Identifying Heterogeneity in the Production Components of Globally Engaged Business Enterprises in the United States

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June 10, 2015

Abstract

This paper presents experimental tables created by the U.S. Bureau of Economic Analysis comparing industry-specific shares of the components of total output of globally engaged firms located in the United States that are part of a multinational enterprise (U.S. parents and U.S. affiliates) with those of firms that are part of an enterprise entirely located in the United States. Recent research has shown both the importance of accounting for trade in value added when estimating bilateral trade flows and that multinational enterprises located in the United States account for the lion's share of U.S. trade in goods and services. However, trade in value added is typically accounted for using input-output tables that are aggregated across all types of firms. The experimental tables are consistent with other research showing that value added as a share of output is lower for foreign-owned firms compared with domestic-owned firms and that exports and imports as a share of output is larger for foreign-owned firms. We also find heterogeneity in the composition of output among different types of domestic-owned firms. Future work will analyze this heterogeneity in more detail using establishment-level data on production and trade.

[1] We thank Paul Farello, Raymond Mataloni Jr., Sally Thompson, Robert E. Yuskavage, William Zeile, and participants at the BEA Joint Industry-International Directorate research seminar for their comments and insights. The views expressed in this paper are solely those of the authors and not necessarily those of the BEA or the U.S. Department of Commerce.

1 Introduction

The growth of complex and increasingly fragmented supply chains in the global economy has increased both trade in intermediate goods and services and the return of intermediate goods sent abroad. These changes have increased the need to measure the degree to which trade values reflect value added from the trading partner or from intermediate inputs sourced from other countries or the home country itself. For example, Johnson and Noguera (2012) estimate that as much as two-thirds of gross trade is comprised of intermediate goods that pass a given customs frontier multiple times before becoming final goods and reaching their ultimate consumer. They also estimate that when adjusting bilateral trade flows to include only trade in value added (TiVA), the U.S-China bilateral trade deficit is about 30 to 40 percent smaller and the U.S.-Japanese deficit is about 33 percent larger.

However, national statistical agencies have found that directly measuring the degree to which trade flows contain value added from the country of origin, as opposed to intermediate inputs from other countries is, very difficult. The most popular approach to estimating TiVA is by using input-output (IO) coefficients for the home country and for major trading partners from a global supply-use table (SUT). These global SUTs are built from national economy SUTs that are linked together through bilateral trade flows. TiVA statistics are produced in collaboration between the Organisation for Economic Cooperation and Development (OECD) and the World Trade Organization while other global, regional, or world IO tables have been developed by research and academic institutions around the world.[2]

[2] For example, see http://www.wiod.org/new_site/home.htm, and https://www.gtap.agecon.purdue.edu/about/project.asp.

TiVA and global value chain (GVC) analysis has garnered significant attention in recent years in the international community with TiVA and GVC analysis projects developing at a fast pace. For example, the OECD and Asia Pacific Economic Cooperation (APEC) forums have each established technical work groups to develop so-called "extended" SUTs, while the United Nations Statistics Division is working to build further capacity with member countries on understanding the impact of economic globalization on national economies.[3]

The key feature of these extended SUTs is to recognize the importance of accounting for firm-level heterogeneity for TiVA and GVC analysis. Accounting for firm-level heterogeneity is expected to lead to more accurate TiVA and GVC analysis as the aggregate production functions of industries in national economy SUTs are decomposed into relevant sets of characteristics, such as globally engaged firms versus those that serve the domestic economy only. The current OECD initiative proposes a number of ways in which national statistical agencies may disaggregate their SUTs including firm characteristics such as domestic and foreign-ownership, being a multinational enterprise (MNE), the degree of export and import orientation, and the size of the firm (OECD (2015)).

The importance of heterogeneous firms in international transactions has become increasingly recognized in recent years in the economics literature, although it was initially recognized in the international business literature. The seminal work of Hymer (1976) recognized the importance of heterogeneous firms in explaining foreign direct investment (FDI). Whereas the classical explanation focused on capital price arbitrage and, thus, ignored firm characteristics, Hymer recognized that much FDI occurred between countries with similar

[3] See http://unstats.un.org/unsd/trade/events/2014/mexico/default.asp

capital endowments and the classical explanation did not fit. He recognized the role of firm heterogeneity, specifically firm-specific intangible assets, in enabling and motivating FDI. In the economics literature there has been much work in the past 10 years recognizing the importance of accounting for firm-level heterogeneity in understanding trade flows. Melitz (2003) motivated the development of models of international trade that allow for different levels of firm-level productivity. Helpman, Melitz, and Yeaple (2014) found that only the most productive firms engage in foreign activities and the most productive of these firms engage in foreign direct investment. Consistent with Melitz's model, there is also evidence that the bulk of trade in both goods (Bernard, Jensen, and Schott (2009)) and services (Barefoot and Koncz-Bruner (2012)) has involved MNEs. Therefore, disaggregating extended SUTs by MNEs and non-MNEs may in particular be an important way to account for firm heterogeneity.

