

**An Alternative Approach for the Classification of Imports Data by Use and
Industries-of-Destination:
The Case of Israel**

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2018

Abstract

One of the main challenges in economic statistics today is the classification of imports by uses and industries-of-destination. Such classification provides an important analytical economic framework, and is one of the main components in the compilation of Supply, Use and Input-Output Tables.

The main approach presented in the literature is based on differentiating between direct and indirect imports. For direct imports, the total value of imports for each industry is calculated using business surveys and then allocated to commodity groups through a general distribution based on imports data by commodity. The uses of indirect imports are allocated using broad assumptions such as the proportionality assumption.

In this paper, an alternative approach based on the creation of a classification matrix of uses and industries-of-destination by commodity and importer is proposed. This matrix facilitates the compilation of statistics that take into account the weight of each commodity and importer at any given period.

In this approach, the uses of imports for selected commodities are assessed using administrative data. For the remaining commodities, imports are identified as direct or indirect imports based on the importer's industry in the business register. Importers classified as wholesale or retail trade in the business register are considered indirect while the remaining importers are considered direct. A complementary survey of selected importers is used to identify those that import commodities for both direct use and resale.

The uses of direct imports are defined according to the commodity description, and the industry-of-destination is assessed using the business register. Indirect imports uses and industries-of-destination are assessed via survey.

The case of Israel is presented, including examples of the use of administrative data and practical guidelines on how to maintain and update the classification matrix. Survey methodology is described, including population, questionnaire, quality management, integration and analysis.

Keywords: Uses of Imports, Industries-of-destination, SUT, Direct Imports, Indirect Imports, Supply Table, Use Table, IOT, Input-Output Tables, BEC

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Introduction

Globalization and the fast pace of changes in global trade highlighted the need for detailed trade data and created a multitude of challenges for economic statisticians. One of the key questions in economic statistics today is how to classify imported commodities by uses and industries-of-destination.^{1,2}

The classification of imported commodities by uses and industries-of-destination is an important analytical economic framework. It allows external trade statistics to be considered jointly with other sets of general economic statistics such as national accounts, taxes and industrial statistics for national, regional or world-level economic analysis.³ It is a core component on the production of Supply and Use Tables (SUT),⁴ Input-Output Tables (IOT)⁵ and the calculation of GDP from the use side.⁶ It also allows a deep analysis of Trade in Value Added (TIVA),^{7,8} Global Value Chains (GVC)⁹ and the influence of trade agreements on the national economy.¹⁰

¹ United Nations. (2012). *Classification by Broad Economic Categories Rev.5, Defined in terms of the Harmonized Commodity Description and Coding System*. New York: author.

² United Nations. (2016). *The Central Product Classification, 2.1*. New York: author. pp.13-15.

³ United Nations. (2003). *Classification by Broad Economic Categories: Defined in terms of the Standard International Trade Classification, revision 3 and the Harmonized Commodity Description and Coding System (2002)*. New York: author. p. 4.

⁴ United Nations. (2017). *Handbook on Supply, Use and Input-Output Tables with Extensions and Applications. Draft for Global Consultation*. New York: author.

⁵ Ibid. p. 33.

⁶ United Nations. (2003). *Statistics Division Studies in Methods Series F, No.85 Handbook of National Accounting National Accounts a Practical Introduction*. New York: author. p.4.

⁷ United Nations. (2012). *Classification by Broad Economic Categories Rev.5, Defined in terms of the Harmonized Commodity Description and Coding System*. New York: author.

⁸ United Nations. (2016). *The Central Product Classification, 2.1*. New York: author. para.1.

⁹ Ibid.

¹⁰ It may be argued that the classification of imports according to use is relevant even for taxation and other legal purposes. See, for example, the case of Halperin optics against the Israel Tax Authority. Eyeglasses and eyeglass parts were taxed differently. Halperin optics claimed that eyeglass lenses and eyeglass frames should be considered as complete eyeglasses, while customs authorities claimed that they should be considered as intermediate consumption for the production of eyeglasses.

For more information see: Hashalom Courts. (2018). *Glasses Imports, Implementation of the "Integration Test"*. Retrieved from <https://www.psakdin.co.il/Court/%D7%90%D7%95%D7%A4%D7%98%D7%99%D7%A7%D7%94-%D7%94%D7%9C%D7%A4%D7%A8%D7%99%D7%9F-%D7%91%D7%A2-%D7%9E-%D7%95%D7%90%D7%97-%D7%A0-%D7%9E%D7%93%D7%99%D7%A0%D7%AA-%D7%99%D7%A9%D7%A8%D7%90%D7%9C-%D7%A8%D7%A9%D7%95%D7%AA-%D7%94%D7%9E%D7%A1%D7%99%D7%9D-%D7%90%D7%92%D7%A3-%D7%94%D7%9E%D7%9B%D7%A1-%D7%95%D7%94%D7%9E%D7%A2-%D7%9E#.WvmlYa2we1s>

Some of the main issues faced when aggregating trade data by uses and industries-of-destination are: classification of commodities that can be used for more than one use, classification in cases where the use of a commodity may vary according to specific market conditions, and the lack of direct information regarding the industries-of-destination of a large number of commodities.

These issues are widely known by the international statistics community.^{11 12} Nonetheless, the practical advice and recommendations presented in the literature are often based on broad assumptions and/or do not provide enough guidelines and detailed examples for national statisticians.¹³

The purpose of this paper is to present, through the case of Israel, an alternative approach to the analysis of uses and industries-of-destination. This approach is based on the creation of a classification matrix that provides, for each importer and commodity imported by it:

1. The percentage of the value of imports destined for each of the three uses described in the System of National Accounts (SNA)
2. The percentage of the value of imports destined for each industry.

This matrix can then be applied to current imports data in order to calculate aggregated statistics of imports by uses and industries-of-destination.

The information contained in this paper is the fruit of a multi-decade effort made by the Israel Central Bureau of Statistics to develop a practical methodology for the classification of imports by uses and industries-of-destination. This methodology was developed with the intention of providing better estimates for the uses of imports aggregates, and improving the estimates used in the 2006 and 2014 Input-Output Tables. In particular, it summarizes the innovative analysis techniques developed during the preparation and deployment of the "Imports Destinations Survey" for the years 2006 and 2014, conducted by the Foreign Trade Sector in cooperation with the Input-Output Sector.

The first part of this paper introduces the principles for the classification of imports by uses and industries-of-destination provided in the international literature. This chapter also

¹¹United Nations. (2017). *Handbook on Supply, Use and Input-Output Tables with Extensions and Applications. Draft for Global Consultation*. New York: author. para. 8.6.

¹²United Nations. (2012). *Classification by Broad Economic Categories Rev.5, Defined in terms of the Harmonized Commodity Description and Coding System*. New York: author. p. 20.

¹³Such as the "proportionality assumption" proposed in the Handbook on Supply, Use and Input-Output Tables or the assumption that "each commodity has only one use" or the assumption that "there is a unique relationship between each product and its end-use classification that allows it be allocated within a Supply-Use framework as either intermediate consumption, gross fixed capital formation, or other final consumption" used in the BEC classification.

includes a brief discussion of the challenges and proposed methodology found in the compilers manuals.

The second part of this paper presents the case of Israel. It provides a brief description of the national environment and a detailed description of the methodology used by the Israel Central Bureau of Statistics. The methodology section is divided into four parts: 1. The principles of the Israeli approach, 2. The methodology used to create the classification matrix, 3. The methodology used for the maintenance of the classification matrix, and 4. The way the classification matrix is used to create current aggregates. The methodology used to create the classification matrix includes: a detailed discussion of the definitions used at the national level, the use of the commodity description and of additional customs data, the use of data from the national business register, the use of additional sources of administrative and secondary data, survey methodology, integration of the different data sources, data imputation and quality management.

Classification of imports by uses

The classification of imported commodities by use is an important analytical macro-economic framework. According to The United Nations System of National Accounts (SNA), commodities imported can be used as either intermediate inputs or for final uses. The final use of a commodity can be either household consumption or capital formation in any of the different industries. Based on these principles, three main "uses" are defined: "Goods for capital formation", "Intermediate goods" and "Consumption goods".¹⁴

The allocation of products to use categories comes with non-trivial challenges,¹⁵ and can vary between countries depending on their economic structure. As a result, the development of the methodology for the classification of imports data by use is usually considered the job of national statisticians.

