The U.S. Economic Contributions of Hass Avocado Imports from Mexico

2024 Update

Dr. Gary W. Williams
Dan Hanselka

September 2024

Avocados from Mexico
ALWAYS GOOD

2024 UPDATE:
THE U.S. ECONOMIC CONTRIBUTIONS OF HASS AVOCADO IMPORTS FROM MEXICO

Report to the Mexican Hass Avocado Import Association (MHAIA)and Asociación de Productores y Empacadores Exportadores de Aguacate de México (APEAM, A.C.)

September 2024

Authors:
Dr. Gary W. Williams
Emeritus Professor, Texas A&M University

Dan Hanselka
Extension Program Specialist, Texas A&M University

Abstract:
This report updates previous analyses of the U.S. economic benefits or contributions of imports of Hass avocados from Mexico. Those reports concluded those imports created positive and economically important benefits for the U.S. economy for the years analyzed. The objective of this report is to update the measurement of the contribution of Mexican Hass avocado imports to the U.S. economy and the distribution of the contribution by U.S. industry sector for fiscal year (FY) 2023/24 (July/June). An historical view of how the contributions of the imports to the U.S. economy have grown since they were first measured for FY 2012/13 is also provided. This report also provides a special focus on the effects of avocado imports from Mexico on the state economies of California and Texas, the states with the highest levels of avocado consumption.

Acknowledgements:
We gratefully acknowledge funding for this project from the Mexican Hass Avocado Import Association (MHAIA) and the Asociación de Productores y Empacadores Exportadores de Aguacate de México (APEAM). We are particularly grateful to Dolora Sillman of MHAIA for providing key data used in this study. Nevertheless, the authors are solely responsible for the content of this report. The findings and conclusions are those of the authors and do not necessarily represent the views of MHAIA, APEAM, or Texas A&M University.

Executive Summary

This report updates the measurement of the contribution of Mexican Hass avocado imports to the U.S. economy and their distribution by U.S. industry sector for fiscal year (FY) 2023/24 (July/June). An historical view of how those contribution have grown since they were first measured for FY 2012/13 is included. Also, the contributions to the economies of California and Texas, the states with the highest levels of avocado consumption, are highlighted.

U.S. consumers' fondness for avocados has impelled U.S. avocado consumption almost continuously upward for over two decades. Many well-known forces underlie the rapid growth in that consumption over the years. Three forces stand out: (1) a sequential lifting of the U.S. ban on Hass avocado imports from Mexico beginning in the late 1990s through 2007; (2) the intersection of a growing U.S. consumer trend towards ethnic as well as health-promoting foods and an increasing consumer awareness of the health benefits of avocados; and (3) the highly effective avocado promotion efforts under the Hass Avocado Promotion, Research and Information Order established in 2002.

U.S. imports of Hass avocados have grown rapidly to feed growing U.S. demand, with Mexico's share of the growing U.S. avocado import volume increasing rapidly from almost nothing in the 1990s to 89.1% in 2023. After hitting a record level in the immediate post-Covid year of 2021 at 2.4 billion pounds, the U.S. import volume of Mexican avocados dropped sharply in 2022 to 2.1 billion pounds due to weather-related supply problems in Mexico and intra-industry issues. Avocado import value from Mexico that year, however, jumped to a record $3.3 billion due to continuing U.S. demand pressure that pushed the import price (import unit value) of Mexican avocados to a record high of $1.38/pound, according to USDA trade data. Import supplies from Mexico recovered to a record 2.8 billion in 2023 leading to a lower price ($1.10 per pound) and, thus, a lower import value ($2.7 billion) that year as well.

Imported avocados are packed in the country of origin and shipped to U.S. markets to various buyers. In 2024, almost 98% of the avocados from Mexico (non-organic and organic) were trucked to the United States through Texas border crossings (land ports). The imported avocados are transported to U.S. wholesalers (shippers) who distribute them to processors, supermarkets, restaurants, fast-food establishments, and elsewhere along the supply chain. As the imports move to U.S. end points, they generate economic growth by stimulating economic activity

along the avocado supply chain and, as a result, economic activity along associated supply chains with which the avocado import supply chain intersects.

To analyze the extent of the economic stimulus created in the U.S. economy by the sale of imported avocados from Mexico through the U.S. avocado import supply chain in FY 2023/24, this study employs a methodology referred to as "economic contribution analysis." The analysis is based on the idea that a dollar spent in one sector of an economy stimulates additional economic activity as it circulates through the economy (the multiplier effect). The well-known, widely used, and heavily documented IMPLAN (IMpact analysis for PLANning) input-output system is used in the analysis. The principal outputs of the IMPLAN analysis are aggregate measures of the contribution of Hass avocado imports from Mexico in FY 2023/24 to key U.S. economic measures (FY 2019/20 in parentheses):

- U.S. aggregate output or spending: $7.5 billion ($6.5 billion);
- U.S. GDP (value-added): $4.2 billion ($3.9 billion);
- Jobs added: 42,112 (33,051);
- Labor income $2.5 billion ($2.2 billion); and
- Taxes (federal, state, and local): $1.1 billion ($1.1 billion).

Every dollar of Mexican Hass avocado imports in FY 2023/24 generated $2.13 dollars in output, $1.18 in U.S. GDP, and $0.72 in labor income. Every million dollars of imports generated 11.9 U.S. jobs. Taxes generated by the imports amounted to 30.4% of the value of the imported avocados. Much of the benefits accrued to industries in the wholesale/retail and service sectors.

The U.S. economic contributions of Hass avocado imports from Mexico reported in this study for FY 2023/24 declined relative to those reported in the preceding biennial study, the first time that has occurred since the first study was completed for FY 2012/13. The reason for the apparent decline was actually an anomalous sharp *increase* in the value of Mexican Hass avocado shipments into U.S. markets in FY 2021/22 resulting in equally sharp increases in the measured economic contributions of those shipments for that year. In other words, the shipment value for FY 2021/22 was an outlier, significantly higher than the value of shipments before or since that year. The report provides a discussion of the spike in the FY 2021/22 shipment value. Shipments and prices were more in line with historical trends in FY 2023/24 so that the measured economic contributions of FY 2023/24 shipments in this study were lower than in the anomalously higher shipment value year of FY 2021/22 but still higher than in all previous years.

For this reason, comparing the economic contributions of Mexican Hass avocado shipments for FY 2023/24 with those for FY 2019/20 and previous years provides a more indicative assessment of the trend in their contribution to the U.S. economy than comparing with the anomalous results for FY 2021/22. Between FY 2012/13 and FY 2023/24, the value of Mexican Hass avocado shipments increased by over 250% from $991.9 million to $3.5 billion. The contribution of those imports to U.S. output and U.S. GDP (value added) over that period increased by over 330% (from $1.7 billion to $7.5 billion) and 240% (from $1.2 billion to $4.2 billion), respectively. The contributions to U.S. labor income, U.S. tax revenues, and employment all registered dramatic increases over that period as well.

For California and Texas, the two largest avocado consuming states in the country, their estimated imports of Mexican Hass avocados in FY 2023/24 ($601.7 million and $285.4 million, respectively) generated substantial contributions to their respective economies in that year:

- Output or spending – California: $965.2 million and Texas: $468.7 million;
- GDP – California: $580.2 million and Texas: $259.9 million;
- Jobs – California: 5,281 and Texas: 2,847;
- Labor income – California: $356.9 million and Texas: $156.8 million; and
- Taxes (federal, state, and local) – California: $171.2 million and Texas: $59.8 million.

Together, California and Texas accounted for 19% – 22% of the U.S. total values of these economic measures in FY 2023/24 which means that 78% – 81% of the contribution of Mexican Hass avocado imports to the U.S. economy occurs in other states throughout the country.

The primary implication of this update study is that imports of Mexican Hass avocados continue to be pro-growth for the U.S. economy. Given the historical upward growth path of those imports, their contribution to the U.S. economy will likely only intensify over the years. Clearly, however, volatility in the availability of Mexican avocado supplies for whatever reason has the potential to create substantial corresponding price and import revenue volatility and, in turn, volatility in the level of their contributions to the U.S. and state economies. When that happens, not only do U.S. avocado consumers lose from price and supply volatility and uncertainty, the whole U.S. economy is affected as well along with those of individual states that import avocados. Such was the case with the sharp run-up in the level of economic contributions from imports in 2021/22 and their subsequent decline in 2023/24. Even so, the measured growth in the contributions of U.S. imports of Mexican Hass avocados to the U.S. and state economies since the first study was conducted for FY 2012/13 has been remarkable.

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2024 UPDATE: THE U.S. ECONOMIC CONTRIBUTIONS OF HASS AVOCADO IMPORTS FROM MEXICO

This report updates previous analyses of the U.S. economic benefits or contributions of imports[1] of Hass avocados from Mexico (Williams, Capps, and Hanselka, 2014 and 2016 and Williams and Hanselka, 2018, 2020, and 2022). The reports all concluded that those imports have had a positive and economically important effect on the U.S. economy for the years analyzed. The objective of this report is to update the measurement of the contribution of those imports to the U.S. economy and their distribution by U.S. industry sector for fiscal year (FY) 2023/24 (July/June). An historical view of how the contributions of the imports to the U.S. economy have grown since they were first measured for FY 2012/13 is also provided. This report also provides a special focus on the effects of those imports on the state economies of California and Texas, the states with the highest levels of avocado consumption.

