

The 34th Meeting of the Voorburg Group on Service Statistics

Paris, France, 30 September – 4 October 2019

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ISIC 5812 – Publishing of Directories and Mailing Lists
ISIC 5813 – Publishing of Newspapers, Journals, and Periodicals

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1. Description and Characteristics of the Industry

1.1 Definition of the Industry

ISIC class **5812, Publishing of directories and mailing lists**, and **5813, Publishing of newspapers, journals and periodicals** and their NAICS (North American Industry Classification System) counterparts (511140, 511110, and 511120) are defined in the tables below.

This report will refer to the industries by their NAICS, which is the classification system used in the United States. In addition, the terms revenue, receipts, and turnover will be used interchangeably.

ISIC Rev. 4 Class	NAICS (2017-Basis)
5812 - Publishing of directories and mailing lists	511140 - Directory and Mailing List Publishers
<p>Includes the publishing of lists of facts/information (databases) that are protected in their form, but not in their content. These lists can be published in printed or electronic form. This class includes:</p> <ul style="list-style-type: none"> • publishing of mailing lists • publishing of telephone books • publishing of other directories and compilations, such as case law, pharmaceutical compendia etc. 	<p>This industry comprises establishments primarily engaged in publishing directories, mailing lists, and collections or compilations of fact. The products are typically protected in their selection, arrangement and/or presentation. Examples are lists of mailing addresses, telephone directories, directories of businesses, collections or compilations of proprietary drugs or legal case results, compilations of public records, etc. These establishments may publish directories and mailing lists in print or electronic form.</p>
5813 - Publishing of newspapers, journals and periodicals	511110 - Newspaper Publishers
<p>This class includes:</p> <ul style="list-style-type: none"> • publishing of newspapers, including advertising newspapers • publishing of periodicals and other journals, including publishing of radio and television schedules <p>Publishing can be done in print or electronic form, including on the Internet.</p>	<p>This industry comprises establishments known as newspaper publishers. Establishments in this industry carry out operations necessary for producing and distributing newspapers, including gathering news; writing news columns, feature stories, and editorials; and selling and preparing advertisements. These establishments may publish newspapers in print or electronic form.</p>
	511120 - Periodical Publishers

It should be noted that firms are primary to NAICS 519130 – Internet Publishing and Broadcasting and Web Search Portals if they publish *exclusively* over the Internet. However, firms that publish in both traditional print formats and Internet formats are classified in either 511110, 511120, or 511140.

1.2 Market Conditions and Constraints

Industry Size and Concentration

The table below highlights the importance of NAICS 511110, 511120, and 511140 relative to the entire information sector (NAICS 51) of the U.S. economy. Based on data published from the 2007 and 2012 Economic Census, one can see that the size of these industries in terms of overall turnover has decreased substantially and has become a smaller proportion of the sector total.

NAICS Level	Value of sales, shipments, receipts, revenue, or business done (\$1,000)		Percent of Information Sector	
	2012	2007	2012	2007
51 - Information	1,238,463,251	1,072,342,856	-	-
511110 - Newspaper Publishers	29,790,426	47,562,788	2.4%	4.4%
511120 - Periodical Publishers	29,337,951	46,003,261	2.4%	4.3%
511140 - Directory and Mailing List Publishers	10,117,670	18,515,494	0.8%	1.7%

2012 Economic Census of the United States: Geographic Area Series: Comparative Statistics for the U.S. (2007 NAICS Basis): 2012 and 2007

The 2017 Service Annual Survey (SAS) publication displays the continued downward trend of total turnover by industry for all industries but NAICS 511120, as they all comprise a smaller and smaller percentage of revenue at the sector (NAICS 51) level.

Estimated Revenue for Employer Firms (in Millions of dollars)			
NAICS Level	2017	2016	2015
51 - Information	1,533,690	1,493,592	1,405,882
511110 - Newspaper Publishers	25,204	25,264	26,550
511120 - Periodical Publishers	28,258	28,237	28,314
511140 - Directory and Mailing List Publishers	7,533	7,777	8,214

2017 Service Annual Survey: Table 2. Estimated Revenue by Tax Status for Employer Firms: 2013 Through 2017

According to the 2012 Economic Census, both NAICS 511110 and 511120 had relatively similar levels of industry concentration as the four largest firms in both industries accounted for roughly one quarter of the entire industry's revenue. However, the newspaper publishing industry displayed a higher level of revenue concentration among the fifty largest firms (72.9 percent) while the top fifty largest firms classified as periodical publishers accounted for only 57.8 percent of revenue for the industry. Concentration in revenue among newspaper publishers can be high in some specific regions of the country as firms providing this service often cater to local

news. Despite some consolidation, however, overall concentration is fairly low outside of the few major players in the industry that have subscribers across larger areas of the country.

NAICS 511110	Number of establishments	Receipts (\$1,000)	Revenue of largest firms as percent of total revenue (%)	Annual payroll (\$1,000)	First-quarter payroll (\$1,000)	Number of paid employees for pay period including March 12
All firms	7,663	29,790,426	100.0	9,456,066	2,420,228	234,245
4 largest firms	488	8,260,943	27.7	2,299,606	601,530	41,054
8 largest firms	749	12,220,483	41.0	3,549,811	916,550	67,006
20 largest firms	1,363	17,305,578	58.1	5,183,589	1,348,350	107,485
50 largest firms	1,744	21,731,208	72.9	6,609,784	1,710,294	142,040

2012 Economic Census of the United States: Information: Subject Series - Estab & Firm Size: Concentration by Largest Firms for the U.S.: 2012

The periodical publishing industry has been experiencing a fair amount of consolidation as well. Smaller firms are being acquired by larger competitors and are sometimes converting to Internet-only subscriptions to reduce costs, which changes their classification to 519130 (Internet Publishing and Broadcasting and Web Search Portals). These two trends will be factors in future industry concentration.

NAICS 511120	Number of establishments	Receipts (\$1,000)	Revenue of largest firms as percent of total revenue (%)	Annual payroll (\$1,000)	First-quarter payroll (\$1,000)	Number of paid employees for pay period including March 12
All firms	6,475	29,337,951	100.0	7,274,086	1,886,897	107,929
4 largest firms	128	7,309,822	24.9	1,105,044	326,948	9,727
8 largest firms	656	9,861,539	33.6	1,663,321	464,431	17,607
20 largest firms	859	13,107,151	44.7	2,483,513	684,451	27,886
50 largest firms	1,025	16,971,314	57.8	3,453,127	939,957	39,948

2012 Economic Census of the United States: Information: Subject Series - Estab & Firm Size: Concentration by Largest Firms for the U.S.: 2012

Directory and mailing list publishers are far more concentrated according to the 2012 Economic Census as the top four largest firms account for over 63.7 percent of industry revenue. These services are dominated by a handful of firms because of various mergers, acquisitions, or divestitures.