Trade data is usually collected using a national version of the Harmonized Commodity Description and Coding System (HS) or the Central Product Classification (CPC). Since the main purpose of these classifications is to facilitate international trade, the commodity descriptions are often not detailed enough to define "use" according to the SNA definitions.

The main challenges national statisticians face when aggregating trade data by use are:

1. Classification of commodities that can be used for more than one use. For example, coffee, sugar, computers and office supplies are used both for household consumption and as intermediate goods in a variety of industries.
2. The use of a commodity may vary according to specific market conditions. In these cases, national statisticians are confronted with classification dilemmas such as:
 - a. According to the SNA definitions, should cutlery purchased by a hotel be classified as intermediate goods due to the low value of each piece? Does this apply when the hotel replaces its entire cutlery at once?
 - b. Should construction materials purchased by a home owner and used by a contractor be considered as household consumption or as intermediate goods in the construction industry?
 - c. Should vehicle parts sold and installed by an automobile repair shop be considered as intermediate goods or as consumption of the car owner? Is there a difference if the parts and the installation service are billed separately?

¹⁴ European Communities, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations and World Bank. (2009). *System of National Accounts 2008*. New York: author. pp151-153.

¹⁵ United Nations. (2012). *Classification by Broad Economic Categories Rev.5, Defined in terms of the Harmonized Commodity Description and Coding System*. New York: author. p. 20.

These issues are widely recognized by the international statistics community, and described at length in international methodology publications such as the "Classification by Broad Economic Categories Rev.5"¹⁶ and the "Draft for Global Consultation of the Handbook on Supply, Use and Input-Output Tables"¹⁷ Nonetheless, the practical advice and recommendations presented in the literature are often based on broad assumptions and/or do not provide enough guidelines and detailed examples for national statisticians.

¹⁶ United Nations. (2012). *Classification by Broad Economic Categories Rev.5, Defined in terms of the Harmonized Commodity Description and Coding System*. New York: author.

¹⁷ United Nations. (2017). *Handbook on Supply, Use and Input-Output Tables with Extensions and Applications. Draft for Global Consultation*. New York: author.

Classification of imports by industries-of-destination

As explained in the last chapter, a commodity imported can be used as "Goods for capital formation", "Intermediate goods" or "Consumption goods". "Consumption goods" are, by definition, used by households. "Goods for capital formation" and "Intermediate goods" are, by definition, used by companies and institutions in different industries for the production of other goods or services.

The industries-of-destination of a commodity is defined as the first industry in which it is used (either as an intermediate good or for capital formation). In this context, a company that resells commodities with only minimal processing such as a wholesaler or a retailer would not be considered as a user, but rather as an intermediary.^{18 19} Industries-of-destination are classified according to the International Standard Industrial Classification of all economic activities (ISIC), or according to a national version of this classification.

Assessing the industries-of-destination of imported commodities can be straightforward when direct information is available. In contrast, when no direct information is available, determining the industries-of-destination of imported commodities can be extremely complex,²⁰ and is considered by the international statistics community as one of the major challenges for national statisticians.²¹

The main issues related to the classification of imports by industries-of-destination are:

1. Direct information for assessing the industries-of-destination of imports is generally rare and available only in exceptional cases.
2. It is difficult to differentiate between goods imported for the use of the importer (direct use) and goods imported for resale based solely on customs data. There is no international convention or accepted methodology to do this, and it is usually done at the national level based on national statisticians' expertise.

It is possible to use complementary administrative data and assumptions to differentiate between goods imported for direct use and goods imported for resale. While these methods can create valuable insights, they don't provide a comprehensive solution due to three major issues that arise:

¹⁸ Ibid. para. 7.37.

¹⁹ European Communities, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations and World Bank. (2009). *System of National Accounts 2008*. New York: author. para. 6.146.

²⁰ United Nations. (2017). *Handbook on Supply, Use and Input-Output Tables with Extensions and Applications. Draft for Global Consultation*. New York: author. para. 8.18.

²¹ Ibid. para. 8.27.

1. It does not provide insights regarding the industries-of-destination of commodities imported by companies in the "wholesale and retail trade" industries. Assessing the industries-of-destination of commodities imported by companies in these industries is a complex task due to the fact that a number of commodities can both be used and sold by the reseller. These commodities may include, among others, plastic bags and packaging materials, mannequins, samples, furniture, computers, machinery, tools and spare parts used in the importers' maintenance and repair shops.
2. Although companies can be active in a range of industries, they are classified in administrative files only according to their main economic activity. This activity does not necessarily represent the industry in which imported commodities are used. Also, companies tend to specialize in specific products, while sourcing complementary commodities locally or abroad. For example, a bed manufacturer may import mattresses to be sold as compliments to the beds. These mattresses are not used in the importer's industry, but rather by the client that purchases the bed.
3. The economic reality is that products sold by importers often consist of a mix of commodities and services, such as assembly or installation. In these cases, it is unclear if the commodities should be considered as intermediate goods used by the importer or consumption goods used by the client. In these cases, national statisticians are confronted with classification dilemmas similar to those encountered when classifying commodities by "use". Examples of these dilemmas are:
 - a. Air conditioners' internal and external units are imported separately and classified by customs as parts. Both units are then installed at the customer's site. Is this installation activity enough to classify the units as intermediate goods or should the whole air conditioner be considered as consumption goods?
 - b. Desktop computers are customized by the dealer according to client's specifications. Should the parts be considered as intermediate consumption of the dealer or household consumption?
 - c. A train car may be imported as two pieces for easier transportation and then assembled locally. Should it be considered as intermediate consumption of the local "manufacture of railway, locomotives and rolling stock" industry or investment goods of the "Passenger transport on urban and suburban trains" industry?

According to the recommendations found in the literature, the industries-of-destination should preferably be defined based on direct information. When no direct information is available,

the industries-of-destination of commodities should be defined using indirect techniques such as data collected via business or trade surveys. Survey results are used to calculate the total value of imports for each industry. This value is then allocated to commodity groups through a general distribution.

When survey data is not available, broad assumptions are used to assess the industries-of-destination. One of the most widely used assumptions is the "import proportionality assumption", that assumes that imported commodities are used in the same proportion across all industries intermediate inputs and final uses.²² Other assumptions used are usually based on available direct data such as the classification of commodities according to the specification dimension of the BEC classification²³ or expert knowledge regarding commodities commonly used in specific industries.²⁴ The generalized results of these methods are analyzed for reasonableness and adjusted based on country specific expert knowledge of the economy, production chains and purchases of products by final use. Due to the broad nature of these assumptions, the analysis process is focused on the biggest industries, while smaller industries receive less attention.²⁵

²² Ibid. pp. 260-264.

²³ United Nations. (2012). *Classification by Broad Economic Categories Rev.5, Defined in terms of the Harmonized Commodity Description and Coding System*. New York: author. pp.17-18.

²⁴ Ibid. p. 39.

²⁵ United Nations. (2017). *Handbook on Supply, Use and Input-Output Tables with Extensions and Applications. Draft for Global Consultation*. New York: author. para. 8.35.

An alternative approach

The challenges national statisticians face when aggregating data by uses and industries-of-destination are recognized by the international statistics community.^{26 27} Nonetheless, the recommendations presented in the literature are often based on broad assumptions and do not provide enough practical guidelines. There is also a shortage of examples of how to adapt the international recommendations to the national level.

The purpose of this paper is to propose an alternative, comprehensive approach to the classification of imports by uses and industries-of-destination. This approach is based on the creation of a classification matrix of uses and industries-of-destination by commodity and importer using the best information available at the individual importer and commodity level.

For each importer and commodity imported by it, this matrix provides:

1. The percentage of the value of imports destined for each of the three uses described in the System of National Accounts (SNA)
2. The percentage of the value of imports destined for each industry.

Once created, the matrix can be applied to current imports data and used to calculate aggregated statistics of imports by uses and industries-of-destination. The aggregates take into account the weight of each commodity and importer at any given period.

The approach proposed is presented through the case of Israel. The next chapters of this paper provide a brief description of the Israeli national environment and a detailed description of the principles of the Israeli approach and the methodology used by the Israel Central Bureau of Statistics to create, maintain and use the classification matrix.