This paper presents experimental tables created by the U.S. Bureau of Economic Analysis (BEA) to compare industry-specific shares of the components of total output between globally-engaged firms located in the United States that are part of an MNE and those of non-MNE firms that are entirely located in the United States. The MNEs considered include both U.S. parents of affiliates located in foreign countries and U.S. affiliates of foreign parent companies. This early work is considered a "proof of concept" of the approach to measuring firm heterogeneity by MNE characteristic. A more detailed and careful study will be made after the necessary datasets pertaining to MNE characteristics have been constructed. We use publicly available data from the U.S. Department of Treasury Internal Revenue Services (IRS) Statistics of Income (SOI), the U.S. Census Bureau (Census), and BEA for these estimates. The results will help inform our understanding of the degree to which heterogeneity is accounted

for in SUTs for the United States. We also provide preliminary estimates for the proposed extended SUTs to preview major themes for the ultimate study that will require BEA-Census data linking, which we expect to generate more precise estimates.

The paper includes four sections. First, we review other research that has analyzed how the components of value added have varied across different types of firms. Second, we describe the BEA, Census, and IRS data used for these preliminary estimates. Third, we compare the estimates of value added across three U.S. firm types: domestic operations of U.S. MNEs, U.S. affiliates of foreign MNEs, and non-MNE U.S. companies.

2 Literature Review

The limited amount of research that has analyzed the components of value added for other countries within a SUT framework has shown evidence of firm heterogeneity. Almost all of this research (Ahmad and Araujo (2011), Ma, Wang, and Zhu (2015), and Piacentini and Fortanier (2015)) has used domestic and foreign ownership as a distinguishing characteristic among firms. In addition, Ahmad and Araujo (2011) and Piacentini and Fortanier (2015) have analyzed how the components of value added have varied between small and medium-sized enterprises (SMEs) and large enterprises as measured by the number of employees working for the enterprise. To reduce aggregation bias in estimating the domestic and foreign content of Chinese exports, Ma, Wang, and Zhu (2015) also examine heterogeneity by distinguishing between firms engaged in processing trade and those that either sell traditional exports that are not part of the processing trade regime or that sell to domestic customers. They do not distinguish between exporters and non-exporters because they lack information on the input

intensity of imports for non-exporters. They also indicate that because of the incentive for firms to import inputs free of tariffs and value-added taxes through the Chinese processing regime, differences in the production functions of traditional exporters and non-exporters may not be significant enough to justify disaggregating the two types of firms.

Foreign value added was a lower share of output or turnover (sales) than domestic value added in many, but not all countries studied. Piacentini and Fortanier (2015) found that foreign value added as a share of turnover was lower in 2011 than the domestic value added share for 14 of the 16 European countries for which data were available. The largest differences were value added as a share of turnover being 15 percentage points lower for foreign firms than for domestic firms in the Slovak Republic, 10 percentage points lower in Estonia and the United Kingdom, and nine percentage points lower in Germany. Foreign value added as a share of output was nine percentage points larger for foreign firms than domestic firms in Finland and was the same for both domestic and foreign firms in Italy.

Ahmad and Araujo (2011) found that value added as a share of output for domestic Turkish firms in 2006 was on average about 90 percent of the value-added share for foreign-owned firms, although this share varied by industry. The value-added share was larger for Turkish firms than foreign firms in several industries including textiles and apparel and about the same for the machinery and equipment and the motor vehicles industries. Although Ma, Wang, and Zhu (2015) do not directly report value added as a share of output, their estimated shares of imported inputs imply that value added as a share of output was about five percentage points larger for foreign-owned processing firms compared with Chinese-owned

processors in 2007, but five percentage points smaller for foreign-owned non-processing firms compared with Chinese-owned firms.[4]

Exports and imports as a share of output or turnover were typically larger on average for foreign-owned firms than for domestic-owned firms. Piacentini and Fortanier (2015) found that imports as a share of turnover was larger in 2011 for all 16 European countries analyzed and that exports as a share of turnover was larger for all countries except for Germany where the foreign share was one percentage point smaller than the domestic share. Ahmad and Araujo (2011) estimated that exports as a share of output was much larger for foreign-owned firms than for Turkish-owned firms except in the fabricated metal products industry and the machinery and equipment industry. Ma, Wang, and Zhu (2015) also found that imported inputs as a share of all inputs was about 30 percentage points larger for foreign-owned processing firms compared with Chinese-owned processing firms and that the share was about three percentage points larger for foreign-owned non-processing firms compared with Chinese-owned ones.