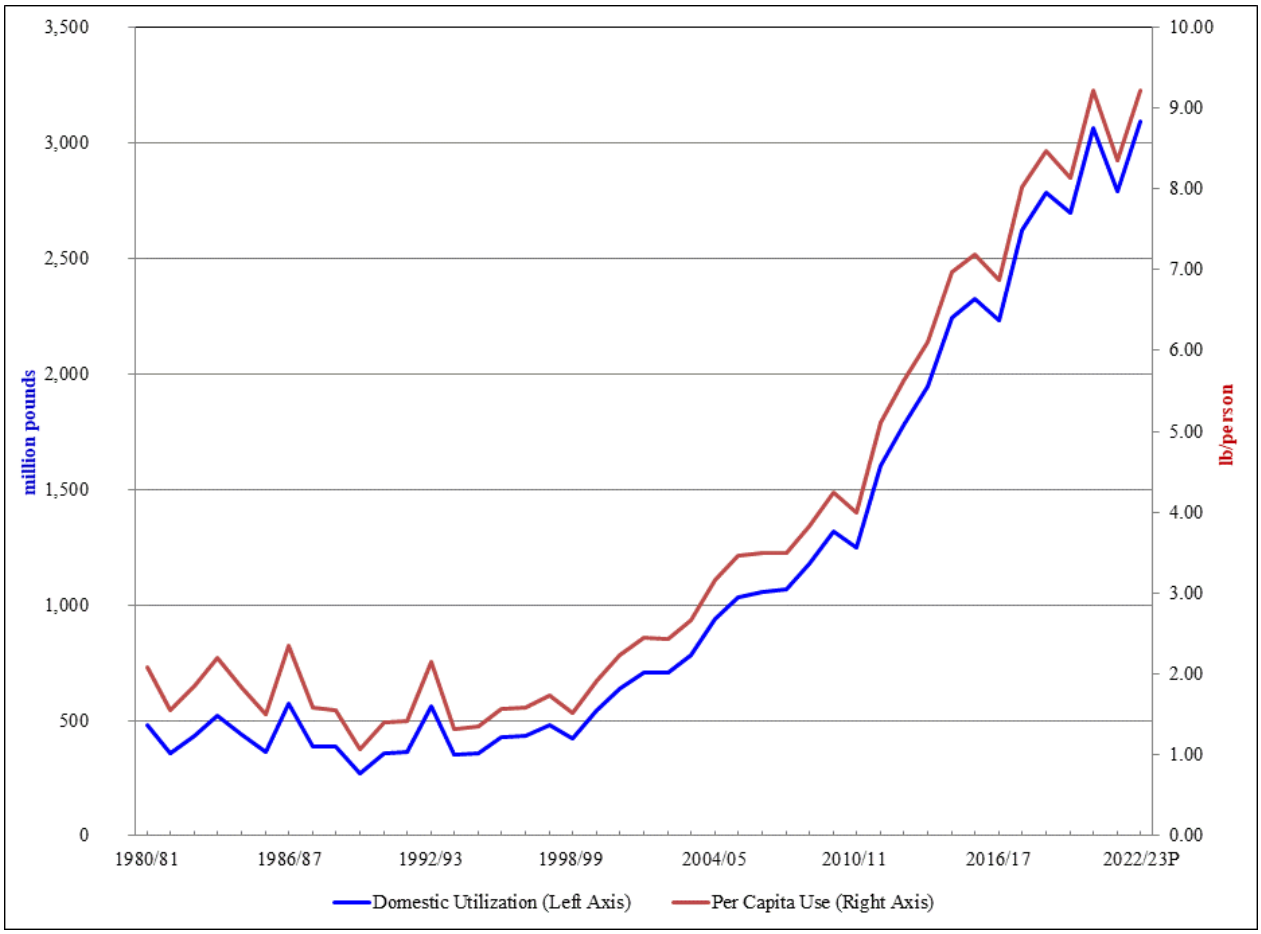
The report begins with a brief overview of U.S. avocado consumption and imports and the role of Mexico. Following a discussion of the methodology used in the analysis, the measured contributions of FY 2023/24 Mexican Hass avocado imports to the U.S. aggregate economy and then to the Texas and California state economies are discussed. An historical view of the contributions to the U.S. economy follows, providing context for changes in those values since the last biennial report. Finally, salient conclusions and implications of the analysis are highlighted.

ECONOMIC DIMENSIONS OF U.S. IMPORTS OF MEXICAN HASS AVOCADOS

U.S. consumers' fondness for avocados has impelled U.S. avocado consumption almost continuously upward for over two decades (Figure 1). Hass avocados comprise about 95% of all U.S. avocado consumption and are the most widely available avocado variety. U.S. avocado consumption hovered at around an average of about 400 million pounds between 1980/81 through the mid-1990s with an average per capita consumption over that period of about 1.7

[1] This report refers to both U.S. "imports" of Hass avocados from Mexico and "shipments" of Hass avocados into the U.S. from Mexico - sometimes interchangeably. While intended to represent the same economic activity, imports are the value/volume of those avocados from Mexico as measured and reported by U.S. federal agencies and reported by the U.S. Department of Agriculture (USDA, 2024a) and elsewhere. Shipment volume/value, on the other hand, are Mexican Hass avocados shipped from Mexican suppliers to buyers in the U.S. as measured by the Mexican Hass Avocado Import Association (MHAIA, 2024). Consequently, imports and shipment values/volumes are not identical. The trends in each over time, however, are the same and tell the same story about the historical growth of Hass avocadoes coming into the U.S. from Mexico.

Figure 1: U.S. Domestic Avocado Utilization, Total and Per Capita, MY 1980/81-2022/23



P= Preliminary and MY = Maraketing year
Source: Graphic by authors using data from USDA (2024a).

pounds. Then, beginning in about 1998/99, U.S. avocado consumption began to grow rapidly, skyrocketing by a whopping 630% through 2023/24, an impressive 9.0% average annual growth rate over that period. The result was a per capita consumption increase of over 500% to 9.22 lb in 2023/24 (Figure 1).

Forces Behind the Rapid Growth in U.S. Avocado Consumption

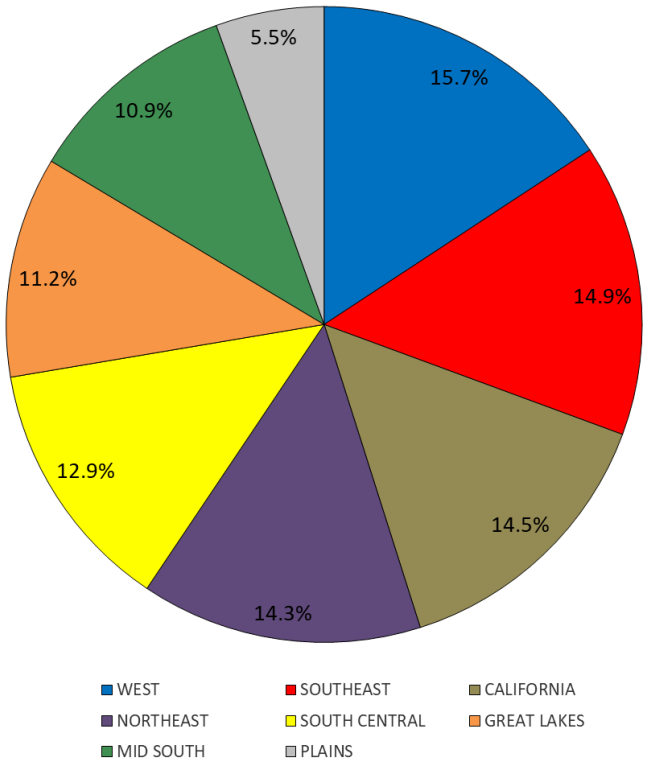
Many increasingly well-known forces underlie the rapid growth in U.S. avocado consumption over the years. Three forces, however, stand out: (1) a piecemeal lifting of a long-standing U.S. phytosanitary ban on Hass avocado imports from Mexico between 1997 and 2001; (2) the intersection of a growing U.S. consumer trend towards ethnic as well as health-promoting foods and an increasing consumer awareness of the health benefits of avocados (Ware, 2021); and (3) the highly effective avocado promotion efforts under the Hass Avocado Promotion, Research and Information Order established in 2002. A recent benefit-cost analysis of Hass avocado

promotion in the U.S. for the period of 2018-2022 concluded that the return to those who pay for the promotion (domestic producers and importers of Hass avocados) ranges between $1.85 and $3.34 per dollar spent on promotion, "strong evidence that the promotion programs conducted under the auspices of the HAB were successful during the review period in increasing profits to California producers and importers of Hass avocados" (Guo, et al., 2024). Avocados from Mexico (AFM), a cooperative venture between the Mexican Hass Avocado Import Association (MHAIA) in the United States and the Association of Avocado Exporting Producers and Packers of Mexico (APEAM), conducts the largest share of avocado promotion in U.S. markets. AFM has utilized national media to focus its advertising on major national events such as the Super Bowl, Cinco de Mayo, and others, emphasizing the taste, healthfulness, and versatility of avocados as well as the near year-round availability of avocados from Mexico. Guo, et al. (2024) report that AFM also has substantially "expanded its digital and social media marketing, established brand leadership in e-commerce, and introduced new programs to reach consumers via the foodservice channel." They also report that AFM "communicates a brand promise of goodness via a triad of 'Healthy, Tasty & Fun' and the 'Mexicanity' of its brand that is designed to appeal both to Hispanic and broader audiences."