²⁶ Ibid. para. 8.6.

²⁷ United Nations. (2012). *Classification by Broad Economic Categories Rev.5, Defined in terms of the Harmonized Commodity Description and Coding System*. New York: author. p. 20.

The case of Israel

Israel has a technologically advanced free market economy. Cut diamonds, high-technology equipment, and pharmaceuticals are among its leading exports. Its major imports include crude oil, grains and raw materials.²⁸ Israel is an OECD member,²⁹ with the 33rd-largest economy in the world (based on nominal gross domestic product) as of 2017. Israel signed free trade agreements with the European Union, the United States, the European Free Trade Association, Turkey, Mexico, Canada, Jordan, Egypt, and on 18 December 2007, became the first non-Latin-American country to sign a free trade agreement with the Mercosur trade bloc.³⁰

Israel's economy is dependent on imports for production and consumption. As a consequence, its imports, which totaled 69.1 billion USD in 2017³¹, have a large impact on its economy. Therefore, detailed and accurate imports data are extremely important for economic and policy decision making.

Israel started classifying imports of commodities by use in 1953³², and in 1962 a survey was developed to improve this classification. This survey became the first in a series of Imports Destinations Surveys conducted for selected years.³³

²⁸Central Intelligence Agency. (2018). *The World Factbook*. Retrieved from <https://www.cia.gov/Library/publications/the-world-factbook/geos/is.html>

²⁹OECD. (2018). *Israel's accession to the OECD*. Retrieved from <http://www.oecd.org/israel/israelsaccessiontotheoecd.htm>

³⁰Ministry of Economy and Industry. (2014). *Trade and Economic Agreements*. Retrieved from <http://www.economy.gov.il/English/InternationalAffairs/ForeignTradeAdministration/TradePolicyAgreements/Pages/TradeEconomicAgreements.aspx>

³¹Israel Central Bureau of Statistics. (2018). *Israel's Foreign Trade in Goods by Countries - March 2018*. Retrieved from http://www.cbs.gov.il/reader/newhodaot/tables_template_eng.html?hoda=201816121

³²Israel Central Bureau of Statistics. (1953). *Statistical Abstract of Israel*. Jerusalem: author.

³³The Import Destinations Survey for 2014 is the latest in a series of similar surveys conducted for selected years by the Israel Central Bureau of Statistics since 1965. The results of the surveys which were prepared for 1965 and 1972 were not published separately. The results of the surveys which were prepared for 1968/1969, 1977/1978, 1982, 1988 were published in the Israel Central Bureau of Statistics special publications series number 645 (1980), 787 (1986) and 952 (1993). The results of the survey for the year 2006 were published online at the Israel Central Bureau of Statistics website. The results of the survey for the year 2014 are yet to be published.

Israel Central Bureau of Statistics. (1980). *Import Destinations survey 1977/78*. Special Series No 645. (1980) Jerusalem: author.

Israel Central Bureau of Statistics. (1986). *Import Destinations survey 1982/83*. Special Series No 787. (1986) Jerusalem: author.

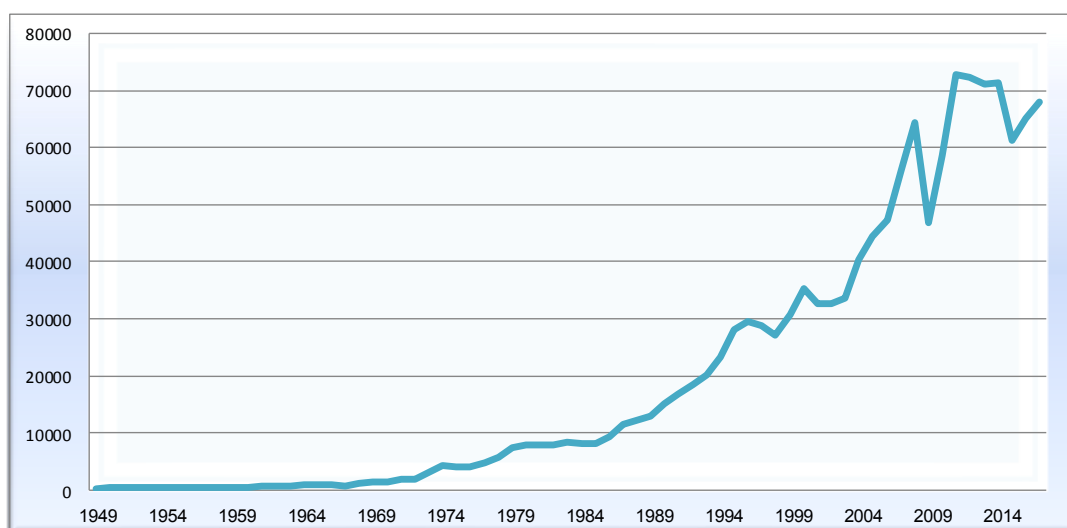
Israel Central Bureau of Statistics. (1993). *Import Destinations survey 1982/83*. Special Series No 952. Jerusalem: author.

Israel Central Bureau of Statistics. (2012). *Import Destinations survey 2006*. Retrieved from http://www.cbs.gov.il/webpub/pub/text_page_eng.html?publ=96&CYear=2012&CMonth=1

In Israel, official imports statistics are compiled and disseminated by the Israel Central Bureau of Statistics, an autonomous unit within the Prime Minister's Office. The legal framework for data collection is based on the power of the Statistics Ordinance³⁴ that defines the obligation of the public to provide information, the obligation of the CBS to safeguard the confidentiality of the information obtained, and the obligation of the CBS to publish the results of its statistical activities.^{35,36}

The methodology described in the next chapters was developed by the Foreign Trade Sector at the Israel Central Bureau of Statistics. One of the primary drives for the development of the methodology was the rapid changes in the magnitude of the value of Israeli imports and the number of importers during the years between 1990 and 2010. The techniques described are based on the existing data infrastructure in Israel, but the concepts and methodology can be adapted to different situations and applied by most countries.

Israel's Total Imports of Commodities: 1949-2017 (Million USD)³⁷



³⁴ Statistics Ordinance (New Version), 5732 - 1972. Published in Dinei Medinat Yisrael (Nusach Chadash) No. 24, 25th of Nisan, 5732 (9th of April, 1972), p. 500. Retrieved from http://www.cbs.gov.il/statistics_ordinance_e.pdf

³⁵ Israel Central Bureau of Statistics. (2009). *The Statistics Ordinance*. Retrieved from http://www.cbs.gov.il/www/publications09/about/aboutcbs_e.htm

³⁶ Israel Central Bureau of Statistics. (2009). *The Statistics Ordinance*. Retrieved from http://www.cbs.gov.il/www/publications09/about/ordinance_e.htm

³⁷ Israel Central Bureau of Statistics. (2018). *Statistilite No. 167. Israel 70*. Jerusalem: author. Retrieved from <http://www.cbs.gov.il/statistical/stat167h.pdf>

Principles of the Israeli Approach

The main principle of the methodology is that uses and industries-of-destination estimations should be compiled based on the best information available at the most detailed level. In practice, this principle leads to the creation of a matrix of uses and industries-of-destination at the individual importer and commodity level. This matrix is then used to compile current statistics from the "bottom up". In other words, the value of imports of each commodity imported by each importer is divided between uses and industries-of-destination according to the classification matrix. The data is then further aggregated into uses and industries-of-destination.

This "bottom up" approach has several advantages. It ensures that the true weight of each commodity and importer at any given period is taken into account in the compilation of aggregated indicators. Also, it provides a consistent method to address all the industries in the economy, ensuring that industry totals are consistent with imports data published using other classifications. In addition, it allows the compilation of detailed monthly, quarterly and annual data by uses and industries-of-destination.

Methodology

This section presents a detailed account of the methodology used to create the classification matrix, the methodology used for the maintenance of the classification matrix and the way the classification matrix is used to create current aggregates.

The first part of the methodology presents the techniques used for the creation of the classification matrix, including detailed discussions regarding: 1. the definitions used at the national level, 2. the use of the commodity description and additional customs data, 3. the use of data from the national business register, 4. the use of additional sources of administrative and secondary data, 5. survey methodology and 6. integration of the different data sources, data imputation and quality management.

