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August 20, 2011

Acknowledgements

The authors would like to thank the California Association of Winegrape Growers (CAWG) for a grant that supported this research. We also want to recognize Georgi Gabrielyan, William Matthews and Jessica Vergati for assistance, Steve Fike and personnel from the U.S. Customs Bureau, The Wine Group and Gallo and for information that improved our understanding of the program. John Aguirre provided for information, suggestions and probing questions throughout the project. Jonathan Barker prepared the manuscript.

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EXECUTIVE SUMMARY OF MAIN ANALYSIS AND FINDINGS

This summary outlines the key background facts, economic analysis and the main results of our study of the effects of the U.S. duty and excise drawback program for wine. We focus especially on deriving and explaining economic impacts of the drawback program on the California winegrape industry.

Basic Facts

The United States offers a refund of import duties and federal excise taxes on imports of non-sparkling wine of 14 percent alcohol or less whenever firms match imports with exports of wine legally defined as “interchangeable.” All discussion of wine and wine markets in this report refers to this broad category of wine to which the drawback applies. None of the data or analysis applies to sparkling wine or wine of more than 14 percent alcohol. As noted below, wine exported to Canada or Mexico is also not eligible to use as a match for imports in applying for drawback of duties or excise taxes paid.

U.S. regulations define “interchangeable” exports of wine for drawback eligibility as those of the same color and within 50 percent of the price of the imports (and of 14 percent alcohol or less and not sparkling wine). A firm has up to three years to match imports with subsequent exports and claim the drawback. The U.S. Bureau of Customs and Border Protection administers the drawback and enforces the rules of the program, mainly through audits.

Import duty schedules are complex. Duty rates differ by specific product, by country of origin and have changed over time, especially with implementation of free trade agreements

(FTAs). For wine, the important FTAs are those applying to Australia and Chile. The base import duty is \$0.063 per liter for bottled wine (wine imported in containers of two liters or less) and \$0.14 for bulk wine (more than four liters). For bottled wine, imports from Chile now enter duty free under the FTA. The significant exception from the base duty rate for bulk wines is that under the FTAs, wines from Australia and Chile paid a duty rate of \$0.048 per liter in 2010. The federal excise tax is \$0.2827 per liter, so the total eligible for drawback is \$0.3457 per liter for bottled wine and \$0.4227 per liter for bulk wine from most countries. The combined rate was \$0.3307 for bulk wine from Australia and Chile in 2010.

The United States imported about 832 million liters of table wine (non-sparking wine at or below 14 percent alcohol) in 2010. Of that, about 658 million liters was in the bottled categories and about 168 million liters was bulk wine (entering in containers of more than 4 liters). Very little wine was imported in the intermediate sized containers. U.S. wine exports totaled about 369 million liters in 2010, of which about 173 million liters were bottled wine (container size of two liters or less) and about 196 million liters was bulk wine (container size of more than two liters). (The export data is available only for two container size classifications.)

Excise taxes and import duties on still wines of 14 percent alcohol or less that are covered by the substitution drawback program were about \$276 million in 2010, of which \$212 million were for bottled wine and about \$64 million were for bulk wine. Firms received drawbacks on about 188 million liters in 2010, of which more than 66 million liters was bottled wine and about 121 million liters was bulk wine. (Drawbacks received in a year could apply to wine imports up to three years earlier.) In 2010, firms received approximately \$23 million in drawbacks for bottled wine and about \$47 million for bulk wine for a total of about \$70 million. The process of assembling the required documentation and applying for drawbacks is complicated and usually takes at least several months, so even if matching exports are available, drawbacks on imports in the later months of a year are likely to be awarded in the next calendar year.

Economic Model and Qualitative Implications

The concept behind the drawback program is that if imports are matched by exports of an interchangeable product, then effective net imports are zero and it is as though imports never entered at all. However, the concept does not imply that the program, as implemented, has no effects, especially when imports and exports occur even without the drawback.

Both imports and exports occurred before there was an operative drawback program allowing for substitution across interchangeable wines. Moreover, substantial quantities of imports and exports continue to occur for which no drawback is requested. In order to understand the aggregate impact of the drawback program on the wine markets, one must consider the balance of imports and exports of the interchangeable wine as defined by the program.

When imports exceed interchangeable exports, a share of the imports cannot receive the drawback because no eligible exports will be available for a portion of the imports. Since this excess imported wine pays the full import duty and excise tax, there is an incentive to reduce imports or increase exports. Those incentives mean that for market situations or categories for which wine is imported with full duty and excise tax paid, firms have a strong incentive to use the potential drawback funds to expand exports in that category. In this situation, for any additional exports that can be secured, there is a direct per unit benefit that is equal to the full amount of the per unit drawback. In this market situation, the drawback operates as a per unit export incentive up to the point where exports fully match imports for each firm and category of interchangeable wines. (Of course, complying with drawback rules is itself costly, so the net benefit is less than the full per unit drawback.)

When interchangeable exports exceed imports, however, the opposite set of incentives prevails. In that case, there are available exports to cover all imports and more, so each additional liter of imports would receive the drawback and this reduced effective duty and tax would create an incentive to import more.

During the same year or period of years, and for specific importers or exporters, some categories of wines (defined by color and price range) could have excess imports while others have excess exports. That means for some wines (and the grapes used to produce those wines), the drawback may act as an export incentive, while for another category, the drawback may act as an import incentive.

For a category in which imports exceed exports, the drawback acts as an export incentive. This increases the demand for exports of that wine. Therefore, domestic production of wine in this category expands and some domestic production shifts from the U.S. market to the export market. The result is a higher price of wine in the domestic market, so domestic consumers pay more. The higher demand for domestic wine in this category implies a larger demand for U.S. grapes used to make wine in the category and a higher price of grapes than would otherwise prevail. The higher price of grapes encourages planting of additional acreage of U.S. grapes in that category. In this market situation, any (relatively small) expansion of imports is an indirect consequence of the higher price in the U.S. domestic wine market.

For a category and market situation in which exports exceed imports, the drawback acts as a direct incentive to increase imports relative to the case when the full duty and excise tax apply. Therefore, domestic production of wine in this category would fall as increased imports substitute for domestic wine and the prevailing domestic price falls. The result is a lower price of wine in the domestic market and a lower demand for U.S. grapes used to make wine in the category. The price of grapes is therefore lower than would otherwise prevail and growers will stem losses by reducing acreage of grapes in that category. Any expansion of exports follows only indirectly because of the lower price in the U.S. domestic wine market.

Domestic consumers gain from the drawback for categories of wine for which the import incentive prevails and they lose from the drawback for wine categories in which the export subsidy prevails. Firms that both export and import wine gain relative to specialized firms

because they find it easier to use the drawback program. The drawback program creates an incentive for firms to either expand into international trade or to create joint ventures with trading companies. The drawback program reduces net tax and duty revenues for the U.S. government.

Application of the Program to Recent Wine Imports and Exports

Using the economic reasoning just developed, we can assess the impact of the drawback program using data on U.S. wine imports and exports. In general, official U.S. government import data is available monthly by port of entry, national source of imports, container size, price category (for some sizes) and color (for some sizes). Export data is limited to port of exit, destination and two container sizes (less than or equal to two liters and greater than two liters), with no data on price category or color.

Imports of table wine are concentrated in three categories. For the period 2008 through 2010, almost 44 percent of imports by volume was red wine imported in containers of two liters or less, almost 34 percent was white wine imported in containers of two liters or less and almost 21 percent was bulk wine imported in containers of more than four liters. The other one percent or so of wine imports was scattered across bottled wine of other colors (rosé) or in the intermediate container size. Exports were evenly split across the available categories with about half the wine exported in containers of two liters or less (bottled wine) and about half in containers holding more than two liters (bulk wine).

Although the interchangeability criteria do not specify container size, import and export unit values (prices) correlate closely with container size. The average price of bottled wine imports in the past three years has been in the range of \$5.00 per liter, while over this period, the average price of bulk wine imports has been about \$0.90 per liter. The average price of bottled wine exports has ranged from about \$3 per liter to \$4 per liter and the average price of bulk wine exports has been about \$1.05 per liter. These data suggest that based on the price criteria, a substantial share of bottled exports is within 50 percent of the unit values of bottled imports and that most bulk imports and exports would be within 50 percent of the unit

value range for interchangeability. However, relatively few export shipments of bulk wine could be matched with bottled imports to claim a drawback because the price of bulk wine exports is so much lower than the price of bottled wine imports. The situation is more complex because there is some evidence that exporters may use only the unit value of the wine content of their bottled wine exports to match import prices of imports of bulk wine. So, for example, bottled wine that has an export unit value of \$2.50 per liter, but for which \$1.20 per liter was the costs of bottling and other packaging, would have a wine value of \$1.30 per liter. This would be within 50 percent of the unit value of imports at about \$0.90 per liter. Thus, we expect at least some quantity of bottled wine exports may be interchangeable with bulk wine imports.