Ahmad and Araujo (2011) also found that with some exceptions, imports, intermediate imports, and value added as a share of output all typically increase with firm size. Piacentini and Fortanier (2015) found that exports and imports as a share of turnover and value added as a share of employment were generally smaller for SMEs compared with large enterprises in the countries examined (most European countries and Brazil, Israel, Korea, and Turkey). Notable exceptions were Ireland and Luxembourg where, for SMEs, exports as a share of turnover was 100 percent and imports as a share of turnover was 97 percent for Luxembourg and 40 percent

[4] Based on authors' calculations using the mean value in tables 3 and 4 in Ma, Wang, and Zhu (2015).

for Ireland (which was much larger than the 7 percent share for large enterprises in that country). Value added as a share of turnover was larger for SMEs than for large enterprises for about two-thirds of these countries, namely Belgium, Brazil, the Czech Republic, Estonia, Finland, France, Germany, Greece, Italy, Korea, Lithuania, Luxembourg, the Netherlands, Norway, Portugal, Romania, Slovak Republic, Spain, Switzerland, and the United Kingdom.

3 Data

The experimental tables presented here are based on data from several sources. We use IRS Statistics of Income (SOI) data to account for all firms with operations in the United States. These include corporations, partnerships, and sole proprietorships. All data for MNEs are based on comprehensive statistics on U.S. direct investment abroad and FDI in the United States collected from mandatory surveys conducted by BEA for 2011. We use data for 2011 since it is the latest year that is not scheduled for further revisions by BEA. The U.S. MNE accounts provide statistics on transactions between parent companies and their affiliates, on direct investment positions, and on the financial and operating characteristics of the firms involved. The data are used to estimate the level of direct investment income and financial transactions for the International Transactions Accounts and International Investment Position. We also use data from the BEA IO accounts to estimate measures of employee compensation, exports by industry, and intermediate imports.

In this paper, we estimate the components of output and trade flows for 2011 for the operations of MNEs with headquarters in the United States and U.S. affiliates of MNEs with headquarters abroad. For U.S. MNEs, we separately analyze data for U.S. parent companies

that own at least one foreign affiliate and for U.S. affiliates that are majority-owned by foreign MNEs.

Results by industry for domestic non-MNEs are computed as the difference between the SOI results for all U.S. firms less the results for directly measured domestic-owned and foreign-owned MNEs. We use the SOI data instead of the BEA IO tables because they are collected and published by industry at the enterprise level, similar to the BEA MNE data.

The SOI program compiles tabulations of tax returns filed by corporations, sole proprietorships, and partnerships. The aggregate data are compiled based on stratified probability samples of tax or information returns. The data collected include by-industry information on assets, business receipts and deductions, and net income. These source data are primarily used in estimating corporate profits and nonfarm proprietors' income in the National Income and Product Accounts (NIPAs). BEA's Industry Economic Accounts directorate uses these data to develop the gross operating surplus component of value added by industry. For this paper, we make wider use of the IRS SOI data to proxy measures of gross output, intermediate inputs, and value added by industry.[5] This allows us to get a first look at identifying firm-level heterogeneity for future work that will introduce heterogeneity in BEA's establishment-based IO accounts.

Because of some challenges when working directly with the SOI data, we sometimes use establishment-level IO data from the BEA. First, in the SOI tabulations, compensation of employees can appear on one of three lines, but only two of which (compensation of officers and "salaries and wages") pertain exclusively to compensation of employees, whereas the third

[5] See the appendix for a summary of the line items used in the various calculations.

line (other deductions) can contain some items related to compensation of employees (such as costs related to employee benefit programs), but can also contain a variety of tax-deductible expenses that are unrelated to compensation of employees. Therefore, we use establishment-level employee compensation as a proxy for enterprise level employee compensation. This inconsistency implies that our compensation shares of value added for the enterprise are underestimated since they do not include compensation at the enterprise level not attributed to a particular establishment.

Second, we use an unpublished BEA tabulation of exports and total imported intermediate inputs by industry for further developing the trade dimension of our experimental tables since the IRS does not report data on trade flows. The estimates of exports by industry are derived from a concordance of international trade in goods and services to domestic output produced by each industry. Estimates of imported intermediate inputs by industry are based on the import proportionality assumption, which is covered in detail in Samuels, Howells III, Russell and Strassner (2015). Strassner and Wasshausen (2014) detail the methodology for the construction of the IO accounts, including the most recent comprehensive revision that integrates the benchmark IO account that is produced every five years, with the annual IO accounts and the NIPAs.