Definitions at the national level

The classification of the uses and industries-of-destination of a commodity may vary according to national market conditions and different behavior patterns of the users of the imported commodities. As a consequence, the first step in the analysis process is the adaptation of the international recommendations to the national level. The following rules

currently used in Israel were defined by a group of experts in foreign trade, national accounts and Input-Output Tables:

- Machinery and equipment valued at more than a 100 USD and used for more than a year are considered as goods for capital formation
- Machinery and equipment valued at less than 100 USD and used repeatedly are considered as goods for capital formation if they represent a sizable part of the company's expenditures. This is analyzed on a case by case basis.
- Small appliances, cutlery and bed linens in hotels are considered as goods for capital formation if purchased in bulk. Replacements purchased regularly are considered as intermediate goods.
- The industries-of-destination of goods for capital formation purchased through a reseller or a service provider are determined based on the client's industry.
- Machinery and equipment assembled or installed by a service provider are considered as goods for capital formation and the industries-of-destination are determined based on the client's industry.
- Degradable goods, raw materials, small gifts to customers, tools that are used for less than a year and tools valued at less than 100 USD purchased by companies are considered as intermediate goods.
- Gifts for workers imported by the company are classified as consumption goods.
- Replacement parts used for day to day maintenance of machinery and equipment are considered as intermediate goods.
- Replacement parts used for special maintenance or for upgrading machinery and equipment are considered as goods for capital formation if they change the basic properties or the life span of the machine. This is analyzed on a case by case basis.
- Replacement parts for machinery and equipment purchased through a reseller or a service provider are considered as intermediate goods and the industries-of-destination are determined based on the client's industry.
- Spare parts for vehicles, including small vehicle motors, are considered as intermediate goods in the "Maintenance and repair of motor vehicles" industry, unless purchased directly by households.
- Motors and chassis for trucks and busses are considered as goods for capital formation
- Turbines and aircraft parts are considered as goods for capital formation and the industries-of-destination is determined according to the importer's industry. The exception to this is if the turbines and aircraft parts were imported by companies

classified in the "Manufacture of air and spacecraft and related machinery" industry, in which case they are considered as intermediate goods in this industry.

- The classification of cell phones changed over the years. Until 2014 all cell phones purchased by companies were considered as goods for capital formation. Due to changes in ownership behavior, life span, price and the way cell phones are registered in financial reports, cell phones purchased by companies are now considered as intermediate goods.
- Commodities imported via courier services are considered as consumption goods.

Use of commodity description and additional customs data

Once the definitions are clear at the national level, it is possible to start the creation of the classification matrix. The simplest classification method is to rely on the commodity description and additional data collected by the customs office. The commodity description can be used at the international level or based on additional country specific positions of the HS classification.³⁸ Additional customs data such as procedures, requirements, permissions and codes used for tax differentiation can also be relevant. Cooperation between the statistical agencies and customs can even lead to the development of special codes at the national level that can be used for this purpose.³⁹

In Israel, the commodity description at the national level and codes used for tax differentiations are currently used to assess the uses and industries-of-destination of selected commodities.⁴⁰ ⁴¹The commodities classified using this method include: fuels for the production of electricity, diamonds and a range of commodities for which the Israeli Customs and Purchase Tax Tariff ⁴² clearly describes their use to belong to specific industries (e.g. vehicles for firefighting, transportation ships and aircrafts, ambulances, taxis, machinery and raw materials used specifically in the production of certain goods). A clear example of such

³⁸ United Nations. (2012). *Classification by Broad Economic Categories Rev.5, Defined in terms of the Harmonized Commodity Description and Coding System*. New York: author p. 39.

³⁹ United Nations. (2011). *International Merchandise Trade Statistics: Concepts and Definitions 2010*. New York: author. para. 8.4.

⁴⁰ A complete list of discount codes used by Israeli customs can be found at: Israel Tax Authority. (2018). *List of discount codes used by Israeli customs*. Retrieved from <https://shaarolami-query.customs.mof.gov.il/CustomspilotWeb/UrlHash/CustomsBook?hash=EE1V9WILGnAaolpITx7A3kl0YvCOan42A6CgkK4fyhcoLc15p%2BL24162a37O6xrNb9akM6tV3prGcTkuytOz~8gaxm3vVM4tSVDuNjnu9J4%21>

⁴¹ The commodity description was used at the eight digits level until the end of 2017, and at the 10 digits national level since then.

⁴² Israel Tax Authority. (2018). *Customs and Purchase Tax Tariff*. Retrieved from <https://taxes.gov.il/English/customs/CommercialImport/Pages/CustomsTaxTariff.aspx>

commodities is national HS code 0402102000, as can be seen from the following snippet extracted from the Israeli Customs and Purchase Tax Tariff:⁴³

[Customs and Purchase Tax Tariff](#)->Customs item information Valid for date 10/04/2018

	Section I: LIVE ANIMALS; ANIMAL PRODUCTS	Rules
	Chapter 4: Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or	Rules
4 0402000000	-MILK AND CREAM, CONCENTRATED OR CONTAINING ADDED SUGAR OR OTHER SWEETENING MATTER	
4 0402100000	-IN POWDER, GRANULES OR OTHER SOLID FORMS, OF A FAT CONTENT, BY WEIGHT, NOT -%EXCEEDING 1.5	
0402102000/5	Approved by the Director General of the Ministry of Economy as intended for the manufacture of chocolate, candy, animal food or food preparations of heading 19.01	

While the commodity description and additional customs data can provide information regarding the uses and industries of certain commodities, it does not provide enough information to classify the majority of the imported commodities. Therefore, other sources and methods for analysis were developed, such as the use of data from the national business register.

Business register data

The Israeli Business Register contains data from two main sources: Value Added Tax authorities (VAT) and the National Insurance Institute. It consists of a repository of business records, which contains monthly data on employment and revenue, as well as additional indicators such as industry, contact information and addresses of businesses.⁴⁴

Business register data can be analyzed separately or in conjunction with other administrative data sources. It can also be used to define the population of business surveys, and as a source of contact information for companies included in survey samples. This chapter describes the ways that business register data were incorporated with customs data to create the basis of the classification matrix. The uses of business register data in conjunction with additional sources of administrative data and for surveys are described in the next chapters.

The first step in the creation of the classification matrix was to augment the data from customs with additional fields from the business register. Business register data and customs

⁴³ Israel Tax Authority. (2018). *HS code 0402102000*. Retrieved from <https://shaarolamiquery.customs.mof.gov.il/CustomspilotWeb/UrlHash/CustomsBook?hash=5HxtffTx5GxH8T1am1yeVEJGGxh0iAZNgNg4ME%2Bab4HRGHpl~LwaTq5ZO2P3G%2B16lxR6C%2BO5~KFIOiFXYOOXQEeR4%2Bzc1wfA53s1m8HeRm7PAeG4bw~BSJJsrniD7evqM%2Bus74Ouf8zoTVBgLsUP7ycCK~~YmISjZ06F7XSWfisimkBbhxkFTXye5vaKcgxW1F12SfgQKWOK5JMSflbFQ%21%21>

⁴⁴ Israel Central Bureau of Statistics. (2017). *Business demography - A Collection of Statistical Data from the Business Register 2011- 2015*. Retrieved from http://www.cbs.gov.il/publications17/1669/pdf/intro_e.pdf

data were linked using the "importer ID" field from customs data and the "business ID" field from the business register. The "importer ID" field contains an identifier that can be either a company's registration number or a personal ID number. The "business ID" field from the business register contains an identifier that can be either a company's registration number or a personal ID number for Sole Proprietorships. If a match is found, the industry in the business register is added to the customs data.

A number of insights at the commodity and importer level can be gained based on the industry of the importer, using two assumptions:

1. Commodities imported by importers that are not registered in the business register are used as consumption goods.
2. Commodities that can be used only as intermediate consumption or only as goods for capital formation are used in the industry of the importer, unless the importer is classified in the "Wholesale and retail trade" industries.

A large share of imports can be classified given these two assumptions. Yet, these assumptions should be used with care. The first assumption was verified by reviewing the descriptions of the commodities imported by importers that are not in the business register. The second assumption was verified by an analysis of the survey results received from importers included for this purpose in the Imports Destinations Survey 2006 and 2014. The results show that while the assumptions are valid in most cases, they are not always true. Therefore, the results of the analysis should be checked for reasonableness before being considered final.