NAICS 511140	Number of establishments	Receipts (\$1,000)	Revenue of largest firms as percent of total revenue (%)	Annual payroll (\$1,000)	First-quarter payroll (\$1,000)	Number of paid employees for pay period including March 12
All firms	1,287	10,117,670	100.0	2,240,545	635,328	33,940
4 largest firms	376	6,448,016	63.7	1,131,211	311,120	15,325
8 largest firms	421	7,647,586	75.6	1,400,420	387,030	19,100
20 largest firms	505	8,661,800	85.6	1,791,118	524,456	25,155
50 largest firms	552	9,279,813	91.7	1,974,079	569,916	28,312

2012 Economic Census of the United States: Information: Subject Series - Estab & Firm Size: Concentration by Largest Firms for the U.S.: 2012

Industry Regulation

The main public regulations regarding the newspaper and periodical publishing industries that firms must abide by involve copyrights, trademarks, and other intellectual property protections. However, these regulations have not changed significantly in recent years and therefore, have not strongly influenced market conditions. Directory and mailing list publishers are seeing more restrictive industry regulations because of privacy laws being passed and considered by federal and state governments. In addition, some activities of the firms in this industry can relate to unsolicited mailings and other unwelcome advertising-associated ventures that can and have been regulated by the Federal Communications Commission (FCC).

Product Structure

The following tables display the product lines and their generated turnover according to the 2012 Economic Census for NAICS 511110, 511120, and 511140. It is clear that subscription and advertising sales are the two largest product line categories for all three industries.

Meaning of Products and services code NAICS 511110 – Newspaper Publishers	Revenue (\$1,000)	Product line sales as % of total sales of all establishments (%)
Industry total	29,790,426	100
Subscriptions and sales - General newspapers	7,908,975	26.5
Subscriptions and sales - Specialized newspapers	193,060	0.6
Sale of advertising space - General newspapers	18,161,701	61.0
Sale of advertising space - Specialized newspapers	333,916	1.1
Other publishing - Subscriptions and sales	64,460	0.2
Other publishing - Sale of advertising space	354,892	1.2
Publishing service for others	45,748	0.2
Printing services	1,266,137	4.3
Distribution services for others	764,910	2.6
Convention and trade show organization services	21,447	0.1
Graphic design services	10,785	Z
Licensing of rights to use intellectual property	21,673	0.1
Resale of merchandise	31,693	0.1
All other receipts	560,736	1.9

2012 Economic Census of the United States: Information: Subject Series - Product Lines: Product Lines Statistics by Industry for the U.S. and States
Z – Rounds to zero

Meaning of Products and services code NAICS 511120 – Periodical Publishers	Revenue (\$1,000)	Product line sales as % of total sales of all establishments (%)
Industry total	29,337,951	100.0
Professional, technical, and scholarly books	367,826	1.3
Adult trade books	52,980	0.2
Subscriptions and sales - General interest periodicals	7,587,765	25.9
Subscriptions and sales - Financial, professional, and academic periodicals, including farming	2,489,942	8.5
Subscriptions and sales - Other periodicals	714,688	2.4
Sale of advertising space - General interest periodicals	10,905,170	37.2
Sale of advertising space - Financial, professional, and academic periodicals, including farming	1,733,853	5.9
Sale of advertising space - Other periodicals	741,131	2.5
Other publishing - Subscriptions and sales	307,480	1.0
Other publishing - Sale of advertising space	366,904	1.3
Publishing service for others	209,285	0.7
Printing services	327,727	1.1
Distribution services for others	5,513	Z
Convention and trade show organization services	791,693	2.7
Rental or sale of mailing lists	67,251	0.2
Licensing of rights to use intellectual property	542,199	1.8
Rental or lease of goods and/or equipment	671	Z
Resale of merchandise	80,141	0.3
All other receipts	1,968,845	6.7

2012 Economic Census of the United States: Information: Subject Series - Product Lines: Product Lines Statistics by Industry for the U.S. and States
Z – Rounds to zero

Meaning of Products and services code NAICS 511140 - Directory and Mailing List Publishers	Revenue (\$1,000)	Product line sales as % of total sales of all establishments (%)
Industry total	10,117,670	100.0
Sale of advertising space - General interest periodicals	12,522	0.1
Directories - Subscriptions and sales	1,536,648	15.2
Directories - Sale of advertising space	6,737,652	66.6
Databases and other collections of information - Subscriptions and sales	1,244,148	12.3
Databases and other collections of information - Sale of advertising space	52,846	0.5
Other publishing - Subscriptions and sales	31,655	0.3
Other publishing - Sale of advertising space	4,176	Z
Printing services	40,885	0.4
Rental or sale of mailing lists	223,228	2.2
Licensing of rights to use intellectual property	70,269	0.7
Resale of merchandise	13,404	0.1
All other receipts	122,982	1.2

2012 Economic Census of the United States: Information: Subject Series - Product Lines: Product Lines Statistics by Industry for the U.S. and States
Z – Rounds to zero

NAICS 519130 (Internet Publishing and Broadcasting and Web Search Portals) is the other industry within sector 51 with a similar product structure. Not only are “Subscriptions and Sales” and “Sales of Advertising Space” the two largest broad product lines collected, but this industry also collects detail product lines relating to these same publishing industries in an effort to capture revenue provided exclusively over the Internet. The table below displays the product lines captured on the 2012 Economic Census for NAICS 519130. Broad product lines can be comprised of multiple detail product lines. For instance, in the table below, the “Internet access services – Broadband” broad line is the total of the “Internet access services - Broadband – Residential” and “Internet access services - Broadband – Business” detail lines.

Meaning of Products and services code NAICS 519130 - Internet Publishing and Broadcasting and Web Search Portals	Revenue (\$1,000)	Product line sales as % of total sales of all establishments (%)
Industry total	87,946,171	100
Website hosting services, with or without integration of related services	455,603	0.5
Internet access services - Broadband (i.e., always-on)	2,193	Z
Internet access services - Broadband - Residential	471	Z
Internet access services - Broadband -Business	1,722	Z
Publishing - Subscriptions and sales - Print	848,913	1.0
Publishing - Subscriptions and sales - Internet publishing and broadcasting	28,026,544	31.9
Subscriptions and sales - Internet newspaper publishing	497,896	0.6
Subscriptions and sales - Internet periodical publishing	448,013	0.5
Subscriptions and sales - Internet book publishing	1,668,488	1.9
Subscriptions and sales - Internet directories publishing	724,268	0.8
Subscriptions and sales - Internet databases and other collections publishing	16,303,189	18.5
Subscriptions and sales - Internet gaming	3,476,711	4.0
Subscriptions and sales - Internet adult content	238,750	0.3
Subscriptions and sales - Other Internet content	4,669,229	5.3
Publishing - Subscriptions and sales - Electronic and other media	841,149	1.0
Publishing - Sale of advertising space - Print	86,159	0.1
Publishing - Sale of advertising space - Internet	46,063,346	52.4
Publishing - Sale of advertising space - Electronic and other media	43,634	0.1
Rental or sale of mailing lists	25,626	Z
Licensing of rights to use intellectual property	3,306,753	3.8
Resale of merchandise	730,872	0.8
Resale of merchandise - Computer hardware and software	668,841	0.8
Resale of merchandise - Other merchandise, excluding computer hardware and software	62,031	0.1
All other receipts	7,515,262	8.5

2012 Economic Census of the United States: Information: Subject Series - Product Lines: Product Lines Statistics by Industry for the U.S. and States
Z – Rounds to zero

Shaded rows are broad product lines. All others are detail product lines

1.3 Specific Characteristics of the Industry

Newspaper publishers largely continue to sell issues of their papers through newsstands and subscriptions, which has been the case for decades. What has changed in this industry is the development of online editions that has led to new ways for firms to sell their services. Now, it is

common to see more than a handful of ways in which customers can purchase subscriptions as many plans involve some type of access to online content. Even though print subscriptions may still comprise the majority of their subscription sales, many firms are offering subscription packages with digital-only access in an effort to compete with online news providers.