Quantities of recent imports and exports by container size category remain the best proxy for potential drawbacks under the price criterion. Unfortunately, with no data on exports by color, it is impossible to assess potential drawbacks based on matching color of imports and exports. This may be important because there is some evidence of significant exports of low-priced rosé wine and there are almost no imports of rosé wine for which such exports would be interchangeable.

Now consider the drawback potential for imports of bottled wine. Bottled wine imports into the United States have far exceeded exports of bottled wine for many years. During the three-year period from 2008 through 2010, the United States imported about 630 million liters of bottled wine per year. The total duty and excise tax on this wine was approximately \$220 million per year. During this period, the United States exported about 190 million liters of bottled wine. The implication is that for this category much of the imports would have been ineligible for a drawback because no matching exports were available. Moreover, for bottled wine, the drawback program provided an incentive of about \$0.35 per liter for additional exports. Given an average unit value of about \$3.50 per liter, the export incentive amounted to approximately 10 percent of the export price. Using an export supply elasticity of 3.0, a 10 percent incentive applied to all exports would have encouraged exports to expand by 30 percent above what they would have otherwise been. Finally, based on data made

available by the Customs Bureau, firms claimed drawbacks on about 66 million liters of bottled wine per year for an approximate drawback value of about \$23 million. Therefore, although imports of bottled wine far exceed exports, which creates an incentive for expanding exports, firms claimed drawbacks on only about 35 percent of the export quantity. Thus, even given the incentive to match imports with interchangeable exports, relatively little of the potential drawback for bottled wine was actually claimed.

The situation has been quite different for bulk wine. During the period 2008 through 2010, an average of about 167 million liters of bulk wine were imported per year compared to about 190 million liters per year of bulk wine exported. Without more detail about the color of the wine, it is difficult to know precisely how the imports and exports match with respect to drawback interchangeability. For example, as noted above, if a substantial share of bulk exports was rosé wine (say, white zinfandel), it would be likely that imports exceeded exports for the red and white categories. And since very little rosé wine is imported, there is little scope for claiming drawback credits for rosé exports. More broadly, in the recent period it is likely that for some firms, exports exceeded imports, while for other firms imports exceeded exports. That means that the drawback likely created an incentive for more bulk wine imports in some situations and an incentive for more bulk wine exports in other situations.

Import duties and excise taxes paid on bulk wine imports during the period 2008 through 2010 were about \$66 million annually, taking into account that bulk imports from Australia and Chile faced the lower duty rate of \$0.048 per liter rather than the standard rate of \$0.14 per liter. The drawback was about \$0.42 per liter for imports from other significant sources and \$0.33 per liter for imports from Australia and Chile. Given that the average price of bulk imports was about \$0.90 per liter, but lower for imports from Australia and Chile, the per-unit drawbacks averaged about 40 percent of the import price. Clearly, the drawback program for bulk wine created very large incentives to expand imports to capture additional drawback for firms with large matching exports or to expand exports to allow a drawback claim for firms with large imports relative to exports.

During the period 2008 through 2010, firms claimed drawbacks on an average of about 96 million liters of bulk wine per year, with the bulk wine drawback claims rising from about 70 million liters in 2008 to 121 million liters in 2010. Thus, drawbacks were claimed on almost 60 percent of the average volume of imports of bulk wine. Recognizing that firms have up to three years to claim the drawback, we note that the 2010 drawbacks of 121 million liters was about 72 percent of the average imports of bulk wine from 2008 through 2010 (167 million liters). Of course, given the three-year window in which to claim drawbacks, firms have until 2012 to claim drawbacks on imports in 2010. Still, based on an examination of the moving averages, substantial quantities of potential drawbacks have not been claimed. This suggests that either many firms do not have exports to match with imports, or that the colors of exports did not line up with the colors of imports.

The incentives provided by the drawback program for additional imports or additional exports of bulk wine may be roughly offsetting in their aggregate implications for the bulk wine and associate grape industry in the United States. The program clearly creates incentives to increase international trade. Unlike the case for bottled wine, the percentage incentives created for bulk wine are quite large, so firms collected most of the available drawback and received substantial financial benefits for participating.

Conclusion

In situations (defined by price, color, winery or trader-specific trade patterns) where interchangeable exports exceed imports, the drawback creates an added incentive to import more wine that substitutes for domestic grapes that produce wine of that price category and color. The result is a lower demand for the domestic grapes used to produce that particular wine. However, when imports exceed exports for a specific interchangeable category of wine imports, the incentive is for more exports and, hence, a higher demand for domestic wine grapes to satisfy the additional exports. Our analysis shows that for bottled wine the most applicable case is that imports exceed exports and the drawback creates (relatively small) incentives for increased exports. However, unlike the case for bottled wine, the

implications for lower-priced bulk wine were for increased imports in the early part of the past decade, when exports exceeded imports. Now, no broad generalizations are applicable because imports and exports of interchangeable bulk wine are likely of quite similar magnitudes.

Economic Implications of the Import Duty and Excise Tax Drawback for Wine Imported into the United States

1.0 Introduction and outline

This report develops an economic analysis of the U.S. excise tax and duty drawback for imported wine, with emphasis on the implications wine produced in the United States from domestic grapes. Although the details of the drawback program related to wine imported into and exported from the United States are complicated, the basic operation of the program is relatively straightforward.

When wine is shipped into the United States, the importer pays the applicable import duty and the excise tax. If that firm subsequently exports a “commercially interchangeable” wine, the wine is eligible for a “drawback,” which is essentially a refund of 99 percent of the amount paid. The concept behind the drawback is that the import and subsequent export of interchangeable products is (almost) equivalent to no import having occurred at all, so, under this rationale, it is natural that no net duties or taxes would be collected.

Section 2 uses an example to outline the basic economic logic of the impacts of drawbacks for imports, exports, and domestic production and consumption. This discussion shows how removing the drawback would change incentives for wine trade, production and marketing and how the changes in incentives affect economic behavior. In section 3, we turn to the historical and legal background of the drawback program for wine and discuss the very long tradition of duty drawbacks and the recent history of the specific program for wine. Then in section 4, we examine recent data on imports, exports and drawbacks that are particularly relevant to determining the implications of the program. The discussion in section 4 refers to a series of tables and charts that show the relevant international trade patterns. Section 5 lays out the economics of the drawback program. Section 5 then turns to an algebraic model to which we can apply parameters such as market shares, supply and demand elasticities to simulate quantitative implications. We also note that while the drawback program may have significant implications for production, consumption and trade patterns, there are many other factors, such as crop size, exchange rates and demand trends that also affect the wine and grape industries. We do not present statistical evidence that

apportions recent changes in prices or quantities to the drawback relative to other drivers. Section 6 briefly summarizes main results.

2.0 Examples to illustrate the basic economic implications of the drawback program

Many important details of the program's operation affect its impact on firms, markets and trading relationships. However, we may better understand the essential economic implications by analyzing hypothetical examples that have crucial features in common with the wine market. Domestic wine and imported wine are close but not perfect substitutes for one another and domestic wine may be sold domestically or exported. We will compare situations under the drawback program to an alternative situation with the drawback removed.

First, consider an initial situation in which imports exceed exports and exports meet the rules to be "commercially interchangeable" with imports. In this situation, there are not enough exports to match the imports, and export quantities limit the amount of the drawback. Given the excess of imports over exports, firms have a strong incentive equal to the amount of the per unit drawback to expand their exports to match imports. In this case, per unit drawback creates an incentive to export more rather than to import more. Competition for exports to match imports means that per unit drawback will be retained as an export incentive and imported wine continues to pay the duty and tax, because the drawback is not returned to the importer.

If there were no drawback, all imports would continue to pay the tax and duty but there would be no incentive to export, so exports would fall, demand for domestic wine and grapes would fall, and thus the domestic price of domestic wine would fall. A lower price of U.S. wine would cause a lower quantity of imported wine.

Next, consider an initial situation in which exports exceed imports. In this case, some exports occur with no matching imports and thus no drawback credit. Each unit of imports would be eligible for drawback and imports would retain the drawback because, with "excess" exports there would be competition among exports to match imports with exports. Now, with no drawback, imports would decline and the domestic price would rise, but some

domestic production that had been shipped to the export market would remain in the domestic market, moderating the domestic price increase. In this case, with no drawback the domestic price and production would be higher and exports lower.

3.0 History, Legal Background and Operation of Drawbacks for Wine

Although drawbacks apply to many products, there are differences across drawback programs. This section provides the needed background on the operation of drawbacks for wine. The section also provides information on recent attempts to adjust the administration of drawbacks and explains the application process.