U.S. State-Level Consumption of Avocados

Avocados are consumed in every state of the union. The largest share is consumed in western states and the smallest in southern and plains states, according to the most recently available avocado sales data from Information Resources, Inc. (IRI) which tracks the retail volume of avocados sold across eight IRI regions (HAB, 2024). In 2023, the West region (Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming) accounted for the largest share of regional avocado consumption (15.7%) (Figure 2). The Southeast region (Alabama, Florida, Georgia, Mississippi, South Carolina) is now in second place compared to two years ago with a 14.9% share of regional avocado consumption in 2023. California ranked third in avocado consumption with 14.5%. The Northeast region (Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island), was fourth in avocado consumption with 14.3%. The South Central region (Arkansas, Louisiana, Oklahoma, and Texas) slipped from third place two years ago to fifth place with a 12.9% share of regional avocado consumption. The Great Lakes region (Illinois, Indiana, Michigan, Ohio, and Wisconsin) followed with a 11.2% share, the Mid-South region (Delaware, District of Colombia, Kentucky, Maryland, North Carolina, Tennessee, and West Virginia) with a 10.9%

Figure 2: Estimated Shares of U.S. Avocado Consumption Volume by Region (%), 2023



Source: Developed by authors from data in HAB (2024).

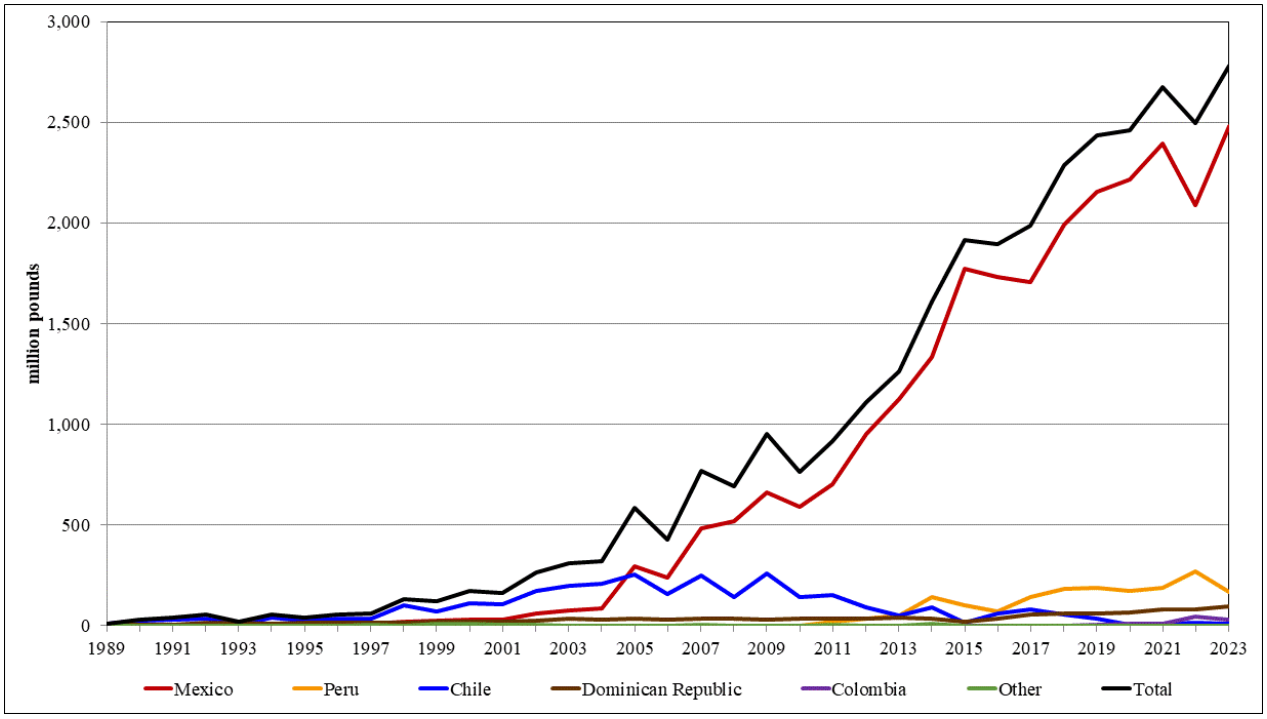
share, and finally the Plains region (Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota) with a 5.5% share.

Growth in U.S. Imports of Avocados

U.S. imports of avocados from all destinations experienced little growth until the late 1990s when the ban on Mexican avocado exports into U.S. markets was lifted (Figures 3 and 4). Pent up demand for healthy foods rich in nutrients like avocados and the forces discussed earlier behind the rapid U.S. demand growth over the last two decades or more spurred dramatic growth in total imports from 41.0 million pounds in 1995 to 2.8 billion pounds in 2023 (Figure 3).

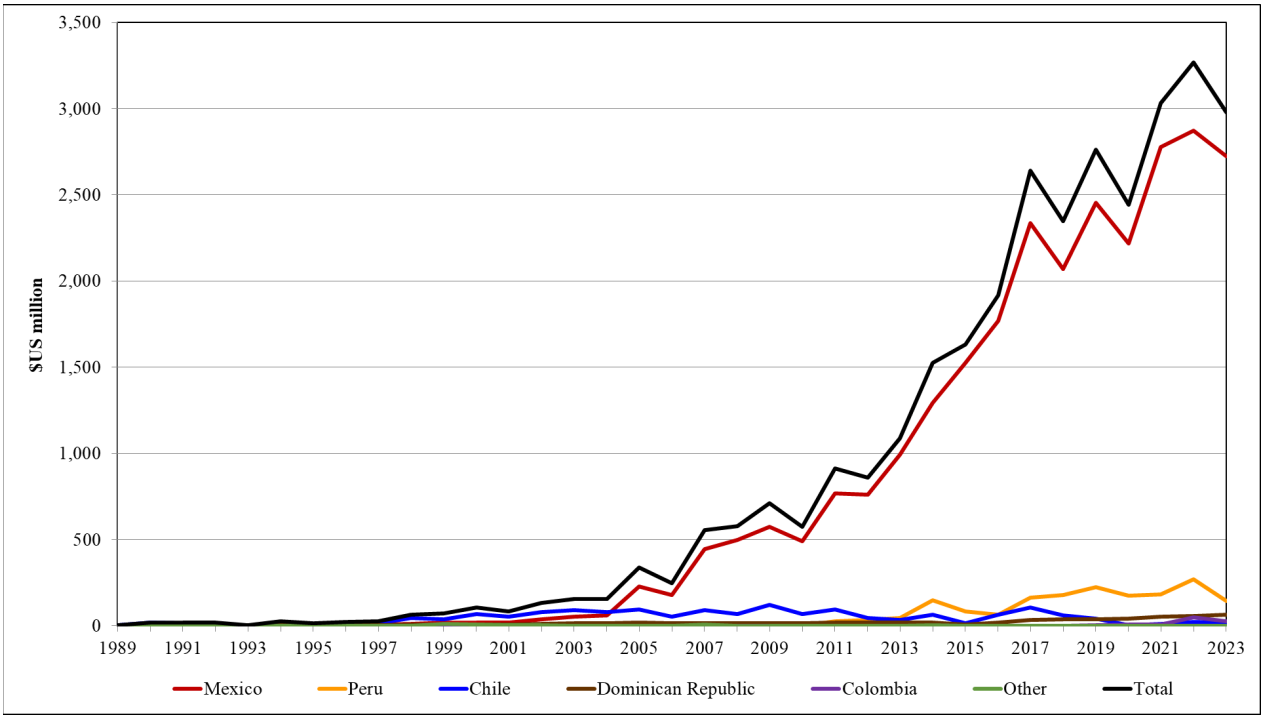
Over that period, Mexico's share of U.S. avocado import volume increased from 3.7% to 89.1%. After hitting a record level in the immediate post-Covid year of 2021 at 2.4 billion pounds, the import volume of avocados from Mexico dropped sharply in 2022 to 2.1 billion pounds due to weather-related supply problems in Mexico and intra-industry issues (Figure 3). Avocado import value from Mexico, however, hit a record $3.3 billion (Figure 4) due to continuing U.S. demand pressure that pushed the import price (import unit value) of Mexican

Figure 3: Volume of U.S. Avocado Imports by Country of Origin, CY 1989 – 2023



CY = Calendar year.
Source: Graphics by authors using data from USDA (2024b).

Figure 4: Value of U.S. Avocado Imports by Country of Origin, CY, 1989 – 2023



CY = Calendar year
Source: Graphics by authors using data from USDA (2024b).

avocados to a record high of $1.38/pound (Figure 5), according to USDA trade data (USDA, 2024b). Import supplies from Mexico recovered to a record 2.8 billion in 2023 which led to a lower price ($1.10 per pound) and, thus, a lower import value ($2.7 billion) in that year as well. Avocado supplies into the U.S. market from Mexican import competitors (Peru, Dominican Republic, Chile, and Colombia) increased in 2022, taking advantage of the dip in supplies from Mexico and the higher price. Imports from most competitors slacked off in 2023, however, as supplies from Mexico recovered (Figures 3 and 4).