The major players in this industry have been forced to contemplate how much content they provide free to the public while still ensuring that revenue is generated for their services. One technique that some newspapers have implemented on their web pages are paywalls. This allows potential customers to view a certain number of articles free of charge per month or just specific articles without having to pay for a subscription. It is not clear how newspaper publishers will deal with these paywall systems moving forward since competitors providing free access to their online content have been gaining notoriety and credibility. What is clear, based on past industry revenue trends, is that newspaper publishers will continue to progressively rely on their digital subscriptions and advertising going forward.

Almost all of the factors influencing the newspaper publishing industry are influential in the periodical publishing market as well. Firms publishing periodicals and magazines are being tested as they consider shifting their advertising revenues from print to those displayed electronically, as subscribers are now comfortable in accessing content online. Since advertisers are more easily able to reach niche customer markets through the Internet and mobile applications, there is a pressure for periodical publishers to transition more of their services to the online platform. For some firms, transitioning their business entirely to a digital-only subscription model has been beneficial as printing services fail to get cheaper. As with the newspaper industry, periodical publishing firms will continue to grapple with their business models as it relates to print versus digital subscriptions.

The directory and mailing list publishing industry is similarly competing with digital alternatives. Information compiled in the publications of these firms has become comparatively available through various search engines and social media websites. As a result, firms providing these services are facing challenges to their revenues from sales of advertising space as advertisers have been shifting to online alternatives that are in some cases free of charge to customers. Even though the major firms in this industry already have an Internet presence, online competition has forced access or subscription fees to drop, which puts a lot of pressure on existing business models as they are being pinched in more than one way.

2. Revenue/Output Measurement

2.1 General Framework

Objectives of Key Users

The U.S. Census Bureau provides output data for the publishing industries as part of the Quarterly Services Survey (QSS), Service Annual Survey (SAS), and the quinquennial Economic Census.

The U.S. Bureau of Labor Statistics (BLS) Producer Price Index (PPI) program uses Economic Census data to update industry and product index weights.

BLS also uses SAS industry revenue and expense data as a main source for service industry labor productivity and cost measures.

The U.S. Bureau of Economic Analysis (BEA) uses revenue data in the creation of national and regional accounts. In addition, annual industry accounts, including both Gross Domestic Product (GDP) by industry and annual input-output (I-O) accounts are shaped by revenue/output data. The Economic Census is used as the measure of output in the benchmark (I-O) tables.

Definition of Output

Revenue generated by these three publishing industries primarily falls under sales of subscriptions and sales of advertising space. These two items are the main contributors to a total revenue figure that is collected and published in terms of gross revenue. Revenue is in scope to these industries when the firms providing these publishing services are not exclusively conducting them over the Internet. Measurement issues can arise when establishments incorrectly separate out Internet exclusive publishing services (particularly advertising space sales) from non-Internet exclusive activities even though those activities would be in scope.

Additionally, firms can be classified as NAICS 511110, 511120, or 511140 and as a result of either confusion or unawareness, fail to properly report that they are misclassified. In these instances, firms may continue reporting in one of these publishing industries when they actually provide their services exclusively over the Internet. This is experienced when a firm who was sampled as NAICS 511120 for instance, later converts to an Internet-only service provider but continues to report under the initial classification. In short, the Internet-exclusive element to the classification of these firms can be confusing on the part of respondents and lead to measurement error.

2.2 Measurement Issues

Product Structure

The products available for respondents to report are largely the same across NAICS 511110, 511120, and 511140 as various advertising revenue items could be applicable to many firms conducting these types of services. Below are the NAPCS (North American Product Classification System) codes or product lines displayed on the 2017 Economic Census questionnaires for these three industries. Although much of the content is the same, there are differences between the product structures from one Economic Census to another as the product structures are updated every five years.

NAPCS Code	NAPCS Description	511110	511120	511140
7001175000	General newspapers	X		
7001175003	General newspapers, daily	X		
7001175006	General newspapers, other than daily	X		
7001200000	Specialized newspapers	X		
7001200003	Specialized newspapers, daily	X		
7001200006	Specialized newspapers, other than daily	X		
7001225000	Periodicals, general interest		X	
7001225003	General interest periodicals, arts, culture, leisure and entertainment		X	
7001225006	General interest periodicals, home and living		X	
7001225009	General interest periodicals, political, social and business news		X	
7001225012	Other general interest periodicals		X	
7001250000	Periodicals, business (including farming), professional and academic		X	
7001275000	Periodicals, not elsewhere classified		X	
7014505000	Directories			X
7014505003	Directories, online			X
7014505006	Directories, except online			X
7014515000	Databases and other collections of information			X
7014515003	Databases and other collections of information, online			X
7014515006	Databases and other collections of information, except online			X
7002525000	Library and archive services			X
7012275000	Advertising space in printed publications	X	X	X
7012275003	Advertising space in printed general daily newspapers	X	X	X
7012275006	Advertising space in printed newspapers other than general daily	X	X	X
7012275009	Advertising space in printed specialized newspapers	X	X	X
7012275012	Advertising space in printed arts, culture, leisure, and entertainment periodicals	X	X	X
7012275015	Advertising space in printed home and living periodicals	X	X	X
7012275018	Advertising space in printed political, social, and business news periodicals	X	X	X
7012275021	Advertising space in other printed general interest periodicals	X	X	X
7012275024	Advertising space in printed business (including farming), professional and academic periodicals	X	X	X
7012275027	Advertising space in printed periodicals, not elsewhere classified	X	X	X
7012275031	Advertising space in printed telephone directories	X	X	X
7012275033	Advertising space in other printed directories	X	X	X
7012275036	Advertising space in printed databases and other printed collections of information	X	X	X
7012275039	Advertising space in books	X	X	X
7012350000	Internet advertising	X	X	X
7012350003	Advertising space in online general daily newspapers	X	X	X
7012350006	Advertising space in online newspapers other than general daily	X	X	X
7012350009	Advertising space in online specialized newspapers	X	X	X
7012350012	Advertising space in online arts, culture, leisure, and entertainment periodicals	X	X	X
7012350015	Advertising space in online home and living periodicals	X	X	X
7012350018	Advertising space in online political, social, and business news periodicals	X	X	X
7012350021	Advertising space in online general interest periodicals	X	X	X

NAPCS Code	NAPCS Description	511110	511120	511140
7012350024	Advertising space in online business (including farming), professional and academic periodicals	X	X	X
7012350027	Advertising space in online periodicals, not elsewhere classified	X	X	X
7012350031	Advertising space in online directories	X	X	X
7012350033	Advertising space in online databases and other online collections of information	X	X	X
7012400000	Advertising space in publications on electronic and other media, except online	X	X	X
2052875000	Quick printing	X	X	X
2052900000	Digital printing	X	X	X
7011125000	Local transportation and delivery of purchased or serviced items	X		
7012075000	Graphic design services, except advertising graphic design	X		
7013050000	Public relations event management services		X	
7012600000	Mailing lists			X
7009581000	Licensing of rights to use intellectual property protected by copyright, excluding audiovisual works and musical compositions and recordings	X	X	X

Shaded rows are broad product lines. All others are detail product lines

X - Indicates that a particular NAPCS is present on the industry form

The 2018 Service Annual Survey includes far fewer product lines compared to the Economic Census. The table below shows the product lines present on each industry form.

