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An Application of USDA's Food Dollar Method to Mexico

Steven Zahniser, Araceli Ortega Díaz, Víctor Hugo Hernández García, José Valentín Solís y Arias, and Clarissa Gallegos



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An Application of USDA's Food Dollar Method to Mexico

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Abstract

In this report, the USDA, Economic Research Service (ERS) Food Dollar methodology is applied comprehensively to Mexico for the first time to analyze food expenditure shares across industry groups and factors of production during 2003–18. The annual farm share of Mexico's food expenditures averaged 22.1 percent for food at home (FAH) expenditures and 4.0 percent for food away from home (FAFH) expenditures. Embedded imports—imported inputs used in domestic food production—accounted for a rising share of Mexico's FAH expenditures: 18.4 percent in 2018 versus 13.4 percent in 2003. Most of these imported inputs came from the United States. When the expenditure shares for Mexico were decomposed into industry groups comprising the food value chain, FAH relies on wholesale and retail services and food processing, while FAFH depends heavily on food services. Application of this methodology to Mexico also allows for comparisons with the data series for the United States in USDA, ERS's Food Dollar data product.

Keywords: Mexico, United States, food expenditures, food value chain, food dollar

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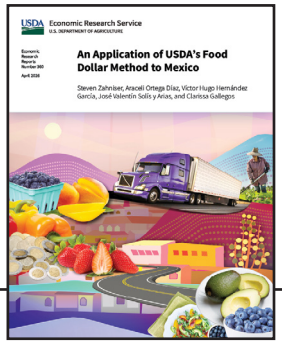
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USDA Economic Research Service
U.S. DEPARTMENT OF AGRICULTURE

A report summary from the Economic Research Service

An Application of USDA's Food Dollar Method to Mexico

Steven Zahniser, Araceli Ortega Díaz, Víctor Hugo Hernández García, José Valentín Solís y Arias, and Clarissa Gallegos



Key Points

- This report applies the USDA, Economic Research Service (ERS) Food Dollar methodology to Mexico for the first time in a comprehensive fashion. This methodology provides a consistent way to measure annual expenditures on domestically produced, domestically consumed food, allowing for comparisons to be made between the United States and Mexico across multiple years.
- The study period, 2003–18, includes the final stages of the transition to intraregional free trade among the United States, Mexico, and Canada under the North American Free Trade Agreement (NAFTA) and was marked by a dramatic expansion in Mexico's agricultural trade.
- Although the agricultural markets of Mexico and the United States became more closely integrated during the period studied, the economies of the two countries still exhibited sharp contrasts.
- In 2018, per capita income equaled $10,130 in Mexico and $62,301 in the United States (in nominal terms, i.e., not inflation-adjusted), and 35.0 percent of Mexico's total household expenditures went to food and beverages, compared with 12.9 percent in the United States.
- Households in Mexico dedicated a larger share of their food expenditures to food at home (FAH) (rather than food away from home (FAFH)) than their U.S. counterparts in 2018 (77.1 percent versus 56.3 percent).
- The annual farm share of Mexico's FAH expenditures averaged 22.1 percent during 2003–18, compared with 24.5 percent in the United States. The farm share of FAFH expenditures averaged 4.0 percent in Mexico and 5.2 percent in the United States.
- The share of FAH expenditures in Mexico that went to embedded imports—imported inputs used in domestic food production—climbed from 13.4 percent in 2003 to 18.4 percent in 2018, revealing the growing importance of such imports in Mexico's domestic food production. Most of these imported inputs came from the United States.

Why Does This Matter?

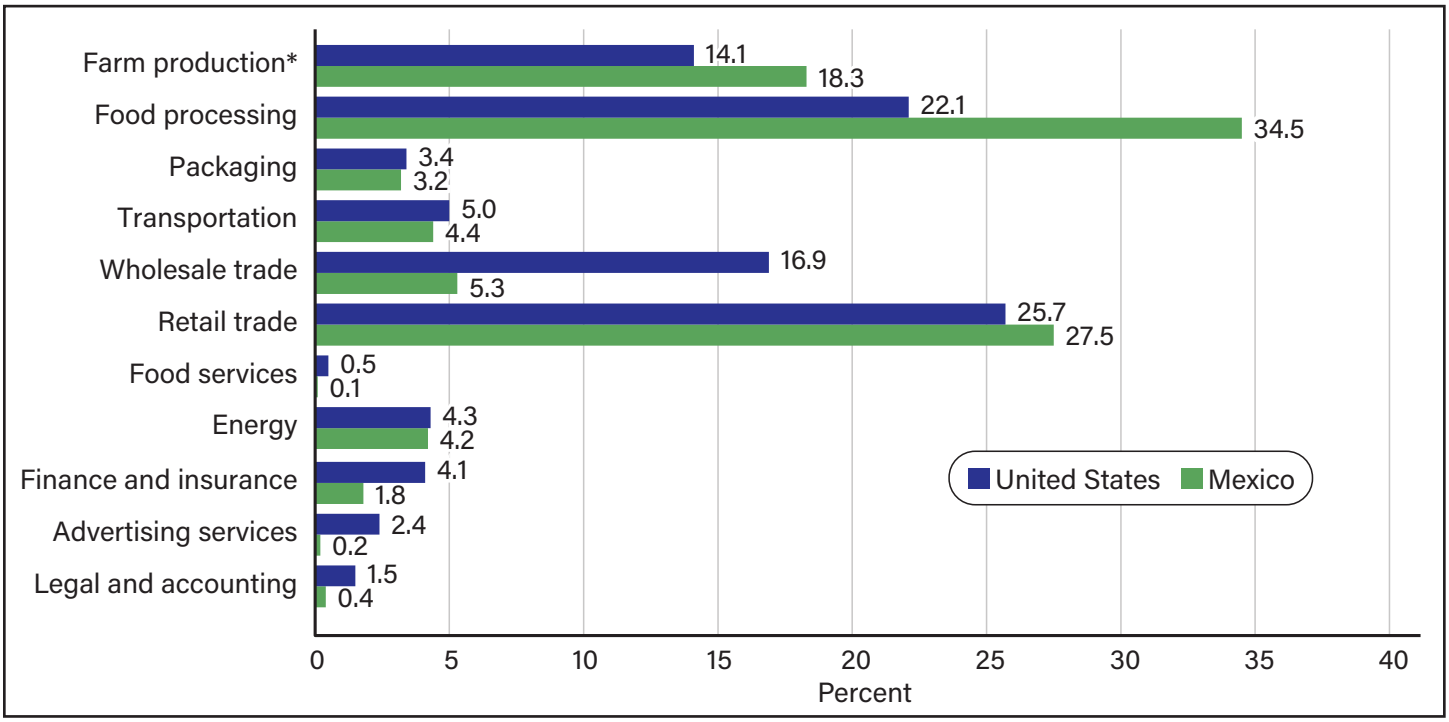
This report features the first comprehensive application of USDA, ERS's Food Dollar methodology to Mexico. This methodology provides a consistent way to measure a country's annual consumer expenditures on domestically produced, domestically consumed food and to analyze the distribution of those expenditures. Although USDA, ERS has used the Food Dollar approach for more than a decade to study U.S. food expenditures, this methodology has not been previously applied to Mexico in a comprehensive fashion. Using input-output data from 2003–18, we measure the share of Mexico's food expenditures that went to the country's farm sector, as well as the contributions to value added made by the primary factors of production and by the different industry groups that make up Mexico's food value chain (FVC). This results in a set of data series for Mexico that correspond closely to the data series for the United States in USDA, ERS's Food Dollar data product and help to illustrate the changing food expenditure landscape in a major market for U.S. agricultural products. Overall, the report contributes to

a better understanding of Mexico's agri-food system and complements past collaborative efforts involving USDA, ERS researchers that apply the Food Dollar methodology to other countries and generate cross-nationally comparable data.

Applying the Food Dollar Methodology to Mexico

The Food Dollar methodology generates three data series—the marketing bill series, the industry group series, and the primary factor series—each using a unique set of categories to examine different aspects of the food supply system. For example, the industry group series is based on the accounting identity that the market value of all expenditures on domestically produced food equals the value added by all industries that contribute to that food's production. Thus, the total value added may be categorized by industry group.

Food-at-home expenditures in Mexico and the United States, 2018: Contributions by industry group to total value added for domestically produced food (percentage)



* Includes agribusiness.

Source: USDA, Economic Research Service (ERS) in conjunction with Econoquanty S. de. R.L. and Mexico's National Institute of Statistics and Geography (INEGI) using data from INEGI and USDA, ERS.

The industry group series on FAH expenditures in 2018 reveal several differences between the food supply systems of Mexico and the United States. First, farms and food processors accounted for a much larger share of value added in Mexico than in the United States. Farm production, agribusiness, and food processing combined to contribute 52.8 percent of value added in Mexico in 2018, compared with 36.2 percent in the United States. Second, retail trade accounted for a larger share in Mexico than in the United States, while wholesale trade contributed a smaller share. These two differences suggest that some of the value-added activities performed by wholesale trade in the United States were carried out by farm production, agribusiness, food processing, and retail trade in Mexico. Finally, certain professional services (finance and insurance, advertising, and legal and accounting) made up a smaller share of value added in Mexico than in the United States.

ERS is a primary source of economic research and analysis from the U.S. Department of Agriculture, providing timely information on economic and policy issues related to agriculture, food, the environment, and rural America.

An Application of USDA's Food Dollar Method to Mexico

Introduction

This report presents the first comprehensive application of the Food Dollar methodology developed by the USDA, Economic Research Service (ERS) to Mexico's food expenditures and food value chain (FVC). The Food Dollar and the concept of farm share were first created to measure the cost of marketing agricultural products in the United States, with the farm share measuring the portion of consumers' food expenditures that goes to farms (Canning, 2011). The main focus of the Food Dollar approach is what USDA, ERS calls the domestic Food Dollar—expenditures on food that are domestically produced and domestically purchased. Food exports are outside this definition, since exports are not purchased domestically. Imports of final food products are also excluded, since such imports are not produced domestically. Thus, embedded imports—food ingredients and other inputs used in domestic food production—are part of the domestic Food Dollar.[1]

The Food Dollar methodology generates three data series—the marketing bill series, the industry group series, and the primary factor series—each using a unique set of categories to examine different aspects of the food supply system. The marketing bill series distinguishes between the farm share and the marketing bill, the market value of all post-farm processes in the supply chain. The industry group series categorizes by industry group the value added by all industries that contribute to domestic food production. Finally, the primary factor series identifies the distribution of food expenditures in terms of the salaries and benefits received by workers, property income (the pretax income or capital gain accruing to owners of nonlabor primary factors of production), output taxes, and embedded imports.[2] All three data series are generated for expenditures on food at home (FAH), food away from home (FAFH), and total food expenditures, which is the sum of FAH expenditures and FAFH expenditures.

The Food Dollar concept is useful for quantifying the distribution of expenditure shares along the FVC, shedding light on the structure of the agri-food sector, what share of food expenditures go to the farm sector, and how resources are distributed across industries in the FVC and among its factors of production. Given this usefulness, USDA, ERS researchers have participated in collaborative research that applies the Food Dollar methodology to other countries with the aim of fostering the development of data systems that are comparable across countries. Canning et al. (2016) applied the methodology to Canada (albeit for a reduced set of products) for the period 1997–2010 and found that Canada and the United States had similar farm shares for both FAH and FAFH. In addition, the authors of that work noted that increases in the share of U.S. food expenditures dedicated to FAFH and in the services provided by Canada's food retail and food service industries were major determinants affecting the distribution of food expenditures in the two countries.

[1] USDA, ERS's Food Dollar data product considers food imports by including a variable called the total food dollar that equals the sum of food imports and the domestic food dollar.

[2] See Canning (2011) and the glossary for USDA, ERS's Food Dollar data product (Baker & Zachary, 2025) for more detailed descriptions of each Food Dollar data series.

