Other data were omitted because the data needed to produce them were no longer available – e.g., net company sales and receipts and business expenses. Finally, tables show only data for 2007; comparable data for earlier years is not available.

The eight prototype tables are as follows; a set of explanatory notes is available on the ESP website.

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<sup>43</sup> These “impossible” cases were largely enterprises for which there were no in-scope operating establishments – i.e., they consisted only of central offices, auxiliaries, and manufacturers’ sales branches and offices. Also deleted were out-of-scope records of primarily out-of-scope enterprises. On the other hand, establishments whose sales and receipts were significantly understated, were not removed from the file.

<sup>44</sup> The amount of these differences has not been tabulated for this report. They should only be significant for those industries that include the reclassified auxiliaries, such as warehousing and research and development.

**Table A1. Selected Statistics for Establishments Classified in Each Industry Category, by Detailed Classification Status of Company: 2007**

Table A1 presents selected statistics collected in the 2007 Economic Census for establishments with paid employees by the equivalent enterprise industry category and sector classification system used in this prototype 2007 enterprise statistics report.

**Table A2A. Selected Statistics for Establishments Classified in Each Industry Category by Employment Size Class and Primary Industry Category Specialization of the Company, 2007.** Table A2A distributes the 2007 Economic Census establishment statistics shown in Table A1 by two characteristics of their owning companies – employment size and industry specialization.

**Table A2B. Number of Companies with Establishments Classified in Each Industry Category by Employment Size Class and Primary Industry Specialization of the Company, 2007.** Table A2B provides expanded detail on the establishment data shown in Table A2A. The number of employment size classes is expanded from four to ten; the industry specialization category for multi-industry companies is expanded to show quartiles. Unlike Table A2A, only the number of companies is shown at all levels.

**Table B1. Selected Statistics for Companies Classified in Each Industry Category, 2007.** Table B1 presents selected statistics collected in the 2007 Economic Census for establishment records of firms with paid employees for companies classified in each of the 376 enterprise industry categories and their sectors.

**Table B2A. Selected Statistics for Companies Classified in Each Industry Category by Employment Size Class and Primary Industry Category Specialization of the Company, 2007.** Table B2A distributes several of the company statistics shown in Table B1 by two company characteristics – employment size and industry specialization.

**Table B2B. Number of Companies Classified in Each Industry Category by Employment Size Class and Primary Industry Category Specialization Of the Company, 2007.** Table B2B provides expanded detail for the company characteristics data shown in Table B2A. The number of employment size classes is expanded from four to ten; the industry specialization category for multi-industry companies is expanded to show quartiles. Unlike Table B2A, only the number of companies is shown at all levels.

**Table B3. Selected Statistics of Companies in Each Enterprise Industry Category, by the Industry Category of Establishment, 2007.** Table B3 shows the extent and specific nature of industrial diversification patterns reported in at the detailed enterprise industry category level and of the companies that own establishments in each industry category. Thus, table B3 can be thought of as a matrix whose columns show the detailed establishment industries of the companies classified in each industry and rows show the detailed company industries of the establishments in each industry category.

**Table C. Selected Statistics for Nonemployer Firms in the Economic Census by Enterprise Industry Category, 2007.** Table C provides the number of, and sales and receipts for, firms

with no paid employees or “nonemployer” firms. Data for these firms are not included either in the Tables A1 – Table B3 of this enterprise statistics report.

**Appendix A. Enterprise Industry Classification Sectors and Categories and Equivalent 2007 Economic Census (NAICS) Industries.** The purpose of this appendix is to show the composition of each enterprise industry category in terms of detailed NAICS industries.

## **Section D: Annual Updating of Enterprise Classifications after 2012**

### **Introduction**

A major issue for any ongoing survey may be how and when to incorporate new information that changes the enterprise classification of a unit, whether it is an enterprise, an establishment, or some other reporting unit.<sup>45</sup> Industry reclassification is an issue because information available between economic censuses is limited usually to only the largest firms. Also, when such new information calls for a change in the primary classification, the change may not be “permanent” and reversed the next year or quarter. To avoid limiting the usability of the resulting time-series data, only “permanent” changes should be made.

Survey managers try to control for spurious classification changes by relying on analyst or survey manager reviews or the application of quantitative “resistance rules.” In the first part of this section, the rules used for several enterprise statistics programs and the Annual Survey of Manufactures (ASM) are summarized, followed by recommendations for the 2012 ESP.<sup>46</sup>

### **Classification Updating in Selected Enterprise Programs**

#### **BEA International Survey Industry (ISI) Related Programs**

According to the Chief of BEA’s International Investment Division, ISI codes are computer checked to determine if they have changed. For these cases, a survey editor reviews the reported data to ascertain the reason for and significance of the change.