A drawback is the refund of duty (and in some cases, other taxes) on imported merchandise that is re-exported, destroyed or rejected (not used) in the United States. Drawbacks have a long history, going back to the Second Act of Congress, July 4, 1789, which allowed a 99 percent drawback on duties paid on merchandise (aside from distilled spirits) imported into the United States if the merchandise was exported within a year. One basic idea of a drawback is to facilitate domestic industry and exports by allowing manufacturers to recapture duties paid on imported materials if the finished goods are exported, thus allowing the manufactured goods to be more competitive in foreign markets than would be the case if costs had been increased by duties or taxes. Since 1789, the laws governing drawbacks have been changed many times, although the current law traces back to the Tariff Act of 1930. Drawbacks, including the potential drawback of excise taxes, are administered by U.S. Customs and Border Protection (CBP). Laws governing drawback are found in 19 USC 1313.

3.1 Types of Drawbacks

Broadly speaking, there are three types of drawbacks: (1) manufacturing drawback, (2) rejected merchandise drawback, and (3) “unused merchandise” drawback, which applies to exports of imported products (or commercially interchangeable domestic substitutes). In addition to these three categories, there are several commodity-specific drawbacks, including salt for curing fish, jet aircraft engines, and flavoring extracts.

An important principle holds that, in some cases, original materials imported need not be exported and domestic substitutes may be exported in the place of the original articles. This is called “substitution.” Substitutes must be “commercially interchangeable” with the imported merchandise and are allowed for both manufactured articles and for unused articles. Unless substitutes are specifically listed in a law, a manufacturer wishing to substitute must request a ruling from CBP to determine whether the proposed substitute meets all requirements for commercial interchangeability.

Manufacturing drawbacks, which do not apply to wine, are defined in section 1313(a), which allows for drawback on imported materials that are used to produce goods that are exported and in 1313(b), which allows for substitution for the imported materials used in manufacturing if the imported materials and the domestic materials used in manufacturing are commercially interchangeable. Since 1313(b) is only for manufactured goods, and since the CBP considers wine to be a “manufactured product” only if fermented in the United States, sections 1313(a) and 1313(b) do not apply to wine. Wine bottled in the United States using imported bulk wine is not considered to be “manufactured” in the United States, but rather an imported good that has been packaged in the United States.

1313(c) applies to rejected merchandise. A rejected merchandise drawback is given to materials imported into the U.S. which do not meet specifications or which were shipped without consent of the importer. These goods are generally destroyed, although some may be returned. Although 1313(c) would apply to wine, if a particular lot of imported wine was not sound, there is no indication that such rejections are significant. We will not devote any further discussion to rejected merchandise drawbacks.

Sections 1313(j1) and (j2) refer to “unused” merchandise. An unused merchandise drawback allows for drawback on imported materials for which duty and taxes were paid and which were not used (consumed) in the United States. To be considered “unused,” material must either be destroyed or exported. Section 1313(j1) refers to “direct identification unused merchandise” where the actual material imported is destroyed or exported. Section 1313(j2) refers to commercially interchangeable materials that are exported in place of the original imported material. It is this section that has been applied to wine.

3.2 Legal background of Wine Drawbacks:

For the purposes of this study, which examines drawbacks of duties and taxes on wine, the “unused merchandise” drawback applies. By assuming commercial interchangeability between foreign and domestic wine, imported wine can be considered to be “unused merchandise” if domestic wine is exported in place of the imported wine. In such a case, 99 percent of the duties and the excise tax are refunded to the importer/exporter. Unused merchandise drawback is defined in 19 U.S.C. 1313 (j), and is specifically dealt with in the second paragraph (2). The 2010 text follows:

(j) Unused merchandise drawback

(1) If imported merchandise, on which was paid any duty, tax, or fee imposed under Federal law upon entry or importation—

(A) is, before the close of the 3-year period beginning on the date of importation—

(i) exported, or

(ii) destroyed under customs supervision; and

(B) is not used within the United States before such exportation or destruction;

then upon such exportation or destruction 99 percent of the amount of each duty, tax, or fee so paid shall be refunded as drawback. The exporter (or destroyer) has the right to claim drawback under this paragraph, but may endorse such right to the importer or any intermediate party.

(2) Subject to paragraph (4), if there is, with respect to imported merchandise on which was paid any duty, tax, or fee imposed under Federal law upon entry or importation, any other merchandise (whether imported or domestic), that—

(A) is commercially interchangeable with such imported merchandise;

(B) is, before the close of the 3-year period beginning on the date of importation of the imported merchandise, either exported or destroyed under customs supervision; and

(C) before such exportation or destruction—

(i) is not used within the United States, and

(ii) is in the possession of, including ownership while in bailment, in leased facilities, in transit to, or in any other manner under the operational control of, the party claiming drawback under this paragraph, if that party—

(I) is the importer of the imported merchandise, or

(II) received from the person who imported and paid any duty due on the imported merchandise a certificate of delivery transferring to the party the imported merchandise, commercially interchangeable merchandise, or any combination of imported and commercially interchangeable merchandise (and any such transferred merchandise, regardless of its origin, will be treated as the imported merchandise and any retained merchandise will be treated as domestic merchandise);

*then, notwithstanding any other provision of law, upon the exportation or destruction of such other merchandise the amount of each such duty, tax, and fee paid regarding the imported merchandise shall be refunded as drawback under this subsection, but in no case may the total drawback on the imported merchandise, whether available under this paragraph or any other provision of law or any combination thereof, exceed 99 percent of that duty, tax, or fee. For purposes of subparagraph (A) of this paragraph, **wine of the same color having a price variation not to exceed 50 percent between the imported wine and the exported wine shall be deemed to be commercially interchangeable.***

(3) The performing of any operation or combination of operations (including, but not limited to, testing, cleaning, repacking, inspecting, sorting, refurbishing, freezing, blending, repairing, reworking, cutting, slitting, adjusting, replacing components, relabeling, disassembling, and unpacking), not amounting to manufacture or production for drawback purposes under the preceding provisions of this section on—

(A) the imported merchandise itself in cases to which paragraph (1) applies, or

(B) the commercially interchangeable merchandise in cases to which paragraph (2) applies, shall not be treated as a use of that merchandise for purposes of applying paragraph (1)(B) or (2)(C).

(4)

(A) Effective upon the entry into force of the North American Free Trade Agreement, the exportation to a NAFTA country, as defined in section 2(4) of the North American Free Trade Agreement Implementation Act [19 U.S.C. 3301 (4)], of merchandise that is fungible with and substituted for imported merchandise, other than merchandise described in

paragraphs (1) through (8) of section 203(a) of that Act [19 U.S.C. 3333 (a)], shall not constitute an exportation for purposes of paragraph (2).

(B) Beginning on January 1, 2015, the exportation to Chile of merchandise that is fungible with and substituted for imported merchandise, other than merchandise described in paragraphs (1) through (5) of section 203(a) of the United States-Chile Free Trade Agreement Implementation Act, shall not constitute an exportation for purposes of paragraph (2). The preceding sentence shall not be construed to permit the substitution of unused drawback under paragraph (2) of this subsection with respect to merchandise described in paragraph (2) of section 203(a) of the United States-Chile Free Trade Agreement Implementation Act.

Subsection (2) lays out rules for the drawback claimed for export of commercially interchangeable products. One key is that the matching export can occur up to three years after the import. A second provision states that the exporter claiming the drawback must also be the importer or have received the imports or the interchangeable product from the importer. The final sentence of subsection (2) defines commercial interchangeability for wine as wine of the same color and wine that has no more than a 50 percent price difference between the import and the export.

Also of note, subsection (3) specified that activities such as testing, inspecting, blending, relabeling or repacking the wine do not affect drawback eligibility. Importantly, subsection (4) documents that shipment of commercially interchangeable wine to North American Free Trade Agreement (NAFTA) countries does not count as exportation eligible for drawback. Likewise, starting January 1, 2015, shipment of commercially interchangeable wine to Chile does not count as exportation eligible for drawback. Exports to Chile have not been commercially important, but as shown below, when we turn to the data, exports to Canada are significant and this NAFTA restriction affects results, especially for bulk wine.

3.3 CBP Rulemaking on Commercial Interchangeability of Wine:

It is unclear how long wine has been receiving a drawback, but it seems to date back at least to April 19, 2001. In a letter dated March 27, 2009 from Myles Harmon, Director of the Commercial and Trade Facilitation Division of CBP, to Catherine Markey, then

Drawback Chief for the San Francisco Area port of CBP, Harmon states that a request for a formal ruling on commercial interchangeability of bulk wine was made on October 8, 1999. This would have been the first step to file for drawback, as commercial interchangeability must be determined prior to drawback.

There are essentially two processes to determine commercial interchangeability. Both processes are described in 19 C.F.R. 191.32 C. A manufacturer can request a formal ruling (as was referenced above) from Washington D.C., or can request a “predetermination letter” from a regional office. Such a letter is not considered a formal ruling and may be revoked at a future date.