The analysis of business register data can be extremely useful, but there are some major limitations to the information it can provide, and several constraints should be taken into consideration:

1. Due to the nature of the data sources, the business register does not include institutions and companies that do not pay VAT and have no registered employees in Israel.
2. Although the business register is regularly updated according to new data from surveys and other sources, companies' activities are not always up to date at the time the data is used.
3. The analysis does not provide information regarding the use of commodities that can be used for more than one use.
4. The registered industry of the company may not represent the industry in which the imported commodities were used. Examples of such cases include:

- a. Commodities imported by companies in the "Wholesale and Retail Trade" industries.
- b. Commodities imported by companies in other industries that are also resellers of complementary products.
- c. Owners of small businesses that import commodities for personal use using the company's import structure.
- d. Sole proprietors that import commodities for personal use.

These cases require different methodologies, such as the analysis of additional sources of administrative data and surveys.

Additional administrative and secondary data sources

A variety of advantages are associated in the literature with the use of administrative data sources, including: broad coverage, availability, timeliness, lower costs for data collection, lower public burden of response to surveys, and more.⁴⁵ In Israel, several methodologies for analysis using administrative data were developed in the last years. Development priorities were set according to the value of imports and the availability of quality sources of secondary and/or administrative data. Poor quality of results regarding a specific commodity or a group of commodities in previous surveys was also taken into consideration.

Administrative data is currently used to assess the uses and imports and industries-of-destination of vehicles⁴⁶ and spare parts,⁴⁷ automotive fuels⁴⁸, ships and aircraft⁴⁹. Secondary data sources are used to analyze the uses and industries-of-destination of pharmaceutical products⁵⁰, computers and computers parts⁵¹, and cell phones⁵². This chapter provides a detailed description of the methodologies used for each group of commodities.

⁴⁵ Statistics Canada. (2017) *Use of administrative data*. Retrieved from <https://www.statcan.gc.ca/pub/12-539-x/2009001/administrative-administratives-eng.htm>

⁴⁶ Wajnryt, D. (2009). *Analysis of Changes in the Structure of Imports by Economic Use of Transport Vehicles and Equipment, in the years 1995-2007*. Jerusalem: Israel Central Bureau of Statistics, Internal paper.

⁴⁷ Vinokur, S. (2016). *Methodology for the analysis of uses and industries of destination of vehicles spare parts*. Jerusalem: Israel Central Bureau of Statistics, Internal paper.

⁴⁸ Wajnryt, D. (2011). *Imports destinations surveys – methodology for the current update of the economic uses of imported commodities*. Jerusalem: Israel Central Bureau of Statistics, Internal paper.

⁴⁹ Ibid.

⁵⁰ Kirma, S. (2016). *Methodology for the analysis of uses and industries of destination of pharmaceutical products*. Jerusalem: Israel Central Bureau of Statistics, Internal paper.

⁵¹ Faur, H., Vinokur, S. (2017). *Methodology for the analysis of uses and industries of computers and computers parts*. Jerusalem: Israel Central Bureau of Statistics, Internal paper.

Vehicles and spare parts

The analysis of the uses of vehicles and spare parts is based on the proportion of the number of vehicles owned by private owners and by companies in the different industries.

The data used in this analysis originates from the Ministry of Transport's register of vehicles. The register of vehicles contains data regarding all vehicles licensed in Israel, including: vehicle type, category, model, ID of owners (either personal ID or company ID), production year, date of purchase and change of ownership, number of kilometers at the time of license renewal, motor capacity, allowed weight and type of fuel. This data was cross-referenced with the business register using the "Owner ID" field.

"Imported vehicles" were identified as all vehicles registered in the relevant year and produced in that same year or in the previous year. The analysis was done by vehicle categories: trucks, busses, tractors, recreational vehicles, gasoline and hybrid cars by motor capacity, diesel cars by motor capacity and motorcycles.

Trucks, busses, tractors and any vehicle whose owners' IDs appear in the business register were considered as goods for capital formation in the industry of the owner. Vehicles whose owners' ID numbers did not appear in the business register were considered as consumption goods.

The same constraints described in the last chapter regarding the business register apply in this case. As an anecdotal example of the influence of cases where the industry of the owner does not necessarily represent the industry in which the imported products were used, we originally found that a comparatively large number of recreational vehicles were owned by lawyers. These vehicles are most likely used for private use, and not for capital formation.

Automotive fuels

The analysis of the uses of automotive fuels was based on a methodology similar to the one used for the analysis of vehicles. The only difference is that the proportions calculated took into account the number of kilometers travelled by each car between license renewals. This analysis is scheduled to be further developed to take into account other parameters, such as the car model and fuel consumption according to the manufacturer.

⁵² Faur, H., Vinokur, S. (2017). *Methodology for the analysis of uses and industries of destination of cell phones*. Jerusalem: Israel Central Bureau of Statistics, Internal paper.

Ships and Aircraft

Large vessels were classified as goods for capital formation. The industries-of-destination was defined according to the type of vessel described in the national tariff. A small number of smaller ships and aircraft are imported into Israel each year. The use of these vessels was analyzed on a case by case basis according to the importer. A methodology similar to the one used for automotive vehicles is under development based on Israel's ships and aircraft registers.

Pharmaceutical products

Pharmaceutical products were identified as all commodities classified as originating in the "Manufacture of pharmaceutical products and homeopathic pharmaceutical products" industry.

The link between the commodity and industry of origin was done using the Israeli "HS – industry of origin correspondence" table. This table provides a link between the HS classification at the national level and the national version of the ISIC classification⁵³ - the "Standard industrial Classification of All Economic Activities".⁵⁴ This link is based on the description of the commodities in the customs tariff.⁵⁵ The table is maintained by experts in the Foreign Trade Sector at the Israel Central Bureau of Statistics.

For the purposes of the analysis, pharmaceutical products were divided into four groups:

1. Commodities that are, by definition, raw materials used in the manufacture other pharmaceutical products. These commodities were classified as intermediate goods used in the "Manufacture of pharmaceutical products and homeopathic pharmaceutical products" industry.
2. Commodities imported by companies registered in industries other than trade. These commodities were classified as intermediate goods used in the industry of the importer.
3. Commodities imported by companies registered in the "Retail trade" industry. These commodities were considered as used for private consumption.
4. Commodities imported by companies registered in the "Wholesale trade" industry.

⁵³ Israel Central Bureau of Statistics. (2013). *Israel's foreign trade in goods – definitions and explanations*. Retrieved from http://www.cbs.gov.il/www/fr_trade/intro_eng.pdf

⁵⁴ Israel Central Bureau of Statistics. (2011). *Standard Industrial Classification of All Economic Activities (Updated edition) 2011*. Jerusalem: author.

⁵⁵ *Ibid.*, p. 20.

The analysis of the uses and industries-of-destination of commodities imported by companies registered in the "Wholesale trade" industry was based on the assumption that these commodities are either sold to hospitals and health funds for intermediate use or to households through retailers. Health funds in Israel manage both clinics and retail pharmacies that sell prescription drugs and cosmetics items to households. These commodities were analyzed as a group, under the assumption that all pharmaceutical products are used in the same proportion by the different industries.

The methodology for analysis is based on deriving the total value of pharmaceutical products used from different sources, and the value of pharmaceutical products purchases made by hospitals, health funds and households. The proportion of the pharmaceutical products used by households and by each industry is then calculated.

The methodology for analysis has three main steps:

1. Calculating the total value of pharmaceutical products used in the economy.
2. Calculating the total value of pharmaceutical products used by hospitals and health funds.
3. Calculating the proportion of the pharmaceutical products used by each industry and by households.

The total value of pharmaceutical products used in Israel was calculated as the sum of the value of imports and the value of national production of pharmaceutical products. The value of imports was retrieved from customs data, and the value of national production was derived from the revenue of the "Manufacture of pharmaceutical products" industry.⁵⁶

The value of pharmaceutical products purchased by hospitals was derived from several sources. There are two kinds of hospitals in Israel: government owned and health fund owned. The value of the pharmaceutical products purchased by government owned hospitals was derived from the financial reports of the hospitals, and the value of pharmaceutical products purchased by health fund owned hospitals was retrieved from the "Final report on the activity of health funds",⁵⁷ issued by the Ministry of Health.