If the organizational structure of the enterprise changed due to mergers, acquisitions, and/or divestitures, the editor will fully document the facts and obtain the approval of a management official before the primary industry code is changed in the data file.

If the change in the primary industry code was caused by the introduction of a new product line or the discontinuance of a previously existing product line, the editor will conduct further research to determine if the change is expected to continue into the future, in which case the procedure is the same as that mentioned in the paragraph above. If the change is deemed temporary in nature, the editor will note this in the data file for future reference, but take no action to change the industry code.

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<sup>45</sup> These changes may not be a major issue for enterprise surveys, such as ACE where the enterprise classification is used only to select the survey sample and not to organize the presentation of the published data.

<sup>46</sup> Section E also includes a recommendation

In many instances it is difficult, even for the survey respondent, to determine whether changes due to fluctuations in the levels of sales by industry (product lines) will continue into subsequent reporting periods. When this is the case, BEA will generally wait until the next reporting period to confirm that the change is not a one-year aberration. If the sales levels by industry are repeated in the next reporting period, the editor will fully document the facts and obtain the approval of a management official before the code is changed in the data file.

The procedures stated above are applied equally to all surveys, including BEA's benchmark surveys of U.S. direct investment abroad and foreign direct investment in the United States. In other words, BEA does not give more weight to information provided on a benchmark survey report than any other report when deciding on an industry change.

#### IRS, Corporate Statistics of Income (SOI)

According to the Chief of the Corporate SOI branch, they use the principle business activity as reported by the corporation annually on the corporate tax return. If this code differs from the prior year, they conduct a judgmental review to determine whether to change the primary industry activity.

#### Census Bureau, Annual Capital Expenditures Survey (ACES)

According to the ACES program manager, the industry code is based on the latest information in the Census Bureau's business register. Industries in which the company operates, based on the business register are preprinted on the survey forms, and respondents are asked to correct the industry category codes and report capital expenditures for each industry in which they operate. For companies involved in mergers and acquisitions, the business register (classification office) staff determines new enterprise classifications.<sup>47</sup> The enterprise classifications for other firms are only updated when a new sample is drawn.

#### Census Bureau, Quarterly Financial Report (QFR)

According to the QFR program manager, enterprise industry classifications that change are identified from the IRS list provided to the Census Bureau to maintain the survey sample. In addition, respondents also provide information on their business receipts that might indicate an enterprise classification change. Changes are reviewed by the Census Bureau's classification office for decisions on implementing these changes.<sup>48</sup>

#### NSF, Business Research and Development and Innovation Survey (BRDIS)

Information had been requested, but not yet provided for this program, whose survey forms are similar to those used for ACES, but whose publication program includes data by primary enterprise industry classification.

#### Eurostat

For updating the classification of an enterprise, Eurostat uses a "stability rule" to avoid making frequent changes to classifications are based on a plurality. Under this rule, changes

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<sup>47</sup> Written criteria for determining enterprise classification changes for mergers and acquisitions were not provided for this report.

<sup>48</sup> See footnote 37.

are made when a primary activity that accounts for less than 50 percent of the total enterprise is primary for at least two years.

#### Establishment classification updating in the Census Bureau's, Annual Survey of Manufacturers (ASM)

For each year except for the year of an economic census, industry codes are compared to prior year records. For sample establishments, the historical code is used. For certainty cases, if the record matches an historical code, then that code is used unless shipments for the new code accounts for 60% or more of the establishment shipments. Then, the new code is used. The new code also will be used if the new code accounts for less than 60% of the establishment's shipments but is 20% greater than the same code's value in the previous period.

#### **Recommendations for Post-2012 Enterprise Statistics Program**

Information available to update the enterprise industry categories for post 2012 enterprise statistics programs will come from several sources: the Annual Report of Organization that feeds into the business register and annual and quarterly survey data. These programs should deal with the problems of mergers, acquisitions, and dispositions. However, they typically do not deal with when to change an enterprise code. To minimize volatility in the ESP industry series, the lead of the ASM should be followed and specific criteria based on the change in the firms primary category industry specialization ratio to determine when codes should be change. Because it has not been possible to test criteria on "live" data, a starting point should be a 5 percentage points or more change in a single year to cause the assignment of a new code.<sup>49</sup>

### **Section E: Changes for 2012**

This section presents suggestions for improving the 2012 ESP and related ECS in the following areas:

- Redefining the coverage of the ESP;
- Improve editing and processing of the economic census establishment records;
- Estimating value added for all establishments;
- Expanding data items presented in the ESP report;
- Expanding tables in the ESP report;
- Improving the ECS;
- Noise infusion.

