

32nd Voorburg Group Meeting
23 – 27 October 2017
New Delhi, India

Sector Paper: ISIC 661
Activities auxiliary to financial service activities,
except insurance and pension funding

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Any views expressed are those of the author and not necessarily those of the U.S. Census Bureau

This paper summarizes the experiences of participating national statistical offices in measuring output and prices for this industry, and aims to identify best practices. Except where noted, the information is sourced from the papers and presentations contributed by the United States, Japan, India, Malaysia, and Canada at the 31st Voorburg Group meeting held in 2016.

1. Description and characteristics of the industry

1.1 Definition of the industry

ISIC 661, Activities auxiliary to financial service activities, except insurance and pension funding activity, covers the furnishing of physical or electronic marketplaces for the purpose of facilitating the buying and selling of stocks, stock options, bonds or commodity contracts¹. This group includes the following three ISIC classes:

ISIC 6611, Administration of financial markets

- operation and supervision of securities exchanges, other than by public authorities, such as:
 - commodity contracts exchanges
 - futures commodity contracts exchanges
 - securities exchanges
 - stock exchanges
 - stock or commodity options exchanges

ISIC 6612, Security and commodity contracts brokerage

- dealing in financial markets on behalf of others (e.g. stock broking) and related activities
- securities brokerage
- commodity contracts brokerage
- activities of bureaux de change

ISIC 6619, Other activities auxiliary to financial services activities

- financial transaction processing and settlement activities, including for credit card transactions;
- investment advisory services;
- activities of mortgage advisers and brokers; and
- trustee, fiduciary and custody services on a fee or contract basis

¹ ISIC Rev.4, <https://unstats.un.org/unsd/cr/registry>

The contributed country mini-presentations for this industry discussed the National Industry Classification of India (NIC), the Malaysian Standard Industrial Classification (MSIC), and the North American Industry Classification System (NAICS). The NIC and MSIC adhere closely to the ISIC for this industry while the NAICS is substantially different. Activities within ISIC 661 are classified into 14 separate detailed NAICS industries across subsector 522, Credit intermediation and related activities; and subsector 523, Securities, commodity contracts, and other financial investments and related activities.

The activities of ISIC 661 are closely related to those in ISIC 6499, Other financial service activities, except insurance and pension funding activities. Classification challenges between these groups are exacerbated because statistical agencies sometimes use similar terms to refer to different financial service activities. For example, the ISIC specifically identifies dealing in securities on behalf of others as part of group 661. In NAICS the phrase “securities dealing” is reserved for establishments that act as a principal in buying and selling securities on a spread basis. In contrast, ISIC states that the purchasing of securities for resale to others is part of class 6499. The activity referred to as dealing in ISIC is termed only as “securities brokerage” in NAICS.

1.2 Market Conditions and Constraints

The Canadian mini-presentation noted that the finance and insurance sector contributed roughly 7 percent GDP in that country over the last several years. This is very similar to the U.S., where this sector produced 7.2 percent of value added in 2015.² The U.S. turnover paper estimates that the U.S. industries that best concord to ISIC 661 had 72,804 employer establishments that produced a total of \$257.8 billion in receipts in 2012. The largest contributions were from securities brokerage establishments.

This industry is highly regulated in a majority of countries. As a result, many firms are accustomed to requirements to record and share standardized measures of turnover, expenses, and in some cases prices. This also provides opportunities for national statistical offices to partner with regulators to obtain non-survey data.

The largest financial services firms tend to provide services to both businesses and consumers. These integrated providers contributed approximately 75% of securities industry turnover in Canada. In the U.S. the eight largest securities brokerage firms generated approximately 50% of industry turnover in 2012.

Many firms provide a broad range of services that include activities primarily classified in other industries. This may include investment banking, portfolio management, insurance brokerage,

² U.S. Bureau of Economic Analysis, “Value Added by Industry as a Percentage of Gross Domestic Product” <https://www.bea.gov/iTable/iTable.cfm?ReqID=51&step=1#reqid=51&step=51&isuri=1&5114=q&5102=5>
Accessed September 17, 2017

and commercial banking. As a result, secondary production may be a significant source of turnover for industry firms. There is also substantial production of activities auxiliary to financial services by statistical units primarily classified in other industries.

The B2C segment of this industry is also known as retail brokerage. This segment can be subdivided into full-service brokerage firms and discount brokerage firms. Full-service firms tend to offer a broader range of financial services, personalized advice, and supplementary research in addition to trade execution. Discount brokerages, some of which operate exclusively online, focus more on commission-based trade execution.