Apparently, the winery making the formal application withdrew the request on December 12, 2000 after being informed that “the evidence presented did not support a determination of commercial interchangeability of table wine based on color and 50 percent relative value” (Harmon letter, 2009). Two months later (early 2001), the same winery made a request for a nonbinding “predetermination letter” from the San Francisco regional drawback office. According to Harmon, on April 19, 2001, the regional office approved the proposed standard for interchangeability. Between that date and March 23, 2007, the office issued similar predetermination letters to “several major wineries.” Thus, from the information presented in Harmon’s letter, we can assume that drawbacks on bulk wine based on 1313 (j) (2) have been occurring for about a decade. The standard approved, based on same color and a price variation of less than 50 percent for table wine, has been the standard applied since 2001 and was later codified in the 2008 Farm Bill.

In May of 2007, the San Francisco drawback office advised the wineries to which it had issued predetermination letters that the letters would be revoked because the standard based upon wine color was not sufficiently specific. Harmon writes: “CBP did not provide a definitive new standard but stated that the criterion of the varietal wine should have been a determining factor in determining commercial interchangeability.” Two months later, in July of 2007, the San Francisco office withdrew the revocation. Ten months later, in May of 2008, the Food, Conservation, and Energy Act of 2008 (better known as “the Farm Bill”) was passed. Section 15421 of the Farm Bill amended 19 U.S.C. 1313(j)(2) and specifically stated that wines with the same color and a price variation of less than 50 percent were

commercially interchangeable. The codification of “commercial interchangeability” of wine in the Farm Bill has legally defined standards for commercial interchangeability. Therefore, predetermination letters are no longer in force or required for an exporter to claim drawback.

3.4 Definitions of interchangeable wine for drawback applications

Harmon’s letter of March 27, 2009 was written in response to a request from the San Francisco District Office of CBP for guidance on which “wines” should be allowed substitution. Specific questions asked by the San Francisco office were: (1) whether wines not produced from grapes could be substituted, (2) whether wines over 14 percent in alcohol content should be included, (3) whether carbonated wine should be included, (4) whether wines must be in the same size container (where a container might be a large food-grade bag holding 1000s of liters, or a 750 ml bottle), and (5) whether rosé wine could be considered interchangeable with red and white wines.

In his response, Harmon reviewed the legislative history prior to and including the 2008 Farm Bill to attempt to determine what was the legislative intent. He writes, “From late 2001 to May, 2007 CBP paid drawback claims on wine based on white domestic and imported **table wine** being commercially interchangeable with relatively valued imported white **table wine**.” (Bolding was applied in the original letter.) He then refers to the Conference Report for the Farm Bill which discussed CBP’s nonbinding predetermination letters that allowed drawback claims for **table** wines (again, bolded in original letter), provided the substitute wine was of the same color. He comments that the Congressional Budget Office projected that implementation of section 15421 would have “no revenue effect” and from that, Harmon concludes that Congress did not intend to extend commercial interchangeability to wine other than table (i.e. under 14 percent alcohol) wine, since to include wines at a higher rate of taxation would have decreased excise revenue.

Harmon also reviewed standards of identity for “wine” as defined in 27 C.F.R. Subpart C, showing that “table wine” does not include wine made from material other than grapes, nor is it carbonated.

With regard to container size, Harmon wrote: “Section 15421 contains no requirement that the imported and substituted wine be in the same size containers. Moreover, between 2001 and 2007, CBP accepted drawback claims for table wine in various size

containers because, as stated above, Congress intended to continue CBP's approach in analyzing commercial interchangeability of wine products, so the size of the container may not be considered when determining whether imported and substituted table wines are commercially interchangeable."

Harmon addressed the issue of rosé wines at the end of his letter, concluding that "it is apparent that Congress intended CP to continue its practice of treating a rosé table wine as its own category of table wine, which is not commercially interchangeable with red or white table wine."

Harmon thus concluded that section 1313(j2) applied only to wines produced from grapes containing 14 percent alcohol or less and without carbonation. He found that container size was essentially irrelevant as long as the actual imported and exported wines were within 50 percent of value, and were of similar color. This conclusion is of particular importance, because it clearly allows the substitution of exported bottled wine for imported bulk wine.

3.5 The 2009 process to change the wine substitution rules

In the October 15, 2009 issue of the Federal Register (Vol. 74, No. 198), the Department of the Treasury and the Department of Homeland Security gave notice of proposed rulemaking to amend title 19 CFR. The proposal was to "preclude situations where imported merchandise subject to Federal excise tax is allowed into the United States, in effect, 99 percent free of that tax through application of drawback claim." Specifically, it referred to situations "where no excise tax was paid upon the substituted merchandise." The proposal argued that, since domestically-produced wine that is exported does not pay the Federal excise tax of \$1.07 a gallon, allowing a drawback for the substitute should not be allowed. It required that comments by November 16, 2009.

On November 27, 2009, the Department of the Treasury, in the Federal Register of that date, extended the comment period until January 14, 2010. CBP received over 40 comments from trade associations, including both Wine Institute and Wine America, individual customs attorneys and brokers, members of Congress (10 Senators and 18 Congressmen), and wineries, including letters from The Wine Group, Hahn Estates, Trinchero, Royal Wine, and Bronco. All the comments made the case that the proposed

rulemaking was contrary to the stated intent of Congress and would reduce exports. Most responders made the point that the drawback was of duty and tax paid on the imported wine and that for the purposes of the law, it made no difference whether an excise tax had or had not been paid on the commercially interchangeable domestic wine that was exported in place of the imported wine.

The only letter in favor of the proposed rulemaking was from The European Commission's Directorate-General for Agriculture and Rural Development, which commented that "the current practice as used by certain exporters amounts to disguised export subsidies supporting exports of US wines to the EU." The Director General pointed out that "under the WTO Agreement on Agriculture export subsidies are limited and subject to reduction commitments. Moreover, export refunds for wines would even fall outside the scope of eligibility for export subsidies, since the US has no commitment for wines in its schedule and does not notify such support to the WTO."

On Tuesday, March 2, 2010, the Department of Homeland Security and the Department of the Treasury announced in the Federal Register (vol. 75, no. 40) that they had withdrawn their notice of proposed rulemaking. With the Treasury's withdrawal of their proposed rulemaking, it seems that the substitution drawback provision for table wine has now become a settled part of American law. The 2008 Farm Bill specifically incorporated CBP past practices on commercial interchangeability of wine by expanding 1313(j)2 to include a definition of commercial interchangeability for wine, thus obviating the need for companies to request predetermination letters from CBP. At a time of increasing international trade in wine, the defeat of the Treasury's attempt at rulemaking would seem to make the use of "unused merchandise" an important part of winery profitability, saving as it does \$1.07 a gallon in Federal taxes for wine that is exported (assuming it can be matched with a similar quantity of commercially interchangeable imported wine).

3.6 Import, Export, Drawback Procedures

Wine can be imported into the United States in different size containers, but all will pay duty and excise tax upon entry. Claims for drawback must be made within three years of importation. Bottled wine may enter commercial channels immediately, but bulk wine may pose a logistical problem in that it must be bottled at a winery before it can be sold. Most

wineries keep their bulk wine in tanks in bonded facilities where the wine is maintained without paying excise tax until the wine leaves the bonded facility. A winery can designate a section of its winery as a “tax-paid” area and can maintain tax-paid wine in tanks in that area. Cellar practices (fining and filtering) for tax-paid bulk wines are more restrictive than for non-tax-paid bulk wine but, with proper recordkeeping, imported bulk wine can be blended with other tax-paid wine and bottled. It may enter the U.S. market as a blend with domestic-produced wine.

3.7 Applying for Drawback

The procedure for applying for drawback differs slightly depending upon the type of drawback (manufacturer, rejected or unused) being requested. This section describes drawbacks for unused, substituted merchandise (1313 (j)2), the type of drawback normally used for wine. The drawback application is made on form 7551 (see appendix 1) where the applicant supplies detailed information about the merchandise imported and the merchandise exported that is commercially interchangeable. The application is made by the exporter and must be filed within three years of the date of import for which the drawback is being applied. The exporter claiming drawback must have either been the importer of the merchandise, a successor company, or have purchased the imported merchandise from the original importer.

Although form 7551 has 48 separate items to be completed, it is fairly straightforward. Section I assigns a unique identifier number, identifies the claimant, type of drawback claimed, amount of duty and tax to be refunded, and other information about the claimant or broker. Section II lists the materials imported for which the duty will be refunded. It begins with the import entry number that was assigned in form 7501 when the material was imported, identifies port of entry, date of importation, lists the 6-digit HTSUS number for the product, and describes the merchandise, quantity value and duty rate, concluding with a calculation of the 99 percent duty drawback. Section III is for manufactured articles and not applicable to wine. Section IV supplies information on the exported merchandise that is commercially interchangeable, including the 6-digit HSTSUS number and quantity. Filers of form 7551 must maintain commercial records up to five years, such as bills of lading, sufficient to support their drawback claim in case of audit. This

is particularly important as wine color must be matched, but is not identifiable for bulk wine at the HTSUS 6-digit level. This record keeping requirement means that exporters applying for the drawback must maintain detailed records to document every claim made on form 7551.