The value of pharmaceutical products purchased by health fund's clinics and pharmacies was also derived from the "Final report on the activity of health funds".⁵⁸ Based on expert

⁵⁶ Israel Central Bureau of Statistics. (2014). *Revenue from local sales and exports by Industry (class) (2011 Classification)*. Retrieved from <http://www.cbs.gov.il/publications14/1578/pdf/t04.pdf>

⁵⁷ Israel Ministry of Health. (2013). *Final report on the activity of health funds 2012*. Retrieved from <http://www.health.gov.il/PublicationsFiles/dochHashvaatui2012.pdf>

⁵⁸ Israel Ministry of Health. (2017). *Final report on the activity of health funds 2016*. Retrieved from

knowledge, it was assumed that 5% of the pharmaceutical products purchased were used at the clinics as intermediate goods, while the remaining was sold to households through the health fund's pharmacies.

The value of pharmaceutical products purchased by privately owned pharmacies was derived from the revenue of the "Retail sale of pharmaceutical and medical goods, cosmetic and toilet articles in specialized stores" industry, minus the market margins and taxes. Based on experts knowledge, it was assumed that for privately owned pharmacies, 30% of the value of sales were of pharmaceutical products and 70% were of cosmetic items and toiletries.⁵⁹

The resulting values were verified for reasonableness and compared to other data sources such as the results of the "Households expenditure survey".⁶⁰ A final proportion of the pharmaceutical products used in each industry and purchased by households was calculated according to these values.

Computers and computer parts

Most computers in Israel are imported and assembled by a small number of wholesalers that either resell to retailers or act as integrators for large clients. Several wholesalers were included in the samples of the Imports Destinations Surveys for the years 2006 and 2014. As a general rule, the respondents were able to provide information regarding the value of computers sold directly to big clients and the amount of computers sold to retailers. However, the wholesalers were not able to provide quality information regarding the industries-of-destination.

The proportion of computers destined to the different industries was assessed by industry experts based on market knowledge, information from financial reports and additional sources of secondary data.

Cell phones

In Israel, until the first years of the last decade, the ownership and purchase of a cell phone were highly correlated with the ownership of a phone line. In addition, many companies provided cell phones to workers as part of their benefits packages. As a consequence, the uses

<https://www.health.gov.il/publicationsfiles/dochhashvaatui2016.pdf>

⁵⁹ Shachar, N. (2014). *Creation of marketing margins for Input-Output tables 2006*. Jerusalem: Israel Central Bureau of Statistics, Internal paper. p.18.

⁶⁰ Israel Central Bureau of Statistics. (2018). *Households expenditure survey*. Retrieved from http://www.cbs.gov.il/reader/?MIval=cw_usr_view_SHTML&ID=404

and industries-of-destination of cell phones could be assessed using data from the Ministry of Communications regarding the ownership of cellular lines.

In Israel, the proportion of lines owned by households and by companies in the different industries was used until 2014. This practice was discontinued due to changes in the market that led to the disassociation between purchase of the device and the ownership of the line.

Surveys

The methodologies described above provide insights regarding a considerable part of the commodities imported. Regardless, the uses and industries-of-destination of many commodities remain unclassified, specifically those imported by companies in the "Wholesale and retail trade" industries, and commodities that can be used for more than one use.

The analysis of these commodities was done via surveys. The survey's main objectives were:

1. To classify the commodities imported by companies in the "Wholesale and Retail Trade" industries according to uses and industries-of-destination.
2. To identify importers registered in other industries that resell complementary commodities, and to classify these commodities.
3. To identify importers registered in other industries that import commodities that can be used for more than one use, and to classify these commodities.
4. To identify importers that changed economic activity and classify the commodities imported by them.

Population

Based on the objectives described, the survey population was comprised of 2 different groups:

1. All commodities imported by companies in the "Wholesale and Retail Trade" industries not analyzed using the methods described in the previous chapters.⁶¹
2. All commodities imported by companies registered in industries other than "Wholesale and Retail Trade" that may import complementary commodities, or that import commodities that can be used for more than one use.⁶²

⁶¹ For sampling purposes, commodities were considered at the international 6 positions HS level, and included only if the total value of imports exceeded 50,000 USD.

⁶² Companies that may import complementary commodities can be identified in a number of ways, such as all companies that import commodities produced in the same industry the company is classified, or companies that import commodities not used by other companies in the industry. In the Import Destinations Survey 2014, such

Sample

In the Imports Destinations Survey 2014, three complementary samples were defined:

1. A sample of importers in the "Wholesale and Retail Trade" industries. This sample was selected using the systematic random sampling with probability proportional to size⁶³ ⁶⁴ technique, taking into account both the number of different commodities imported and the value of imports. This technique was used to create a balance between covering the maximum number of commodities in a representative way, while covering the maximum possible value of imports in the sample. In the Imports Destination Survey 2006, all commodities imported were included in the questionnaire, and the response burden was too heavy in several cases. In the Imports Destinations Survey 2014, the questionnaire was limited to up to the 30 commodities with the highest value of imports for each importer. In addition, commodities with an imports value of less than 5,000 USD for a given importer were excluded from their questionnaire.⁶⁵
2. A sample of importers registered in the "Manufacturing" industries. This sample consisted of all companies that imported commodities that could be used for more than one use and that were sampled in the Survey of Products and Materials in Manufacturing.⁶⁶ This sample was used to identify resellers and importers of complementary commodities, and to clarify the uses of commodities that can be used for more than one use.
3. A sample of 4 importers in the "Telecommunications" industry. This sample was specifically designed to analyze the uses of imports and industries-of-destinations of cell phones.

companies were identified in a case by case basis since only companies included in the sample of the "Survey of Products and Materials in Manufacturing 2014" were considered.

⁶³ Makovsky, T. (2008). *Final report on sample design and production for the Import Destinations Survey 2006*. Jerusalem: Israel Central Bureau of Statistics, Internal paper.

⁶⁴ Friedrich, E. (2018). *Final report on sample design and production for the Import Destinations Survey 2014*. Jerusalem: Israel Central Bureau of Statistics, Internal paper.

⁶⁵ These thresholds were selected to provide a balance between coverage and questionnaire complexity. A number of threshold options were analyzed according to these parameters. For more information see: Friedrich, E. (2016). *Analysis of thresholds in the sample of the Import Destinations Survey 2014*. Jerusalem: Israel Central Bureau of Statistics, Internal paper. and Wajnryt, D. (2015). *Analysis of the influence of thresholds in the Import Destinations Survey*. Jerusalem: Israel Central Bureau of Statistics, Internal paper.

⁶⁶ Israel Central Bureau of Statistics. (2011). *Survey of Products and Materials in Manufacturing*. Jerusalem. Retrieved from http://www.cbs.gov.il/publications11/manufact_prod06/pdf/h_print.pdf

Questionnaire and interview process

In theory, the questionnaire of this survey should be simple, since there are only two main questions: the uses and industries-of-destination of each commodity imported. In practice, the definitions of the uses of imports classification dictate that different follow up questions were needed according to the specific cases.⁶⁷ A number of issues that make the task of designing the survey questionnaire even more complex were identified, such as:

1. The information needed to classify the commodities may be spread out among different functions in a company. For example, finance and accounting personnel may have information necessary to identify the commodities imported, while marketing personnel may have information regarding the company's customers, and therefore the industries of destination. In these cases, the interview process can become very complex and face challenges such as personnel availability and internal politics.
2. Answers on multiple levels. At times, a basic description of the company's economic activity is enough to assess the uses and industries-of-destination of all commodities imported. In other cases, the respondent may provide information by groups of commodities, and not at the detailed commodity level. This requires a flexible questionnaire that allows a fluid grouping of commodities.
3. The classification of commodities according to the national HS classification is usually done by a customs broker. Due to the formal and broad language of customs descriptions the respondent is not always able to make the link between the products purchased by the company and the data provided by the customs office. Making the link between the customs definitions and the product names known to the respondent is a major issue, especially when dealing with commodities related to machinery parts and commodities described as "other" in the HS classification. This can lead to very complex interviews and an increased burden on the company.
4. A reseller or an integrator can have clients a large number of different industries, each one using the commodity for a specific use. The questionnaire has to be able to adapt to these situations.
5. A detailed description of the company's activities, uses of goods and main clients is very useful for the classification, and the usefulness of this description is directly

⁶⁷ The economic reality is so complex that it becomes almost impossible to design a questionnaire that covers all options. For example, if a company imports parts for machines, a number of factors may affect the economic use classification such as whether the company customize the machines, whether it provides maintenance services, whether maintenance is done on the company's repair shop or at the clients site, whether the parts are included as part of a service contract or sold directly, and more.

correlated with the ability of the interviewer to ask the right follow up questions. The questionnaire has to provide enough space for the interviewer to add an unstructured description with no defined boundaries.