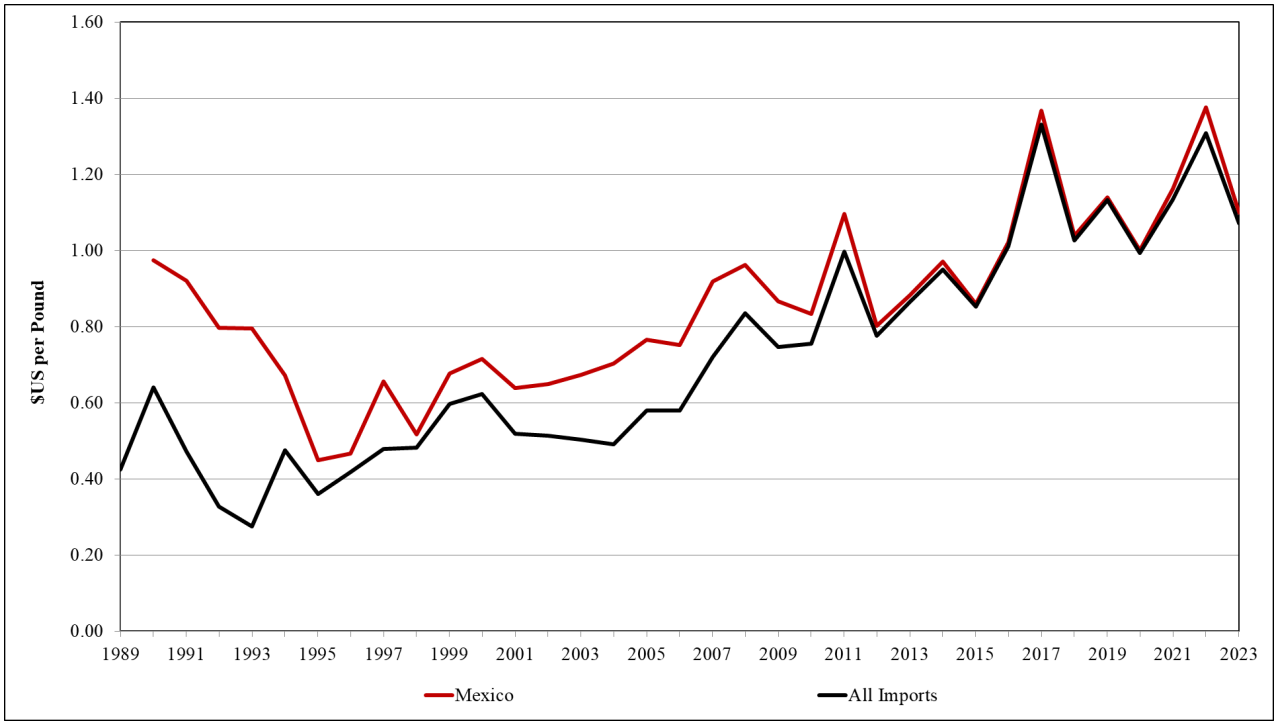
Chile dominated the U.S. avocado market in the 1990s with more than 80% of the low volume of U.S. imports. The dramatic growth in imports from Mexico over the years, however, quashed both the volume and the share of imports from Chile to only 2.6 million pounds and 0.1%, respectively, by 2020 (Figure 3). With supply problems in Mexico in 2022, imports from Chile surged to 16.4 million pounds in 2022 and 10.7 million pounds in 2023 but Chile's import share remains much below 1%. Peru mounted a small surge in avocado exports to the U.S. from virtually nothing in 2010 to 269.7 million pounds in 2022, accounting for about 10% of total U.S. avocado imports (Figure 3). Although imports from Peru dropped in 2023 as supplies from Mexico recovered, Peru managed to maintain a 6% share of U.S. imports. The Dominican Republic has also aggressively competed for U.S. market share. In 2023, the Dominican Republic exported 97.5 million avocados to the U.S., an import share of 3.5% (Figure 3).

Mexican Hass Avocado Import Supply Chain

Imported avocados are packed in the country of origin and shipped to U.S. markets to various buyers. In 2024, almost 98% of the avocados from Mexico (non-organic and organic) were trucked to the United States through Texas border crossings (land ports), primarily Pharr (58.2%) and Laredo (39.4%) (USDA, 2024c). The imported avocados are transported to U.S. wholesalers (shippers) who distribute them to processors, supermarkets, restaurants, fast-food establishments, and elsewhere along the supply chain (Figure 6). As the imports move to U.S. end points, they generate economic growth by stimulating economic activity along the avocado supply chain and, as a result, economic activity along associated supply chains with which the avocado import supply chain intersects (Figure 6).

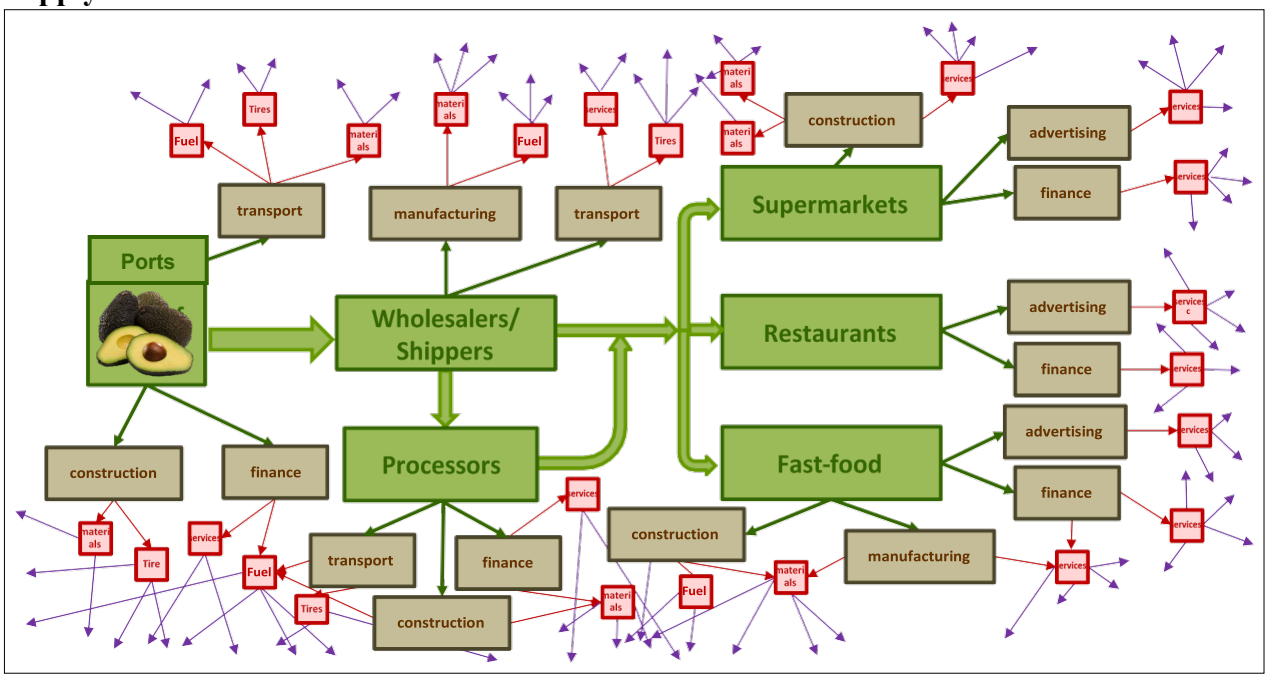
For example, avocado shipments passing through U.S. land ports require services from port officials such as the U.S. Customs and Border Protection and other Federal Inspection Agencies responsible for the enforcement of federal laws pertaining to such activities. As the avocado shipments move inland from the ports, they stimulate a large number of other economic activities

Figure 5: Import Unit Value of U.S. Avocado Imports from Mexico and Total, CY 1989 – 2023



CY = Calendar year
Source: Graphics by authors using data from USDA (2024b).

Figure 6: Economic Multiplier Effects of Mexican Hass Avocado Imports through the U.S. Supply Chain



Source: Developed by authors.

related to transportation, wholesale and retail trade, advertising, construction, finance, manufacturing and processing, infrastructure, and numerous after-market services. The economic activities stimulated at each point in the supply chain not only generate services and jobs at those points but also services and jobs along the supply chains that intersect at those points (Figure 6). For example, the transport of avocados requires fuel which generates a demand by fuel retailers for fuel from their suppliers who then must demand more fuel from refiners who demand more oil from oil suppliers and so on. At each point on the fuel supply chain, the additional demand for fuel initiated by the avocado shipments contributes to profits and employment. Also, the suppliers of fuel equipment, transportation services, repair services, and other fuel support services are also all benefited by the additional demand for fuel generated by the shipments. The same process holds true at each point in the avocado import supply chain resulting in additional economic activity along all intersecting supply chains.

METHODOLOGY

In this study, we conduct an analysis of the contribution of Hass avocado shipments from Mexico in FY 2023/24 to the value of U.S. national aggregate output, value-added, employment, labor income, and taxes paid (federal, local, and state-level) in that same year. We then conduct similar analyses for Texas and California, the two largest avocado consuming states, to measure the effects of avocado imports into those two states on their respective state economies. Known as "economic contribution analysis," this analytical methodology measures the direct, indirect, and induced effects (contributions) of avocado shipments from Mexico on the U.S. national economy as well as on the economies of California and Texas. The *direct effects* are the initial economic activities that are impacted by those shipments as they move through their respective supply chains. The direct effects result in two types of secondary effects: (1) indirect and (2) induced. The *indirect effects* result from the purchase of inputs among local industries as a result of the shipments moving through the respective supply chains. The *induced effects* result from the expenditure of institutions such as households and governments benefitting from increased activity among local businesses (IMPLAN, 2022c).