In addition to filing form 7551, an exporter must also give the CBP two-days' notice of exportation by filing form 7553 "Notice of Intent to Export." If a claimant posts a bond for the amount of the transaction, claimant can file for "accelerated payment of drawback" at the regional drawback office, which will allow payment within three weeks of filing. It is unclear how long drawback payments normally take, but one employee at the San Francisco District Office stated in a phone conversation that payment sometimes took up to a year.

There are specific penalties for inaccurate or unsubstantiated drawback claims. The first negligent violation results in a fine of up to 20 percent of the loss of revenue. A second occurrence brings a 50 percent fine, and subsequent violations may reach 100 percent of the loss of revenue. Fraudulent filings may bring fines up to three times the loss of revenue. Enforcing the drawback program occurs mainly through audits. Drawbacks of all sorts for many types of merchandise are common, but regular audits are a feature of the program. There is no official record of regular recovery audits, although one broker stated that about 10 percent of applications for wine drawbacks are audited.

4.0 The import, export and drawback data

This section reviews recent facts about wine trade and drawbacks relevant to assessing the implications of the drawback program recently and into the future. We focus especially on the relative magnitudes of imports and exports in similar price categories and how drawback quantities related to imports and exports.

4.1 Import and export patterns

In order to appreciate the pattern of U.S. wine exports, table 1 shows the annual and three-year moving average volume of U.S. wine exports by container size between 2004 and 2010. Total export volume fluctuated throughout the period while the share of bulk wine (defined using the official export data as exports in containers over two liters) out of total

export volume increased from about 21 percent to more than 53 percent. No export data is available by color.

Recall that according to 1313(j) (4), shipments of commercially interchangeable wine to NAFTA countries do not count as exportations eligible for drawback. Consequently, table 1A shows the annual and three-year moving average volume of U.S. wine exports, excluding wine exports to Canada and Mexico. Removing exports to Canada and Mexico lowers total exports by about 35 to 55 million liters, depending on the year. In 2004 and 2005, bulk exports to Canada and Mexico exceeded bottled exports. Beginning in 2006, bottled exports exceeded bulk exports to Canada and Mexico, and by 2009, bottled exports were more than double bulk exports to these countries. Bulk wine exports excluding Canada and Mexico were smaller by about 20 million liters in 2004 and about 14 million liters in 2010 as the total bulk wine export grew from 68 million gallons to 196 million gallons (see table 1). Therefore, excluding those to Canada and Mexico, bulk exports grew from about 47 million gallons to 182 million gallons (see table 1A).

Figure 1 displays the three-year moving average volume of U.S. wine exports by container size. Note that each bar adds one year and removes one year from the average and thus indicates longer-term trends by smoothing individual year-to-year variations. Figure 1 illustrates well the gradual increase in overall exports and the rapidly rising share of bulk wine exports from 2004-6 to 2008-10.

Table 2 reports the annual and three-year moving average volume of U.S. wine imports by container size and value grouping. By far, the largest volume of wine imports comes in containers of two liters or less that is valued at more than \$1.05 per liter (typical bottled wine). However, bulk imports (defined using official trade statistics as “imports in containers over four liters”) are now significant and increased about seven-fold over the period. There is no additional data on imports by color for containers over four liters. Figure 2 shows the moving averages of import volumes for higher-priced red bottled wine and white bottled wine, bulk wine and all the minor categories. Figure 2 shows that red and white bottled imports have remained large, bulk wine imports have grown very rapidly and the other categories have remained very small. Table 3 documents explicitly the shares of total imports associated with the volumes reported in table 2.

The drawback issues revolve around comparisons of the volumes of imports and exports and especially the availability of exports eligible to match import volumes for claiming a drawback; or, stated another way, the availability of imports for which drawbacks can be claimed for planned exports. Tables 1a and 2 provide the only official public data available for making these comparisons.

Figure 3 uses the data from tables 1 and 2 to compare the three-year moving averages of volumes of U.S. wine exports and imports from 2004 to 2010. Over the period, exports increased from about 300 million liters to about 375 million liters and imports increased from about 630 million liters to nearly 800 million liters. Thus, wine imports continue to exceed wine exports by a large margin and, in volume terms, the gap has widened. From table 1 and table 2, we have already seen that higher-priced bottled wine imports far exceed bottled wine exports in all years and thus in the case of bottled wine, exports are the limiting quantity in determining drawbacks.

Bulk wine trade patterns are of particular interest in considering the drawback issue. Figure 4 compares the patterns of three-year moving average volumes of bulk wine exports and imports. Bulk exports grew from about 100 million liters (for the period 2004-2006) to more than 180 million liters (for the period 2008-2010). Over these same periods, imports grew from about 50 million liters to more than 160 million liters. (As table 5 and figure 5 show, in value terms, bulk wine exports have exceeded bulk wine imports by a large margin in all periods.)

Recall that one of the criteria for matching exports to imports is that the unit value of the export wine must be within 50 percent of the unit value of the import wine. Lacking data on unit values specifically, we have calculated the average unit value of imports by HTS code. Table 4 shows there are large differences in average unit values and that these are as expected. The unit values for bulk wine imports are generally below \$1.00 per liter and are naturally grouped with the lower-priced wines in smaller package sizes. Among the higher-priced wines, which are reported by color, import prices are generally more than \$4 per liter.

Table 5 reports wines sorted into low and high unit-value groupings based on the reported unit values given in table 4. Based on the shares in table 3, table 5 condenses the data reported in table 2 by grouping wines in low and high unit-value categories. Low unit-

value wines include those with HTS codes 2204296000, 2204215005, 2204215015, 2204215025, 2204292005 and 2204292015. Among these lower-priced wines, the bulk wine category dominates with more than 99 percent of the import share. High unit-value wines include those with HTS codes 2204215030, 2204292030, 2204292045, 2204292060, 2204215060 and 2204215046. The high unit-value wines are then grouped and reported by color. Among the higher-priced wines, those in the smaller package size (bottled wine) account for 99 percent or more of the imports for each color.

In order to assess the potential for large variations in import unit values across sources, table 6 reports 2010 unit values and market shares for imports by container size, color and by country of origin. Import unit values are higher for the three main European sources (Italy, France and Spain) and lower for imports from Australia and Chile. The three main European countries accounted for almost 50 percent of the bottled wine imports, while Australia and Chile accounted for another 35 percent of bottled wine imports. For bulk wine, Australia and Chile accounted for almost 85 percent of imports, while the three European countries shipped only about five percent of U.S. bulk imports in 2010.

For drawback potential, import unit values must be compared with export unit values. Table 7 shows average unit values of U.S. wine exports by container size. Unit values for the bottled wine category experienced a significant rise between 2004 and 2010, from less than \$2.50 per liter to about \$4.00 per liter. Average unit values for bulk wine exports were high (\$1.20 per liter) in 2004, and then remained in the range of \$0.90 per bottle for four years before rising again in 2009 and 2010.

In order to examine potential variations, table 8 represents average unit values of U.S. bulk wine exports (containers more than two liters, HTS code 2204290020) by some major export destinations. The table also shows shares of export volume by destination. Export unit values to specific markets show considerable variation, for example a very high price to the UK in 2004 and a low price in 2008, but the prices in major markets are generally at or below \$1.00 per liter. The share of exports going to Canada fell significantly since its high in 2004, while average unit values of exports to Canada increased. Shares going to other major destinations fluctuated by year. Throughout the period, Italy and the United Kingdom have received comparatively high shares of U.S. bulk wine exports.

Figure 6 graphs average unit values of wine imports and exports by category from 2004 to 2011 (year to date through March preliminary). For the bottled wines, import average unit values for wines in containers of two liters or less showed no particular trend, while bottled export unit values converged on the import unit values. Average unit values for bulk exports and imports remained more or less flat over the period. Export unit values for bulk wine slightly exceeded import unit values in most years.

Figure 7 shows the dominance of imports of high unit-value wine in the U.S. wine trade by illustrating the three-year moving average of wine import and export volumes by value grouping. As noted, however, high unit-value wine imports barely increased, while low unit-value wines increased strongly. Similarly, high unit-value wine exports showed no particular trend while low unit-value wine exports increased rapidly. Generally, both bulk wine imports and exports have expanded rapidly since 2004.

4.2 Duties, excises taxes and drawbacks

Given this background on the recent pattern of U.S. international wine trade, we turn to data on import duties and excise taxes and drawbacks.