4 Empirical results

Table 1 shows the experimental supply use table for all private industries for 2011. All private industry value added based on the use of tax data was $13.5 trillion, which compares

favorably to a published value in the IO accounts of 13.3 trillion.[6] Similarly, measured manufacturing value added based on the tax data is $2.3 trillion compared with $1.9 trillion from the IO accounts.

The shares of the components of output for all private industries are shown for 2011. Consistent with findings for most other countries in other related studies, value added as a share of output is smaller for foreign-owned U.S. affiliates than for both types of domestic-owned firms (U.S. parents and non-MNEs).

Focusing first on the MNE data, value added as a share of output is about 10 percentage points larger on average for U.S. parents than for U.S. affiliates. The value-added share is larger for U.S. parents in almost all industries, although the share varies across industries (see tables 2 and 3 and figure 1). For example, although the parent value-added share is seven percentage points larger for all manufacturing industries combined, it is 16 percentage points larger for the computers and electronic products industry. Larger shares of output for employee compensation and gross operating surplus equally account for the larger value-added share for U.S. parents in all private industries. However, larger profits as a share of output explain about two-thirds of the difference between U.S. parents and U.S. affiliates in the manufacturing industry.

Comparing the non-MNEs to the MNEs, value added as a share of output for non-MNEs is at least 50 percent larger than the share for MNEs in all private industries. The largest part of this difference is from gross operating surplus, which is two to three times the share of output

[6] Both gross output and intermediate inputs are overstated based on the use of tax data; each by about $10 trillion. This is just one illustration of the imperfect nature of using tax data to measure national accounting concepts and, thus, a reason for our focus on ratios rather than levels in this analysis.

for non-MNEs. The larger gross operating surplus share of output for non-MNEs may reflect the ability of the MNEs to realize company profits in different countries. Some research suggests that MNEs attempt to realize profits in countries with relatively low tax rates.[7] Employee compensation of non-MNEs is also a larger share of output, although compensation per employee is 35 to 45 percent larger for MNEs. Part of this difference is explained by the larger imports of intermediates as a share of output by MNEs, which may suggest that MNEs tend to require fewer, but more highly skilled, workers per dollar of output than non-MNEs. These patterns at the all-private-industry level do not hold for some industries. For example, value added as a share of output is smaller for non-MNEs compared to U.S. parents in manufacturing and almost the same compared to U.S. affiliates.

About two-thirds of the lower value-added share of non-MNE manufacturers compared with all private industries is attributable to employee compensation being only five percent of output by non-MNE manufacturers compared with 22 percent of output for all industries.

There are also differences in the value-added share between different types of domestic-owned firms. While value added as a share of output is larger on average for non-MNEs than for U.S. parents overall, the share is smaller for non-MNEs in industries such as manufacturing. The share of value added for all private industries may be biased upward due to estimates of the value-added share close to or above 100 percent of output in industries where output has a large intangible element and is difficult to measure such as pharmaceuticals and medicines, information, and finance and insurance. These industries deserve further scrutiny in the upcoming data linking project.

[7] Curcuru and Thomas (2015) present evidence suggesting that transfer pricing might explain part of the difference between the average returns of U.S. parents and U.S affiliates.

Across all types of firms, industries where value added makes up the largest share of output tend to be labor-intensive industries such as health care and social assistance (see figure 2). Employee compensation is more than 30 percent of output in these industries for all types of firms. Likewise, value added comprises the smallest share of output in industries that are highly reliant on intermediate inputs such as wholesale trade for which employee compensation is 10 percent of output or less for all three types of firms.[8]

Given that MNEs are able to structure their global work force to take advantage of host country comparative advantage, we expect MNEs to employ a high percentage of skilled workers and employees of MNEs to earn a wage premium over employees of non-MNEs. On average, employees of MNEs earn a wage premium of 35 to 45 percent over employees of non-MNEs, although this premium varies by industry. The wage premium increases to 65 to 74 percent for MNE workers across manufacturing industries and is 30 to 80 percent among the finance and insurance industries. The wage premium enjoyed by MNEs is not surprising. For example, Doms and Jensen (1998) found that both domestic and foreign MNEs in the United States have the most productive and highest paying plants.