Economic contribution analysis is based on the idea that a dollar spent in a region/country stimulates additional economic activity or multiplies as it circulates through the economy. The measurement of the economic contribution of avocado imports from Mexico on the U.S., Texas, and California economies is conducted using the well-known, widely used, and heavily documented IMPLAN (IMpact analysis for PLANning) input-output system (IMPLAN Model,

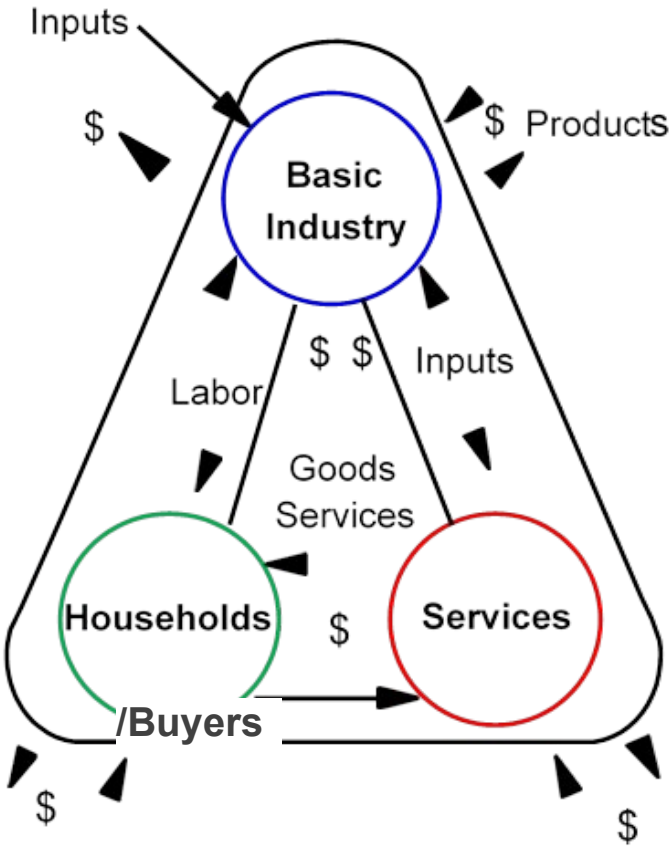
2022a). Input-output analysis reflects the effects of a change in one sector of the economy on other sectors (the multiplier effect). Input-output analysis captures the relationships between industries and estimates the change in each sector's sales due to an initial change in final demand for a given industry's output. The sum of these changes is the industry's multiplier.

To measure impacts, the IMPLAN system produces multipliers which estimate the total economic contribution of expenditures within an economy (the entire U.S. or a state in this case). Multipliers are calculated based on the purchasing patterns of industries and institutions in the regional economy. Each industry and region combination has a unique spending pattern and a unique multiplier relating to the direct, indirect, and induced effects of the spending.

Four types of economic effects are reported from IMPLAN analyses. The ***employment contribution*** measures the number of jobs (both full-time and part-time) attributable to the direct economic activity stimulated (U.S. imports of Hass avocados from Mexico, in this case). The ***contribution to labor income*** measures the effect of spending by businesses on the incomes of households and indicates a benefit to local residents. The ***value-added contribution*** measures the impact on gross domestic product (GDP) and indicates the return to resources used by businesses. The ***output contribution*** measures economic activity (total spending) generated. Labor income is a subset of value-added which is part of output. These four effects provide a better perspective of the contribution of an economic activity like avocado imports from Mexico but represent separate measures of economic contribution and are not meant to be summed (Clouse, 2019).

The foundation of a given sector of an economy (such as agriculture or retailing) is those businesses which sell some or all of their goods and services to other businesses and/or buyers outside of that sector (Woods et al., 2007). Such a business is considered to be a "basic industry" of the sector (Figure 7). The flows of products out of, and dollars into, that sector are represented by the two arrows in the upper right portion of Figure 7. To produce these goods and services for "export" outside the sector, the basic industry purchases inputs from outside of the sector, labor from the residents or "households" in the sector, and inputs from service industries located within the sector. The flow of labor, goods, and services in the sector is completed by households or other buyers using their earnings to purchase goods and services from the sector's service industries. As depicted in Figure 7, a change in any one segment of a sector of the economy will have reverberations throughout the economic system of the sector (Woods et al., 2007). Interactions among sectors create the national aggregate effects.

Figure 7: Overview of the Economic System of a Sector of the Aggregate Economy



Source: Adapted from Woods, McCorkle, and Niemeyer (2007).

Procedures Followed in the National Aggregate Analysis

The national economic contribution analysis of Hass avocado imports from Mexico to the United States was conducted using an IMPLAN input-output model of the U.S. economy. Using 2022 data for the United States, the IMPLAN software was used to write component information, add structural matrices, create regional absorption tables, commodity balances, market shares, and international transfers, and compute and create multipliers for the U.S. model (IMPLAN Model, 2022b; Clouse, 2020). With the U.S. model constructed, the next step was to determine the IMPLAN sector to use for the analysis of the economic contribution of avocado imports from Mexico. IMPLAN consists of 546 different sectors from production to transportation, wholesale, manufacturing, retail, services, and others. For this particular analysis, commodity sector 3004 representing fruits was used because this industry sector best reflects the direct impact that Hass avocado imports from Mexico would have on the U.S economy.

Within the U.S. national model, the margins for production, transportation, wholesale, and retail were identified. The value of Mexican Hass avocado imports to the United States (as represented by shipment data from MHAIA (2024)) for FY 2023/24 was divided by the margin for production to arrive at the total sales value at the retail level. *The margin for production was zeroed out to enable the results of the model to best reflect the impact of importing rather than domestically producing avocados.*

Next, a "commodity output" type with a specification for the fruits sector was selected. The total retail sales value was entered as the value for the event within the U.S. model. With the total retail sales value of avocado shipments for FY 2023/24 entered into the model, the analysis of this commodity change to the U.S. economy was conducted which entailed selecting and naming a scenario for the given "commodity change" type, analyzing a single region, whereby IMPLAN calculated direct, indirect, and induced impacts.

Finally, summary and industry sector results for the direct, indirect, induced, and total effects for output (total spending), employment (full and part-time jobs), value added (contribution to GDP), labor income (employee compensation), and taxes (local, state, and federal) were reported out by the IMPLAN model for this particular commodity change activity across the economy.

Procedures Followed in Texas and California State-Level Analyses

The same general methodology and procedures used for the U.S. analysis were used in the analyses of the Texas and California state-level economic contributions of Mexican Hass avocado shipments into those states using the specific IMPLAN models for just those states. For each state analyzed, the FY 2023/24 estimated value of Mexican Hass avocado shipments into each state was entered into the respective state model as the industry sales for the commodity sector for fruits. The value of avocado shipments into each state (net of transshipments) in FY 2023/24 had to be estimated because state-level shipment data are not available.

The first step in estimating the value of shipments to each individual state was to estimate U.S. *regional* avocado consumption values by multiplying the estimated U.S. national value of avocado consumption by the U.S. regional shares of avocado consumption values (dollar sales) in 2023 using the Regional Composite Data published by Symphony Information Resources Inc. Group/FreshLook Marketing (IRI/FreshLook) (HAB, 2024). IRI/FreshLook gathers chain-wide fresh avocado sales data across all major U.S. retail markets. Although the data do not capture 100% of all U.S. avocado sales, the data provide a useful representation of the avocado category by region at the retail level of the marketing channel.

The IRI/FreshLook avocado sales data include an aggregation of sales in the grocery, mass, club, drug, dollar, and military channels. IRI/FreshLook gathers and reports chain-wide fresh avocado sales data across all major U.S. retail markets on a calendar quarter basis. The data are organized into and reported for eight U.S. regions, including: (1) California, (2) Great Lakes, (3) Mid-South, (4) Northeast, (5) Plains, (6) South Central, (7) Southeast, and (8) West. These regions include avocado sales data for the major metropolitan markets in those regions plus some additional cities in each region. The major metropolitan markets captured in each of the eight regions include: (1) **California:** Los Angeles; Sacramento; San Diego; and San Francisco; (2) **Great Lakes:** Chicago, IL; Cincinnati, OH; Cleveland, OH; Columbus, OH; and Detroit, MI; (3) **Mid-South:** Baltimore, MD; Louisville, KY; Memphis, TN; Raleigh, NC; Richmond, VA; and Roanoke, VA; (4) **Northeast:** Albany, NY; Boston, MA; Buffalo, NY; New England; New York; Philadelphia, PA; and Pittsburgh, PA**;** (5) **Plains:** St. Louis, MO; Omaha, NE; Des Moines, IA; Minneapolis/St. Paul, MN; Kansas City, KS/MO; and Wichita, KS; (6) **South Central:** Dallas, TX; Houston, TX; and Little Rock, AR; (7) **Southeast:** Atlanta, GA; Charlotte, NC; Columbia, SC; Jacksonville, FL; Miami, FL; Orlando, FL; and Tampa/St. Petersburg, FL; and (8) **West:** Boise, ID; Denver, CO; Las Vegas, NV; Phoenix, AZ; Portland, OR; Seattle, WA; and Spokane, WA. According to these data, the regional avocado shares of the value (dollar sales) of avocado consumption in 2023 were: (1) California – 16.9%, (2) West – 16.3%, (3) Northeast – 15.6%, (4) Southeast – 14.0%, (5) Mid South – 11.0%, (6) South Central – 10.6%, (7) Great Lakes - 10.6%, and (8) Plains - 4.9%. While not identical, these estimated shares of the regional value of avocado consumption are similar to the shares by volume as shown in Figure 2.

The next step in estimating the value of shipments to individual states involved calculating the state values of avocado consumption in 2023 for each of the eight regions as a product of the respective estimated regional values of avocado consumption and the shares of each state of the aggregate GDP for the corresponding region (IMPLAN Model, 2022b). *To account for the fact that California produces and sells avocados across the U.S., the estimated values of state avocado consumption in 2023 were reduced by the value of California avocados consumed in the corresponding states in 2023 to generate the state values of avocado consumption net of the value of California avocados consumed (net state value of avocado consumption).* The state values of California avocado consumption were estimated by multiplying the value of California avocado production in 2022/23 as published by the California Avocado Commission (CAC, 2024) by the share of each state of national aggregate GDP (IMPLAN Model, 2022b).

The final step in estimating the state values of Mexican Hass avocado shipments was to multiply the value of total shipments in FY 2023/24 ($3.515 billion) by each state's share of the aggregate net state value of avocado consumption. The resulting estimates of the value of avocado shipments by state for FY 2023/24 are exhibited in Table 1. Not surprisingly, the two top states were California at $601.7 million and Texas at $285.4 million (in bold) which then formed the inputs into the IMPLAN models for the Texas and California analyses as described earlier.