Table 9 reports the U.S. federal excise tax rate for wine, \$0.2827 per liter, and the various import duty rates that apply to different container sizes and countries of origin. Whereas the excise tax is the same for all wine (non-sparkling wine of 14 percent alcohol or less) sold in the United States, import duties vary by container size and import source. Import duties on shipments from Canada and Mexico are zero under NAFTA, but these imports are very small. For container size of two liters or less, the general import duty rate is \$0.063 per liter. For the intermediate package size (for which there are very few imports) the import duty rate is \$0.084 per liter. For bulk containers, the MFN (“most favored nations,” which generally means WTO members) duty rate is \$0.14 per liter. Among important sources of bulk wine imports, those from Australia and Chile enter at a duty of \$0.048 per liter under the free trade agreements with those countries. (This duty rate applied in 2010.) Total excise tax plus duty rates vary from about \$0.33 per liter for bulk wine under the free trade agreements to \$0.42 per liter for bulk wine outside those agreements.

Table 10 shows the approximate value of excise taxes and import duties on bulk wine imports by applying the rates reported in table 9 to import volumes from Australia or Chile

and wine from other places for the years 2004 through 2010. Notice that in 2010, more than two-thirds of excise taxes, but only about 44 percent of estimated import duties, were accounted for by wine from Australia and Chile. This is one reason that import duty collections fell substantially from 2009 to 2010. Table 11 reports similar estimated value of excise taxes and import duties levied on bottled wine imports by color. After a 20 percent increase from 2005 to 2006, the sum of excise taxes and import duties on bottled wine was relatively stable from 2006 to 2010 with some rise in the middle of the period and a slight decline since 2008.

Table 12 shows the annual volume of drawbacks claimed for still wine of 14 percent alcohol content or less from 2005-2010, including both bottled wine and bulk wine. Unlike previous tables, these data are derived from a request from U.S. Customs and Border Protection and show drawbacks for the year in which they were awarded, not the year in which the wines were imported. As noted above, when the associated export happens in a later year, the drawback will be recorded in years subsequent to the import year (up to three years later).

Drawbacks on bottled imports (i.e. imports and exports in containers of two liters or less), including all three color designations, rose from about 70 million liters in 2005 to about 86 million liters in 2007 before falling to about 56 million liters in 2008. Drawbacks for bottled wine jumped back to about 82 million liters in 2009 before declining to about 66 million liters in 2010. In all years except 2010, drawbacks for red wine and white wine were within a few percent of each other. The share of drawbacks used on bottled wine in 2010 was about 56 percent for red wine and 44 percent for white wine. Drawbacks for wines in containers of two to four liters are tiny compared to those for containers of two liters or less or containers of more than four liters.

Drawbacks for bulk wine (wine in containers larger than four liters) grew strongly between 2005 and 2010, rising from about 13 million liters to more than 121 million liters, with a dip in 2008. Total drawbacks on all wine more than doubled between 2005 and 2010, due exclusively to the growth in drawbacks on bulk wine. Figures 8a and 8b illustrate the data in table 12 and show clearly how growth in drawbacks for bulk wine overtook

drawbacks for bottled wine by 2008 and how bulk wine drawbacks were almost double the bottled wine drawbacks in 2010.

Figures 9a and 9b draw on the data in table 12 along with the earlier import and export tables. These figures show drawbacks associated with bottled wine compared to the volume of bottled wine exports and compared to imports of higher unit-value wine. (Recall higher unit-value wines include imports in containers of two liters or less and imports in containers of more than two liters but less than four liters, if their unit value exceeded \$1.05 per liter.) An important caveat to the interpretation of these figures is that the import and export data apply to the year of the transaction whereas the drawback data is for the year of the drawback claim. That means it is not appropriate to link drawbacks in, say, 2007 to imports in 2007. It is more likely, given the incentive to claim the drawback as soon as eligible, that drawbacks in a given year may be compared to exports in that year, but even then, drawbacks for a given year's imports may be claimed on exports from several years earlier until all the eligible drawback is taken.

Nonetheless, these figures illustrate clearly that imports of higher unit-value wine far exceeded both exports and drawbacks in every year. Only about 11 or 12 percent of bottle wine import duty and excise taxes paid are claimed as drawbacks. Drawbacks were also smaller than exports in any year. Hence, the total volume of exports in this category was not a direct constraint on drawbacks. Something else, such as the small value of the drawback relative to the export unit value or substantial exports by firms that do little importing, must account for the limited claims of bottled wine drawbacks.

Figures 10a and 10b are similar to figures 9a and 9b. They compare drawbacks on bulk wine to the volume of wine exports in containers of more than two liters and to the volume of imports with lower unit value. (Recall lower unit-value imports includes imports in containers of two liters or less and imports in containers of more than two liters but less than four liters, if their unit value is less than \$1.05 per liter, as well as imports in containers of more than four liters.) Exports, imports and drawbacks on these wines increased significantly between 2005 and 2010. Exports grew from about 83 million liters in 2005 to almost 180 million liters in 2008, before falling back to about 160 million in 2009, and recovering to about 182 million liters in 2010. Imports rose from about 41 million liters in

2005 to a high of about 219 million liters in 2009, before falling to about 170 million liters in 2010. Exports exceeded imports in all years except 2009. Drawbacks on these wines increased from more than 13 million liters in 2005 to more than 121 million liters in 2010. Both imports and exports continued to exceed drawbacks in all years.

Figures 11 and 12 provide a useful picture of the drawback data compared to the import and export data. Figure 11 shows the annual ratio of drawbacks on wine in containers of two liters or less to exports of wine in containers of two liters or less and to wine imports with a unit value of more than \$1.05 per liter. The ratio of drawbacks to exports has ranged between 0.48 and 0.56, except when it fell to about 0.32 in 2008. The corresponding ratio of drawbacks to imports has generally remained between 0.10 and 0.13 except for a fall in 2008 to 0.09. (Recall that drawbacks can be claimed up to three years after the date of the importation, so the years do not necessarily match.) Figure 12 shows similar ratios for bulk wine and lower unit-value imports. From 2005 to 2010, the ratio of claimed drawbacks to exports increased substantially from about 0.16 to about 0.67, except for a one-year drop in 2008 when it fell to about 0.38. The ratio of claimed drawbacks to imports also increased over the period, going from more than 0.30 in 2005 to more than 0.70 in 2010, with a high of more than 0.82 in 2007.

4.3 Implications for effects of drawbacks and limitations

With this background, let us consider in more detail our best assessment of actual potential drawbacks and whether imports or exports limit drawback claims. Table 13 provides estimates of aggregate “potential” drawback quantities for both bottled and bulk wine imports in a given year. Because bottled wine imports are much larger than bottled wine exports, the potential drawback quantity for bottled wine is estimated by using the three-year moving average of exports (excluding exports to NAFTA countries) starting with the current year, except for 2009, which uses a two-year average, and 2010, which uses the single year. For bulk wine, the limiting factor has been imports. The potential drawback quantity for bulk wine is estimated by setting drawbacks equal to bulk imports in each year. The exception is 2009, but we list import quantity in that year as the limiting factor because exports again exceeded imports in 2010 and are likely to do so in 2011. Exports in those

years can be used to match 2009 imports and the imports in subsequent years can be “rolled forward” until all potential drawback claims are covered.

Table 14 applies excise taxes and import duty rates from table 9 to approximate aggregate “potential” drawback values from the quantities in table 13. Since import duty rates are different for bulk imports from Australia and Chile, estimated values for aggregate drawbacks on bulk wine are weighted estimates based on Australia and Chile’s shares of actual drawbacks. The aggregate potential drawback value for bottled wines decreased from about \$57 million in 2005 to about \$49 million in 2010, while aggregate potential drawback value for bulk wines increased strongly from about \$17 million to about \$71 million.

Finally, we do not want to claim too much for the analysis in tables 13 and 14. These tables are not able to incorporate color limitations on drawbacks or the limitations inherent in the relationships among importing and exporting firms. Moreover, these data apply to maximum potential drawbacks based on the year of import and thus cannot be compared directly to the actual drawbacks made in any year. Drawbacks in a given year relate to imports in up to three previous years as well as the current year’s imports.

4.4 Market context for assessing implications of drawbacks; grape production and prices, exchange rates and shipping costs

The data on imports, exports and drawbacks presented above indicate that significant effects of the drawback on markets in the United States are likely to be associated with relatively low-priced grapes and wines that face competition from bulk imports and supply bulk exports. With some exceptions, much of the wine in these categories is from grapes produced in the San Joaquin Valley of California in crush districts 12, 13 and 14. We therefore consider recent production and price trends for these districts as a context for assessing the role of drawbacks.

Figure 13 shows the quantities crushed from districts 12, 13 and 14 from 2000 through 2010. Quantities varied from year to year between about 2.4 (in 2000) to 1.8 million tons (in 2006). The up and down fluctuations of 10 to 20 percent dominated the first part of the period, but the trend was clearly downward. Increases since 2006 have brought the crush quantity back to where it had been in the early part of the decade.