Product Name	511110	511120	511140
Subscriptions and sales	X	X	X
Advertising space	X	X	X
Printing services for others	X	X	
Distribution services	X		
Licensing of rights to content		X	
Rental or sale of mailing lists			X

X - Indicates that a particular NAPCS is present on the industry form

Other Available Data Sources

The Economic Census as well as SAS and QSS utilize administrative data provided by other Federal agencies in their imputation models and during analyst review of cases that may be missing key data items due to item or unit nonresponse. These data are used alongside U.S. Securities and Exchange Commission (SEC) filings and annual reports to provide opportunities to verify reported data, or to edit or impute data at the company level.

2.3 Description of Methods for Measurement

Frequency of Collection

The Economic Census occurs once every five years, and collects data for years ending in “2” and “7”; the SAS and QSS occur annually and quarterly, respectively. Data for the Economic Census and SAS are collected exclusively through the Internet, with respondents logging onto a secure website to provide their data. Respondents to the QSS can choose to respond through mail, fax, telephone, or Internet reporting.

Description of Estimation Procedure and Sampling Design

The Economic Census employs several imputation methods, which can be divided between two categories: 1) values derived by logical edits, and 2) values derived from statistical modeling due to nonresponse. Data captured in an economic census must be edited to identify and correct reporting errors. The data also must be adjusted to account for missing items and for businesses that do not respond. Data edits detect and validate data by considering factors such as proper classification for a given record, historical reporting for the record and industry/geographic ratios and averages. Nonresponse is handled by estimating or imputing missing data. Imputation is defined as the replacement of a missing or incorrectly reported item with another value derived from logical edits or statistical procedures.

Individual establishment records are tabulated in different ways based on data product and analytical needs. Tabulations include data summed by industry, specified geographic areas, establishment-size, products produced, materials used, fuels used, and product lines sold.

Total estimates for the SAS are computed using the Horvitz-Thompson estimator, i.e. the sum of weighted reported or imputed data, for all selected sampling units that meet the sample canvass and tabulation criteria. The weight for a given sampling unit is the reciprocal of its probability of selection into the SAS sample. These estimates are then input to a benchmarking procedure that uses estimates produced by the Economic Census. Variances are estimated using the method of random groups and are used to determine if measured changes are statistically significant.

The SAS is a survey of approximately 90,000 selected service businesses with paid employees, supplemented by administrative records data or imputed values to account for non-employer and certain other businesses.

The sampling frame used for the SAS has two types of sampling units represented: single establishment firms and multiple-establishment firms. The information used to create these sampling units was extracted from data collected as part of the 2012 Economic Census and from establishment records contained on the Census Bureau's Business Register as updated to December 2015. However, unlike the Economic Census, which is establishment based, the SAS and QSS are company-based samples.

In the initial sampling, firms are stratified by major and minor kind of business, and by estimated receipts or revenue. Within each stratum, a substratum boundary (or cutoff) that divides the

certainty units from the noncertainty units is determined. Firms expected to have a large effect on the precision of the estimates (i.e., have annual revenue greater than the corresponding certainty cutoff) are selected with certainty. All firms not selected with certainty are subjected to sampling. Within each stratum a simple random sample of firms is selected without replacement.

During the period for which the samples are used, updates are made on a quarterly basis to reflect changes in the business universe. These updates are designed to account for new businesses (births) and businesses that discontinue operations (deaths). The samples are also updated to reflect mergers, acquisitions, divestitures, splits, and other changes to the business universe.

Estimates for employers plus nonemployers are only published for total revenue. All other estimates are based only on employer firms. Firms without paid employees (nonemployers) are included in the total revenue estimates for the SAS through administrative data provided by other Federal agencies and through imputation.

The QSS is a principal economic indicator series that produces, for selected service industries, quarterly estimates of total operating revenue and the percentage of revenue by class of customer (government, business, consumers, and individuals). The survey also produces estimates of total operating expenses from tax-exempt firms in industries that have a large not-for-profit component. In addition, for hospital services, the survey estimates the number of inpatient days and discharges.

The QSS sample includes approximately 19,500 service businesses, is a subsample of the SAS sample and has the same types of sampling units as the SAS frame—single establishment firms and multiple-establishment firms. Sampling units represent clusters of one or more establishments owned or controlled by the same firm. The Quarterly Services Survey estimates are published for less detailed industry groupings than the Service Annual Survey estimates.

Therefore, the industry stratification for the Quarterly Services Survey sample is broader than the industry stratification used for the Service Annual Survey sample. Sampling units are assigned to the industry stratum corresponding to the industry that contributes the most to the unit's sampling measure of size (i.e., annual revenue). Similar to SAS, within each industry stratum, sampling units are substratified by a measure of size related to their annual revenue. Sampling units expected to have a large effect on the precision of the estimates are selected "with certainty." Within each noncertainty substratum, units are selected using a systematic, probability proportional-to-size sampling scheme. The sample is redrawn approximately every 5 years to redistribute reporting burden and to introduce sampling and processing efficiencies. Estimates are produced using the same general methodology as the SAS.

3. Measurement of SPPI

3.1 General Frame work

The U.S. Bureau of Economic Analysis (BEA) publishes GDP-by-industry quarterly at the NAICS three-digit level, 511, Publishing Industries, Except Internet (includes software

publishing). On an annual basis, BEA publishes these statistics at the NAICS four-digit level, 5111, Newspaper, Periodical, Book, and Directory Publishers.

Input-output data is published annually by BEA at the two- and three-digit NAICS level, 51 and 511. NAICS sector 51, Information, includes publishing industries; motion picture and sound recording industries; broadcasting; telecommunications; data processing, hosting and related services; and other information services. Every five years, BEA publishes a detailed benchmark table by six-digit NAICS. This table includes: 511110, Newspaper Publishers; 511120, Periodical Publishers; and 5111A0, Directory, Mailing List, and Other Publishers.