Consistent with earlier research such as Zeile (1998), imports and exports as a share of output are larger on average for the foreign-owned U.S. affiliates compared with domestic-owned firms and these shares vary by industry. Imports as a share of output are two to three times larger on average for foreign-owned U.S. affiliates in all private industries. The import share of output for U.S. affiliates is also larger in every industry compared with U.S. parents and

[8] In the National Accounts, wholesale trade output is measured as a margin activity. For this exercise, we use a total receipts or sales-type concept for output because of the limitations of the IRS SOI and BEA MNE enterprise data, which does not lend itself to easily construct estimates of margin output.

larger in all but a few industries when compared with non-MNEs. On average, exports are 9 percent of output for U.S. affiliates compared with a 6 percent share for U.S. parents and a 3 percent share for non-MNEs. However, exports as a share of output for U.S. affiliates are smaller than the shares of both U.S. parents and non-MNEs in some industries such as food, beverages, and tobacco products manufacturing.

Heterogeneity in the share of intermediates that are imported is an important issue in estimating TiVA. Although our data on MNEs do not indicate whether imports are used as intermediate goods, we can calculate the total imports of goods as a share of intermediates to estimate an upper bound on how important imports are for MNEs relative to non-MNE firms. Consistent with findings for other countries, imports as a share of intermediates is larger on average (23 percent) for foreign-owned U.S. affiliates than for U.S. parents and non-MNEs (9 percent each). The assumption that total imports are consumed as intermediate goods is most plausible for manufacturing, in which imports make up 25 percent of intermediates for U.S. affiliates compared with 18 percent for U.S. parents and 1 percent for non-MNEs. The share is larger for U.S. affiliates than U.S.-owned firms in most other industries, with a few exceptions.

In addition to foreign ownership, being an exporter is another criterion proposed by the OCED for accounting for firm heterogeneity. Although we cannot disaggregate the components of output by firms that export from the SOI data, we can examine firms that export goods in the MNE data.[9] About one-half of U.S. parents and U.S. affiliates report being exporters of goods in 2011. On average, value added as a share of output is about six to seven percentage points smaller for both U.S. parents and U.S. affiliates that exported goods in 2011 than those that did

[9] The MNE data do not indicate whether or not firms export services.

not, although this varies by industry. For example, value added as a share of output is larger for U.S. manufacturing affiliates that export than non-exporters, but smaller for exporters among U.S. parents in the manufacturing industry.

5 Conclusion and next steps

These results indicate the existence of firm-level heterogeneity in the components of output within industries in the United States. The results clearly demonstrate differences in the composition of gross output, the use of intermediate imports, and export intensity by firm-type, ownership structure, and industry.

Consistent with earlier research, we find that value added as a share of output is smaller for foreign-owned firms compared with domestic-owned firms and that imports and exports as a share of output are larger for foreign-owned firms than domestic-owned firms. We also find heterogeneity in the value-added share between different types of domestic-owned firms. Although value added as a share of output is larger on average for non-MNEs compared with U.S. parents of MNEs, the share is about the same or smaller for non-MNEs in some major industries, such as manufacturing, particularly food, beverages, and tobacco products. As expected, exports and imports as a share of output are also larger for U.S. parents than for non-MNEs. We also find that value added as a share of output is smaller on average for MNEs that export goods compared with non-exporters of goods.

However, limitations in the analysis of heterogeneity using publicly available data are also evident. The IRS SOI data are used as a proxy for developing estimates of output, intermediate inputs, and value added for all firm-types. These taxed-based estimates, collected

for other purposes, do not comport well in developing statistics that meet national economic accounting concepts. The BEA MNE trade data are imprecise measures of intermediate inputs insofar as the import data by industry include imports that are used as intermediate inputs as well as imports that are likely sold to end users. In addition, the mixing of establishment data from the IO accounts with enterprise data from the IRS and the BEA introduces a level of inconsistency that must be rectified before producing any official BEA estimates.

This early work raises a number of interesting research questions. Future research will explore why the value-added share for output for U.S. affiliates is typically smaller than that for U.S. parents. One possible explanation is that this reflects shifting profits from the U.S. market through transfer pricing. Also to be explored is the larger employee compensation share of output for U.S.-owned firms than foreign-owned firms.

Looking ahead, BEA and Census will undertake research at the Census Bureau Center for Economic Studies that we hope will ultimately result in official extended SUTs. This project will bring together BEA data on MNEs and trade in services along with customs data tabulated by the Census Bureau and establishment-level data from various economic censuses and annual Census Bureau surveys. The goal of this work will be to test further firm-level heterogeneity on the dimensions proposed by the OECD along with those used in this proof of concept study. The results of this research will be used to develop the specifications for a tabulation we hope will be provided on a regular basis by Census to the BEA for use in compiling extended SUTs for the United States and that will support international efforts improve measurement of trade in value added.