Figure 14 shows crush prices paid for grapes in district 13—which accounts for most of the grapes in the San Joaquin Valley. Prices fell drastically by more than 20 percent from 2000 to 2002 to below \$140 per ton. Prices have risen substantially since then, reaching a high of more than \$265 per ton in 2010. The major exceptions to the steady rise in prices occurred in the middle of the period, when prices declined by about 15 percent from more than \$230 per ton in 2005 and to about \$200 per ton in 2006 and 2007. This pattern of production and prices was driven by weather fluctuations and shifts on the demand side may have been influenced by drawbacks. However, the dramatic increases in prices from 2002 on also correspond to a period when imports and exports of bulk wine increased and drawbacks became much more widely used.

Several additional drivers contributed to changes in the patterns of U.S. wine trade. As seen above, increased trade in bulk wine accounts for the growth in U.S wine exports with the bulk share of U.S. wine exports going from 16.2 percent to 56.1 percent (Table 1A). Overall wine imports into the U.S, including bottled wine, increased between 2004 and 2010. The bulk share of wine imports into the U.S. also increased substantially (Table 2), going from less than five percent to more than 20 percent of volume.

International trade in wine is affected by long-term changes in demographics and income. Falling fertility rates, lower mortality rates and longer life expectancy in Europe will lead to ageing populations in traditionally heavy wine-consuming countries of Europe. Meanwhile, China and India have significantly younger populations and India's population is projected to grow substantially. Both China and India have experienced growth in wine consumption during the last decade, but both still consume little wine per capita. The U.S. and Europe accounted for a combined 12 percent of world population in 2010, while Africa and Asia accounted for a combined 70 percent of world population. Clearly, growth in consumption outside Europe is important to trade.

Per capita incomes in China and India, to take the largest two developing countries, are projected to continue to grow rapidly. Rising incomes offer the potential for increased wine consumption in countries that have little history of wine consumption. Between 1997 and 2007, per capita wine consumption in China increased by about 50 percent (FAOSTAT 2011), although per capita consumption remains very low. In 2010, the United States and

Europe accounted for a combined 58 percent of world gross domestic product and Asia accounted for about 25 percent. These shares are projected to be 45 and 35 percent in 2030 (ERS 2011).

Exchange rates specify the relative value between different currencies and are therefore an important factor in international trade. Figure 15 shows indexed (Jan 2003 =100) real exchange rates between the U.S. dollar and currencies from countries that are important sources of bulk wine imports into the United States. From 2003 through late 2008, the U.S. dollar depreciated by 25-40 percent against this group of currencies that included the Euro, Argentine peso, Chilean peso, New Zealand dollar and Australian dollar. From late 2008 through early 2009, the U.S. dollar sharply appreciated against these currencies. Thereafter, the U.S. dollar continued to depreciate, although there was a temporary appreciation in mid-2010 against four of the currencies and in early 2011 against the Argentine peso.

Figure 16 shows indexed (Jan 2003 =100) real exchange rates between the U.S. dollar and currencies from countries that are important destinations for U.S. bulk wine exports. Between 2003 and early 2005, the U.S. dollar depreciated against the Euro, British pound, Canadian dollar and Japanese yen. From then until late 2008, the European currencies and Canadian dollar continued to appreciate against the U.S. dollar while the Japanese yen depreciated. In late 2008/early 2009, all the currencies sharply depreciated against the U.S. dollar and then resumed their appreciation in mid 2010.

Using these individual currency exchange rates, we compiled wine-trade-weighted indexes relevant to U.S. wine imports and exports. These exchange rates represent a weighted index of currencies from countries that are important trading partners for wine. Figure 17 shows this trade-weighted index for imports into the U.S. of bulk and bottled wine, weighted according to the share of imports from each currency area (e.g. the Euro zone). Thus, these indexes are not only affected by changes in nominal exchange rates, but also by each country's share of total import value. The bulk wine index includes currencies from five currency zones, the EU, Australia, Argentina, Chile, and New Zealand. In 2010, imports from these sources accounted for about 97 percent of total bulk wine imports into the U.S. The indexes for both bottled and bulk wine imports fell by more than 30 percent between

2003 and mid 2008. The indexes increased sharply from late 2008 to early 2009. Since then, the indexes have shown volatility, and they were both at about 75 in May 2011.

Figure 18 shows trade-weighted indexes for U.S. exports of bulk and bottled wine. As in figure 17, each exchange rate index is weighted according to the share of trade value by major destination. In order of importance, the currency zones are the Euro zone, the United Kingdom, Canada and Japan. Together, these countries accounted for about 80 percent of U.S. bulk wine exports in 2010. Between 2003 and late 2008, the bottled and bulk wine indexes both fell by more than 25 percent. The indexes increased substantially during late 2008 and early 2009. They then decreased again with temporary increases in mid 2010 and early 2011. Short-term upticks in the bulk index tend to coincide with decreases in the import share attributable to Australia and the EU and increases in the share attributable to Argentina.

5.0 Modeling and quantifying the implications of drawbacks for the U.S. wine and grape industry

In this section, we will develop a simple economic model to show the potential quantitative implications of the drawback program, highlighting the importance of market shares and supply and demand responsiveness to determining effects on market prices and quantities. In the initial situation, U.S. policy includes an excise tax that applies to wine sold in the U.S. market as well as an import duty. The drawback allows for a refund of duty and taxes paid for each quantity of import matched to the export of a “commercially interchangeable” wine. We will examine the situation in which relevant exports are “commercially interchangeable” with imports. The drawback creates an incentive for additional imports if initial exports exceed imports, and creates an incentive for additional exports if initial imports exceed exports.

The model links wine markets back to the grapes used to produce that wine and the data and parameters used to calibrate the model and produce the calculations related to bulk wine and that part of U.S. wine and grapes that compete most directly with bulk imports or that supply bulk exports. We consider the time horizon for the analysis to be an intermediate

period, long enough to adjust quantity supplied and demanded, but not so long that farmers would be able to replant vineyards and see new vines producing at full yields. Grape supply adjustments would entail accelerating or slowing vine removal and adjustments to increase yields. Also affecting supply, winery capacity constraints cannot be relaxed in the short run, but some adjustments are available in capacity utilization. Demand adjustments take less time and are expected to be larger as wineries and consumers can adjust their buying patterns with fewer constraints.

5.1 The algebraic model of grape and wine markets in the presence of drawbacks

[Readers most interested in the results and not interested in the algebraic formulation may skim or simply skip this subsection.]

The demand for U.S. grapes, G^d , is derived from the production of U.S. wine, W_u . As an approximation, we assume that we can use a standard rule of thumb for converting grapes to wine. We use about 630 liters per ton in the calculations below to represent the standard for relatively low-priced wine. The quantity supplied of U.S. grapes, G^s , responds positively to the price of grapes, P_g , where the measure of responsiveness, the elasticity of demand, is denoted as ϵ . Because there is no substitute for grapes in the winemaking process, the cost of production of wine adjusts with the price of grapes. With this approximation, when the grape price changes, the percentage adjustment in the marginal cost of wine is simply equal to the cost share of grapes in wine production times the percentage change in the price of grapes. And, with a relatively undifferentiated product, competition among producers requires that marginal cost of wine production equals the price of U.S. wine, P_u . With these grape related relationships established, we recognize that market clearing in the grape market implies that quantity demand equals the quantity supplied.

The grape segment of the model of the grape and wine markets, using the relationships just discussed, can be written in proportional change form in four equations. Equation 1 shows that because the quantity of grapes determines the quantity of wine, then the proportional change in the quantity of grapes demanded is equal to the proportional change in the quantity of wine produced.

$$(1) d\ln G^d = d\ln W_u,$$

where $d\ln$ denotes proportional change. Equation 2 shows that the proportional change in the quantity of grapes supplied equals the elasticity of supply times the proportional change in price,

$$(2) d\ln G^s = \varepsilon d\ln P_g,$$

where we have left aside other supply determinants, such as weather or input prices that are not directly connected to the drawback issue. Equation 3 says that, with a given amount of wine per ton of grapes, competition means the proportional change in the price of wine produced in the United States equals the cost share of grapes in wine production times the proportional change in the price of grapes,

$$(3) d\ln P_u = s_g d\ln P_g.$$

Equation 4 is the market-clearing equation for the grape market,

$$(4) d\ln G^d = d\ln G^s,$$

which simply says that the proportional change in quantity demanded must equal the proportional change in quantity supplied for the market to clear.

The grape market is linked to the market for wine through the quantity relationship in equation 1 and the price relationship in equation 3. The next four equations specify the wine market relationships and the impacts of drawbacks.