BEA uses the following U.S. PPIs for publishing as deflators to determine real output in the industry account:

- 511110P- Newspaper Publishers Primary Services
- 5111106- Newspaper Subscription and Single Copy Sales
- 511120P- Periodical Publishers Primary Services
- 5111205- Periodicals, Subscriptions and Single Copy Sales
- 51112051- Specialized Business and Professional Periodicals
- 51112052- General and Consumer Periodicals, Subscriptions and Single Copy Sales

3.2 Measurement Issues

Product Structure

The U.S. PPI samples and publishes price indexes by industry, using NAICS classification. ISIC 5812, Publishing of Directories and Mailing Lists matches NAICS 511140, Directory and Mailing List Publishers. ISIC 5813, Publishing of Newspapers, Journals and Periodicals combines NAICS 511110, Newspaper Publishers and NAICS 511120 Periodical Publishers.

The following table shows the U.S. PPI structure for NAICS 511110, Newspaper Publishers.

Index Codes	Index Title
511110	Newspaper publishers
511110P	Primary services
5111105	Newspaper advertising sales
51111051	Newspaper advertising sales, print only
51111052	Newspaper advertising sales, digital only and print and digital bundled
5111106	Newspaper subscription and single copy sales
51111061	Newspaper subscriptions, print only
51111062	Newspaper subscriptions, online only and print and online bundled
523110SM	Other receipts

The U.S. PPI for Newspaper Publishers closely follows the NAPCS structure, although the NAPCS structure includes more detail in several areas.

The growing prevalence and popularity of mobile and tablet devices, combined with the declines in print ad turnover, have caused newspaper publishers to seek turnover-producing opportunities through online advertising and circulation. As a result of the desire to increase newspaper circulation turnover, pricing strategies for circulation and advertising may differ across both print and online platforms. To capture these differences, detailed indexes for “print only” and “digital only and print and digital bundled” are included in the PPI structure. It should be noted that prices included in the “digital only and print and digital bundled” indexes are only from those firms that also have a print presence. Under NAICS, any firm that only publishes in a digital format is included in a separate industry, NAICS 519130, Internet Publishing and Broadcasting and Web Search Portals.

The following table shows the U.S. PPI structure for NAICS 511120, Periodical Publishers.

Index Codes	Index Title
511120	Periodical publishers
511120P	Primary services
5111202	Periodicals, advertising sales
51112021	Specialized business and professional periodicals, advertising sales
51112022	General and consumer periodicals, advertising sales
51112024	Other periodicals, including advertising periodicals, nec, advertising sales
5111205	Periodicals, subscriptions and single copy sales
51112051	Specialized business and professional periodicals, subscriptions and single copy sales
51112052	General and consumer periodicals, subscriptions and single copy sales
511120SM	Other receipts

The U.S. PPI for Periodical Publishers closely follows the NAPCS structure, although the NAPCS structure includes more detail in several areas.

The service lines for “specialized business and professional periodicals” including publications containing news and information regarding manufacturing, retail and wholesale trade, medical and health care, professional services, and other industries. These publications are directed primarily toward persons engaged in these industries, and are not generally mass-marketed in retail settings. General business publications that are marketed to the general public are not included in this category.

The service lines for “general and consumer periodicals” include the following types of publications: comics; women's, home, and fashion periodicals; general news, regional, metropolitan, and city periodicals; special interest periodicals (including hobby, sports, entertainment, art, photography, science, automotive, aviation, etc.); and general interest periodicals (including general articles, pictures, fiction, literature, geography, travel, history, humor, etc.). Also included in this group are general business publications that are mass-marketed in retail settings to the general public.

The service line for “other periodicals, including advertising periodicals, not elsewhere classified” includes advertising periodicals (sometimes known as shopping news periodicals), religious periodicals, and Sunday newspaper magazines.

As with newspapers, the digital turnover of any firm that provides periodicals in both print and online format is included in this industry. However, if the firm only publishes in digital format, the turnover would be included in NAICS 519130.

The following table shows the U.S. PPI structure for NAICS 511140, Directory and Mailing List Publishers.

Index Codes	Index Title
511140	Directory and mailing list publishers
511140P	Primary services
5111401	Directory and mailing list publishing – advertising sales incl. telephone directory listings
5111405	Directory and mailing list publishing – subscription, content, and licensing sales
511120SM	Other receipts

The U.S. PPI for directory and mailing list publishing closely follows the NAPCS structure, although the NAPCS structure includes more detail in several areas.

The service line entitled “Directory and mailing list publishing–advertising sales incl. telephone directory listings” captures all advertising services for mailing list, directory, and database publications. Telephone book ad listings represent the vast majority of advertising services represented by this index.

This service line also includes ad sales in both print and digital format, unless the firm only publishes in digital format.

The service line entitled “Directory and mailing list publishing--subscription, content, and licensing sales” includes subscription sales and single copy sales of directories, mailing lists, and databases. Content sales also include fees for one-time access to data or pay per view charges. This index also captures licensing fees charged by directory and mailing list publishers for granting others permission to use or publish their data.

Sampling Design

A firm’s probability of selection is proportionate to its size.

For newspaper publishing and part of periodical publishing, sample units were selected by title based on circulation figures. The records location for each sample unit is the headquarters of the sampled newspaper or periodical title.

For the other part of periodical publishing and all of directory and mailing list publishing, sample units were selected by publishing firm based on employment.

After a firm is selected and agrees to participate in the survey, a probability sampling technique called disaggregation is used to determine which specific services will be included in the PPI.

For single copy sales of traditional print publications, the unit of measure is per copy or per specified number of copies. For subscriptions to traditional print publications, the unit of measure is per subscription. Publishers may have additional units of measure for online subscriptions based on a unit of time (example: per year of access) or based on viewing (example: one-time content access fee to view or download). Directory and mailing list publishers may also charge a one-time content licensing fee for the right to publish their content or a per defined time period fee for continuously providing content.

For advertising transactions in traditional print publications, the unit of measure typically refers to the physical size of the advertisement, often in column inches or page length.

Online or digital advertising is typically measured per thousand ad views, impressions, or clicks. Publishers may charge advertisers each time an online advertisement is clicked upon. This is known as cost per click, or CPC pricing. An impression refers to an instance when an advertisement appears on a webpage. Publishers may charge clients based on the number of thousands of impressions that are displayed for a particular advertisement. This is known as CPM (cost per thousand) pricing.

Data Sources for Various Weights

Sampled transactions are weighted by a measure of their size and importance. In the first stage of PPI computation, price indexes are constructed for narrowly-defined groupings of goods or services. The individual transactions included in these indexes are weighted by the producing firm's turnover for the product line. In the second stage of PPI computation, indexes for individual goods and services are combined into aggregate indexes. Data for weighting together the product line indexes comes primarily from the Economic Censuses of the U.S. Census Bureau. These weights are updated every 5 years.

3.3 Description of Pricing Methods and Criteria for Choosing the Method

Price Determining Characteristics

Price determining characteristics for the publishing industry differ based on whether the transaction is for the sale of advertising or the sale of a subscription or single copy.

Advertising Sales Transactions

Price determining characteristics for advertising sales in the publishing industry generally include the size of the advertisement and the circulation of the publication. Another major characteristic is the position of the ad within the publication. Buyers may request guaranteed placement in a specific position within the print edition, digital edition, or publication's website. The exact placement of the advertisement, contingent upon the section of the publication in which the ad is placed, is also important. Especially with newspapers, some sections have higher readership and are therefore able to elicit a higher sale price. Other characteristics relevant to price include use of graphics (relative to a text-only ad) and number of pages (for inserts).