ANALYSIS OF THE U.S. ECONOMIC CONTRIBUTION OF HASS AVOCADO IMPORTS FROM MEXICO

This section presents a summary of the aggregate economic contributions of Hass avocado imports from Mexico to the U.S. national economy and then to the economies of Texas and California derived following the procedures outlined in the preceding section. We used shipment data as collected by the Mexican Hass Import Association (MHAIA, 2024) to represent "imports" for these analyses. In each case, the analytical emphasis is on the contribution of the imports to the value of output, value-added, employment, labor income, and taxes paid (federal, state, and local) at the national level and then specifically for Texas and California.

Avocado import contribution multipliers are then presented for the U.S. and then for Texas and California. The multipliers represent the respective dollar value of the contribution of imports (as represented by shipment data) of Mexican Hass avocados to output, value added, and labor income per dollar of avocado imports. An employment multiplier is also presented which reflects the number of jobs generated per million dollars of Hass avocado imports from Mexico. Finally, a tax multiplier is presented for the U.S. and then Texas and California showing the value of all federal, state, and local taxes generated as a result of all activities stimulated by Hass avocado imports from Mexico as a share of the value of imports. The aggregate economy-wide contributions in each case (U.S., Texas, and California) are also broken down by industry to provide an indication of the industry distribution of the contribution of Hass avocado imports from Mexico.

National Aggregate Analysis Results

The national analysis demonstrates that Hass avocado imports from Mexico have made a substantial contribution to the U.S. economy as they have moved along the U.S. avocado import supply chain, generating multiplier effects along intersecting supply chains, and adding to U.S. output, value-added, income, jobs, and taxes as a result. The total of all the direct, indirect, and induced effects of the $3.52 billion of U.S. imports (shipments) of Mexican Hass avocados in FY

Table 1: Estimates of State Values of Mexican Hass Avocado Shipments, FY 2023/24

State	Shipment Value	State	Shipment Value
Alabama	$47,457,593	Montana	$12,857,702
Alaska	$12,270,468	Nebraska	$17,897,694
Arizona	$92,632,398	Nevada	$43,623,908
Arkansas	$19,623,658	New Hampshire	$11,308,535
California	**$601,699,272**	New Jersey	$81,357,220
Colorado	$94,827,191	New Mexico	$23,725,813
Connecticut	$34,625,315	New York	$219,067,733
Delaware	$11,426,785	North Carolina	$93,631,170
District of Columbia	$21,340,407	North Dakota	$7,434,351
Florida	$249,738,268	Ohio	$91,051,083
Georgia	$127,342,898	Oklahoma	$28,296,866
Hawaii	$19,684,311	Oregon	$57,666,629
Idaho	$21,646,477	Pennsylvania	$98,229,215
Illinois	$112,982,642	Rhode Island	$7,870,231
Indiana	$51,854,149	South Carolina	$50,953,021
Iowa	$24,969,839	South Dakota	$7,264,664
Kansas	$22,671,678	Tennessee	$63,881,003
Kentucky	$33,909,381	**Texas**	**$285,436,796**
Louisiana	$34,472,837	Utah	$49,671,565
Maine	$9,270,700	Vermont	$4,389,941
Maryland	$62,542,888	Virginia	$86,326,228
Massachusetts	$74,695,836	Washington	$146,055,019
Michigan	$68,750,592	West Virginia	$12,148,993
Minnesota	$47,329,076	Wisconsin	$43,187,853
Mississippi	$23,147,759	Wyoming	$9,142,453
Missouri	$42,362,192	**Total**	**$3,515,750,295**

Source: Developed by authors from data in HAB (2024), CAC (2024), and IMPLAN (IMPLAN Model, 2022b).

2023/24 on U.S. output or total spending amounted to $7.50 billion (Table 2). That is, the $3.52 billion in Mexican Hass avocado imports in FY 2023/24 stimulated U.S. economic activity that generated a total of $7.50 billion in output or total spending. At the same time, the total economic activity stimulated by those imports added nearly $4.16 billion in FY 2023/24 to the U.S. GDP (about 0.0152% of the U.S. GDP), created $2.52 billion in U.S. labor income, $1.07 billion in taxes (federal, state, and local), and added 42,112 jobs (0.025% of U.S. employment).

Table 2: National Economic Contribution of Mexican Hass Avocado Shipments, FY 2023/24

U.S. Output ($ million)	U.S. Value-added ($ million)	U.S. Employment (no. of jobs)	U.S. Labor Income ($ million)	Taxes* ($ million)
$7,496.1	$4,156.2 (0.0152% of U.S. GDP)	42,112 (0.025% of U.S. employment)	$2,527.9	$1,069.8

* federal, state, and local.

Implied National Economic Contribution Multipliers

Every dollar of Mexican Hass avocado imports in FY 2023/24 generated $2.13 in gross output, $1.18 in GDP (value-added), and $0.72 in labor income (Table 3). Every million dollars of those imports generated 11.9 jobs in the U.S. economy. Taxes generated by the imports amounted to 30.4% of the value of the imported avocados (Table 3). Stated in this way, these contributions measure the multiplier effect of the imports. That is, they indicate how much additional output, GDP, etc. is generated by each dollar of imports. For example, for every $100 million increase in Mexican Hass avocado imports, U.S. output or spending increases by $213 million while GDP increases by $118 million, labor income by $72 million, and employment by 1,190 jobs.

Industry Distribution of the National Economic Contribution of Mexican Hass Avocados

An industry breakdown of the economic contributions reveals that the wholesale/retail and service industries accounted for most of the contribution of Mexican imports to U.S. economic activity in FY 2023/24 as might be expected (Table 4). Together those two industries accounted for 77% of the contribution of imports of Mexican Hass avocados to U.S. gross output, and approximately 82% of the contribution to the U.S. GDP (value-added), U.S. employment, and U.S. labor income. The manufacturing industry is also a major beneficiary of U.S. imports of Mexican Hass avocados, accounting for 7.5% of their contribution to gross output and 2% to 3% of the contribution made to GDP, labor income, employment, and taxes. Transportation and warehousing and a large number of miscellaneous services (such as advertising, insurance, accounting and legal services, repair services, and more) account for much of the remaining contribution of U.S. imports of Mexican Hass avocados to the U.S. economy.

Table 3: Implied National Economic Contribution Multipliers for Mexican Hass Avocado Imports, FY 2023/24

U.S. Output Multiplier ($output/$imports)	U.S. Value-Added Multiplier ($VA/$imports)	U.S. Employment Multiplier (jobs/$million imports)	U.S. Labor Income Multiplier ($income/$imports)	Tax* Multiplier (% of import value)
2.13	1.18	11.9	0.72	30.4%

*** federal, state, and local.**

Table 4: National Industry Distribution of the Economic Contribution of Mexican Hass Avocado Imports, FY 2023/24

Industry	U.S. Output ($ million)	U.S. Value-Added ($ million)	U.S. Employment (no. of jobs)	U.S. Labor Income ($ million)
Wholesale/Retail	**$2,957.2**	**$1,720.8**	**21,492.6**	**$1,090.3**
Manufacturing	$566.5	$162.0	902.1	$78.7
Transportation & Warehousing	$671.1	$357.8	4,398.3	$256.7
Services	**$2,808.3**	**$1,675.1**	**13,850.2**	**$978.1**
- Food & accommodation	$181.3	$101.6	1,800.4	$65.1
- Other	$2,627.0	$1,573.5	12,049.8	$913.0
Agriculture	$43.9	$19.5	261.3	$10.3
Other	$449.1	$221.0	1,207.1	$113.9
Total*	$7,496.1	$4,156.2	42,111.6	$2,527.9

* Totals may not add due to rounding.

Texas State-Level Analysis

This section focuses specifically on the contribution of Hass avocado imports from Mexico in FY 203/24 into Texas (and not transshipped through Texas to other states) on the Texas economy as Hass avocados from Mexico moved along the avocado import supply chain within Texas. As shown in bold earlier in Table 1, the Texas share of the value of U.S. avocado imports amounted to an estimated $285.4 million. This Texas share of U.S. avocado imports generated multiplier effects along intersecting supply chains within the state, adding to Texas output, value-added, income, jobs, and taxes as a result. The total of all the direct, indirect, and induced

effects of the Mexican Hass avocado imports in FY 2023/24 on Texas output or total spending amounted to $468.7 million (Table 5). That is, the $285.4 million of Mexican Hass avocados imported into (and not transshipped through) Texas in FY 2023/24 stimulated Texas economic activity that generated a total of $468.7 million in output or total spending. At the same time, the total economic activity stimulated by those imports added nearly $259.9 million in FY 2023/24 to the Texas GDP, created $156.8 million in Texas labor income, $59.8 million in taxes (federal, state, and local), and added 2,847 jobs in Texas.

Implied Texas Economic Contribution Multipliers

Every dollar of Mexican Hass avocado imports into Texas in FY 2023/24 generated $1.64 in state gross output to Texas, $0.91 in state GDP (value-added), and $0.55 in state labor income (Table 6). Every million dollars of those imports generated 9.9 jobs in Texas. Taxes generated by the imports amounted to 20.9% of the value of the Mexican avocados imported into Texas (Table 6). Thus, these are the multiplier effects of the import of Mexican Hass avocados into Texas, indicating how much additional Texas output, GDP, etc. is generated by each dollar of those imports. For example, for every $100 million increase in Mexican Hass avocado imports into Texas, state total output or spending increases by $164 million while state GDP increases by $91 million, state labor income by $55 million, and state employment by 990 jobs.