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<sup>49</sup> The criteria used for the ASM are not relevant because the specialization ratio of establishments is much higher than the specialization of large multi-industry companies.

## **Redefining the Coverage of the ESP**

To improve the use of the 2012 enterprise reports for measuring the extent and nature of diversification and firm-size of U.S. firms, all government establishments should be dropped from the scope of the enterprise statistics program. These establishments, although important for the coverage of the specific industries, are not relevant to the main purposes of the ESP. Furthermore, the inclusion of government establishments currently applies only to selected industries – e.g., government operated utilities are not covered. NAICS calls for all business-type government establishments to be classified in the appropriate NAICS industry.<sup>50</sup> The current partial coverage in the economic census suggests the need to review whether the Census Bureau should drop them all from the economic census, as they are covered in the Census of Governments.

A major limitation of the ESP as a source of data on diversification by U.S. firms is the omission from the underlying establishment records of establishments of U.S. companies outside the United States. Some of these establishments are identified on the Census Bureau’s business register and others are available in BEA’s international surveys records. Although there are significant definitional issues to be resolved, the addition of the foreign operation would greatly improve the ESP as a source of information on diversification.

## **Improve Editing and Processing of the Economic Census Establishment Records**

Editing of the 2012 Economic Census establishment records for “impossible firms” should be conducted early enough so that corrections can be introduced into final 2012 economic census establishment records. These corrections will reduce substantially or eliminate differences between the establishment data published in the regular census reports and the ESP.<sup>51</sup> Also early editing should be conducted for incorrect sales data. In the review of the ESP company employment size tables, many establishments were identified whose sales or receipts data were grossly inconsistent with its employment data. Although it did not impact the prototype 2007 tables because there are no tables showing enterprise sales size distributions, failure to correct sales and receipts data in 2012 may make it necessary to use sub-optimum sales size ranges to hide the errors. (It was not feasible to correct the sales data for the preparation of the 2007 prototype tables.) Editing of this type should be conducted as part of the regular Economic Census processing so that corrections can be carried to the final establishment record file and reports.

Another possible source of substantial errors in the ESP is the failure to identify auxiliaries so they can be treated as non-operating establishments. The process that is used to identify auxiliaries needs to be maintained to prevent new establishments from being miscoded.

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<sup>50</sup> The BLS follows NAICS for the Quarterly Census of Employment wages program. The classification review undertaken under the new BLS-Census Bureau data sharing agreement should facilitate this change.

<sup>51</sup> For example, early editing and correction would have resulted in the reclassification of a large central office to the main location of a major franchisor. Because enterprises in the ESP records must have at least one operating establishment, the central office was deleted.

A problem arose in using the 2007 Economic census establishment file because of the process in the Census by which non-certainty construction single establishment firms are converted to multi-establishment firms with a non-construction industry establishment. The current process creates problems for matching the establishment data from the economic census and results in the assignment of incorrect enterprise classifications. The process needs to be reviewed and changed. An easy fix would be to change the weights for these firms to certainty.

To improve the establishment record file used for the 2012 ESP, the following additional information should be extracted from the 2012 Economic Census establishment records:

- Geographic code
- Industry codes for manufacturing sales branches and office and industries outside the scope of the censuses
- Industry code for auxiliaries
- Industry of establishments serviced by central offices
- Legal form of organization
- Ownership of foreign establishments
- Ownership by foreign entity
- Details on capital expenditures, fixed assets, supplemental labor cost, and business expenses (if available).

In implementing the process of updating the ECS categories as discussed in the Section D, all methodologies used by the Classification branch or other organizations who work with Business Register to update the classifications of enterprises in other Census Bureau surveys should be documented and reviewed to ensure that the same principles are being applied to all surveys.