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7 Appendix – Proxies for outputs and inputs using IRS SOI data

Data from the IRS Statistics of Income (SOI) are used to calculate proxy measures for gross output, intermediate inputs, and value added by industry. All U.S. firms, including sole proprietorships, are captured in this dataset. The IRS SOI data are used to establish totals by industry. Results by industry for domestic non- MNEs are computed as the difference between the results for all U.S. firms less the results for directly measured domestic-owned and foreign-owned MNEs. While this tax-based dataset is imperfect for use in measuring national economic accounting concepts, it nevertheless allows for a proof-of-concept analysis to establish a first look at firm-level heterogeneity for the United States.[10]

For each industry, gross output and intermediate inputs are directly measured, allowing for value added in total to be computed as the difference between gross output and intermediate inputs.[11] Gross output by industry for all corporations is computed as the sum of business receipts plus rents, royalties, and other receipts. For partnerships, gross output is measured as the sum of business receipts, changes in inventories and changes in other income.[12] For sole proprietorships, it is measured as the sum of business receipts and changes in inventories. The provisional estimate of intermediate inputs for corporations is the sum of costs of goods sold

[10] In this first study, we make no attempt to account for misreporting on tax returns, which differs from how the IRS data is used in construction of the NIPAs and Industry Accounts. In addition, we do not adjust the definitions of industry output for industries like wholesale and retail trade, which are margin concepts for the national accounts. Likewise, we do not impute output for nonmarket activity, such as financial intermediation, which can be very important for some industries.

[11] The production approach to measuring value added; that is gross output less intermediate inputs, resulted in levels and ratios of inputs and outputs that seemed more meaningful to the authors. For example, these ratios compared better overall to establishment-level results from the IO accounts. This is in contrast to building up a direct estimate of value added from its components through use of the tax data. A key challenge to the direct measure was estimating the levels of compensation of employees, which remained incomplete in the SOI tax data.

[12] These changes in other income may perhaps be more akin to distributions or dividends from other partnership activity. Excluding these data would not meaningfully changes the levels of gross output by industry.

(CoGS),[13] repairs, rents, and advertising. For partnerships, the provisional estimate of intermediate inputs is equal to the sum of CoGS, rent, repairs and maintenance, and repairs. For sole proprietorships', the provisional estimate of intermediate inputs equals the sum of CoGS and home office expenses. Provisional estimates of compensation of employees by industry is measured directly using IO establishment data as previously discussed and provisional estimates of taxes on production and imports are proxied for by business taxes and license payments, excluding income taxes. This allows gross operating surplus to be measured indirectly as the difference between value added and the sum of compensation of employees and taxes on production and imports.

[13] IRS cost of goods sold is based on tax accounting rather than financial accounting and is a narrower concept than the financial accounting measure. In particular, employee compensation is excluded from the tax accounting measure whereas it is included in the financial accounting measure.

Table 1. Extended Supply/Use Tables for All Private Industries, 2011

(percentage of total output)		Multinational		Non-multinational	Exports of goods	Other uses
		U.S. parent	U.S. affiliate			
Multinational	U.S. parent				6	94
	U.S. affiliate				9	91
Non-multinational					3	97
Total domestic intermediate consumption and imports of services		63	61	48		
Total imports of goods		7	18	5		
Total intermediate consumption		69	79	53		
Value added		31	21	47		
of which: Compensation of employees		17	12	22		
Gross operating surplus		12	7	22		
of which: Consumption of fixed capital		4	3	5		
Taxes on production and imports		2	2	4		
Total output		100	100	100		

Note: The experimental estimates presented in this table are provisional and are intended only for discussion and to illustrate the types of analysis that can be performed with this framework.

Table 2. Extended Supply/Use Tables for Manufacturing, 2011

(percentage of total output)		Multinational		Non-multinational	Exports of goods	Other uses
		U.S. parent	U.S. affiliate			
Multinational	U.S. parent				12	88
	U.S. affiliate				13	87
Non-multinational					7	93
Total domestic intermediate consumption and imports of services		58	58	76		
Total imports of goods		13	19	1		
Total intermediate consumption		71	78	77		
Value added		29	22	23		
of which: Compensation of employees		14	12	5		
Gross operating surplus		13	8	14		
of which: Consumption of fixed capital		4	3	3		
Taxes on production and imports		2	2	4		
Total output		100	100	100		