Yi et al. (2021) then developed and implemented a "Global Food Dollar" approach to explore the pre- and post-farmgate distribution of consumer food expenditures in 61 middle- and high-income countries during the period 2005–15. While that study produced a complete panel of observations (each country-year combination studied) on the farm share of expenditures on food and accommodations away from home, it did not generate a complete set of the farm shares of FAH expenditures due to data limitations. With respect to Mexico, Yi et al. (2021) calculated the farm share of FAH expenditures, but only for the years 2008 and 2013.

This report in turn applies the Food Dollar methodology to Mexico in a far more comprehensive fashion. To apply this methodology in general, Input-Output (I-O) matrices are required. In Mexico, these matrices are prepared by the National Institute of Statistics and Geography (INEGI—Instituto Nacional de Estadística y Geografía). Like the U.S. Food Dollar, the primary focus of our application of the Food Dollar methodology to Mexico is the expenditures of Mexican households on food that is produced and consumed within Mexico—the domestic Food Peso, named after Mexico's currency.

The report also explores similarities and differences between the Food Dollar results for Mexico and its largest trading partner, the United States. There are two important limitations to these cross-country comparisons. First, the farm shares of total food expenditures of the two countries are not comparable because FAFH accounts for a much smaller share of total food expenditures in Mexico than in the United States, thereby giving FAFH much less weight in the farm share of total food expenditures for Mexico than for the United States.[3] Second, only two of the four primary factor categories in the analysis for Mexico—taxes and embedded imports—are directly comparable to the primary factor categories in the U.S. Food Dollar data product.

Overview of Food Expenditures in Mexico and the United States

Mexico's agri-food system is unique. The country's agricultural sector features a heterogeneous set of producers. This group includes small-scale farmers relying on traditional agronomic practices to achieve household subsistence and to supply local markets, as well as large-scale enterprises employing state-of-the-art agronomic techniques and supplying both national and international markets. In addition, Mexico has well-developed food manufacturing and food retailing sectors, featuring foreign direct investment, a diverse array of food outlet types, and the sale of brand-name products, some of which are trademarks belonging to U.S. food companies (Cortez, 2024; Farah et al. 2022; Zahniser, 2024). For more than three decades, Mexico has formed part of a free-trade area that also encompasses the United States and Canada. Through the North American Free Trade Agreement (NAFTA) and its successor accord, the United States-Mexico-Canada Agreement (USMCA), Mexico has become a more active participant in intraregional agricultural trade as both an exporter (primarily of fruit, vegetables, and alcoholic beverages) and an importer (primarily of grains, oilseeds, meat, and related products). Many of Mexico's agricultural imports are used as inputs in domestic food production.

At the same time, Mexico is an upper-middle-income country, as defined by the World Bank (2024b). In 2022, Mexico's per capita income (purchasing power parity) was $22,298, compared with $76,330 in the United States (World Bank, 2024a).[4] The average Mexican household spends less on food than the

[3] A similar observation was made by Canning et al. (2016) regarding the impact of differences in the share of total food expenditures dedicated to FAFH on the farm shares of total food expenditures in the United States and Canada.

[4] Some data presented in this paragraph and the next are for the most recent available year (2022) at the time of writing. This report's application of the Food Dollar methodology to Mexico covers the period 2003–18.

average U.S. household (even though Mexican households tend to be larger in terms of the number of people), and the share of household income dedicated to food is larger in Mexico than in the United States (table 1). In 2022, the average household expenditure on food and beverages in Mexico was about 60,000 pesos (roughly $7,947 in U.S. currency), compared with $9,343 on food in the United States. That same year, the average Mexican household dedicated 37.5 percent of its total expenditures to food and beverages, compared with 12.8 percent to food in the United States. In addition, the share of Mexican household expenditures spent on food and beverages increased between 2012 and 2022, from 33.7 percent to 37.5 percent, while food's share of U.S. household expenditures remained around 12–13 percent throughout the 2012–2022 period. In 2018, the last year covered in our application of the Food Dollar methodology to Mexico, the average Mexican household dedicated 35.0 percent of its total expenditures to food and beverages, compared with 12.9 percent to food in the United States.

Table 1
Average annual household food expenditures in Mexico and the United States, 2012–2022

Variable	Year										
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
United States											
	Dollars										
Average annual expenditures (per household)	51,442	51,100	53,495	55,978	57,311	60,060	61,224	63,036	61,334	66,928	72,967
Food	6,599	6,602	6,759	7,023	7,203	7,729	7,923	8,169	7,316	8,289	9,343
Food at home	3,921	3,977	3,971	4,015	4,049	4,363	4,464	4,643	4,942	5,259	5,703
Food away from home	2,678	2,625	2,787	3,008	3,154	3,365	3,459	3,526	2,375	3,030	3,639
Alcoholic beverages	451	445	463	515	484	558	583	579	478	554	583
	Percent										
Average annual expenditures (per household)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Food	12.8	12.9	12.6	12.5	12.6	12.9	12.9	13.0	11.9	12.4	12.8
Food at home	7.6	7.8	7.4	7.2	7.1	7.3	7.3	7.4	8.1	7.9	7.8
Food away from home	5.2	5.1	5.2	5.4	5.5	5.6	5.6	5.6	3.9	4.5	5.0
Alcoholic beverages	0.9	0.9	0.9	0.9	0.8	0.9	1.0	0.9	0.8	0.8	0.8
Food at home as as share of total food expenditures	59.4	60.2	58.8	57.2	56.2	56.4	56.3	56.8	67.6	63.4	61.0
Mexico											
	Pesos (thousands)										
Average annual expenditures (per household)	102.4		106.0		113.1		128.2		119.8		160.0
Food and beverages	34.5		35.9		39.5		44.9		45.3		60.0
Food and beverages at home	27.0		29.0		30.8		34.6		39.2		48.2
Food and beverages away from home	7.5		7.0		8.7		10.3		6.1		11.8
	Percent										
Average annual expenditures (per household)	100.0		100.0		100.0		100.0		100.0		100.0
Food and beverages	33.7		33.9		34.9		35.0		37.9		37.5
Food and beverages at home	26.4		27.3		27.2		27.0		32.8		30.1
Food and beverages away from home	7.3		6.6		7.7		8.0		5.1		7.4
Food at home as as share of total food expenditures	78.3		80.6		77.9		77.1		86.6		80.3

Source: USDA, Economic Research Service in conjunction with Econoquanty S. de. R.L. and Mexico's National Institute of Statistics and Geography (INEGI) using data from INEGI (2023) and U.S. Department of Labor, Bureau of Labor Statistics (2023).

Another key difference between Mexican and U.S. food expenditures is the relatively greater importance in Mexico of food at home (FAH) versus food away from home (FAFH). In 2022, FAH accounted for 80.3 percent of Mexico's total food and beverage expenditures, compared with 61.0 percent of U.S. total food expenditures (table 1). Interestingly, 2022 data from Mexico's National Survey of Household Income and Expenditures (ENIGH—Encuesta Nacional de Ingreso y Gastos de Hogares) showed about 37.2 million Mexican households reported expenditures on FAH, but only 16.7 million reported spending on FAFH (INEGI, 2023).

Methodology

Data Sources

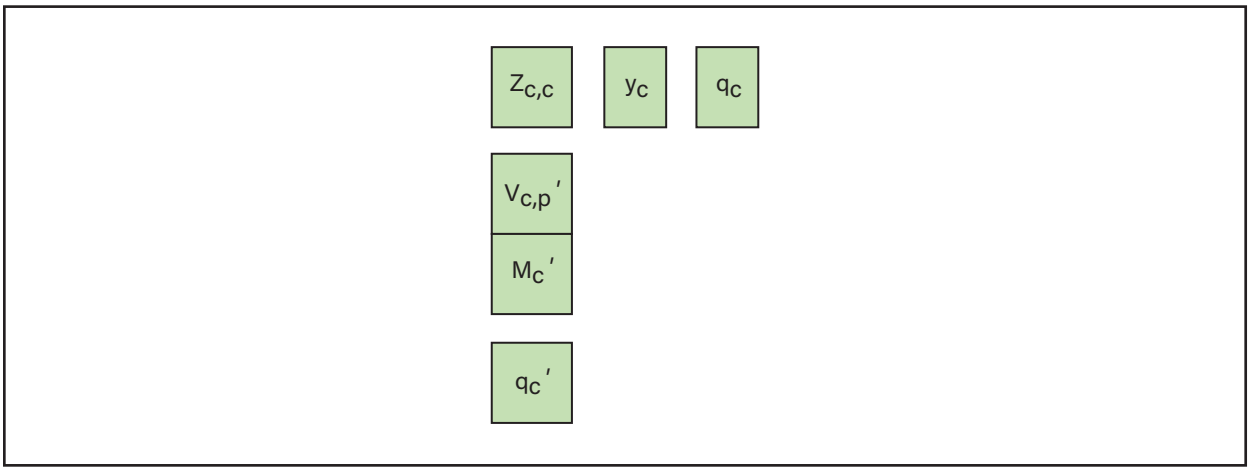
The main source of information for estimating food expenditure indicators for Mexico is the country's Input-Output Tables (IOTs). INEGI publishes a complete set of these tables every 5 years, based on Mexico's economic census, and an annual series of tables is also available, based on non-survey methods and partial information. Three commodity-by-commodity IOTs are used for each year's food expenditure estimations: the domestic production table, imports table, and trade and transport margins table. Mexico's IOTs are valued at basic prices in accordance with the recommendations outlined by the United Nations (2018). Consequently, the results section includes both net taxes on products and net taxes on production as one primary factor.

The annual series of IOTs consists of 260 commodities classified using the North American Industry Classification System (NAICS).[5] This ensures smooth compatibility with the U.S. Food Dollar results. All calculations applying the Food Dollar methodology to Mexico were implemented at the level of 260-commodities IOTs, and the results were then aggregated into 11 industry groups that constitute the FVC. The most recent IOT for Mexico available at the time of writing was for the year 2018, which determines the end point of this report's period of analysis (2003–18).

Even though sufficient information is available to operate the I-O model for Mexico with a separate imports table, the data were converted to what Dietzenbacher et al. (2005) call "U.S.-type" tables (figure 1). The model may be considered a supply model, since its results include domestic production plus imports available in the market to ensure full comparability to the U.S. results.

[5] NAICS is the standard used by statistical agencies in the Canadian, Mexican, and U.S. governments "in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data.…. It was developed jointly by the U.S. Economic Classification Policy Committee (ECPC), Statistics Canada, and [INEGI], to allow for a high level of comparability in business statistics among the North American countries" (U.S. Department of Commerce, Bureau of the Census, 2023).

Figure 1
Organization of Input-Output Table data



Source: USDA, Economic Research Service in conjunction with Econoquanty S. de. R.L. and Mexico's National Institute of Statistics and Geography (INEGI).

In this figure, $Z_{C,C}$ is the commodity-by-commodity intermediate matrix, $V_{C,p}$ is the matrix of primary factor payments, M_C is the vector of total imports, y_C is the vector of final demand, and q_C is the vector of total availability. The vector q_C may also be represented as the sum $q_c = x_c + M_C$, where x_C represents total domestic production. Subindices C represent the 260 products, and p represents the 3 primary factors: net taxes on production and products, remuneration of employees, and gross operating surplus (GOS).

Additional information was needed to refine the estimation of energy used in the FVC. This information comes from Mexico's Economic Censuses for 2003, 2008, 2013, and 2018 and consists of the payments made by wholesale and retail trade activities to acquire energy sources and electricity, expressed as a fraction of the total production of the respective trade activity. According to Canning (2011), there is evidence that establishments which trade food consume more energy relative to many other trade activities, as food-trading establishments need to keep certain products refrigerated or frozen. For the United States, this was verified using U.S. Department of Commerce, Bureau of the Census data, but in the Mexican IOTs, trade is only divided into wholesale and retail components. Thus, in the I-O model for Mexico, the average use of electricity in all trade establishments (regardless of the commodities they sell) is imposed on all products. Following Canning (2011), additional steps were taken to allocate electricity expenses for food trade (see appendix).