The type of advertisement, which can be classified into several main categories, also determines the price.

Print display ads are typically purchased by companies rather than individuals. Their price is determined based on the size (in column inches or 1/6th fractions of a page), the type of graphics, and the number of colors used. Display ads appear in the body of the publication, or, in the case of periodicals, they may also appear on the inside of the front or back cover or the outside of the back cover. Their price may vary based on the location in which they appear and the insertion frequency (the number of issues in which they appear).

Print classified ads appear in smaller typeface and are purchased by both companies and individuals. They are typically black and white, so the main price determining characteristic is the size of the ad, measured in line count. Additional price determining characteristics include frequency of insertion and circulation.

Print insert ads are ads printed apart from the regular press run and then inserted within the regular publication. The price is determined by the number of pages, the quality of the paper, the quality of the graphics, the number of colors used in printing, the frequency of insertion, and the circulation.

The price of **online display ads** is determined by several factors: the height and width of the ad (typically measured in pixels), the type of graphics/fonts, display time, the position of the ad on the screen (i.e. top banner, side banner, etc.) and most importantly the number of clicks on the ad per thousand views of the site where they appear.

Search ads are internet advertisements that appear when an Internet user conducts an online search. The user typically enters search keywords or refines a set of parameters in order to view results relevant to their search. Search ads usually appear as textual ad listings that link to websites when clicked upon. These ads are typically a very small share of total ad turnover. Publishers are generally compensated for search advertising on a per click basis where the publisher is paid a set fee each time the ad is clicked upon. Typically, an advertiser who would like an ad to achieve a higher position in the list of results must be willing to pay a higher price per click relative to other advertisers.

Publishers may sell **contextual advertising**, which is a form of search advertising that occurs when websites display text ads relevant to the content of the particular webpage that is being viewed by a user. For instance, if the user is viewing content related to computers, the website may display text ads from advertisers that sell computers. As with search listings, users may click on the contextual ad link in order to visit the advertiser's website, so an advertiser who would like an ad to achieve a better position on the website must be willing to pay a higher price per click relative to other advertisers.

Publishers may also sell **paid listings**, where advertisers pay a set periodic fee to ensure that their business listings appear in the results of an online search. The advertiser can enhance the appearance of the listing by adding logos or graphics or more information for additional fees.

Publishers may either sell ad space on their websites directly to advertisers or they may use an ad network. The delivery method used (ad sold directly by the publisher versus ad sold by a third

party such as an ad network) influences the price of the advertising. The price per click or thousand impressions received by a publisher tends to be lower when the ad space is sold by an ad network than when the publisher works directly with the advertiser.

Subscriptions and Single Copy Sales Transactions

Price determining characteristics for subscriptions to publications include the format (print, online, or bundled access), type of subscription (new or renewal), and the duration of the subscription. For periodicals, the number of issues included in the subscription can be price determining. For newspapers, the frequency of delivery (daily, daily and Sunday, weekend only, Sunday only, 7 days) can affect the price. Directory and mailing list subscriptions have additional price determinants, including the amount of data provided, the number of users allowed access, the size of the customer, and whether the fee is for single or ongoing usage of the data. For mailing lists, specifically, price may also be influenced by the number of records or leads purchased, the number of data elements per record, and the filters or criteria used to refine the mailing list.

Price determining characteristics for single copy sales of publications include order size (i.e. quantity) of the publication and the number of pages published.

Pricing Methods

The following are the most common types of prices for the publishing industry. While there is a preferred type of price for each service, several fallback types of prices are also allowed. This creates the opportunity for better cooperation because the publishing firms can determine the types of price that they are willing and able to provide based on recording keeping practices and burden.

Advertising – Print

1) Average price – per unit average

The preferred price for all print advertisements is an average price. The average should be based on all sales of advertising of similar characteristics run within a specified time period (e.g. the first two weeks of the month, the week of the pricing date, the entire prior month). Lagged average prices are acceptable. If possible, the average price should be isolated to a specific advertising offering based on the following characteristics:

- Format (print, print and online bundled)
- Type of advertisement (display, classified, insert)
- Size of advertisement (e.g. full page, ½ page)
- Placement of advertisement (e.g. back cover, front page, main section, business section)

For sales of print advertisements, respondents may report average prices in several different ways. First, the average price may be reported on a per column inch basis, where the respondent

reports the total turnover for all ads placed with similar characteristics (format, type, size), and divides the turnover figure by the total number of column inches sold to derive the average price per column inch. Second, the average price may be reported on a per ad basis, where the respondent reports the total turnover for all ads placed with similar characteristics (format, type, size), and divides the turnover figure by the total number of ads placed to derive the average price per advertisement.

Averages for classified advertisements may be reported in terms of average price per line, which is derived by dividing total turnover from the sale of classified advertisements by the total number of lines placed.

If it is not possible to obtain average prices broken out by all criteria above, averages may be collected based on the criteria that are available as long as changes to the average price reflect market-driven price changes over time, rather than distortions driven by major changes to the buyer or product mix used to calculate the average.

An example of such a distortion would be if the per unit average included a mix of full page and half page advertisements that vacillated between being primarily comprised of full page advertisements to being primarily comprised of half page advertisements (for which the per unit price is typically lower).

2) Average price – list price less average discount

The average discount is calculated by comparing the actual turnover received for sales of advertisements of the selected type and size to the turnover that would have been received if each of these advertisements were sold at the listed rate card price. This average discount percentage should be applied to the rate card price to calculate the average price.

In subsequent months, the respondent will 1) update the list price of the selected ad, and 2) recalculate the average discount based on all transactions of the selected ad that occurred during the specified time frame.

If the respondent is not able to calculate the average discount figure based only on transactions of the selected ad, but can calculate the average discount based on a broader set of transactions in which the offering is included, it is acceptable to calculate the average discount based on the broader product grouping as long as changes to the average price reflect market-driven price changes over time, rather than distortions driven by major changes to the buyer or product mix used to calculate the average.

3) Actual transaction price

An actual transaction price may be collected if it is not possible to obtain an average price for print advertising. If this type of price is used, an individual transaction is selected for collection and in future months the respondent reports the actual price paid by similar customers purchasing the same ad under similar conditions.

4) *Estimated transaction price*

An estimated transaction price may be collected if the advertising is sold infrequently or is highly individualized in nature. When collecting an estimated transaction price, a recently billed transaction that is a good representation of the firm's business may be selected at initiation. It is also acceptable to create a realistic hypothetical transaction with the respondent. In both cases, the respondent will then estimate the price that would be charged in subsequent months if the same service were to be provided to a similar buyer.

When collecting transaction prices for advertising sales, the following characteristics of the advertisement being transacted are collected:

- Format (print, print and online bundled)
- Type of advertisement (display, classified, insert)
- Size of advertisement (e.g. full page, ½ page)
- Placement of advertisement (e.g. front page, main section, business section)
- Color or black and white
- Edition in which the ad was placed (daily, Sunday, combined)

5) *List price*

List prices are the prices found on the standard rate card. List prices should only be collected if no other pricing options are feasible.