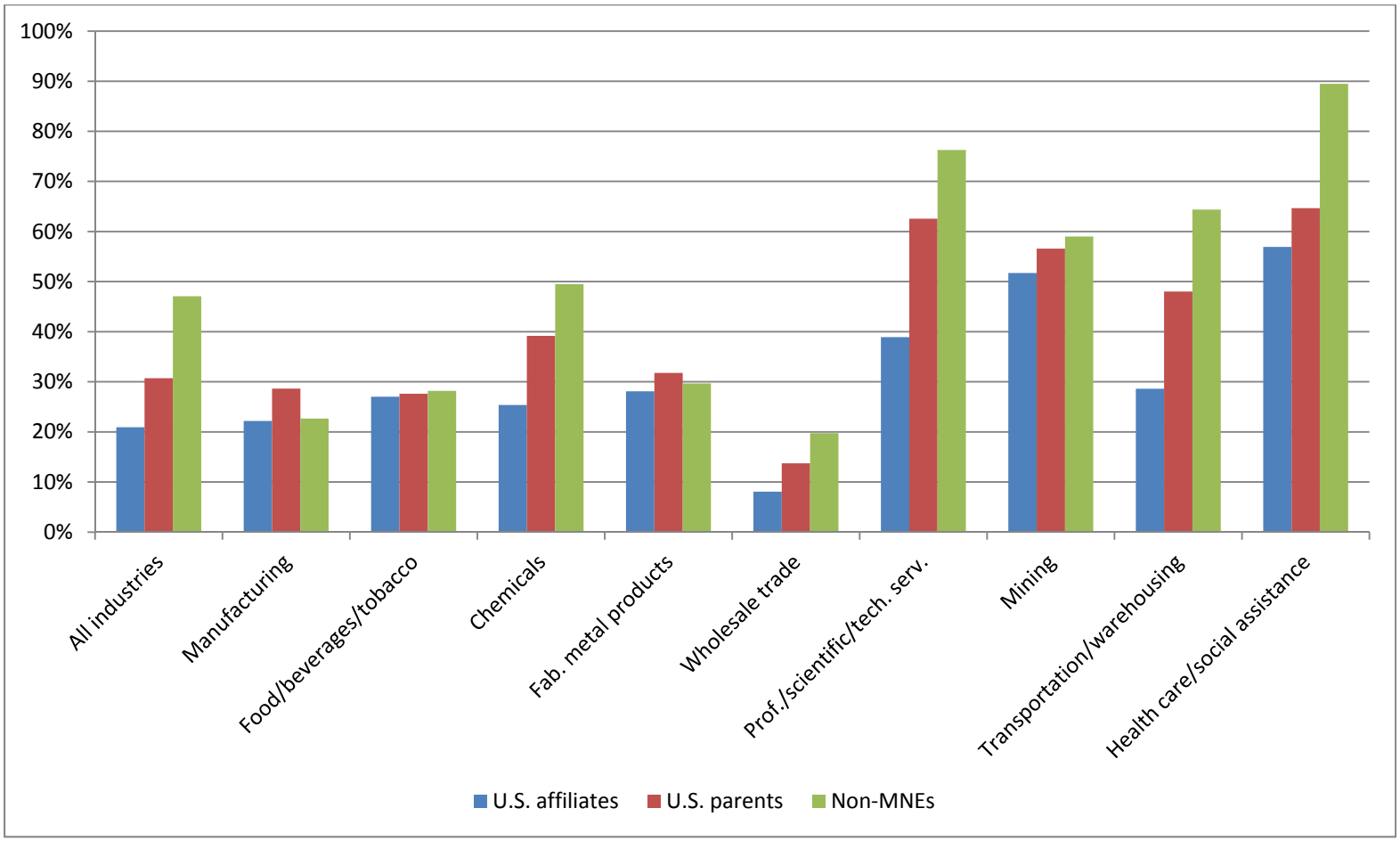
Note: The experimental estimates presented in this table are provisional and are intended only for discussion and to illustrate the types of analysis that can be performed with this framework.

Table 3. Value added, employee compensation, and gross operating surplus as a share output by type of firm for selected industries, 2011

(percentage of total output)	Value added			Employee compensation			Gross Operating Surplus		
	Parents	Affiliates	Non-MNE	Parents	Affiliates	Non-MNE	Parents	Affiliates	Non-MNE
All industries	31	21	47	17	12	22	12	7	22
Manufacturing	29	22	23	14	12	5	13	8	14
Food, beverages and tobacco products	28	27	28	11	12	35	14	12	-13
Chemicals	39	25	49	17	12	-7	21	13	47
Fabricated metal products	32	28	30	21	19	28	10	8	-1
Wholesale trade	14	8	20	7	5	10	6	2	8
Finance and insurance	23	23	102	19	18	19	3	4	77
Insurance carriers and related activities	9	16	63	11	11	11	-3	3	48
Professional, scientific, and technical services	63	39	76	39	30	42	22	8	31
Mining	57	52	59	13	18	10	38	30	45
Transportation and warehousing	48	29	64	27	19	24	18	9	38
Health care and social assistance	65	57	89	46	38	87	17	18	-1