Further modifications of the IOTs were undertaken to decouple food services from the food-away purchases of food in such a way that a fraction of the food-away expenditures (an entry in the private consumption vector) is converted into a vector of food commodities. Finally, trade and transport margins were estimated for each vector of food-at-home expenditure, so that the value chain estimations correctly account for the importance of these services. The decoupling of food services from food-away purchases and the estimation of trade and transport margins are discussed in the appendix.

Input-Output Model

Following the symbols in figure 1, the basic input-output equation can be written as:

$$\boldsymbol{q_C = Z_{C,C} \cdot \iota_C + y_C} \quad (1)$$

where ι_C represents the unitary vector (or sum vector). This equation represents the accounting relationship between total availability by commodity and the intermediate and final demand of goods and services. To transform this accounting relationship into a model, we need to make assumptions about the demand for intermediate inputs. Typically, it is assumed that inputs increase in a directly proportional relationship with the total availability of the produced commodity. The requirements of each input can be estimated as $a_{i,j} = z_{i,j}/q_j$, where the technical coefficient $a_{i,j}$ shows the demand of input i for each unit produced of commodity *j*.

Given that vector q_C includes domestic production and imports, this implicitly assumes that the relative mix of production and imports remains fixed when demand changes. With these assumptions, we can rewrite equation 1 as:

$$\boldsymbol{q_C = A_{C,C} \cdot q_C + y_C} \quad (2)$$

And solving for total availability, we get:

$$\boldsymbol{q_C = \left(I_{C,C} - A_{C,C}\right)^{-1} \cdot y_C \equiv L_{C,C} \cdot y_C} \quad (3)$$

where $L_{C,C}$ represents the Leontief inverse matrix. Its coefficient $L_{i,j}$ shows how much the production of commodity *i* should be increased when demand for commodity *j* increases, considering all direct and indirect productive relationships. So, matrix $L_{i,j}$ estimates the impacts on the entire productive chain.

Farm Share Estimation

The first step in determining the farm share is obtaining a measure of import-inclusive gross farm sales associated with food expenditures (q_A^{fd}) through the following equation:

$$\boldsymbol{q_A^{fd} = L_{A,C} \cdot y_C^{fd}} \quad (4)$$

where $\boldsymbol{y_C^{fd}}$ is the total food-expenditure vector. Subindex A identifies the rows of the matrix associated with farm commodities. For the second step, the sales within the farm commodities are netted out to avoid the double counting of transactions:

$$\boldsymbol{q_A^{net} = q_A^{fd} - \left(AA_{A,A} \cdot q_A^{fd}\right)} \quad (5)$$

where $AA_{A,A} = \left[L_{C,C} - I_{C,C}\right]_{A,A}$ accounts for all the direct and indirect payments which originate in, and end in, the agrifood commodities.

Lastly, household purchases of imported food products are subtracted from the import-inclusive food expenditure (farm share denominator), and a subset of those purchases—food products imported directly by farmers—are subtracted from the import-inclusive net farm sales (farm share numerator). The import share of the food supply is calculated as:

$$s_m_C = \left(\underline{q_C}\right)^{-1} M_C \quad (6)$$

This share is assumed to be the same for the food expenditure vector and the import-inclusive farm sales, so the farm share can be estimated as:

$$farm\ share = \frac{\iota_A'\left[q_A^{net} - \underline{s_m_A} \cdot y_A^{fd}\right]}{\iota_C'\left[(I_{C,C} - \underline{s_m_C}) \cdot y_C^{fd}\right]} \quad (7)$$

To estimate the farm share associated with food-at-home (FAH), food-away-from-home (FAFH), and food expenditure by household deciles, we substitute the y_fd in equations 1, 2, and 6, with the corresponding expenditure vector.

Supply Chain and Factor Payments Estimation

To focus our analysis on the FVC, we follow the matrix reduction procedure described by Canning (2011). The original IOT for Mexico covers 260 commodities, but after the modifications to the table described in the appendix, the final matrix includes two additional activities: food services and trade utilities. The following steps were applied at this level of detail, and the aggregation into 11 supply chain commodities was performed for the purposes of simplifying the presentation and conforming to the structure of the U.S. Food Dollar results.

Let subindex sc represent the set of supply chain-related commodities and nc the set of commodities not related to the supply chain. Total production of the FVC can be represented in a partitioned form as:

$$q_{sc}^{fd} = L_{sc,sc} \cdot y_{sc}^{fd} + L_{sc,nc} \cdot y_{nc}^{fd} \quad (8)$$

In this equation, the total product availability of food-related activities is a function of the final demand for food and non-food products. If we pre-multiply this expression by $L_{sc,sc}^{-1}$, we get a new representation of final demand and its effects, but only in the FVC:

$$L_{sc,sc}^{-1} \cdot q_{sc}^{fd} = y_{sc}^{fd} + L_{sc,sc}^{-1} \cdot L_{sc,nc} \cdot y_{nc}^{fd} = y_{sc}^{*} \quad (9)$$

The first term in the right-hand side of the equation represents the demand for commodities originating in the FVC. The second term represents all the direct and indirect demand of intermediate inputs supplied by the FVC to any non-supply-chain commodity. By combining the two previous equations, we get the reduced I-O model for the supply chain:

$$q_{sc}^{fd} = L_{sc,sc} \cdot y_{sc}^{*} \quad (10)$$

The same procedure can be followed to estimate a reduced matrix of primary factor payments, import-inclusive, in such a way that the payments effectively made by non-chain commodities are imputed to the supply chain commodities, which induce the production of the former.

$$v_{m_{sc,P}}^{*} = v_{m_{sc,P}}^{new} + \left[L_{sc,sc}'\right]^{-1} \cdot L_{nc,sc}' \cdot v_{m_{nc,P}}^{new} \quad (11)$$

In this equation, $v_{m_{sc,P}}^{new}$ represents the technical coefficients of primary factor payments.

Finally, we estimate a matrix of food chain primary factor outlays in the reduced model:

$$V_m^*_{sc,P} = \underline{q^{fd}_{sc}} \cdot v_m^*_{sc,P} \quad (12)$$

This matrix accounts for the total income generated by the Food Dollar expenditures. The rows indicate the industry in which the incomes are paid, and the columns indicate the primary factor of production which receives the income. One of the columns represents the income used to pay for imported inputs required for production. Therefore, the supply chain shares are calculated as:

$$\textbf{supply chain shares} = \frac{V_m^*_{sc,P} \cdot \iota}{\iota' \cdot V_m^*_{sc,P} \cdot \iota} \quad (13)$$

And the primary factor share is estimated with the expression:

$$\textbf{primary factor shares} = \frac{\iota' \cdot V_m^*_{sc,P}}{\iota' \cdot V_m^*_{sc,P} \cdot \iota} \quad (14)$$

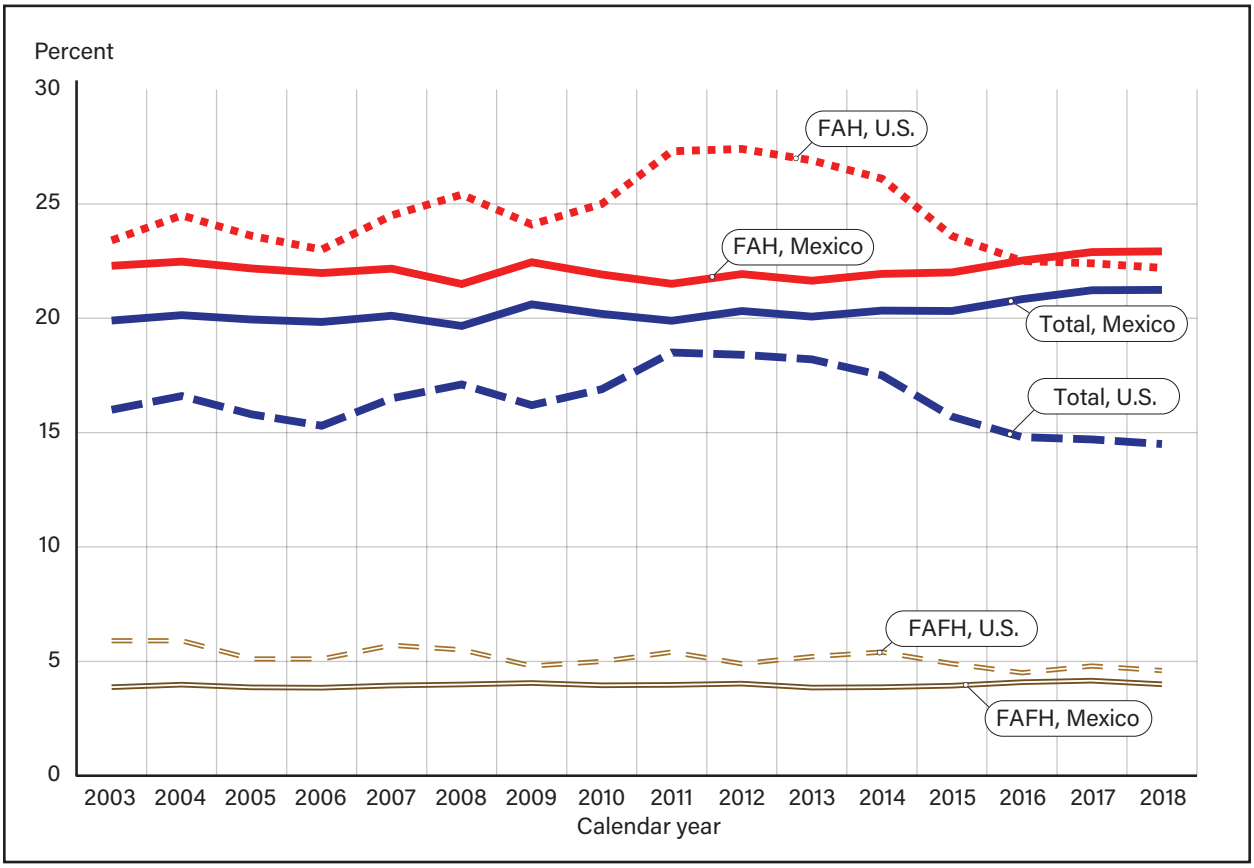
Farm Shares in Mexico and the United States

Application of the Food Dollar methodology to Mexico generates farm share estimates similar to USDA, ERS's estimates for the United States for food at home (FAH) and food away from home (FAFH) (figure 2). But because FAFH accounts for a smaller share of total food expenditures in Mexico than in the United States (22.9 percent versus 43.7 percent, according to data for 2018 presented in table 1), the farm share of total food expenditures is larger in Mexico than in the United States. The farm share of total food expenditures is akin to a weighted average of the farm share of FAH expenditures and the farm share of FAFH expenditures.

During the period of analysis (2003–18), the average annual farm share of FAH expenditures was a few percentage points lower for Mexico than for the United States (22.1 percent versus 24.5 percent), and the farm share of FAH expenditures oscillated more for the United States than for Mexico. The farm share of Mexico's FAH expenditures stayed within the relatively narrow range of 21.5 percent to 22.9 percent, while the farm share of U.S. FAH expenditures ranged from 22.2 percent to 27.4 percent.[6]

[6] In the supplemental tables to their article, Yi et al. (2021) report that the farm share of Mexico's FAH expenditures was 20.90 percent in 2008 and 18.57 percent in 2013, compared with our values of 25.4 percent and 26.9 percent, respectively.

Figure 2
Farm share of food expenditures for Mexico and United States



FAH = Food at home. FAFH = Food away from home. Values for this figure are listed in table A.1.

Source: USDA, Economic Research Service (ERS) in conjunction with Econoquanty S. de. R.L. and Mexico's National Institute of Statistics and Geography (INEGI) using data from INEGI and USDA, ERS.