Industry Distribution of the Texas Economic Contribution of Mexican Hass Avocados

An industry breakdown of the economic contributions to the Texas economy from Hass avocado imports reveals that Texas wholesale/retail and service industries account for most of the contribution as was the case for the aggregate U.S. economy (Table 7). Together those two industries account for 80% of the contribution of imports of Mexican Hass avocados to Texas gross output and approximately 83% to 85% of the contribution to the state GDP (value-added), employment, and labor income. The Texas transportation and warehousing sector is also a major beneficiary of Mexican Hass avocados imports, accounting for 10% of their contribution to state gross output and 9% to 11% of the contribution made to state GDP, labor income, employment, and taxes. Texas manufacturing and a large number of miscellaneous services (such as advertising, insurance, accounting and legal services, repair services, and more) account for much of the remaining contribution of Mexican Hass avocado imports to the Texas economy.

Table 5: Texas Economic Contribution of Mexican Hass Avocado Imports, FY 2023/24

Texas Output ($ million)	Texas Value-added ($ million)	Texas Employment (no. of jobs)	Texas Labor Income ($ million)	Taxes* ($ million)
$468.7	$259.9	2,847	$156.8	$59.8

* federal, state, local.

Table 6: Implied Texas Economic Contribution Multipliers for Mexican Hass Avocado Imports, FY 2023/24

Texas Output Multiplier ($output/$imports)	Texas Value-Added Multiplier ($VA/$imports)	Texas Employment Multiplier (jobs/$million imports)	Texas Labor Income Multiplier ($income/$imports)	Tax* Multiplier (% of import value)
1.64	0.91	9.9	0.55	20.9%

* federal, state, local.

Table 7: Texas Industry Distribution of the Economic Contribution of Mexican Hass Avocado Imports, FY 2023/24

Industry	Texas Output ($ million)	Texas Value-Added ($ million)	Texas Employment (no. of jobs)	Texas Labor Income ($ million)
Wholesale/Retail	**$223.8**	**$130.7**	**1,621.3**	**$80.6**
Manufacturing	$15.9	$4.2	21.0	$1.8
Transportation & Warehousing	$47.9	$24.2	320.0	$17.0
Services	**$152.4**	**$86.5**	**812.3**	**$51.2**
- Food & accommodation	$9.8	$4.9	108.1	$3.3
- Other	$142.6	$81.6	704.2	$47.9
Agriculture	$0.63	$0.23	6.4	$0.13
Other	$28.1	$14.1	65.5	$6.0
Total**	$468.7	$259.9	2,846.5	$156.8

* Totals may not add due to rounding.

California State-Level Analysis

This section focuses specifically on the contribution of Hass avocado imports from Mexico in FY 203/24 into California (and not transshipped through California to other states) on the California economy as Hass avocados from Mexico moved along the avocado import supply chain within that state. As shown in bold earlier in Table 1, the California share of the value of U.S. avocado imports amounted to an estimated $601.7 million. This California share of U.S. avocado imports generated multiplier effects along intersecting supply chains within the state, adding to California output, value-added, income, jobs, and taxes as a result. The total of all the direct, indirect, and induced effects of Mexican Hass avocado imports into California in FY 2023/24 on state output or total spending amounted to $965.2 million (Table 8). That is, the $601.7 million of Mexican Hass avocados imported into (and not transshipped through) California in FY 2023/24 stimulated California economic activity that generated a total of $965.2 million in output or total spending. At the same time, the total economic activity stimulated by those imports added nearly $580.2 million in FY 2023/24 to the California GDP, created $356.9 million in California labor income, $171.2 million in taxes (federal, state, and local), and added 5,281 jobs in California.

Implied California Economic Contribution Multipliers

Every dollar of Mexican Hass avocado imports into California in FY 2023/24 generated $1.60 in state gross output, $.96 in state GDP (value-added), and $0.59 in state labor income (Table 9). Every million dollars of those imports generated 8.8 jobs in the state. Taxes generated in California by the imports amounted to 28.5% of the value of Mexican Hass avocado imports into the state (Table 9). Thus, these are the multiplier effects of the imports into California, indicating how much additional California output, GDP, etc. is generated by each dollar of those imports. For example, for every $100 million increase in Mexican Hass avocado imports into California, state output or spending increases by $160 million while state GDP increases by $96 million, state labor income by $59 million, and state employment by 880 jobs.

Industry Distribution of the California Economic Contribution of Mexican Hass Avocados

An industry breakdown of the economic contributions reveals that the wholesale/retail and service industries account for most of the contribution of Mexican imports to California economic activity as is the case for Texas and the aggregate U.S. economy (Table 10). Together those two industries account for 82% of the contribution of imports of Mexican Hass avocados to

Table 8: California Economic Contribution of Mexican Hass Avocado Imports, FY 2023/24

California Output ($ million)	California Value-added ($ million)	California Employment (no. of jobs)	California Labor Income ($ million)	Taxes* ($ million)
$965.2	$580.2	5,281	$356.9	$171.2

* federal, state, local.

Table 9: Implied California Economic Contribution Multipliers for Mexican Hass Avocado Imports, FY 2023/24

California Output Multiplier ($output/$imports)	California Value-Added Multiplier ($VA/$imports)	California Employment Multiplier (jobs/$million imports)	California Labor Income Multiplier ($income/$imports)	Tax* Multiplier (% of import value)
1.60	0.96	8.8	0.59	28.5%

* federal, state, local.

Table 10: California Industry Distribution of the Economic Contribution of Mexican Hass Avocado Imports, FY 2023/24

Industry	California Output ($ million)	California Value-Added ($ million)	California Employment (no. of jobs)	California Labor Income ($ million)
Wholesale/Retail	**$476.9**	**$296.7**	**3,025.4**	**$182.6**
Manufacturing	$33.6	$9.9	46.1	$4.0
Transportation & Warehousing	$97.7	$54.0	605.5	$39.2
Services	**$317.9**	**$200.5**	**1,456.7**	**$117.2**
- Food & accommodation	$20.5	$11.8	194.8	$7.9
- Other	$297.4	$188.7	1,261.9	$109.3
Agriculture	$1.7	$.98	9.4	$.49
Other	$37.5	$18.0	137.8	$13.5
Total**	$965.2	$580.2	5,280.9	$356.9

* Totals may not add due to rounding.

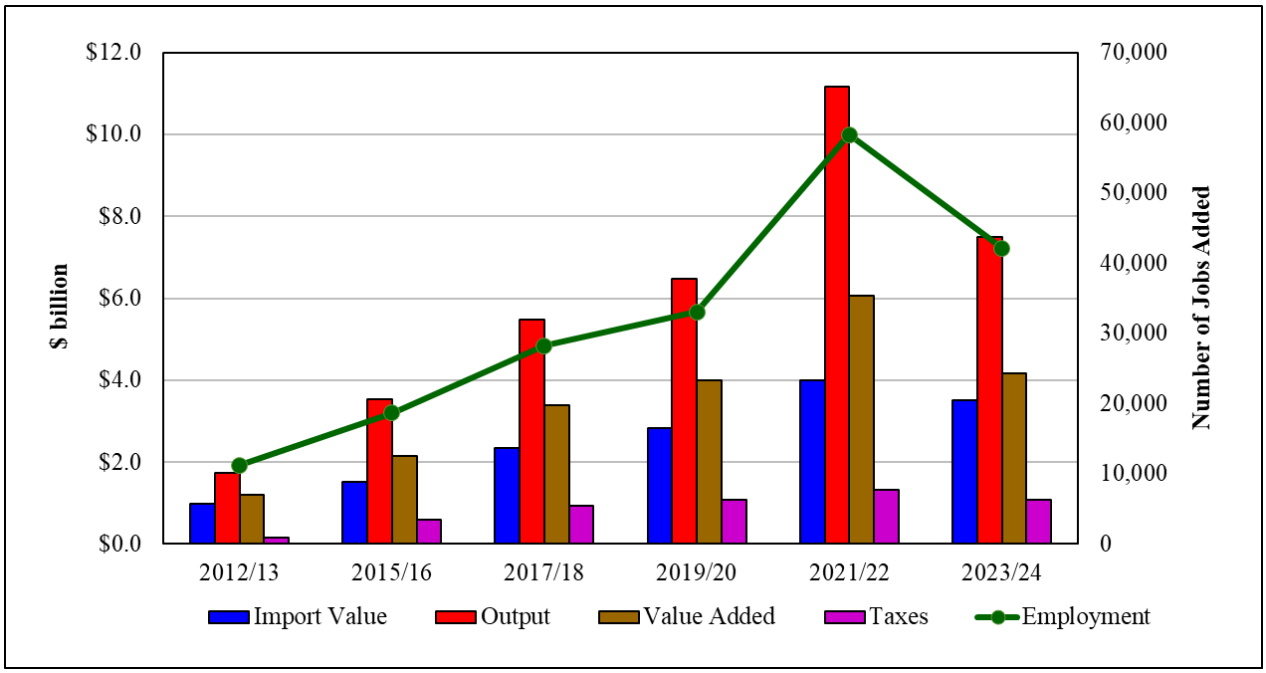
California state gross output, and approximately 84% to 85% of the contribution to the state GDP (value-added), employment, and labor income. The state transportation and warehousing industry is also a major beneficiary of imports of Mexican Hass avocados, accounting for 10% of their contribution to state gross output and 9% to 11% of the contribution made to state GDP, labor income, employment, and taxes. Manufacturing and a large number of miscellaneous services (such as advertising, insurance, accounting and legal services, repair services, and more) in California account for much of the remaining state economic contribution of Mexican Hass avocado imports into the state.