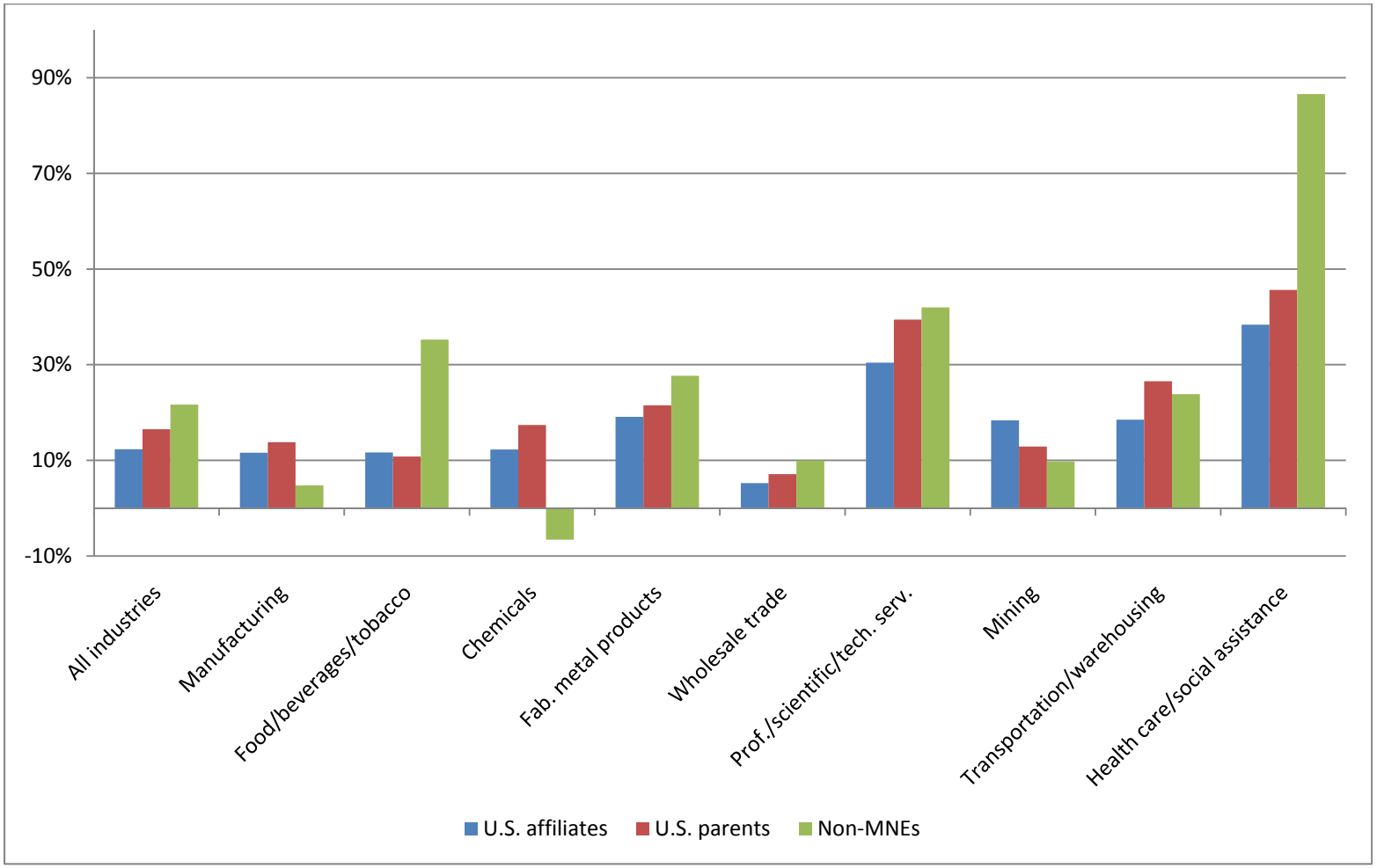
Note: The experimental estimates presented in this table are provisional and are intended only for discussion and to illustrate the types of analysis that can be performed with this framework.

Figure 1. Value added by type of firm for selected industries, 2011



Note: The experimental estimates presented in this table are provisional and are intended only for discussion and to illustrate the types of analysis that can be performed with this framework.

Figure 2. Employee compensation by type of firm for selected industries, 2011



Note: The experimental estimates presented in this table are provisional and are intended only for discussion and to illustrate the types of analysis that can be performed with this framework.