The farm share of expenditures on FAFH was around 4–6 percent for both countries. As our analysis of the distribution of food expenditures across industry groups demonstrates, this small share reflects the prominent role of the food service industry in the provision of FAFH (see section "Food Expenditure Decomposition by Industry Group").

Even though the farm share of FAH expenditures is lower for Mexico (22.9 percent versus 24.0 percent, using the data for 2018), the farm share of total food expenditures is higher (21.2 percent versus 15.3 percent) (table A.1). As mentioned above, this result is explained by the fact that Mexican consumers spend a much smaller share of their total food expenditures on FAFH than U.S. consumers. Thus, the difference between the farm share of FAH expenditures and the farm share of total food expenditures is much smaller for Mexico than for the United States (1.7 percent versus 7.7 percent).

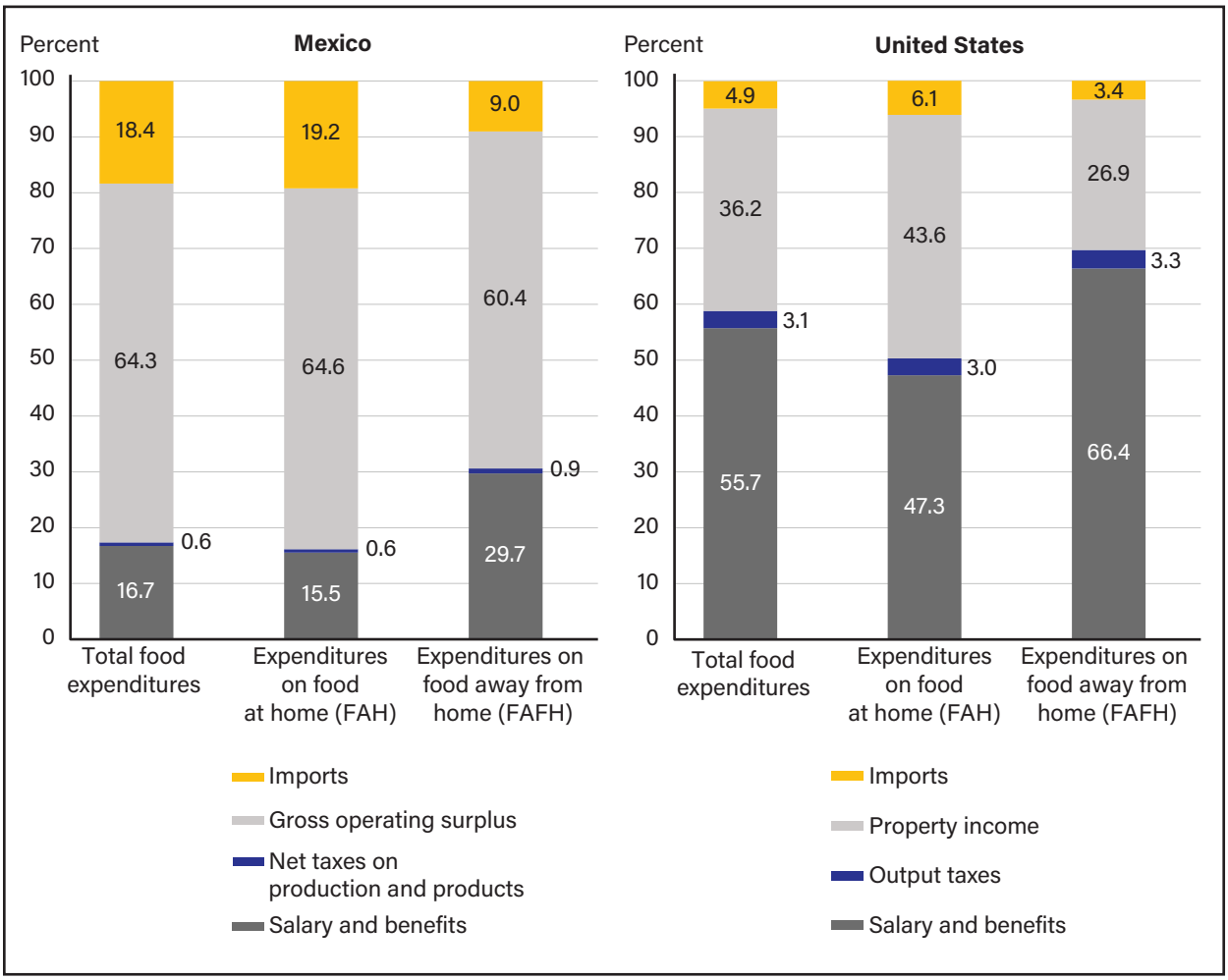
Distribution of Food Expenditures Among Primary Factors

Only two of the four primary factor categories in the Mexico food expenditure analysis are comparable to the categories in the U.S. Food Dollar data product (figure 3). While the factor categories for taxes and embedded imports for the two countries are comparable, the categories for labor's share (salary and benefits) and capital's share (gross operating surplus for Mexico and property income for the

United States) are not.[7] This limits the usefulness of the primary factor results for making comparisons between Mexico and the United States to the categories of taxes and embedded imports.

A smaller share of food expenditures went to taxes in Mexico than in the United States. For Mexico, net taxes on production or products equaled just 0.6 percent of food expenditures in 2018, compared with output taxes totaling 3.1 percent of such expenditures in the United States. The low share corresponding to taxes in Mexico is linked to several factors, including the country's value-added tax (VAT), which has special provisions for agricultural production and food purchases and the high level of informality in the Mexican economy.

Figure 3
Distribution of food expenditures among primary factors in Mexico and the United States, 2018



Source: USDA, Economic Research Service (ERS) in conjunction with Econoquanty S. de. R.L. and Mexico's National Institute of Statistics and Geography (INEGI) using data from INEGI and USDA, ERS (2025).

A VAT is a "consumption tax on goods and services levied at each stage of the supply chain where value is added…from the initial production of goods and services to the point of sale. The amount of

[7] The concepts of gross operating surplus and property income are similar. Gross operating surplus is defined as "Value derived as a residual for most industries after subtracting total intermediate inputs, compensation of employees, and taxes on production and imports less subsidies from total industry output. Gross operating surplus includes consumption of fixed capital (CFC), proprietors' income, corporate profits, and business current transfer payments (net). Prior to 2003, it was referred to as other value added or property-type income" (U.S. Department of Commerce, Bureau of Economic Analysis, 2018). Property income, in turn, is "received by virtue of owning property. Rent is received from the ownership of land or natural resources; interest is received by virtue of owning financial assets; and profit is received from the ownership of production capital" (O'Hara, 2001).

VAT the user pays is based on the cost of the product minus any costs of materials that were taxed at a previous stage" (Investopedia, 2024). Mexico is one of about 175 countries to have a VAT (Caragher, 2024). While the United States is not one of these countries, some State and county governments in the United States apply a sales tax to food.[8]

Under Mexico's VAT, a broad range of goods and services used as inputs in agricultural production are subject to a tax rate of 0, as are many types of food with limited processing (table 2). Milk, juices, nectars, bread, cookies, cakes, sausages, ham, meat products, vacuum-packed or frozen food, tortillas, and food in its natural state are among the food products subject to a VAT tax rate of 0 (Servicio de Administración Tribunal, 2016). A VAT of 0 percent on a particular good or service means that the buyer does not pay the VAT, but the seller is still able to claim a credit or refund under the VAT for any inputs used to produce that good or service (Taxually, 2024). FAFH expenditures in Mexico are generally subject to a tax rate of 16 percent under Mexico's VAT. In 2016, the Mexican Government issued clarifying instructions that this rate applies to many types of prepared foods sold in convenience stores and fast-food courts—including sandwiches and nachos (Servicio de Administración Tributaria, 2016).

A hypothetical example of a Mexican supermarket helps to illustrate how the VAT works. The price of a fresh tomato sold by a supermarket would not have a VAT added to it at the cash register since the VAT rate for food in its natural state is 0. However, a prepared sandwich sold by that supermarket would be subject to the standard VAT rate of 16 percent, and that VAT would be added to the sales price at the cash register. In turn, the supermarket would need to declare these transactions to Mexico's tax authorities to receive a refund for any VAT that it paid when it purchased the fresh tomato and the prepared sandwich from its suppliers.[9]

[8] Dong and Stewart (2021) explore the impact of sales taxes on U.S. food spending.

[9] Brockmeyer et al. (2024) provides a concise, general explanation of how the VAT works.

Table 2

Selected goods and services related to agricultural production and food consumption that are subject to a tax rate of 0 under Mexico's Value-Added Tax

Animals and plants that are not industrialized, except rubber and dogs, cats, and small species used as pets in the home. (1)

Patented medicines and products intended for human and animal consumption, except for: beverages other than milk, juices, nectars, or concentrates of fruit or vegetables; concentrates, powders, syrups, essences, or flavor extracts used to make soft drinks; caviar, smoked salmon, and elvers; flavorings, microencapsulations, and food additives; chewing gum; and processed foods for dogs, cats, and small species used as pets in the home.

Ice.

Noncarbonated water, except when sold in containers smaller than ten liters.

Ixtle, palm, and lechuguilla.

Tractors to operate agricultural implements, except those with tracked treads, as well as tires for said tractors; motor cultivators for small surfaces; plows; harrows to break up clods on plowed land; cultivators for spreading and weeding; harvesters; sprayers and dusters to spray or spread fertilizers, pesticides, herbicides, and fungicides; mechanical, electrical or hydraulic equipment for agricultural irrigation; seeders; silage harvesters, forage cutters and balers; shellers; fertilizer spreaders and fertilizer spreaders for cultivated land; spraying airplanes; manual chainsaws; and commercial fishing boats. (2, 3)

Fertilizers, pesticides, herbicides, and fungicides used in crop or livestock production.

Hydroponic greenhouse and equipment integrated with them to produce controlled temperate and humidity or to protect crops from natural elements. (2)

Irrigation equipment.

The provision of independent services:

- Directly to farmers and ranchers for agricultural activities, for the purposes of: well drilling, lighting, and the formation of water reservoirs; supply of electricity for agricultural uses applied to the pumping of water for irrigation; clearing and roads within agricultural farms; land preparation; agricultural irrigation and fumigation; pest eradication; harvesting and collecting; vaccination, disinfection, and insemination of livestock; or the capture and extraction of marine and freshwater species.
- For the grinding or crushing of corn or wheat.
- For the pasteurization of milk.
- In hydroponic greenhouses.
- For the ginning of raw cotton.
- For the slaughter of livestock and poultry.
- For reinsurance.
- For the supply of water for domestic use.

(1) Under Mexico's VAT, animal and plant products are not considered to be industrialized if they are simply cut, flattened, in pieces, fresh, salted, dried, refrigerated, frozen, or packaged, or, in the case of plant products, if they are dried, cleaned, hulled, seeded, or shelled.

(2) Includes the temporary use or enjoyment of such machinery and equipment.

(3) To qualify, the machinery or equipment must be sold in their entirety.

Source: USDA, Economic Research Service in conjunction with Econoquanty S. de. R.L. and Mexico's National Institute of Statistics and Geography (INEGI) translation and presentation of provisions of Ley del Impuesto al Valor Agregado.

The Food Dollar estimates for Mexico indicate that taxes' share of FAFH expenditures was low throughout the period studied, with a share of just 0.9 percent in 2018 (table A.2). This result includes taxes paid on production (on land and property, assets, etc.) and on products (including the VAT), but only those taxes paid by producers, not final consumers. In the estimates for Mexico, the food consumption basket is based on what is recorded in the IOT, which is valued at basic prices (i.e., without the VAT). Thus, taxes' share of FAFH expenditures is small, since this estimate only includes the taxes paid by producers, who usually deduct the VAT associated with their purchases of inputs.

The prevalence of informality in Mexico's food service industry may also be a contributing factor. In his seminal study of informality in Mexico, Levy (2018) defined informal workers as belonging to one of two groups: (1) unsalaried workers (including the self-employed) and (2) salaried workers whose employers did not register them in the country's social security system and thus evaded that system's rules, requirements, and financial obligations. According to quarterly estimates from Mexico's National Survey of Occupation and Employment (ENOE), informal workers accounted for about 55 percent of the country's workforce in 2023 (INEGI, 2024).