Advertising – Online

1) *Average price – per unit average*

An average price is the preferred type of price to collect for the sale of online advertising.

For Internet search and textual advertising services, the average price is often calculated by dividing the total ad turnover earned during the repricing period by the total number of clicks that occurred during that time frame for the selected type of ad.

For Internet display advertising services, the average price is often calculated by dividing the total ad turnover earned during the repricing period by the total thousands of impressions that occurred during that time frame for the selected type of ad. Display advertising is typically the most common website ad offering provided by publishers.

The average price collected is isolated to revenues that are derived from a single unit of measure only. An average price may also be calculated based on a cost per action or cost per acquisition model in which the publisher is compensated only if an Internet user takes an action after viewing an ad, such as completing an online registration form or completing a purchase. In these

cases, the average price is calculated by dividing the total turnover earned during the repricing period by the total number of actions or acquisitions that occurred during that time frame for the specific type of ad.

The average price is isolated to an online advertising product offering based on the following characteristics:

- Ad type: For search and textual advertising, possible ad types include sponsored search, contextual advertising, directory listings, paid inclusion, etc. For display and other advertising, possible ad types include banner, interstitial, video, etc. Many firms either transact only one of these types of ads or maintain aggregated records across all categories. In these cases, no additional disaggregation between types of ads occurs.
- Ad delivery method (ad space sold directly by the periodical publisher versus ad space sold by a third party such as an ad network). Some firms are not able to provide separate averages based on the ad delivery method.
- Keyword search or content categories, such as healthcare, real estate, automotive, etc.

2) *List price*

When average price data is unavailable for online ads in which the price charged is not based on an auction or bidding process, an acceptable fallback is to collect a standard list price offered by the firm for a specific type of advertising service. This list price may be referred to as a rate card price. Rate card prices are preferred over transaction prices for online advertising because these transactions often consist of a unique bundle of services. It is difficult for respondents to provide accurate estimates of the prices that would be charged for these custom bundles in future months.

3) *Bid price*

If average price data is unavailable for sponsored search listings or other types of advertising in which prices are determined by a bidding or auction-based process, the collected price is the price per click that would be charged if a listing at a certain position was clicked upon for a specific keyword search conducted on the pricing date. For example, this may be the per click price for the 2nd listing position for the keyword “car” on the pricing date. The time of day (noon, 5 pm, etc.) should be specified as well if it is a price determining characteristic. This type of price is called the bid price.

4) *Estimated transaction price*

If the pricing options discussed above are not available, an estimated transaction price may be collected. A recently billed transaction that is a good representation of the firm’s activities or a realistic hypothetical transaction may be used as the basis for future reporting. In both cases, the respondent estimates the price that would be charged in subsequent months if the same service were to be provided to a similar buyer.

Advertising – Print and Online Bundled

It is a common industry practice for publishers to include a replica of a print advertisement in the digital edition as part of a bundled advertising sale. A transaction in which a print ad is placed into a digital edition with no additional fees is still collected as a **print only** transaction and the fact that the ad is placed in the digital edition is noted in the transaction description. However, a transaction consisting of a print ad and a digital ad corresponding to the print ad for which additional media fees are charged is collected as a **print and online bundled** offering, even if the additional fees for the digital ad can be separately itemized from the print ad. The print and online revenues are not uncoupled in this case because the online ad is the digital counterpart to the print ad.

Publishers may sell additional digital advertising beyond what was sold in the corresponding print edition. Transactions consisting of the sale of digital ads for which there is no print counterpart are collected as **online only** transactions.

When collecting average prices for bundled advertising sales, the characteristics of the transactions included in the average should be as similar as possible (e.g. the print component of all bundles within the average should be full page size), but if the respondent can only provide an average for all bundles without designating specifics for the individual print and digital components, it is an acceptable fallback.

Subscriptions

1) Average price – per unit average

The preferred type of price for subscriptions is an average price. The turnover for recently transacted subscriptions of a selected duration and frequency is divided by the number of these units delivered. This number of units delivered is not necessarily the same as the number of subscriptions sold because it can include free and/or promotional copies. Noting the buyer type is important because some buyers, such as universities and libraries, receive what is known as an institutional price, which is a type of discounted list price. The average price is based on all subscription sales of similar characteristics transacted within a specified time period (e.g. the first two weeks of the month, the week of the pricing date, the entire prior month).

The average price is isolated to specific subscription transactions based on the following criteria:

- **Format (print only, online only, print and online bundled):** As previously mentioned, publishers may offer these services at differing price points. If the publisher offers a bundled package, they may bundle smartphone and tablet access in addition to PC access. Such a subscription would draw a different price than one for PC access only. If possible, average prices are collected only for subscriptions to access content on specified types of devices (e.g. tablet only; smartphone only)
- **Duration of subscription (e.g. 13 weeks, 26 weeks, 52 weeks, 2 year, etc.):** Longer subscriptions are typically offered at a lower price on a per issue basis.

- Subscription type: New subscription or renewal. New subscriptions are often offered at rates lower than those for renewals.
- Buyer type: as mentioned above, many buyers such as libraries and universities and non-profit organizations receive institutional discounts on subscriptions. Hotels also subscribe to one or many publications to provide complimentary copies to guests. All of these large buyers typically receive a discounted price.

Publishers often enter into agreements with third party resellers in which the reseller, who may sell print or digital subscriptions on behalf of the publisher, receives a commission for each sale. When an average price for sales to resellers is collected, the average reflects the net turnover retained by the publisher. If the publisher is only able to provide an average price based on gross turnover figures, this is noted in the transaction description.

If it is not possible to obtain average prices broken out by all four criteria above, averages based on the criteria that are available are collected. For example, if a respondent can provide a robust average of all print subscriptions of 1-year duration, but cannot isolate the average to a specific buyer or subscription type, collecting an average based only on a specified format and duration is acceptable. Using fewer than the four criteria above for formulating the average price is acceptable as long as changes to the average price reflect market-driven price changes over time, rather than distortions driven by major changes to the buyer or product mix used to calculate the average.

An example of such a distortion would be if the per unit average included a mix of 1-year and 2-year subscriptions that vacillated between being primarily comprised of 1-year subscriptions to being primarily comprised of 2-year subscriptions (for which the per unit price is typically lower).

2) *Average price – list price less average discount*

An average discount is calculated by comparing the total turnover received for each transaction that occurred during the specified time frame for the selected subscription to the turnover that would have been received if each subscription had been sold at the list price. Ideally this calculation should also include any transactions in which the subscription was offered for free. This average discount percentage should be applied to the list price of the selected subscription to calculate the average price.

During repricing, the respondent: 1) updates the list price of the selected subscription, and 2) recalculates the average discount based on all transactions of the selected subscription that occurred during the specified time frame.

If the respondent is not able to calculate the average discount figure based only on transactions of the selected subscription offering, but can calculate the average discount based on a broader set of transactions in which the offering is included, the average discount is calculated based on the broader product grouping as long as changes to the average price reflect market-driven price

changes over time, rather than distortions driven by major changes to the buyer or product mix used to calculate the average.