Historical View of the Economic Contribution of Mexican Hass Avocado Imports

The U.S. economic contributions of U.S. Hass avocado imports from Mexico reported in this study for FY 2023/24 declined relative to those reported in the preceding biennial study, the first time that has occurred since the first study was completed for FY 2012/13 (Figure 8). The reason for the apparent decline was actually an anomalous sharp *increase* in the value of Mexican Hass avocado shipments into U.S. markets in FY 2021/22 resulting in equally sharp increases in the measured economic contributions of those shipments for that year. In other words, the shipment value for FY 2021/22 was an outlier, significantly higher than the value of shipments before or since that year. Shipments and prices were more in line with historical trends in FY 2023/24 so that the measured economic contributions of FY 2023/24 shipments were lower than in the anomalously higher shipment value year of FY 2021/22 but still higher than in all previous years. For this reason, comparing the economic contribution results from this report for FY 2023/24 with those for FY 2019/20 and previous years provides a more indicative assessment of the trend in the contribution of those imports on the U.S economy than comparing with the anomalous results for FY 2021/22.

The reason for the anomalous spike in the economic contribution of imports in FY 2021/22 is the sharp spike in the value of U.S. imports (shipments) of Mexican Hass avocados in that year. The reasons for the spike in the value of imports in FY 2021/22 are likely many but two economic factors stand out: (1) the unabated U.S. consumer appetite for avocados given the underlying forces that drive demand as discussed in the first section of this report and (2) a decline in the availability of supplies in that year due to weather problems, intra-industry issues, and possibly other forces.

Figure 8: U.S. Economic Contribution of Mexican Hass Avocado Imports, FY 2012/13 – FY 2023/24



Although price is a factor that drives the demand for many commodities, avocado demand is fairly unresponsive to price changes. That is, price changes tend to have relatively small effects on consumer demand for avocados because the effects of many other underlying forces that have been pushing consumption upward over time simply overwhelm the effects of price. In other words, the U.S. market will take and use just about whatever volume of avocados is available whatever the price. That may not always be true at some future higher level of prices and import availability but such is the case currently.

Table 11 shows the year-to-year percentage changes in shipment volumes and the corresponding percentage change in price from FY 2020/21 through FY 2023/24 based on data available from MHAIA (2024). Note that the percentage reactions of prices from year to year are much larger that the corresponding percentage changes in availability of shipments into the U.S. market. The last column of Table 11 shows the "price flexibility index" calculated as the percentage change in prices divided by the percentage change in shipments. An absolute price flexibility value of greater than one indicates that the absolute percentage change in price is greater than the corresponding absolute percentage change in volume. Note that small changes in the availability of avocados from Mexico have the ability to produce rather large changes in

Table 11: Price Response to Changes in Mexican Hass Avocado Shipments, FY 2020/21 – FY 2023/24

Fiscal Years	Shipments of Hass Avocados from Mexico			Price Flexibility Index
	Volume[1]	Average Price	Value	
	---------- annual percentage change ----------			(column 1/column 2)
2020/21	17.9	-25.3	-12.0	-1.42
2021/22	-14.7	69.3	44.3	-4.70
2022/23	18.6	38.1	-26.6	-2.05
2023/24	-2.8	21.0	17.6	-7.52

1 Net of organics and re-exports.
Source: Calculated from data provided by MHAIA (2024)

price in the opposite direction. Because U.S. consumer demand is largely driven by availability rather than price, such large price changes tend to affect consumption by relatively little. So, weather problems, industry issues, and other forces that affect the availability of supplies in a given year mainly affect price levels rather than U.S. consumption of avocados. The consequence is that relatively small disruptions in supply can have rather large effects on the value of the available supplies because demand for avocados in the U.S. is so strong.

That is exactly what happened in FY 2021/22, the last year for which contribution of imports on the U.S. economy were calculated (Williams and Hanselka, 2022). The availability of imports that year dropped by nearly 15% from the previous year (Table 11) and prices reacted strongly, jumping up by 69% so that the value of shipments spiked by 44% that year to a record $4.0 billion. Not surprisingly, the economic contribution of Mexican avocado shipments as measured in FY 2021/22 also spiked in that year as can be seen in Figure 8.

Shipment availability recovered somewhat (nearly 19%) the next year (FY 2022/23) which dropped prices by a more than double (38.1%) so that shipment revenue dropped by nearly 27% in that year (Table 11). Then in FY 2023/24 (the year used in the economic contribution analysis in this report), availability was a little off again by only about 3%, boosting prices back up again by 21% and shipment revenue by nearly 18%. Thus, after a couple of years of changes in supply availability for whatever reasons, shipment revenues are back on trend along with the measures of the contributions of Mexican Hass avocado imports to the U.S. economy.

Despite some ups and downs in the economic contributions of imports to the U.S. economy in recent years mainly due to supply changes and the volatility of prices, comparing the economic contribution of Mexican Hass avocado imports in this report for FY 2023/24 to those for previous years reveals a strong and growing upward trend in the importance of Mexican Hass avocado imports to the U.S. economy (Figure 8). While the value of those imports increased by just over 250% from $991.9 million in 2012 to $3.5 billion in 2023/24, the contribution of those imports to U.S. output increased by over 330% from $1.7 billion to $7.5 billion. Over the same period, the contribution of those imports to U.S. GDP (value added) increased by over 240% from $1.2 billion to $4.2 billion. The contributions to U.S. labor income, U.S. tax revenues, and employment also registered dramatic increases (266%, 547%, and 274%, respectively).

CONCLUSIONS AND IMPLICATIONS

The objective of this report was to update the measurement of the contribution of Mexican Hass avocado imports to the U.S. economy for fiscal year (FY) 2023/24 (July/June). This and previous studies provide clear evidence that imports of Mexican Hass avocados are pro-growth for the U.S. economy. Mexican Hass avocado shipments into the United States generate multiplier effects along intersecting supply chains across U.S. industries and sectors, contributing substantially to U.S. aggregate output, value-added, income, jobs, and taxes as a result. For FY 2023/24, the $3.5 billion in U.S. imports of Mexican Hass avocados contributed the following to the U.S. economy (comparison to FY 2019/20 in parentheses):

- $7.5 billion in output or spending ($6.5 billion);
- $4.2 billion to the U.S. GDP (value-added) ($3.9 billion);
- 42,112 jobs added (33,051);
- $2.5 billion in labor income ($2.2 billion); and
- $1.1 billion in federal, state, and local taxes ($1.1 billion).

Looked at another way, every dollar of Hass avocado imports from Mexico in FY 2023/24 generated $2.13 dollars in output, $1.18 in U.S. GDP, and $0.72 in labor income. Every million dollars of those imports generated 11.9 U.S. jobs. Taxes generated by the imports amounted to 30.4% of the value of the imported avocados.

The U.S. economic contributions of Hass avocado imports from Mexico reported in this study for FY 2023/24, however, declined relative to those reported in the preceding biennial study, the first time that has occurred since the first study was completed for FY 2012/13 (see

Figure 8). The reason for the decline in FY 2023/24 was actually an anomalous sharp *increase* in the value of Mexican Hass avocado shipments into U.S. markets in FY 2021/22 which resulted in equally sharp increases in the measured economic contributions of those shipments. In other words, the shipment value for FY 2021/22 was an outlier, significantly higher than the value of shipments before or since that year. Shipments and prices were more in line with historical trends in FY 2023/24 so that the measured economic contributions of FY 2023/24 shipments were lower than in the anomalously higher shipment value year of FY 2021/22 but still higher than in all previous years. Thus, comparing the economic contribution results from this report for FY 2023/24 with those for FY 2019/20 and previous years provides a more indicative assessment of the upward trend in the contribution of those imports on the U.S economy than comparing with the anomalous results for FY 2021/22 from the previous report.

Between FY 2012/13 and FY 2023/24, the value of Mexican Hass avocado shipments increased by just over 250% from $991.9 million to $3.5 billion (Figure 8). The contribution of those imports to U.S. output over that period, however, increased by over 330% from $1.7 billion to $7.5 billion. Over the same period, the contribution of those imports to U.S. GDP (value added) increased by over 240% from $1.2 billion to $4.2 billion. The contributions to U.S. labor income, U.S. tax revenues, and employment also registered dramatic increases (266%, 547%, and 274%, respectively).

This report also provided a special focus on the effects of Mexican Hass avocado imports in FY 2023/24 on the state economies of California and Texas, the states with the highest levels of avocado consumption. The values of avocado imports into California and Texas (not including avocados transshipped to other states) for FY 2023/24 were estimated to be $601.7 million and $285.4 million, respectively, generating the following contributions to their respective state economies in that year:

- Output or spending – California: $965.2 million and Texas: $468.7 million;
- GDP – California: $580.2 million and Texas: $259.9 million;
- Jobs added – California: 5,281 and Texas: 2,847;
- Labor income – California: $356.9 million and Texas: $156.8 million; and
- Taxes (federal, state, and local) – California: $171.2 million and Texas: $59.8 million.

Together, California and Texas accounted for 19% – 22% of the U.S. total values of these economic measures in FY 2023/24 which means that 78% – 81% of the contribution of Mexican Hass avocado imports to the U.S. economy occurs in other states throughout the country.

The primary implication of this update study is clear and straight forward – imports of Mexican Hass avocados continue to be pro-growth for the U.S. economy. Given the historical upward growth path of those imports, their contribution to the U.S. economy will likely only intensify over the years. Clearly, however, volatility in the availability of avocado supplies from Mexico for whatever reason has the potential to create substantial corresponding price and import revenue volatility and, in turn, volatility in the level of their contributions to the U.S. and state economies. When that happens, not only do U.S. avocado consumers lose from price and supply volatility and uncertainty, the whole U.S. economy is affected as well, along with those of individual states that import avocados. Such was the case with the sharp run-up in the level of economic contributions from imports in 2021/22 and their subsequent decline in 2023/24 as discussed in this study. Even so, the measured growth in the contributions of U.S. imports of Mexican Hass avocados to the U.S. and state economies since the first study was conducted for FY 2012/13 has been remarkable.

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