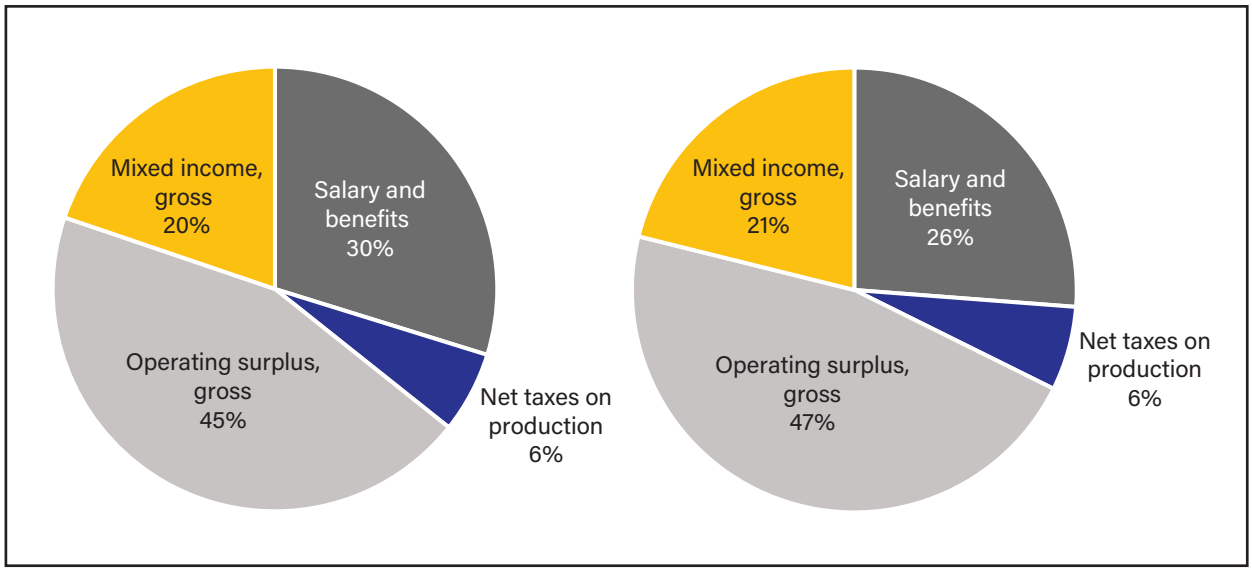
Farah et al. (2022) present evidence that a large portion of household food and beverage purchases in Mexico occurs at "small, family-owned businesses [that] … could either be formal or informal outlets." To frame their analysis, Farah et al. (2022) assigned ENIGH's categories of food outlets to three main groups—informal outlets (street vendors, street markets, and acquaintances); mixed outlets (public markets, small neighborhood stores, specialty stores, and low-budget restaurants); and formal outlets (restaurants, cafés, and bars; convenience stores; and supermarkets)—even though the ENIGH does not measure whether a given food outlet or type of food outlet is informal or formal. Using ENIGH data for 2018, Farah et al. (2022) then estimated that informal outlets accounted for 14 percent of food and beverage purchases, mixed outlets accounted for 70 percent, and formal outlets accounted for 15 percent, with other types of outlets accounting for the remainder. Small neighborhood stores and specialty stores accounted for 30 percent and 25 percent, respectively.

A related feature of the Mexican economy—the prevalence of mixed income—makes it hard to compare labor and capital's respective shares of food expenditures between Mexico and the United States. In national accounts, the operating surplus reported by Mexico (and many other developing countries) includes the income of the self-employed, including owners of microbusinesses. For such businesses, it is difficult to distinguish between the compensation of workers, the returns to capital, and the consumption of fixed capital. For the purposes of national accounts, the total of these three items is estimated and simply categorized as mixed income (European Communities et al., 2009). In the IOTs for Mexico, mixed income is presented as part of the gross operating surplus (GOS). The national accounts for the United States do not include a measure of mixed income, as the U.S. accounts are able to make the distinction mentioned above.

Figure 4 shows the distribution of Mexico's Gross Domestic Product (GDP) among primary factors for 2003 and 2018, making explicit the distinction between operating surplus and mixed income. The share of GDP corresponding to salaries and benefits decreased by 4 percentage points between the beginning (2003) and the end (2018) of the period studied, while the share corresponding to gross operating surplus increased by 2 percentage points. If we were to consider labor income as the sum of salaries and mixed income (26 percent plus 21 percent, respectively, using values for 2018), the total share of 47 percent resembles the share of U.S. GDP corresponding to compensation of employees (53.0 percent, based on 2018 data from U.S. Department of Commerce, Bureau of Economic Analysis, 2024). Unfortunately, we lack the information needed to decompose mixed income by factor of production in our application of the Food Dollar methodology to Mexico. As a result, the estimates of

labor's share (salary and benefits) and capital's share (gross operating surplus) of food expenditures in Mexico are not comparable to the Food Dollar's estimates of these shares in the United States (salary and benefits and property income, respectively).

Figure 4
Distribution of Mexico's gross domestic product among primary factors, 2003 (left) and 2018 (right)



Source: USDA, Economic Research Service in conjunction with Econoquanty S. de. R.L. and Mexico's National Institute of Statistics and Geography (INEGI) using data from INEGI.

Change in the workers' share of Mexico's food expenditures over time suggest that the country's FVC became less labor-intensive during the period studied, particularly with respect to FAH. Between 2003 and 2018, workers' share of FAH expenditures in Mexico dropped from 20.3 percent to 15.5 percent, whereas workers' share of FAFH expenditures rose from 28.6 percent in 2003 to 32.6 percent in 2010 and then declined to 29.7 percent by 2018 (table A.2).

Last, but not least in importance, is the behavior of imports. The Food Dollar methodology distinguishes between "embedded imports"—that is, "food ingredients and non-food inputs that are imported and used throughout [a country's]… food system"—and "direct imports"—imported food and beverages that are purchased directly by a country's consumers (Rehkamp & Canning, 2015). For example, imported blueberries used to make a blueberry pie domestically would be viewed as an embedded import, while fresh blueberries grown abroad and purchased by domestic consumers at the grocery store would be categorized as a direct import. Because the Food Dollar focuses on domestically produced food, its distribution of food expenditures across primary factors includes embedded imports but not direct imports. Moreover, imports are treated in the same fashion in the Food Dollar's marketing bill (i.e., farm versus nonfarm) and industry group data series.

According to the Food Dollar estimates for Mexico and the United States, embedded imports' share of total food expenditures (i.e., total expenditures on domestically produced food) in 2018 was more than three times higher in Mexico than in the United States: 18.4 percent versus 4.9 percent (figure 3). Moreover, embedded imports' share in Mexico was on an upward tendency during the period studied, climbing from 13.4 percent in 2003 to 18.4 percent in 2018, whereas embedded imports' share in the United States oscillated between 4.7 and 6.6 percent over that period (table A.2).

One explanation of why embedded imports' share was higher in Mexico than in the United States is that products that tend to be embedded imports account for a larger share of agricultural imports in Mexico than in the United States. The Bulk-Intermediate-Consumer-Oriented (BICO) classification scheme developed by USDA offers a framework for understanding this difference in product composition. BICO categorizes agricultural products into three groups:

- Bulk commodities—Products transported in large quantities, often with little, if any, packaging and limited processing (such as rice, coffee, and cocoa beans).
- Intermediate products—Products used primarily as inputs to manufacture consumer-oriented products and usually obtained from bulk agricultural commodities (such as vegetable oils, sugar, and livestock).
- Consumer-oriented products—Products destined for direct human consumption (such as meat, fruit, vegetables, and alcoholic beverages).

When agricultural imports are viewed through the lens of the Food Dollar methodology, bulk commodities and intermediate products tend to be embedded imports, while consumer-oriented products tend to be direct imports. In 2018, bulk commodities and intermediate products accounted for 56.4 percent of Mexico's agricultural imports, compared with 30.6 percent for U.S. agricultural imports (table 3). Among Mexico's leading agricultural imports in 2018 were several bulk commodities, including corn (used to feed livestock and manufacture starch and high-fructose corn syrup), soybeans (used to feed livestock and to manufacture oil), and wheat (used mainly to make bread and other baked goods). In contrast, fresh fruits and vegetables, processed fruits and vegetables, and distilled spirits—all consumer-oriented products—were among the leading U.S. agricultural imports (table 3). If these imported consumer-oriented products are not used as inputs in domestic food production, they do not count as embedded imports and thus fall outside the scope of the food dollar method.

Table 3

Mexican and U.S. agricultural imports by bulk, intermediate, and consumer-oriented product categories, 2018

Product	Mexico		United States	
	Value	Share of total	Value	Share of total
	U.S. dollars (billions)	*Percent*	*U.S. dollars (billions)*	*Percent*
Agricultural products, total	29.01	100.0	137.99	100.0
Bulk commodities, total	8.81	30.4	11.93	8.6
Wheat	1.17	4.0	0.78	0.6
Corn	3.26	11.2	0.20	0.1
Soybeans	2.00	6.9	0.28	0.2
Coffee, unroasted	0.04	0.1	4.74	3.4
Raw beet and cane sugar	0.03	0.1	1.11	0.8
All other bulk commodities	2.31	8.0	4.81	3.5
Intermediate products, total	7.66	26.4	30.28	21.9
Live animals	0.18	0.6	2.79	2.0
Other livestock products	0.45	1.5	1.92	1.4
Oilseed meal and cake	0.70	2.4	1.17	0.9
Other feeds and grain products	1.40	4.8	2.76	2.0
Vegetable oils	1.04	3.6	6.32	4.6
Planting seeds	0.55	1.9	1.06	0.8
Sugars, sweeteners, and beverage bases	0.73	2.5	4.41	3.2
Essential oils	1.61	5.6	4.30	3.1
Cocoa paste and cocoa butter	0.14	0.5	1.08	0.8
All other intermediate products	0.86	3.0	5.56	4.0
Consumer-oriented products, total	12.54	43.2	95.79	69.4
Beef and beef products	1.04	3.6	5.87	4.3
Pork and pork products	1.74	6.0	1.65	1.2
Other meat products	0.43	1.5	1.19	0.9
Poultry products and eggs	1.33	4.6	0.57	0.4
Dairy products	1.99	6.9	2.82	2.0
Fresh avocados	0.00	0.0	2.35	1.7
Fresh bananas and plantains	0.00	0.0	2.42	1.8
Fresh berries	0.05	0.2	2.86	2.1
All other fresh fruit	0.68	2.4	5.56	4.0
Fresh vegetables	0.18	0.6	8.49	6.2
Processed fruit and vegetables	0.87	3.0	8.86	6.4
Fruit and vegetable juices	0.07	0.2	2.31	1.7
Tree nuts	0.42	1.4	3.35	2.4
Wine and related products	0.29	1.0	6.44	4.7
Beer	0.20	0.7	5.32	3.9
Distilled spirits	0.36	1.2	8.08	5.9

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Product	Mexico		United States	
	Value	Share of total	Value	Share of total
	U.S. dollars (billions)	*Percent*	*U.S. dollars (billions)*	*Percent*
Nonalcoholic beverages (excluding juice)	0.18	0.6	3.79	2.7
Nursery products and cut flowers	0.14	0.5	2.06	1.5
Roasted and instant coffee	0.11	0.4	1.31	0.9
Spices	0.24	0.8	2.02	1.5
Chocolate and cocoa products	0.29	1.0	2.67	1.9
Condiments and sauces	0.29	1.0	1.27	0.9
Baked goods, cereals, and pasta	0.52	1.8	7.48	5.4
Food preparations	0.87	3.0	2.18	1.6
Dog and cat food	0.11	0.4	0.99	0.7
Manufactured tobacco	0.02	0.1	1.33	1.0
All other consumer-oriented products	0.12	0.4	2.53	1.8