2. Turnover/Output Measurement

2.1 General Framework

Both the U.S. and Malaysia collect output data for this industry as part of a comprehensive Economic Census conducted every five years, and as part of an annual survey. Canada includes firms in this industry in their Annual and Financial Statistics program which measures turnover for nearly all incorporated Canadian businesses. The U.S. and Canada also publish turnover data on a quarterly basis, with the U.S. providing data at the NAICS industry level and Canada at the NAICS sector level.

Output statistics are used as a key input for the creation of national accounts, service industry labor productivity and cost measures, and for weighting SPPIs. Since financial assets are to be valued in the national accounts exclusive of fees or commissions, proper measurement of brokerage services in this industry is critical in facilitating accurate asset valuation.

2.2 Measurement Issues

The CPC lists two products related to this industry.

CPC	Product Name
71521	Securities brokerage services
71591	Financial consultancy services

The North American Product Classification System (NAPCS) provides significantly more detail. The following table lists the NAPCS products related to this industry.

NAPCS	Product Name
41	Financial, insurance, and related products, nec.
41101	Personal financial, insurance, and related products, nec.
4110101	Personal financial services, except mortgage and vehicle loans
411010103	Personal financial planning and investment management services
4110204	Brokering and dealing services
41102040101	Brokering and dealing services for debt instruments
41102040102	Brokering and dealing services for equities
41102040103	Brokering and dealing services for derivatives contracts
41102040104	Brokering and dealing services for foreign currency, wholesale
41102040105	Brokering and dealing services for investment company securities
41102040106	Brokering and dealing services for other financial instruments
41102040107	Brokerage correspondent services
4110205	Financing related to securities
411020501	Financing related to securities
41102050101	Financing related to securities
4110210	Support services for financial and commodity markets
411021001	Support services for financial and commodity markets
41102100101	Support services for financial and commodity markets
4110211	Automated clearing house (ACH) services
411021101	Automated clearing house (ACH) services
41102110101	Automated clearing house (ACH) services
4110212	Other products supporting financial services
411021201	Other products supporting financial services
41102120101	Other products supporting financial services

A very significant challenge for collecting turnover data for this industry is the prevalence of bundled product offerings, particularly where firms offer brokering services and financial planning for a single recurring fee charged periodically. In the U.S. respondents are asked to allocate the turnover from these transactions to brokering and planning separately, which is very difficult for respondents to execute accurately. In practice, respondents often report the entirety of turnover generated from these services as financial planning.

The sampling unit for the U.S. Economic Census is at the establishment level. For the U.S. annual and quarterly surveys, the sampling unit typically represents all activities of the enterprise

that are classified within this industry. Since it is not always easy for respondents to identify which specific activities are classified within each financial industry, clear instructions and extensive clarifications are needed on the data collection instruments. In Canada the enterprise is the survey unit for the annual and quarterly turnover programs.

The U.S. and Canada both make extensive use of administrative tax data for non-surveyed and non-responding units.

2.3 Description of Methods for Measurement

No industry-specific methods for creating tabulated estimates or imputing missing values were described in the contributed papers. The general methods used by statistical offices are not adapted for this industry.

3. Measurement of SPPI

3.1 General Framework

The U.S. has been producing monthly SPPIs for securities brokerage and investment advice since 2001 and 2004, respectively. U.S. national accountants use this data to derive real measures of personal consumption expenditures on financial services. The securities brokerage index is also used to deflate industry output, but the U.S. Bureau of Economic Analysis uses more detailed alternative measures for deflating investment advice.

Canada recently conducted a pilot survey to develop a new securities brokerage services price index. While most of their SPPIs are produced from samples drawn from the Business Register, this pilot program targets units from the register of the Investment Industry Regulatory Organization of Canada. One of the advantages of this approach is that the alternative source includes securities brokerage services offered by financial firms not primarily classified in this industry. This better aligns with the needs of the Canadian national accounts.

Japan produces an SPPI for securities brokerage and related services covering B2B sales only. Retail brokerage and investment advice services provided to consumers are excluded.

India shared their experience developing a price index to capture the total cost of executing securities trades, reflecting commissions, dealer spreads, trade settlement fees, custodial fees, and other related charges.

None of the countries that contributed to this session reported experience with pricing services related to the administration of financial markets, classified in ISIC 6611.

3.2 Measurement Issues

A common theme in the country experiences was challenges with identifying an appropriate survey unit, balancing the needs of concordance with industry and/or product classifications, national account users, and the record keeping practices of industry firms. As previously noted, Canada is planning to measure selected products only in order to better align with company record keeping and national accounts needs. As a result, their pilot data will not be fully coherent with NAICS and will not include secondary production of industry firms. Their program is continuously being expanded to other financial services to improve coverage. Ideally the U.S. identifies survey units based on industry classification, including all primary and secondary activities. In practice, however, record keeping practices of the largest industry firms often make this impossible, forcing the U.S. to employ a fallback survey unit similar to the Canadian activity-based unit, with secondary production excluded. Japan also noted that consideration of reporting burden is a factor limiting potential data collection for highly regulated financial firms. Secondary products are excluded from the Japanese index for this industry as well.