### **Estimation of Value Added for All Establishments**

In the section analyzing differences between the ECS and alternative enterprise classification systems, it was noted that where there are more categories in an alternative than in the ECS, the explanation may lie with the use for the ECS of employment as the size criteria or payroll to classify enterprises, rather than value added, which is generally considered to be the best measure of an industry's contribution to economic activity.<sup>52</sup> Because the relationship of value-added per employee and payroll as a percentage of value added differ widely by industry, it would have been desirable to convert employment and payroll to value added. However, doing this conversion would have been beyond the scope of this report. Thus, an adjustment was made to the size criteria at the sector level, as described earlier, but not within the sector. Looking ahead to 2012, the Census Bureau should initiate a research effort using data collected on the establishment reports and in the Business expense and Service annual survey reports as well as tax return records and BEA's input output and industry accounts to prepare such value added estimates.<sup>53</sup> Not only would the availability of these

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<sup>52</sup> See *System of National Accounts, 2008*, paragraph 1.17, United Nations Statistical Division. Also, the 2002 NAICS Manual notes that the ideal measure as the "share of current production costs and capital investment."

<sup>53</sup> Statistics Canada makes such estimates of value added for use in its process of assigning enterprise classifications.

estimates result in an improved ECS but also they would provide useful data for many users, including the Economic Coordinating Policy Committee in the improvement of NAICS.<sup>54</sup>

### **Improving the ECS**

When the categories were determined, it was assumed that totals for each detailed NAICS industry were publishable. In one case, Securities and commodity exchanges (NAICS 523210), totals could not be published at the United States level, and data for All other financial investment activities (NAICS 52399) were suppressed as a complementary suppression.<sup>55</sup> Failure to take this into account resulted in the suppression of the U.S. totals for two ECS categories. Such suppressions might be avoided for 2012 by taking them into account in determining the ECS. In addition, the number of suppressed cells in tables A1 and B1 indicate that the criteria for a minimum number of 20 multi-industry companies needs to be reviewed. For categories where there were a small number of multi-industry companies that were dominated by a few large firms, it was necessary to suppress the “same industry category” for almost 20 categories.<sup>56</sup> However, the fact that only a small number of large diverse firms operate in these industries may be important to users. There also were about 15 categories where exceptions were made to the 50,000 and 100,000 employee size criteria for the ECS. For 2012, these exceptions should be reviewed but they may need to be continued, as many of them were 3-digit NAICS industries. (See attachment A for a complete list of all exceptions.)

### **Expansion of Data Items Presented in the ESP Report**

The 2012 report should be expanded to include the net company sales data from the 2012 Report of Organization and the methodology for estimating sales and receipts of small multi-establishment firms as in the 1992 ESP should be refined to better approximate net company sales. In consultation with users, consideration should be given to adding value added, new capital expenditures, and change in inventories for selected industries and tables.

### **Expansion of Tables in the ESP Report**

Tables should be added to show enterprise data by company sales and receipts size, legal form of organization, and region or state. Tables should be added to show data for both 2007 and 2012, including a special table showing changes to the enterprise data from the impact of mergers and/or acquisitions by large (employment of 500 or more) companies. For Tables A1 and Table B3, additional detail should be included on the NAICS industry of auxiliaries and establishment outside the scope of the 2007 Economic Census, and detail on the industry of establishments serviced by central administrative offices. Data availability should not be

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<sup>54</sup> Value added estimates would not be needed for establishments outside the scope of the economic censuses so that determination of whether a company is primarily in scope would continue to be based on payroll.

<sup>55</sup> In the County Business Patterns report, data for neither NAICS 523210 nor NAICS 52399 were suppressed, but data for Other depository credit intermediation (NAICS 522190) and Open end investment funds (52591) were suppressed. The latter industry was outside the scope of the 2007 economic censuses.

<sup>56</sup> This aggregate appears as column (b) in both tables A1 and B1.



limited to “report-type” tables but include interactive tables available on line.<sup>57</sup> Most important would be a means to access a version of Table 3B showing full NAICS industry detail of the establishments. In addition, the employment data in Table B3 should be presented in a matrix form.

### **Noise Infusion**

If this methodology were to be adopted for establishments with paid employees in the 2012 Economic Census, an additional “control” would be needed to prevent a large diverse firm’s enterprise classification being influenced by the establishment “multiplier.” The 1996 Zayatz et al. paper on noise infusion that reports on the noise infusion methodology, states: “Thus in order to protect establishments from each other within the same company, each establishment in the company should have a slightly different multiplier.” For the enterprise classification, the use of different multipliers would influence both employment and payroll and could affect the classification of the company. Because it would best not to have the multipliers influencing enterprise classification, before noise infusion is introduced into the 2012 Economic Census, some testing should be conducted to test the possibility of the occurrences of such an outcome and how to prevent them.

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<sup>57</sup> The proposed enterprise report and tables should not be included in the American Fact Finder as it is currently designed. The report is new so that potential users must be able to access its data and methods without prior knowledge of its contents.