3) *Actual transaction price*

An actual transaction price is collected if it is not possible to obtain an average price for subscription sales. If this type of price is used, an individual sale is selected for collection. In this case, disaggregation occurs across all price determining characteristics.

Both print and digital subscriptions can be sold by third party resellers, which receive a commission from the publisher for each sale. If a transaction price is collected for the sale of a print or digital newspaper subscription to a reseller, the price collected represents the turnover per subscription received by the publisher after the commission to the third party vendor has been paid. For example, if a transaction price for a digital newspaper subscription is collected, the retail price of the subscription, the device on which the subscription can be accessed, and the specific vendor and commission granted are collected. Each month, the respondent updates the retail price and commission granted to the specified vendor for the selected digital subscription offering in order to calculate the reported price. For instance, if a one year digital subscription available from a selected vendor on a specified tablet device retails at \$19.99 per year, and the vendor receives a 30 percent commission from the publisher on each sale, the reported price would be \$13.99. This is the amount retained by the publisher.

4) *Estimated transaction price*

An estimated transaction price is acceptable if actual transaction prices are not available. In this case, the respondent provides prices that they would normally charge for the subscription in question if the sale were to be transacted during the current month.

5) *List price*

List prices are only collected if no other pricing options are feasible.

Single Copy Sales

1) *Estimated transaction price*

An estimated transaction price is the ideal price for single copy sales. Publishers typically sell print publications in bulk quantities to national distributors, wholesalers, or retailers which distribute the publications to newsstands. Each single-copy sale transaction represents a unique deal with a specific wholesaler or distributor. In the following months, the features of the contract remain fixed, with the respondent estimating the price to be charged if a similar deal were to be transacted in the current month. Because the wholesaler or distributor then sells the publication to newsstands or stores, the transaction price is a reflection of the price the publisher charges the distributor or wholesaler, which may not be the cover price.

2) *Retail Price*

In the event that a publisher offers a single copy sale of one of its digital editions, the retail price is collected.

Some periodical publishers may sell single copies of digital editions through a third party online vendor that receives a commission from the publisher for each sale. When one of these transactions is selected, the retail price of the issue, the device on which the issue can be accessed, and the specific vendor and commission granted are collected. Each month, the respondent updates the retail price and commission granted to calculate the reported price, which is the turnover per issue received by the publisher.

Content Sales of Directories and Mailings Lists

For mailing lists and directories, a content access fee may be charged for one-time access to content. For these transactions, an actual transaction price is collected. For mailing lists, respondents either provide the details of a recently transacted mailing list or construct a realistic, hypothetical mailing list example. During repricing, the respondent reports the price that would be charged to construct the same mailing list, holding constant the number of records and the criteria used to construct the mailing list.

The compensation for content licensing fees can vary widely based on the agreements made between publishers and those to whom the content is licensed. If the services provided are highly customized or transacted infrequently, an estimated transaction price is collected instead of an actual transaction price.

Index Estimation Procedure, Including Estimation of Missing Prices

PPIs are calculated using the formula for a modified Laspeyres index. The Laspeyres index compares the base period turnover for a set of products or services to the current period turnover for the same set of products or services.

If no price report from a participating firm has been received in a particular month, the change in the price of the associated transaction is estimated by averaging the price changes for other transactions within the same detailed index line (i.e., for the same kind of services) for which price reports have been received.

Quality Adjustment

Quality adjustment may be needed for subscription transactions if the number of issues delivered during a set time frame (such as one year) changes.

Quality adjustment may also be necessary for advertising transactions when there is a large change in circulation. Advertisers view a publication's circulation as an important factor when negotiating advertising rates. An increase in a circulation figure suggests that ads placed in the publication will be seen by a larger audience. However, if circulation declines, advertisers perceive a loss in the value of the advertisement since its potential reach has fallen.

For subscription and content access sales for directories and mailing lists, quality adjustment may be required in instances when the type or depth of content provided in the publication has changed substantially.

Information used to perform any quality adjustment within the publishing industry, such as additional production cost, is requested from the respondent. The U.S. PPI does not currently utilize any third party data or employ any hedonic models to quality adjust publishing industry transactions.

Frequency of Collection

Publishing firms report prices for the selected transactions, usually on a monthly basis, using a form provided by the U.S. PPI. Firms are asked to report their prices as of the Tuesday of the week containing the 13th of the month (average prices reported at this time are often for the entire prior month). If the firm fails to report or reports incomplete information, it is called by an economist who requests the needed information. Firms report prices through a web-based application. Firms continue to report until a new sample is selected for the industry – after 7 to 8 years, on average.

3.4 Evaluation of Comparability of Price Data with Output Data

In general, output and price measures for Directory and Mailing List Publishers, Newspaper Publishers, and Periodical Publishers are comparable. With the ongoing shift from traditional print to online content delivery, the PPI works closely with the Census Bureau to ensure consistency among PPI prices and the Census output data.

4. Evaluation of Measurement

The U.S. PPI classifies and samples firms and publishes indexes based on NAICS industries. The U.S. Census Bureau also publishes turnover data based on NAICS classification. The way that NAICS structures the publishing industries is beginning to create a challenge. Currently, all publishers that only have an online presence are included in NAICS 519130, Internet Publishing and Broadcasting and Web Search Portals. This means that all newspapers, periodicals, directories and mailing lists that are online-only are classified in a different industry than those publishers that have a print-only presence or a print and online presence. This creates at least two issues.

The first issue is that online subscription and advertising prices for the same services are measured in multiple industries. The price of an online subscription to a periodical or advertisement in an online newspaper would be measured in NAICS 511110 and NAICS 511120 respectively if the publishers also has a print option available and measured in NAICS 519130 if it does not. Under classification systems like ISIC, these prices would all be included in the same industry index.

The second issue is that as it becomes more costly to maintain a print presence, more publishers are focusing on their online content and advertising sales. Some publishers have shifted completely to an online presence, which means that their classification has changed. Demand for

subscriptions and advertising is also shifting from print to online. This leads to the decline of turnover and the number of firms in the NAICS industries for newspaper publishers, periodical publishers and directory and mailing list publishers. If these firms and their turnover are being shifted into NAICS 519130, Internet Publishing and Broadcasting and Web Search Portals, classification and delineation by type of publication is lost.

These issues lead to the question of whether publishing a newspaper, periodical or directory is primarily the same service regardless of the media used to deliver the content. Since these industries focus on the publishing and not the printing, whether or not the content is on paper or in digital format may not make a difference in the service being provided. The more important delineation may be the type of publication rather than the type of media it is delivered through. In the future, NAICS definitions may need to be revisited to address these issues and possibly follow more closely to ISIC by including online-only publishers in the same industry with those that only publish on paper and those that have a presence in both areas.

Any views expressed are those of the authors and not necessarily those of the U.S. Census Bureau. The Census Bureau has reviewed this data product for unauthorized disclosure of confidential information and has approved the disclosure avoidance practices applied. (Approval ID: CBDRB-FY19-EWD-B00006)