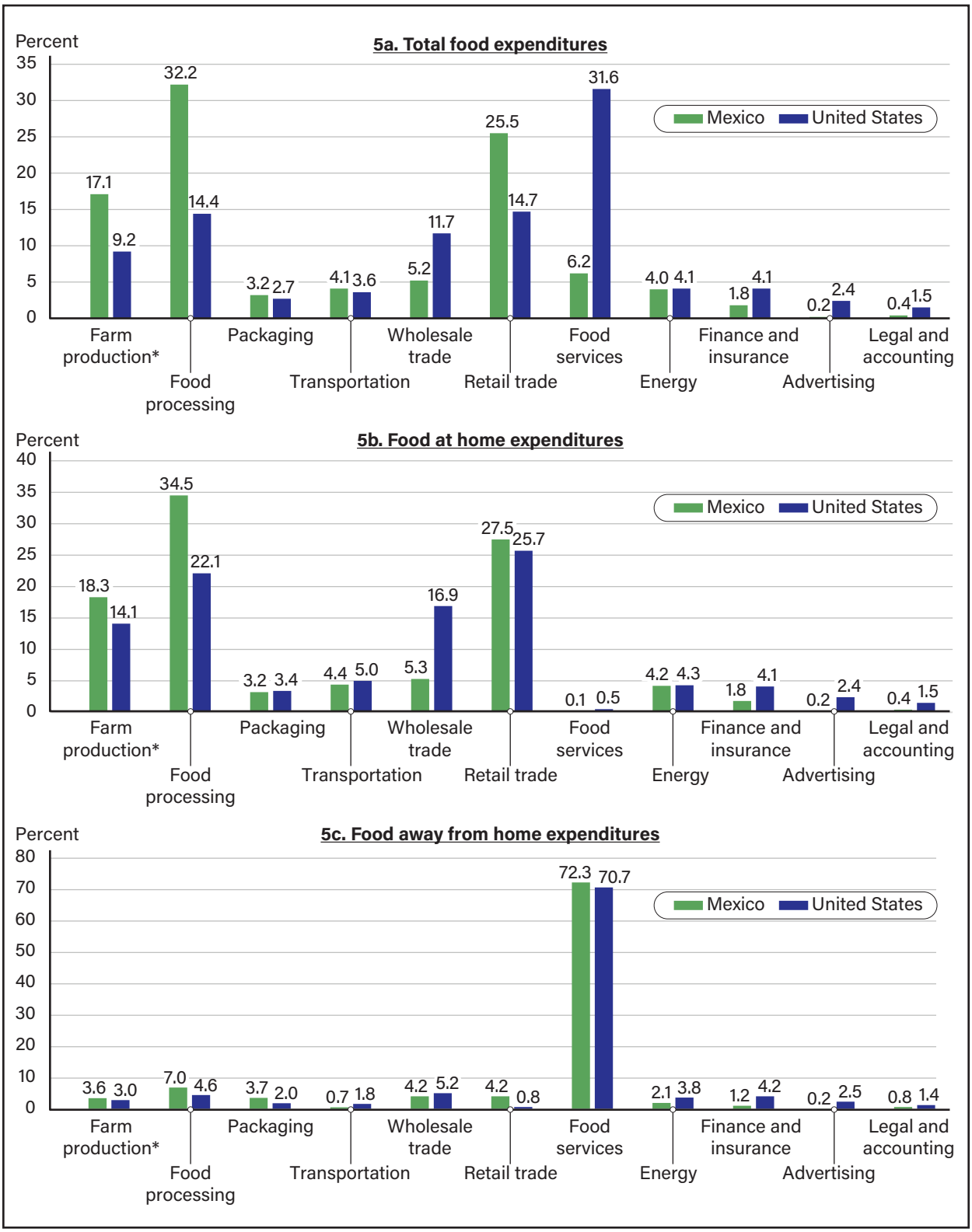
Source: USDA, Economic Research Service in conjunction with Econoquanty S. de. R.L. and Mexico's National Institute of Statistics and Geography (INEGI) using the Mexican Government's import data as compiled by Trade Data Monitor (2024) and U.S. import data from the U.S. Department of Commerce, Bureau of the Census, as compiled by USDA, Foreign Agricultural Service (2024).

Food Expenditure Decomposition by Industry Group

The Food Dollar methodology also makes it possible to quantify the value added by each industry group in the FVC. The industry groups in the estimates for Mexico are the same as the industry groups in the USDA, ERS estimates for the United States, except that in the estimates for Mexico, the agribusiness and farm production industries are combined. The agribusiness and farm production shares do not include nonfarm value added—that is, "value added from nonfarm supply chain industry groups, such as energy, transportation, and financial services" (Canning, 2011). The estimated shares for Mexico and the United States in 2018 were quite different for most industry groups—except energy, packaging, and transportation. Mexico had larger shares in farm production, food processing and retail trade, while the United States has larger shares in food services, wholesale trade, and services such as finance, advertising, and legal. Although advertising received a small share of food expenditures in both countries, this share was 14 times higher in the United States than in Mexico (figure 5a, tables A.3–A.5).

Figure 5

Food expenditure decomposition by industry group, 2018



*The farm production category includes both farm production and agribusiness.

Source: USDA, Economic Research Service (ERS) in conjunction with Econoquanty S. de. R.L. and Mexico's National Institute of Statistics and Geography (INEGI) using data from INEGI and USDA, ERS.

The industry group series on FAH expenditures in 2018 (figure 5b) reveal several differences between the food supply systems of Mexico and the United States. First, farms and food processors accounted for a much larger share of value added in Mexico than in the United States. Together, farm production, agribusiness, and food processing contributed 52.8 percent of value added in Mexico, compared with 39.7 percent in the United States. Second, retail trade accounted for a larger share in Mexico than in the United States, while wholesale trade contributed a smaller share. These two differences suggest that some of the value-added activities performed by wholesale trade in the United States were carried out by farm production, agribusiness, food processing, and retail trade in Mexico.

Third, certain professional services (finance and insurance, advertising, and legal and accounting) made up a smaller share of value added in Mexico than in the United States. This result may reflect the fact that Mexico is a developing, upper-middle-income country and not a developed one. In the latter type of country, the share of value added to the economy by services tends to be higher (Buckley & Majumdar, 2018). The informal economy in Mexico may also help to explain this result, since small producers and traders in traditional markets make little use of these services.

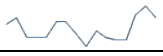
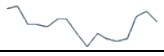
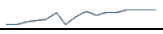
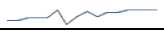
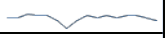
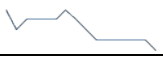
With respect to FAFH expenditures (figure 5c), the food services industry accounted for more than 70 percent of the total in 2018, reflecting the industry's centrality to restaurants, cafés, and bars.

Tables A.3–A.5 show the movements of these shares during the period studied. Legal services' share in the United States tended to increase over the period, while the opposite was true for Mexico. In each of the three food expenditure measures (total, FAH, and FAFH) for Mexico, food services were the industry with the largest decrease in share—with its share of total food expenditures dropping from 9.2 percent in 2003 to 6.2 percent in 2018. Food services' former share seems to have been absorbed by retail trade and food processing mainly.

Figures 6 and 7 display trends for the period of analysis for the United States and Mexico in the food expenditure series. Again, these differences may reflect the fact that Mexico is a developing, upper-middle-income country and the United States is a developed, high-income country. The greater prevalence of the informal economy in Mexico may also help to explain the differences in the shares. The tendencies of the series for food at home and food away from home are distributed similarly in both countries. The two highest shares of food expenditures at home were processed food and retail services, whereas the highest share of food expenditures away from home was food services. In each of the three measures in Mexico, food services were the industry with the biggest decrease in share. In total food expenditures, food services' share declined from 9.41 percent in 2003 to 6.21 percent in 2018. Its share seems to have been absorbed by retail trade, energy products, and farm products, although the later industry's share only increased by 0.6 percentage points over the period (figure 6).

Figure 6

Value added by industry group to food produced and consumed in Mexico, 2003–18, expressed as a percentage of the total for all industry groups

		Food			Food at home			Food away from home	
	Industry group	Average	Period 2003–18		Average	Period 2003–18		Average	Period 2003–18
1	Farm production*	16.8		1	18.2		1	3.6	
2	Food processing	31.9		2	34.6		2	6.9	
3	Packaging	3.1		3	3.1		3	3.4	
4	Transportation	4.4		4	4.8		4	0.8	
5	Wholesale trade	5.4		5	5.5		5	4.2	
6	Retail trade	24.4		6	26.6		6	4.3	
7	Food services	7.1		7	0.1		7	72.0	
8	Energy	4.2		8	4.4		8	2.4	
9	Finance and insurance	2.0		9	2.1		9	1.3	
10	Advertising	0.2		10	0.2		10	0.2	
11	Legal and accounting	0.5		11	0.5		11	0.8	

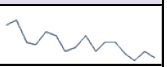
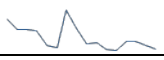
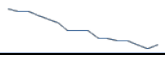
* = The farm production category includes both farm production and agribusiness.

Note: The x-axis measures the year (2003–18), and the y-axis measures the percentage of the total value added by all industry groups.

Source: USDA, Economic Research Service (ERS) in conjunction with Econoquanty S. de. R.L. and Mexico's National Institute of Statistics and Geography (INEGI).

Figure 7

Value added by industry group to food produced and consumed in the United States, 2003–18, expressed as a percentage of the total for all industry groups

		Food Dollar Series			Food at Home Dollar Series			Food Away from Home Dollar Series	
	Industry group	Average	Period 2003–18		Average	Period 2003–18		Average	Period 2003–18
1	Farm production*	11.0		1	16.4		1	3.5	
2	Food processing	15.4		2	23.2		2	4.6	
3	Packaging	3.1		3	3.8		3	2.2	
4	Transportation	3.5		4	4.9		4	1.6	
5	Wholesale trade	10.6		5	15.1		5	4.4	
6	Retail trade	14.1		6	23.8		6	0.8	
7	Food services	29.9		7	0.5		7	70.7	
8	Energy	5.0		8	5.4		8	4.5	
9	Finance and insurance	3.4		9	3.5		9	3.4	
10	Advertising	2.4		10	2.1		10	2.7	
11	Legal and accounting	1.6		11	1.4		11	1.7	

* = The farm production category includes both farm production and agribusiness.

Note: The x-axis measures the year (2003–18), and the y-axis measures the percentage of the total value added by all industry groups.

Source: USDA, Economic Research Service in conjunction with Econoquanty S. de. R.L. and Mexico's National Institute of Statistics and Geography (INEGI).

Conclusion

Applying USDA's Food Dollar methodology to data for Mexico generates farm shares like those for the United States. Based on annual averages for the period studied (2003–18), farms in Mexico received a smaller percentage of expenditures on domestically produced, domestically consumed food than farms in the United States. For food at home (FAH), the average annual farm share was a few percentage points lower in Mexico than in the United States (22.1 percent versus 24.5 percent). For food away from home (FAFH), the farm share averaged 4.0 percent in Mexico and 5.2 percent in the United States. This small share was not surprising given the prominent role of the food services industry in FAFH. For total food expenditures, the farm share was several percentage points higher for Mexico than for the United States (20.3 percent versus 16.4 percent). Because households in Mexico dedicate a smaller proportion of their food expenditures to FAFH, the difference between the farm shares of total food expenditures and the farm shares of FAH expenditures was smaller in Mexico than in the United States.

When analyzing the distribution of total food expenditures across the primary factors of production, the average annual share that went to taxes was much lower in Mexico than in the United States (0.4 percent versus 6.8 percent). The provisions of Mexico's value-added tax (VAT) for agricultural inputs and food and high rates of informality in Mexico's FVC help to explain the low share of food expenditures that accrues to taxes in Mexico.