3.3 Description of Pricing Methods and Criteria for Choosing the Method

Countries presented a variety of methods for measuring prices in this industry. This section summarizes country experiences with pricing various types of industry services.

There are two primary types of prices charged by industry firms: fees or commissions charged per transaction, and periodic fees often assessed based on the value of assets in an account. The transaction fees may be a commission assessed based on the dollar value of a securities trade (value-based commissions), or a flat charge per trade or for the provision of an investment plan. Value-based commissions have traditionally been charged by retail full-service brokerages, but they are becoming less common in the U.S. In their place many of these firms have transitioned clients to accounts with recurring fees. This might include providing unlimited securities trading, some investment advice, and access to research for a set percentage of assets in the account.

Transaction fees

For flat transaction fees, such as those assessed per trade or per security traded, both the U.S and Japan employ the direct use of prices for repeated services. During the repricing period, respondents are asked to update the fee they would charge a specified class of customer if they

were to execute the transaction selected in the base period. A similar approach is used by the U.S. for flat fees charged for investment plans and other advisory products.

The U.S. and Japan use a combination of the model pricing and percentage fee methods to measure value based commissions. However, for these transactions the countries' approaches vary in terms of the unit of measurement that is held constant in the repricing period. The Eurostat-OECD Methodological Guide for Developing Producer Price Indexes for Services refers to the U.S. method as the number of traded securities approach and the Japanese method as the real value of traded securities approach.

In the U.S., a respondent is asked to specify a typical value-based commission transaction for a given security, noting the current market price of the security, the quantity of securities traded (for example, the number of shares in the case of equity transactions), and the percentage fee applied to the trade. These values are multiplied to obtain the price in the base period. In subsequent periods, the quantity of securities traded remains fixed, while the security price and the percentage fee assessed are updated to current market levels.

Japan uses the same technique to derive the base period price, and similarly asks respondents to update the percentage fee to reflect current market prices in subsequent periods. They do not, however, allow the nominal value of traded securities to be updated based on current period market prices. Instead, they adjust this value only to reflect changes in the inflation rate for general prices.

These different methods can provide substantially different measures of the general price level and the amount of real output produced in this segment of the securities brokerage industry. If the value of the securities market were to double in a given period while the percentage commission fee remained constant, the U.S. would show 100% price change for these transactions. Japan, on the other hand, would show price change only at the general inflation level. Assuming no change in the number of securities traded, the U.S. would show that the volume of securities brokerage services was unchanged in this case, while Japan would show that volume increased significantly.

Since the change in the market value of securities is a key determinant of price change in the U.S., they use a probability proportionate to size sampling approach based on market capitalization to select the securities that are to be used in these transactions.

Canada has opted for a single unit value price for all transaction fees, regardless of whether they are value-based commissions or flat fees assessed per trade or per security. With this approach, separate unit values are calculated for all transactions of various trade values. For example, respondents may be asked to provide the total nominal value of all executed trades priced on a per-transaction basis that were valued between \$100,000 and \$150,000. The total amount of commissions that the firm collected for these trades is then divided by this value to get the unit value price.

A significant advantage of this approach is that it allows Canada to capture price changes that result when firms move from value-based commissions to flat transaction fees or vice versa for the same types of executed trades. A disadvantage is the potential for changes in customer mix to effect price changes. The technique of collecting separate unit values for transactions within specified ranges of nominal values alleviates much of this problem for value-based commission transactions.

The Canadian unit value price generates measures of real output and service volumes more similar to the Japanese real value of securities traded approach than the U.S. number of traded securities approach. In other words, changes in these prices are not primarily driven by changes in the market value of traded securities.

India is researching the use of transaction prices for measuring securities brokerage services, including brokerage fees, stamp duties and custody charges. India also shared a novel approach for measuring the total price of trade execution, encompassing the fees charged by firms that purchase securities for resale to others, classified in ISIC 6499. With this method the price is the effective bid-ask spread for a security, calculated as the difference between the executed price of a securities trade and the mid-point between the quoted ask and bid prices at the time of execution. The quoted ask is the price at which dealers will sell a security and the quoted bid is the price at which dealers will buy. When effective spreads are high, dealers earn more for executing trades.