6. Data received from self-reported questionnaires and from questionnaires filled by non-expert interviewers tend to provide answers that don't comply with the SNA definitions or that aren't detailed enough.
7. Even if a detailed description of the company's activities is provided, there is still a need to confirm the uses and industries-of-destination of each commodity it imported. Usually the respondent will describe the regular activities, while some of the imports may have been related to a specific activity that isn't part of the company's regular operations.
8. There is a maximum number of questions that can be included in the questionnaire. Large questionnaires tend to lead to general answers instead of specific information regarding each commodity.

Due to the complexity and variation of the survey options, a more holistic approach was designed, encompassing three main components:

1. A scalable questionnaire that combines general and specific questions
2. Expert interviewers
3. An external support system

Questionnaire

The questionnaire consisted of an open, general question regarding the economic activity of the company, and specific questions regarding the uses and industries-of-destination of each commodity imported by the company. A comments section was added after each commodity, and a large comments section was added at the end of the questionnaire. Follow up questions necessary to clarify and classify the data according to the SNA definitions were added ad hoc by the interviewer according to the specific case.

The questionnaire used in the survey had a fixed structure. The section with questions regarding specific commodities was adapted to each company. This section was limited to a maximum of 30 commodities imported by the company in the survey year, selected according to the imports value. In order to help the respondents identify the commodity, the HS code at

the national level, the commodity description and the value⁶⁸ of imports of each commodity were added to the questionnaire.⁶⁹

The questionnaire was sent to the respondent electronically, by fax or via post. The questionnaire was filled with the help of an expert interviewer either in a personal interview or in a computer aided telephone interview.

The interviewer had a printed copy of the questionnaire and the answers were hand written. This allowed for the flexibility needed to adapt and group commodities according to the specific cases. Interviewers and reporters were encouraged to use both the commodity specific and the general comments sections, and to add annexes such as client's lists and printouts from finance departments whenever necessary.

Several versions of questionnaires were tested for the 2006 and 2014 Imports Destinations Surveys. An example of the final version of the questionnaire used in the 2014 Imports Destinations Survey can be found in annex 1. An on-going effort is being made to develop an improved questionnaire that diminishes the burden, expertise and support needed for this survey. Developing electronic data collection methods and/or self-reported questionnaires are defined as goals for future development.

Expert interviewers

A high level of expertise in numerous fields is expected from the interviewers due to the complexity of the interview process and its importance to the quality of the survey results. The different tasks of the interviewers included:

- Confirming the company's administrative details and respondent's identity.
- Explaining the survey's objectives and the information needed.
- Contacting additional respondents if needed.
- Describing the economic activity of the importer and flagging importers with potentially incorrect industry classifications.
- Helping the respondent understand customs descriptions and identify the commodities imported.
- Adapting the questionnaire according to the company's specific economic activities.

⁶⁸ C.I.F. value.

⁶⁹ In the Import Destinations Survey 2006 the enumerators were trained in the use of the customs tariff and used it constantly to help the respondents identify the commodities imported. In the Import Destinations Survey 2014, the descriptions of all the commodities in the sample were simplified and "translated" to "normal people" language. This proved to be very effective and to diminish the burden and frustration associated with such cases. The customs tariff was used only in a small number of cases.

- Asking follow up questions regarding the company's activities and the uses of imports.
- Classifying the company's customers by industry according to the "Standard Industrial Classification of All Economic Activities".

In order to be able to accomplish these tasks, the interviewers went through extensive training, including classes and exercises related to the classification by use, the HS classification and customs tariff,⁷⁰ the classification of industries and the interview process. In addition, an external support system was developed to assist the interview process.

Support system

A support system was developed in order to ensure the quality of the data and a seamless interview process. This included personal and phone help provided by experts, additional materials and information, and post interview classification services.

When complex cases were identified before the interview, the interviewer was accompanied by an expert from the Foreign Trade Sector or an expert in the specific industry. This type of support was provided for both personal and phone interviews.

During the interviews experts from the Foreign Trade Sector were available via phone to provide guidance and additional information, including:

- Transaction information that could be used to identify a commodity, such as: supplier, transaction dates or quantity.
- Specific guidance on the classification of the uses of commodities that can be used for more than one use.
- Guidance on the classification of the company's customers according to the "Standard Industrial Classification of All Economic Activities". If necessary, the interviewers were encouraged to provide the list of clients' names and the classification was performed post-interview by experts.

Examples of the additional materials provided to the interviewer included an organizational file for each company, souvenirs for respondents, a copy of the statistical ordinance, the official letter from the national statistician granting access to the data, a letter from the

⁷⁰ Israel Central Bureau of Statistics. (2015). *User's guide to the Israeli Customs and Purchase Tax Tariff*. Jerusalem: author. Retrieved from http://www.cbs.gov.il/www/ft_impexp/taarif.pdf

company's C.E.O or legal representative designating the respondent, access to the full text of the customs tariff and a simplified classification of industries.

Integration, data imputation and quality management

Once completed, the results of the different methods of analysis described in the previous chapters were integrated into the classification matrix of uses and industries-of-destination by commodity and importer. Although this matrix covered almost all imports, information regarding some of the importers and commodities was still missing due to a number of factors:

1. Due to budget constraints and the nature of the sampling process, the survey samples did not include all of the commodities imported by resellers and all commodities that can be used for more than one use.
2. Importers whose addresses could not be located, importers who refused to answer and importers who had liquidated their business between the relevant import activity and the time of the survey.
3. Importers that were not able to provide information regarding the uses and industries-of-destination in the cases of:
 - a. Commodities sold to other resellers or via intermediaries.
 - b. Commodities sold in retail stores that can be used by both businesses in different industries and households such as power tools, furniture and computers.
 - c. Complex cases that include a mix of commodities and services such as construction and maintenance of manufacturing plants or service contracts.

The uses and industries-of-destination of these commodities were analyzed on a case by case basis and imputed using data from similar commodities/importers or using expert knowledge.

The final results of the analysis were checked for reasonableness during the balancing process of Input-Output Tables, and by experts in the fields of foreign trade, investment and private consumption.

Current use

The final product of the methodology described in this paper is a matrix that provides, for each importer and commodity imported by it:

1. The percentage of the value of imports destined for each of the three uses described in the System of National Accounts (SNA)
2. The percentage of the value of imports destined for each industry.

This matrix is then applied to the current monthly or annual imports at the importer and commodity level. Aggregated statistics of imports by uses and industries-of-destination are then calculated.

Maintenance

The classification matrix requires maintenance due to changes in the market and the economic activity of the importers. In Israel, the analyses based on expert knowledge and administrative data are done once a year. The Imports Destination Survey and the Survey of Products and Materials in Manufacturing are conducted for selected years and according to the timetables of Input-Output Tables revisions.

Monthly customs data may include importers and/or commodities that were not included the last time the classification matrix was updated. In such cases, the uses and industries-of-destination are defined on a case by case basis using data from similar commodities/importers or using expert knowledge. The imputation is currently made at the commodity level. A system for imputation at the commodity and importer level is currently under development.

Conclusions

This paper presented an alternative approach to one of the main questions in economic statistics today - the classification of imports by uses and industries-of-destination. The main principle of the approach presented is that estimations should be compiled based on the best information available at the most detailed level. A matrix of "uses and industries-of-destination" at the individual importer and commodity level is created, and then used to aggregate imports data for a given period. The approach proposed allows for an in-depth analysis of imports by uses and industries-of-destination that does not rely on broad assumptions. This paper provides specific and detailed examples on how the international guidelines can be adapted to the national economic reality.