The share of total food expenditures received by workers in Mexico tended to decrease during the period studied, from 21.3 percent in 2003 to 16.7 percent in 2018. However, the workers' share estimates for Mexico are much lower than the estimates for the United States (which ranged from 48.3 percent to 55.7 percent during 2003–18) because an unknown portion of the compensation of workers in small, family-owned businesses is classified as mixed income rather than compensation of workers in Mexico's national accounts.

Embedded imports' share of food expenditures, in contrast, was on an upward tendency in Mexico—climbing from 13.4 percent in 2003 to 18.1 percent in 2018—reflecting the growing role of imported bulk commodities and intermediate goods in the country's domestic agricultural production. Most of these imports came from the United States. Embedded imports' share of U.S. food expenditures oscillated between 4.7 and 6.6 percent over that period. Because the most recent input-output table for Mexico at the time of writing was for the year 2018, the period studied ends that year and does not include the years of the United States-Mexico-Canada Agreement (USMCA), which was implemented in July 2020.

Our analysis of the distribution of food expenditures across the industry groups that make up the FVC reveals that the differences between Mexico and the United States are mainly in the retail sector, where the share was much higher in Mexico, and the wholesale sector, where the share was much higher in the United States. In addition, some of the value-added activities performed by wholesale trade in the United States appear to have been carried out by farm production, food processing, and retail trade in Mexico. These results also help to explain why services' share of total food expenditures is much smaller in Mexico than in the United States, a general difference that tends to exist between developed and developing countries.

There are many opportunities to deepen the analysis of Mexico's food expenditures, especially regarding the impact of income distribution on the farm share. Consumption patterns in Mexico

are highly dependent on available income—a key factor in purchasing decisions between highly processed foods of lower cost and quality and unprocessed foods of higher cost and quality. As a result, household incomes are likely to have significant implications for the farm shares. Considering these likely relationships, we anticipate additional research applying the Food Dollar methodology to information disaggregated by income decile for Mexico.

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Appendix: Methodological Details and Supplementary Tables

Accounting for Electricity Outlays in Food Trade Margins

According to Canning (2011), there is evidence to conclude that establishments which trade food have a higher consumption of energy than many other trade activities, as food-trading establishments usually need to keep certain food products refrigerated or frozen. In the data for Mexico, trade is only divided into wholesale and retail components, so in the I-O model, the average use of electricity in all trade establishments (regardless of the commodities they sell) is imposed on all products. To differentiate this use for food, wholesale and retail commodities utility outlays are decoupled and consolidated into a new trade utilities (tu) commodity, as follows:

$$Z^{new}_{C,tu} = \underline{b_ge_C} \cdot \left(Z_{C,wt} + Z_{C,rt}\right) \quad \text{(A-1)}$$

where b_ge is a binary vector identifying the natural gas and electricity utility rows and the bar below means its transformation into a diagonal matrix, tu denotes the position of the new trade utility commodity column, and wt and rt denote the positions of the wholesale and retail trade commodity columns, respectively. No value-added outlays are attributed to the new trade utility commodity:

$$v^{new}_{m_{tu,P}} = 0 \quad \text{(A-2)}$$

The original wholesale and retail outlay columns are updated accordingly:

$$Z^{new}_{C,wt} = \left(\underline{i_c - b_{ge_C}}\right) \cdot Z_{C,wt} \quad \text{(A-3)}$$

$$Z^{new}_{C,rt} = \left(\underline{i_c - b_{ge_C}}\right) \cdot Z_{C,rt} \quad \text{(A-4)}$$

Every time a producer or consumer pays for trade services, a fraction of the payment goes to the electricity bills of the trade establishments.

Next, we decouple this fraction so the agent paying for the trade services instead pays this fraction directly to the trade utilities commodity. The trade utilities commodity is sold directly to the producer instead of the trade and transport intermediary. This way, we can apply different intensities in energy use to make food-related products. Let S_we_C and S_wg_C be vectors indicating the fraction of the payments (technical coefficient) to the electric and gas commodities, respectively, by the trade services, so the element corresponding to a food commodity contains a higher payment. Let $Z_wt_{C,C}$ and $Z_rt_{C,C}$ be the wholesale and retail trade margins tables. The sales of the trade utilities are estimated as:

$$Z^{new}_{tu,C} = \left(S_{we_C} + S_{wg_C}\right)' \cdot Z_{-wt_{C,C}} + \left(S_{re_C} + S_{rg_C}\right)' \cdot Z_rt_{C,C} \quad \text{(A-5)}$$

Final demand sales are computed using the same procedure. This amount is subtracted from the wholesale and retail trade rows, respectively, to maintain the accounting identities of the columns.

Food-away-from-home Accounting

In the I-O accounts, nearly all purchases of food away from home (FAFH) are recorded as expenditures on food services in which food is indirectly purchased as part of the service. To facilitate calculations of food expenditures, food services (fs) are decoupled from the food-away (fa) purchases of food prod-

ucts in such a way that a fraction of the food-away expenditures (an entry in the private consumption vector) is converted into a vector of food commodities. Following the methodology of Canning et al. (2016) for the decoupling, only the expenditures on food are separated, while all trade and transport margins and other associated costs remain in the food service industries:

$$Z_{C,fa}^{new} = \underline{b_fa_C} \cdot Z_{C,fs} \quad \text{(A-6)}$$

$$Z_{C,fs}^{new} = Z_{C,fs} - Z_{C,fa}^{new} \quad \text{(A-7)}$$

where $\underline{b_fa_C}$ is a binary vector identifying the food inputs acquired by the food services. No value-added outlays are attributed to the new food-away commodity:

$$v_{m_{fa,P}}^{new} = 0 \quad \text{(A-8)}$$

$$v_{m_{fs,P}}^{new} = v_m_{fs,P} \quad \text{(A-9)}$$

The new food-away row is calculated as a fraction of the original food-service sales, where the fraction (s_fa) corresponds to the fraction of the food-related expenditures in the total costs of the original food services column.

$$Z_{fa,C}^{new} = Z_{fs,C} \cdot s_fa \quad \text{(A-10)}$$

$$Z_{fs,C}^{new} = Z_{fs,C} \cdot (1 - s_fa) \quad \text{(A-11)}$$

Applying these operations to the final demand matrix results in the separation of household expenditures on food services into two values, one corresponding to the service itself and the other to the indirect purchase of food products. Let PCE_C represent the private consumption expenditure vector; then:

$$PCE_{fa} = PCE_{fs} \cdot s_fa \quad \text{(A-12)}$$

$$PCE_{fs} = PCE_{fs} \cdot (1 - s_fa) \quad \text{(A-13)}$$

The food-away expenditure (a row in the vector) will now be converted into a column vector of direct demand, with the same commodity distribution as the food-away column in the intermediate matrix, and the column of the food-away commodity should decrease by the same amount to keep the accounting identities. Let p_fa represent the food-away vector of consumption; then:

$$p_fa_C = PCE_{fa} \cdot \left(Z_{fa,C}^{new} \cdot \left(\iota \cdot Z_{fa,C}^{new}\right)^{-1}\right) \quad \text{(A-14)}$$

$$Z_{fa,C}^{new} = Z_{fa,C}^{new} - p_fa_C \quad \text{(A-15)}$$

Finally, we define the vector of food-away consumption (y_fa) as the vector which includes the product disaggregation (p_fa_C) and the value of the food-service expenditure:

$$y_fa_C = p_fa_C \quad \text{(A-16)}$$

$$y_fa_{fs} = PCE_{fs} \quad \text{(A-17)}$$

We refer to this vector as the FAFH expenditure. It will be used in the following estimations.

Trade and Transport Margins for Food Consumed at Home

In the I-O accounts, expenditures on food at home (FAH) are separately recorded as food product purchases at basic prices, meaning that all trade and transportation margins are not accounted in expenditures on the product but rather in the trade and transport rows of the matrix. If we intend to account for household food expenditures, the value of the corresponding margins must be estimated and included in the consumption vector. The method used in this report obtains the same result as Yi et al. (2021) but is explained in more steps.

Mexico's annual input-output tables (IOT) series includes tables for trade and transport margins on intermediate and final transactions. We use this information to estimate the margins applied to food consumed at home. Let PCE_ttm_C be the vector of trade and transport margins applied over the private consumption expenditure. This vector can be separated into a vector with positive margins (ttm_pos_C) and a vector with negative values[10] (ttm_neg_C). Let PCE_pp_C be the vector of private consumption expenditure, which includes trade and transport margins. Then, the share of each expenditure corresponding to trade and transport margins is:

$$sh_ttm_C = \left(\underline{PCE_pp_C}\right)^{-1} \cdot ttm_pos_C \qquad \text{(A-18)}$$

We estimate the vector of expenditure on food consumed at home as:

$$y_fh_C^{pos} = \underline{b_fh} \cdot \underline{PCE_pp_C} \cdot (\iota - sh_ttm_C) \qquad \text{(A-19)}$$

where b_fh is the binary vector which identifies the food products consumed at home. We use the superindex pos to indicate that this vector does not include the trade and transport margins yet. The margins must be allocated in the trade and transport rows of the vector. Therefore, we estimate the contribution of the trade and transport sectors to the total margin using the negative part of the margins vector:

$$cont_{ttm_C} = ttm_{neg_C} \cdot \left[\frac{1}{\iota'(ttm_neg_C)}\right] \qquad \text{(A-20)}$$

The contribution of the trade and transport industries to the total margins of food products is:

$$y_fh_C^{neg} = (PCE_pp_C{}' \cdot \underline{b_{fh}}) \cdot sh_ttm_C \cdot cont_ttm_C \qquad \text{(A-21)}$$

Finally, the vector with the total expenditure on food, with the margins in the trade and transport rows, is:

$$y_fd_C = y_fh_C^{pos} + y_fh_C^{neg} \qquad \text{(A-22)}$$

[10] Positive values are the margins added by the trade and transport services, while negative values only appear in the trade and transport rows. The whole vector adds up to zero, so the vector's function is to subtract the value of the trade and transport services and add it to the goods.

Table A.1

Farm share of food expenditures for Mexico and United States, 1993–2020

	United States			Mexico		
Year	Total	Food at home (FAH)	Food away from home (FAFH)	Total	Food at home (FAH)	Food away from home (FAFH)
			Percent			
2003	16.0	23.4	5.9	19.9	22.3	3.9
2004	16.6	24.5	5.9	20.1	22.5	4.0
2005	15.8	23.6	5.1	19.9	22.2	3.9
2006	15.3	23.0	5.1	19.8	22.0	3.8
2007	16.5	24.5	5.7	20.1	22.2	3.9
2008	17.1	25.4	5.5	19.7	21.5	4.0
2009	16.2	24.1	4.8	20.6	22.4	4.1
2010	16.9	25.0	5.0	20.2	21.9	3.9
2011	18.5	27.3	5.4	19.9	21.5	4.0
2012	18.4	27.4	4.9	20.3	21.9	4.0
2013	18.2	26.9	5.2	20.1	21.6	3.9
2014	17.5	26.1	5.4	20.3	21.9	3.9
2015	15.7	23.6	4.9	20.3	22.0	3.9
2016	14.8	22.5	4.5	20.8	22.5	4.1
2017	14.7	22.4	4.8	21.2	22.9	4.2
2018	14.5	22.2	4.6	21.2	22.9	4.0
Mean	16.4	24.5	5.2	20.3	22.1	4.0

Source: USDA, Economic Research Service (ERS) in conjunction with Econoquanty S. de. R.L. and Mexico's National Institute of Statistics and Geography (INEGI) using data from INEGI and USDA, ERS (2025).