Periodic fees

Both Canada and the U.S. described methods for tracking periodic fees assessed based on the value of assets held in client accounts. These are often referred to as fee-based or wrap accounts. In the U.S. the provision of these accounts is classified as investment advice services only if the firm does *not* have authority to execute trades without consultation with the client. These are often called non-discretionary accounts. The U.S. PPI program classifies discretionary accounts, where the firm can execute trades without consulting with the client, in NAICS 523920 Portfolio management. This corresponds to ISIC group 663, Fund management activities. Canada measures both discretionary and non-discretionary fee-based accounts in their securities brokerage index.

The U.S. uses a combination of the model pricing and percentage fee methods for these transactions. In the base period, respondents provide the total assets for a selected account and the percentage fee assessed. In subsequent periods, the respondent updates the rate of investment return earned on the account. This is applied to the prior period asset value, then multiplied by the current market percentage fee to get the current market price. This adjusted asset value may differ from the nominal value of current assets in the account, which is affected by new money deposited (inflows) and funds withdrawn (outflows). Inflows and outflows are excluded from the U.S. price calculation. As with the U.S. method used for value-based commission transactions, this approach also reflect changes in the market value of securities as price change and not volume change.

Canada measures unit value prices for periodic fee transactions. The total amount of the periodic fees collected for accounts valued within a specified tier, such as \$100,000-\$200,000, is divided by the total value of these accounts. The resulting unit value is essentially the price for providing brokerage services for each dollar in the account. As with the Canadian method for calculating transaction-based unit values, changes in the market value of securities are not reflected as price change. s

3.4 Evaluation of Comparability of Price Data with Output Data

In both the U.S. and Canada there are some discrepancies between the survey units used for output and price surveys. In the U.S. the PPI program uses output data from the establishment-based Economic Census to calculate price index weights. The survey unit for prices, however, is either an enterprise or, as a fallback for the largest industry firms, a kind-of-activity unit. This provides challenges in terms of comparability. For example, a large financial services firm responding to the Economic Census may classify each of their establishments that offer services related to securities markets in the Investment banking industry. These establishments may provide a significant amount of securities brokerage and investment advice services as secondary production, but they will not be included in the industry totals for Securities brokerage or Investment advice. The PPI may, however, establish kind-of-activity units for this firm in these industries. So these activities would be included in the industry price data, but not the industry output data. In Canada output data is derived from enterprise surveys and administrative sources. While these sources help to disaggregate output across industries, prices are collected solely from kind-of-activity units, leaving potential for similar inconsistencies.

4.0 Evaluation of Measurement

Differences in the record keeping practices of industry firms and the needs of national accountants may lead statistical offices to choose various methods for measuring output and prices in this industry. It is important that price programs work in close consultation with national accounts, as different pricing methods result in substantially different measures of industry inflation, volume, and productivity when frequently volatile securities markets rise and fall.

The highly regulated nature of the financial services industries provides opportunities for statistical offices to partner with regulatory agencies to collect industry data and reduce respondent burden. An unsurprisingly common theme is that company records are aligned with regulatory requirements, and not the standard industry and product classifications typically used by statistical offices. Additional work on aligning these classifications with record keeping

practices in the financial services industries would facilitate better data reporting and allow for the use of more administrative data. Countries have been successful in using kind-of-activity units to address challenges with industry-based collection.

The financial services industry is very nimble in introducing new services and new pricing models. Compilers need to stay informed of industry developments to ensure that data collection instruments and pricing methods keep pace with these changes. For example, the value of exchange-traded fund transactions in the U.S. moved from less than 5 percent of total equity trades in 2001 to more than 30 percent in 2007³. Recent years have seen a rapid transition from transaction-based commissions to periodic fee-based accounts, where a single price is charged for multiple financial products. Data collection and tabulation methods will need to be adapted to account for the increased use of these bundled offerings.

5.0 International Progress

The following table summarizes international progress on measuring prices and output for this industry as compiled by John Murphy of the U.S. Census Bureau from country-provided progress reports. Note that countries such as Canada and India did not include price programs currently being piloted or researched.

	Countries for ISIC 6611, Administration of financial markets	Countries for ISIC 6612, Security and commodity contracts brokerage	Countries for ISIC 6613, Other activities auxiliary to financial services
PPI details >= CPC	0	2	2
PPI details >=CPC soon	0	0	0
Turnover details >=CPC	1	3	1
Turnover details >=CPC soon	0	1	0
Industry-level prices collected	1	2	3
Industry-level turnover collected	9	9	9
Detailed turnover and prices well aligned	0	1	1
Detailed turnover and prices well aligned soon	0	0	0
Industry level turnover and prices well aligned	1	1	2
Industry level turnover and prices well aligned soon	0	0	0
No industry coverage	19	18	17

³ Robin Wigglesworth, "ETFs are eating the US stock market" Financial Times, January 24 2017
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