## Attachment A: ECS Categories and Constituent 2007 NAICS Industries That Did Not Meet ECS Criteria or Follow NAICS Hierarchy

### ECS criteria are:

- **For all industries**, an industry specialization ratio (ISR) for both employment and payroll of three fifths or more and at least 20 multi-industry companies;
- For industries in Construction; Retail trade; Transportation and warehousing, except Air, Water, and Pipeline transportation; Administrative and support services; and service industries NAICS 61 – 81, a minimum of 100,000 employees;
- For all other industries, a minimum of 50,000 employees.

Criteria that are not met are shown in bold type.

2007 NAICS	ECS or 2007 NAICS Title	ECS	Employment	Industry Specialization Ratio (ISR)		Multi-industry enterprises
				Employment	Payroll	
2121	Metal Ore Mining	212B	<b>35,459</b>	89	91	<b>15</b>
--	Support Activities for Solid Mineral Operations	213C	<b>19,509</b>	91	92	<b>14</b>
213113	Support Activities for Coal Mining					
213114	Support Activities for Metal Mining					
213115	Support Activities for Nonmetallic Minerals (except Fuels) Mining					
2213	Water, Sewage and Other Systems	221D	<b>39,367</b>	97	97	34
2372	Land Subdivision	237D	<b>56,086</b>	95	96	57
3122	Tobacco Manufacturing	312C	<b>32,754</b>	88	75	<b>14</b>
316	Leather and Allied Product Manufacturing	316A	<b>33,587</b>	88	90	29
32312	Support Activities for Printing	323C	<b>44,233</b>	97	96	25
3322	Cutlery and Handtool Manufacturing	332B	<b>46,231</b>	85	84	50
45431	Fuel Dealers	454D	<b>96,385</b>	88	90	217
486	Pipeline Transportation	486A	<b>35,469</b>	69	76	<b>17</b>
487	Scenic and Sightseeing Transportation	487A	<b>22,567</b>	93	94	21
533	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	533A	<b>27,814</b>	81	95	63
621320	Offices of Optometrists	621D	<b>98,426</b>	100	99	38
7131	Amusement Parks and Arcades	713A	<b>76,788</b>	97	97	35
--	Skiing Facilities and Marinas	713D	<b>96,474</b>	94	94	52
713920	Skiing Facilities					
713930	Marinas					

**Categories with below-criteria industry specialization (8)**

2007 NAICS	ECS or 2007 NAICS Title	ECS	Employment	Industry Specialization Ratio (ISR)		Multi-industry enterprises
				Employment	Payroll	
3241	Petroleum and Coal Products Manufacturing	324A	265,887	40	57	84
33312	Construction Machinery Manufacturing	333B	122,969	65	54	49
--	Other Electronic Product Equipment Manufacturing	334E	650,265	53	54	239
3345	Navigational, Measuring, Electrometrical, and Control Instruments Manufacturing					
3346	Manufacturing and Reproducing Magnetic and Optical Media					
--	Electric and Electrical Equipment Manufacturing	335B	288,061	64	57	108
3351	Electric and Lighting Equipment Manufacturing					
3353	Electric and Lighting Equipment Manufacturing					
3361	Motor Vehicle Manufacturing	336A	392,630	56	55	24
3364	Aerospace Product and Parts Manufacturing	336E	826,146	51	50	66
515	Broadcasting (except Internet)	515A	430,359	57	67	121
523110	Investment Banking and Securities Dealing	523A	160,707	58	77	81

**Categories with only below-criteria multi-industry enterprises (5)**

2007 NAICS	ECS or 2007 NAICS Title	ECS	Employment	Industry Specialization Ratio (ISR)		Multi-industry enterprises
				Employment	Payroll	
23832	Painting and Wall Covering Contractors	238I	235,633	99	99	19
3352	Household Appliance Manufacturing	335A	66,015	89	88	16
4521	Department Stores	452A	1,260,622	87	85	14
541921	Photography Studios, Portrait	542G	79,002	98	98	19
81219	Other Personal Care Services	812B	112,243	100	99	19

**Categories with deviations from NAICS hierarchy (2)**

<b>2007 NAICS</b>	<b>ECS or 2007 NAICS Title</b>	<b>ECS</b>
--	Banking	522A
522110	Commercial Banking	
551111	Offices of Bank Holding Companies	
--	Office Services	561A
561110	Office Administrative Services	
551112	Offices of Other Holding Companies	