Table A.2

Food expenditure shares distributed among primary factors

	United States				Mexico				
Year	Salary and benefits	Output taxes	Property income	Imports	Salary and benefits	Net taxes on production	Net taxes on products	Gross operating surplus	Imports
Total food expenditures									
2003	51.6	8.2	35.4	4.8	21.3	0.0	0.5	64.7	13.4
2004	50.6	8.4	35.7	5.3	20.5	0.0	0.4	65.1	14.0
2005	50.4	8.0	35.6	6.0	20.4	-0.1	0.4	64.9	14.3
2006	50.0	8.8	35.0	6.2	20.3	-0.2	0.4	65.1	14.4
2007	50.9	9.2	33.6	6.4	19.5	-0.2	0.4	65.1	15.2
2008	50.9	9.1	33.3	6.6	19.3	-0.9	0.4	65.1	16.1
2009	50.0	9.2	35.9	4.9	19.8	0.0	0.5	63.9	15.9
2010	49.0	9.3	36.1	5.6	19.0	-0.2	0.4	64.7	16.1
2011	48.3	9.1	36.1	6.4	18.1	-0.4	0.4	64.8	17.0
2012	49.0	9.1	35.8	6.2	17.8	-0.5	0.4	65.2	17.2
2013	51.9	3.3	39.5	5.4	18.3	0.0	0.4	64.9	16.5
2014	53.6	3.5	37.5	5.4	18.0	0.0	0.4	64.6	17.0

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	United States				Mexico				
Year	Salary and benefits	Output taxes	Property income	Imports	Salary and benefits	Net taxes on production	Net taxes on products	Gross operating surplus	Imports
2015	53.9	3.3	38.1	4.7	17.4	0.3	0.4	64.7	17.2
2016	55.2	3.2	36.9	4.7	16.9	0.3	0.4	64.2	18.2
2017	55.5	3.3	36.4	4.9	16.6	0.3	0.4	64.6	18.2
2018	55.7	3.1	36.2	4.9	16.7	0.2	0.4	64.3	18.4
Expenditures on food at home (FAH)									
2003	48.4	7.5	38.4	5.7	20.3	0.0	0.6	64.7	14.4
2004	46.9	7.8	39.0	6.3	19.4	-0.1	0.4	65.2	15.0
2005	46.6	7.1	39.0	7.2	19.4	-0.1	0.4	65.1	15.3
2006	46.2	8.2	38.2	7.4	19.2	-0.3	0.4	65.3	15.4
2007	46.7	8.6	37.1	7.6	18.4	-0.3	0.4	65.3	16.2
2008	46.4	8.6	37.0	8.0	18.1	-1.0	0.4	65.5	17.1
2009	45.8	8.8	39.5	6.0	18.5	-0.1	0.5	64.3	16.8
2010	44.9	8.8	39.6	6.8	17.6	-0.2	0.5	65.3	16.9
2011	43.7	8.9	39.5	7.8	16.8	-0.4	0.5	65.3	17.9
2012	44.2	8.9	39.2	7.7	16.5	-0.6	0.4	65.7	18.0
2013	43.0	3.2	47.2	6.7	16.9	-0.1	0.4	65.5	17.3
2014	44.9	3.5	44.9	6.7	16.7	0.0	0.4	65.1	17.8
2015	44.4	3.3	46.5	5.9	16.1	0.2	0.4	65.1	18.1
2016	46.6	3.1	44.4	5.9	15.6	0.3	0.4	64.6	19.0
2017	47.0	3.2	43.8	6.1	15.3	0.2	0.4	65.0	19.1
2018	47.3	3.0	43.6	6.1	15.5	0.2	0.4	64.6	19.2
Expenditures on food away from home (FAFH)									
2003	56.1	9.1	31.2	3.6	28.6	0.4	0.3	64.2	6.5
2004	55.8	9.2	31.1	3.9	28.3	0.4	0.2	64.3	6.7
2005	55.5	9.3	30.9	4.3	28.7	0.4	0.2	63.8	6.9
2006	55.1	9.6	30.7	4.6	28.8	0.3	0.2	63.6	7.0
2007	56.5	9.9	28.8	4.8	28.9	0.3	0.3	63.3	7.3
2008	57.2	9.9	28.2	4.7	30.0	0.0	0.3	62.1	7.6
2009	56.0	9.9	30.7	3.4	32.2	0.4	0.3	59.7	7.4
2010	55.0	10.1	31.1	3.9	32.6	0.4	0.3	59.0	7.8
2011	55.2	9.6	31.0	4.3	31.8	0.3	0.3	59.4	8.3
2012	56.1	9.5	30.6	3.9	31.5	0.2	0.2	59.8	8.3
2013	65.3	3.4	27.8	3.5	32.7	0.4	0.2	58.6	8.0
2014	65.9	3.5	27.1	3.6	32.0	0.6	0.3	59.0	8.2
2015	66.8	3.4	26.7	3.1	30.3	0.7	0.3	60.3	8.4
2016	66.9	3.4	26.7	3.0	30.0	0.7	0.2	60.2	8.9
2017	66.5	3.4	26.8	3.3	29.9	0.7	0.2	60.3	8.9
2018	66.4	3.3	26.9	3.4	29.7	0.7	0.2	60.4	9.0

Source: USDA, Economic Research Service (ERS) in conjunction with Econoquanty S. de. R.L. and Mexico's National Institute of Statistics and Geography (INEGI) using data from INEGI and USDA, ERS (2025).

Table A.3

Distribution of Mexico's total food expenditures by industry group, 2003–18

Year	Farm production*	Food processing	Packaging	Transportation	Wholesale trade	Retail trade	Food services	Energy	Finance and insurance	Advertising	Legal and accounting
					Percent						
2003	16.9	30.9	3.2	4.4	5.4	23.0	9.2	3.8	2.2	0.2	0.6
2004	17.1	31.3	3.3	4.1	5.3	23.1	8.9	4.1	2.0	0.2	0.6
2005	16.5	31.5	3.3	4.2	5.4	23.6	8.5	4.1	2.1	0.2	0.6
2006	16.5	31.2	3.2	4.4	5.4	23.7	8.3	4.4	2.1	0.2	0.6
2007	16.5	31.5	3.0	4.3	5.4	23.9	7.9	4.7	2.1	0.2	0.5
2008	17.0	30.1	2.9	4.4	5.3	25.0	7.3	5.1	2.1	0.2	0.5
2009	17.0	32.4	3.0	4.6	5.6	23.0	7.0	4.5	2.2	0.2	0.5
2010	16.6	31.8	3.0	4.7	5.5	24.3	6.7	4.5	2.1	0.2	0.4
2011	16.2	32.2	3.0	4.4	5.5	25.1	6.4	4.5	2.0	0.2	0.4
2012	16.7	32.6	3.0	4.5	5.6	24.5	6.2	4.3	1.9	0.2	0.4
2013	16.5	32.4	3.1	4.8	5.5	25.0	6.1	4.1	1.9	0.2	0.5
2014	16.4	32.4	3.1	4.9	5.5	25.0	6.2	4.1	1.9	0.2	0.4
2015	16.4	32.7	3.2	4.4	5.4	25.3	6.5	3.5	1.9	0.2	0.5
2016	17.2	32.5	3.2	4.2	5.2	25.5	6.4	3.2	1.9	0.2	0.5
2017	17.5	32.0	3.1	4.2	5.2	25.5	6.2	3.8	1.9	0.2	0.4
2018	17.1	32.2	3.2	4.1	5.2	25.5	6.2	4.0	1.8	0.2	0.4

* = The farm production category includes both farm production and agribusiness.

Source: USDA, Economic Research Service in conjunction with Econoquanty S. de. R.L. and Mexico's National Institute of Statistics and Geography (INEGI) using data from INEGI.

Table A.4

Distribution of Mexico's food-at-home (FAH) expenditures by industry group, 2003–18

Year	Farm production*	Food processing	Packaging	Transportation	Wholesale trade	Retail trade	Food services	Energy	Finance and insurance	Advertising	Legal and accounting
					Percent						
2003	18.8	34.4	3.2	4.9	5.6	25.7	0.2	4.0	2.3	0.2	0.6
2004	18.9	34.7	3.3	4.6	5.4	25.7	0.2	4.3	2.1	0.2	0.5
2005	18.2	34.7	3.2	4.7	5.6	26.1	0.2	4.3	2.2	0.2	0.6
2006	18.2	34.4	3.2	4.9	5.6	26.1	0.2	4.6	2.2	0.3	0.5
2007	18.1	34.5	3.0	4.7	5.6	26.2	0.1	4.9	2.1	0.2	0.5
2008	18.4	32.7	2.9	4.8	5.5	27.3	0.1	5.4	2.1	0.2	0.5
2009	18.4	35.1	3.0	4.9	5.8	25.0	0.1	4.7	2.3	0.2	0.5
2010	17.9	34.3	3.0	5.1	5.6	26.4	0.1	4.7	2.2	0.2	0.4
2011	17.4	34.6	3.0	4.8	5.7	27.1	0.1	4.7	2.1	0.2	0.4
2012	17.9	35.0	3.0	4.8	5.7	26.4	0.1	4.5	2.0	0.2	0.4
2013	17.7	34.7	3.0	5.1	5.6	26.9	0.1	4.2	2.0	0.2	0.4
2014	17.6	34.7	3.0	5.2	5.6	26.9	0.1	4.3	2.0	0.2	0.4
2015	17.7	35.2	3.2	4.8	5.5	27.3	0.1	3.7	2.0	0.2	0.4
2016	18.5	35.0	3.2	4.5	5.3	27.5	0.1	3.3	1.9	0.2	0.4
2017	18.7	34.3	3.1	4.5	5.3	27.5	0.1	4.0	1.9	0.2	0.4
2018	18.3	34.5	3.2	4.4	5.3	27.5	0.1	4.2	1.8	0.2	0.4

* = The farm production category includes both farm production and agribusiness.

Source: USDA, Economic Research Service in conjunction with Econoquanty S. de. R.L. and Mexico's National Institute of Statistics and Geography (INEGI) using data from INEGI.

Table A.5

Distribution of Mexico's food-away-from-home (FAFH) expenditures by industry group, 2003–18

Year	Farm production*	Food processing	Packaging	Transportation	Wholesale trade	Retail trade	Food services	Energy	Finance and insurance	Advertising	Legal and accounting
					Percent						
2003	3.6	6.5	3.3	0.9	4.0	4.3	72.5	2.2	1.5	0.2	0.9
2004	3.7	6.7	3.4	0.8	3.9	4.3	72.3	2.4	1.4	0.2	0.9
2005	3.5	6.7	3.4	0.9	4.0	4.5	72.0	2.4	1.4	0.2	0.9
2006	3.5	6.6	3.4	0.9	4.1	4.4	71.9	2.6	1.4	0.2	0.9
2007	3.6	6.8	3.3	0.9	4.0	4.4	71.8	2.8	1.4	0.2	0.9
2008	3.9	6.5	3.3	0.8	4.3	4.2	71.6	3.0	1.4	0.2	0.9
2009	3.7	7.0	3.3	0.8	4.2	3.9	72.1	2.6	1.4	0.2	0.8
2010	3.6	6.9	3.3	0.9	4.2	4.2	72.0	2.6	1.4	0.2	0.7
2011	3.7	7.0	3.3	0.8	4.2	4.4	71.8	2.6	1.3	0.2	0.7
2012	3.7	7.2	3.4	0.8	4.2	4.3	71.7	2.5	1.3	0.2	0.7
2013	3.5	7.1	3.5	0.9	4.3	4.4	71.7	2.4	1.3	0.2	0.8
2014	3.5	7.0	3.5	0.9	4.3	4.3	71.9	2.4	1.3	0.2	0.8
2015	3.5	7.1	3.6	0.8	4.2	4.4	72.1	2.0	1.3	0.2	0.8
2016	3.8	7.2	3.7	0.7	4.2	4.4	72.0	1.8	1.3	0.2	0.8
2017	3.9	7.2	3.6	0.7	4.2	4.3	71.8	2.1	1.2	0.2	0.8
2018	3.6	7.0	3.7	0.7	4.2	4.2	72.3	2.1	1.2	0.2	0.8

* = The farm production category includes both farm production and agribusiness.

Source: USDA, Economic Research Service in conjunction with Econoquanty S. de. R.L. and Mexico's National Institute of Statistics and Geography (INEGI) using data from INEGI.