The principles and challenges for the classification of imports by uses and industries-of-destination provided in the international literature were discussed. The proposed approach was illustrated through the case of Israel, including a brief description of the national environment and a detailed description of the methodology used by the Israel Central Bureau of Statistics to create, maintain and use the classification matrix. The description of the methodology used to create the matrix included a detailed discussion of: the definitions used at the national level, the use the commodity description and additional customs data, the use of data from the national business register, the use of additional sources of administrative and secondary data, survey methodology, integration of the different data sources, data integration, imputation and quality management. The discussion of additional sources of administrative and secondary data included the different methods used for the classification of vehicles, spare parts and automotive fuels, ships and aircraft, pharmaceutical products, computers and computers parts, and cell phones. The survey methodology section presented the survey objectives, population, sampling, questionnaire, interview process, interviewer training and the use of an external survey support system.

A number of topics for future development can be identified, such as new sources of administrative and secondary data, the development of a simpler interview processes including electronic and/or self-reported questionnaires, and the development of a complementary methodology for the classification of the uses and industries-of-destination of exported commodities.

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Annexes

Annex 1 - An example of the final version of the questionnaire used in the 2014 Imports Destinations Survey



מספר ח.פ.

מספר למ"ס

לכבוד

סקר ייעודי יבוא 2014

הלשכה המרכזית לסטטיסטיקה (להלן הלמ"ס), יחידת סמך של משרד ראש הממשלה, עורכת בימים אלה את סקר "ייעודי יבוא 2014".

יצוין כי סקר זה נערך אחת לכמה שנים במדינת ישראל במטרה לאמוד את השימושים הנעשים בסחורות המיובאות לפי ענפי כלכלה.

נתוני הסקר ישמשו את הלמ"ס להבנת שינויים במשק ולניתוח מגמות לאורך תקופות, ויהוו בסיס להכנת סדרות שונות בחשבונות הלאומיים ולוחות תשומה-תפוקה של המשק.

חברתכם נבחרה להשתתף בסקר זה.

בימים הקרובים יתקשר עמכם סוקר מטעם הלמ"ס לצורך מתן הסברים לסקר ולתיאום מועד למילוי השאלון במשותף.

פרטי התקשרות עם הלמ"ס מופיעים בעמוד האחרון בשאלון.

סקר "ייעודי יבוא 2014" נערך על ידי הלשכה המרכזית לסטטיסטיקה ולפי החוק* חלה חובת השבה. הנכם מתבקשים למלא את הפרטים בשאלון לפי מיטב ידיעתכם. הלמ"ס מצידה מחויבת לפי החוק בשמירת סודיות הנתונים בכללי סודיות נוקשים, וחל איסור מוחלט על עובדיה למסור לגורם כלשהו, כולל משרדי ממשלה אחרים, נתון או פרט כלשהו שממנו ניתן יהיה לזהות עסק, מוסד או גוף כלשהו.

תודה מראש על היענותכם לפנייתנו. אנו בטוחים כי נזכה לשיתוף פעולה מלא מצדכם.

*פקודת הסטטיסטיקה

בכבוד רב,

יואל פינקל,

המשנה לסטטיסטיקן הממשלתי

חלק א – פרטים כלליים של החברה

שם החברה: _____ מספר ח.פ.: _____

כתובת החברה: _____ רחוב _____ מס' _____ יישוב/עיר _____ מיקוד _____ מס' טלפון _____

כתובת דוא"ל של החברה: _____

כתובת אתר אינטרנט של החברה: _____

תיאור כללי של פעילות החברה: _____

חלק ב – הסבר למילוי השאלון

1. הגדרות

- רשימת ענפי הכלכלה – לצורך זיהוי ענפי הכלכלה של החברות אשר להן נמכרו הסחורות, ראה נספח "רשימת ענפי הכלכלה" המצורף לשאלון.
- תשומות – חומרי גלם, עזר ואריזה, חלקים לייצור וחלקי חילוף לתחזוקה שוטפת.
- נכסי השקעה – מכונות וציוד המשמשים את החברה באופן חוזר מעל לשנה.
- צריכה פרטית (צ"פ) – נמכר למשקי בית.

2. הנחיות למילוי השאלון

- בכל שורה בטבלה מוצגת סחורה או קבוצה של סחורות שנלקחה מתוך רשימה של סחורות שייבאה חברתכם בשנת 2014 על פי רישומי המכס. **בעמודות א, ב, ג** מוצג תיאור מקוצר של הסחורה, ¹ קוד סחורה (HS) וערך היבוא המצטבר בשנת 2014 באלפי דולרים ארה"ב, ללא מסים.
- **בעמודות ד, ה** – יש לרשום את ענפי הכלכלה (עם הסמל שלהם מתוך נספח ענפי הכלכלה), שאליהם שייכים המוסדות או החברות שלהם נמכרה הסחורה או קבוצת הסחורות. אם הסחורה או קבוצת הסחורות נמכרו לצריכה פרטית, יש לציין זאת בעמודה ה גם כן.
 - **בעמודה ו** – יש לרשום את החלק באחוזים, מערך היבוא המצטבר בשנת 2014, של אותה הסחורה או קבוצת סחורות שנמכר לכל ענף שצוין בעמודה ה (סך פירוט הענפים יהיה 100%, כפי שמופיע בדוגמה).
 - **בעמודה ז** – יש לרשום לגבי כל ענף שצוין בעמודה ה את אחוז הסחורה המשמש כתשומות ואחוז הסחורה המשמש כהשקעות באותו הענף. אם הסחורה נמכרה לצריכה פרטית, אין צורך בציין חלוקה זו ($100\% = 2z + 1z$).

תיאור הסחורה (א)	קוד סחורה (ב)	ערך היבוא באלפי דולרים (ג)	סמל ענף (ד)	תיאור ענף/ צ"פ (לקוחות) (ה)	אחוז לענף/צ"פ (ו)	ייעוד הסחורה מתוך עמודה ו (ז)	
						תשומה (1)	השקעה (2)
ציגים עד 25 אינץ'	85284190	45	0001	צריכה פרטית	10%		
			1102	ייצור יבנת	10%	0%	100%
			2630	ייצור ציוד תקשורת	20%	100%	0%
			2640	ייצור מוצרי צריכה אלקטרוניים	60%	60%	40%
הערות:							
						100% = (2) + (1)	סה"כ

¹ תיאור הסחורות נלקח מתעריף המכס ומס קנייה.

שם חברה:		מספר ח.פ.:								
Ton	תיאור סחורה (א)	קוד סחורה (ב)	ערך היבוא באלפי דולרים (ג)	סמל ענף (ד)	תיאור ענף/ צ"פ (לקוחות) (ה)	אחוז לענף/צ"פ (ו)		ייעוד הסחורה מתוך עמדה ו (ז)		
						%	%	תשומה (1)	השקעה (2)	
1						%	%	%	%	
						%	%	%	%	
						%	%	%	%	
						%	%	%	%	
הערות: סה"כ 100% 100%=(2)+(1)										
2						%	%	%	%	
						%	%	%	%	
						%	%	%	%	
						%	%	%	%	
הערות: סה"כ 100% 100%=(2)+(1)										
3						%	%	%	%	
						%	%	%	%	
						%	%	%	%	
						%	%	%	%	
הערות: סה"כ 100% 100%=(2)+(1)										
4						%	%	%	%	
						%	%	%	%	
						%	%	%	%	
						%	%	%	%	
הערות: סה"כ 100% 100%=(2)+(1)										
5						%	%	%	%	
						%	%	%	%	
						%	%	%	%	
						%	%	%	%	
הערות: סה"כ 100% 100%=(2)+(1)										

שם חברה: _____

הערות לשאלון

מספר ח.פ.: _____

השקעת זמן במילוי השאלון

ציין את משך הזמן שהושקע בפועל במילוי השאלון (זמן עבודה נטו*) _____ שעות, _____ דקות

תאריך מילוי השאלון _____

* כולל זמן שהושקע בהגדרת מילוי השאלון.

פרטי המדווח

מדווח 1

שם המדווח/ת: _____ תפקיד: _____

מספר טלפון: _____ מספר טלפון ביתי: _____

כתובת דוא"ל: _____

מספר פקס: _____

מדווח 2

שם המדווח/ת: _____ תפקיד: _____

מספר טלפון: _____ מספר טלפון ביתי: _____

כתובת דוא"ל: _____

מספר פקס: _____

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4