We introduce drawbacks into the model by defining a term D_i as the ratio of import duty and excise tax to the import price plus the duty and tax, $D_i = (d+t)/[P_i+(d+t)]$, where d is the import duty per liter, t is the excise tax per liter and P_i is the import price at the border. We treat P_i as unresponsive to U.S. market conditions and policy because the imports of United States imports are a relatively small part of the global market for low-priced wine. Equation 5 says that the proportional change in the quantity of U.S. wine demanded is

$$(5) d\ln W_{uu} = \eta_{uu} d\ln P_u + \eta_{ui} d\ln(P_i+d+t),$$

where η_{uu} is the own price elasticity of demand in the U.S. market for wine produced in the United States and η_{ui} is the cross price elasticity of demand with respect to the full price of imported wine. Application of the drawback when exports exceed imports implies a decline in the effective market price of imports in the U.S. market by D_i percent. In other words,

when exports exceed imports, application of the drawback is $d\ln(P_i+d+t) = D_i$; otherwise it is zero.

Equation 6 shows the demand function for exports of wine produced in the United States as a function of the price of U.S. wine and D_e , the export price incentive created by the drawback.

$$(6) d\ln W_{eu} = \eta_{eu}(d\ln P_u + D_e).$$

When imports exceed exports, $D_e = (d+t)/P_u$, which is the proportional change in the effective export price when the drawback creates the export incentives. Setting the quantity supplied of U.S. wine equal to the total quantity demanded yields

$$(7) d\ln W_u = (1-S_e)(\eta_{uu}d\ln P_u + \eta_{ui}D_i) + S_e[\eta_{eu}(d\ln P_u + D_e)],$$

where, in equation 7, demand for U.S. wine is a weighted sum of the demand in the U.S. and export markets. The share of U.S.-produced wine exported is denoted S_e and other terms and symbols are as previously defined.

The final equation in the model expresses the proportional change in the quantity imported as a function of the proportional change in the full price of imports and the proportional change in the price of the substitute domestic wine,

$$(8) d\ln W_i = \eta_{ii}[d\ln(P_i + d + t)] + \eta_{iu}(d\ln P_u),$$

where η_{ii} denotes the own price elasticity of demand for the quantity of imports and η_{iu} denotes the effect of the price of domestic wine on the quantity of imports demanded.

Before proceeding to solve the model for the important endogenous prices and quantities, we should list explicitly the relationships between the own and cross price elasticities of demand for wine of the two origins that are used in equations 5 and 8. To guide the relationships between these parameters we use the “Armington” assumptions that elasticities depend only on an overall demand elasticity for wine, the market shares of wine of each origin and degree of substitutability between the wines of each origin, which is represented by the elasticity of substitution (Armington).

These relationships are as follows: $\eta_{uu} = (1-S_i)\eta_w - S_i\sigma_{ui}$; $\eta_{ii} = S_i(\eta_w) - (1-S_i)\sigma_{ui}$; $\eta_{ui} = S_i(\eta_w + \sigma_{ui})$; and $\eta_{iu} = (1-S_i)(\eta_w + \sigma_{ui})$. In these equations, S_i is the market share of imports of wine sold in the United States, η_w is the elasticity of demand for wine in the U.S. market and σ_{ui} is the elasticity of substitution between the two wines of different origins.

When wines have no substitution between them, σ_{ui} is zero and when they are perfect substitutes, σ_{ui} is infinity. Moderate levels of substitution are represented by σ_{ui} in the range of 3.0.

Solving the seven equations for the impact of drawbacks and using the other conditions specified above yields a set of seven equations that show how proportional changes in the prices and quantities of interest are related to the two drawback variables D_i and D_e . Equation 9 shows how the price of grapes is affected by the drawback and equation 10 shows how the supply of grapes is affected:

$$(9) \text{dln}P_g = (1/s_g)[(1 - S_e)\eta_{ui}D_i + S_e\eta_{eu}D_e]/[(\varepsilon_g/s_g) - S_e\eta_{eu} - (1 - S_e)\eta_{uu}],$$

$$(10) \text{dln}G = (\varepsilon_g/s_g)[(1 - S_e)\eta_{ui}D_i + S_e\eta_{eu}D_e]/[(\varepsilon_g/s_g) - S_e\eta_{eu} - (1 - S_e)\eta_{uu}].$$

Notice that equation 10 is simply ε times the solution for price in equation 9. Equation 9 is just the $\text{dln}P_u$ in equation 11 divided by the cost share of grapes. Equation 11 itself is the effect of the drawback on the quantity of U.S. wine divided by the shares and supply and demand elasticities,

$$(11) \text{dln}P_u = [(1 - S_e)\eta_{ui}D_i + S_e\eta_{eu}D_e]/[(\varepsilon_g/s_g) - S_e\eta_{eu} - (1 - S_e)\eta_{uu}].$$

Equations 12, 13 and 14 are also proportional to equation 11. Note that, as discussed above, the proportional change in the quantity of wine produced in the United States, equation 12, is identical to the proportional change in the quantity of U.S. grapes shown in equation 10,

$$(12) \text{dln}W_u = (\varepsilon_g/s_g)[(1 - S_e)\eta_{ui}D_i + S_e\eta_{eu}D_e]/[(\varepsilon_g/s_g) - S_e\eta_{eu} - (1 - S_e)\eta_{uu}].$$

Equations 13 and 14 are the relevant elasticities times equation 11.

$$(13) \text{dln}W_{eu} = \eta_{eu}[(1 - S_e)\eta_{ui}D_i + S_e\eta_{eu}D_e]/[(\varepsilon_g/s_g) - S_e\eta_{eu} - (1 - S_e)\eta_{uu}] + \eta_{eu}D_e$$

$$(14) \text{dln}W_{uu} = \eta_{uu}[(1 - S_e)\eta_{ui}D_i + S_e\eta_{eu}D_e]/[(\varepsilon_g/s_g) - S_e\eta_{eu} - (1 - S_e)\eta_{uu}] + \eta_{ui}D_i.$$

Finally, the proportional change in the quantity of imports is the sum of the direct effect from D_i plus the indirect effect through the induced proportional change in the price of U.S. wine,

$$(15) \text{dln}W_i = \eta_{ii}D_i + \eta_{iu}[(1 - S_e)\eta_{ui}D_i + S_e\eta_{eu}D_e]/[(\varepsilon_g/s_g) - S_e\eta_{eu} - (1 - S_e)\eta_{uu}].$$

5.2 Quantitative effects of drawbacks on grape and wine prices and quantities

These equations provide the basis for calculating the effect of the drawback. Recall that the drawback effect D_i applies when exports exceed imports and is otherwise zero, and the drawback effect D_e applies when imports exceed exports and is otherwise zero. We may introduce numerical values for the drawback variables and the shares and elasticities

parameters in the equations to generate quantitative impacts of the drawbacks. We provide these calculations under some alternative supply and demand specifications in the following two tables labeled Calculations I, for the case when the drawback creates an import incentive because exports exceed imports, and Calculations E for the case when the drawback creates an export incentive because imports exceed exports. We use market shares and elasticities that apply to the case of bulk wine.

Calculations I show how the prices and quantities change when the drawback is applied and affects import incentives because exports exceed imports. We use data from the period of about 2005 through 2007 to reflect a period when bulk wine exports clearly exceeded bulk wine imports. For this set of calculations, D_i is 0.3. The elasticity of demand for wine is -1.0, meaning a fall in the price of all bulk or low-priced wine would encourage an equal and opposite percentage response in the quantity purchased. The quantity share of exports in U.S. production of wine is 0.11, the supply response to price, given a few years to adjust, is set as 0.5 and the cost share of grapes in wholesale-level wine costs is 0.4. The long-run supply elasticity of 0.5 means that, with time to adjust to the new policy regime that is expected to be long-lasting, a 10 percent increase in market price would engender a five percent increase in wine production.

Calculations I consider two sets of export demand elasticities and two sets of elasticities of substitution between U.S. and imported wine. The top rows of the tables, along with the footnote, show the alternative elasticity assumptions and the implied own-price and cross-price elasticities between U.S.-produced wine and imported bulk wine in the U.S. market. The own-price elasticity of U.S.-produced wine is only slightly more elastic than -1.0 because the share of imports is small. The demand for imported wine is more elastic because, with a large share of domestic wine to compete with, substitution has a larger impact. The cross-price elasticity of U.S.-produced wine with respect to the price of imports is small because the share of imports is small. Cross-price elasticity of demand for imported wine with respect to the price of U.S.-produced wine is large because substitution is more important for the product with the small share.

The first two columns in Calculations I show results under two assumptions about substitution, $\sigma_{ui} = 2$ and $\sigma_{ui} = 3$, when the own-price elasticity of export demand is -2.0. The

second two columns show the results when the export demand facing U.S. wine is more elastic, meaning that U.S. exports expand substantially when the U.S. price declines. The results show that the application of the duty drawback incentive to imports would cause the U.S. wine price to fall between 0.9 and 2.0 percent. These price declines mean wine production declines by 1.2 to 2.5 percent. U.S. consumption of U.S. wine falls by more, but exports increase because the price of U.S. wine has fallen slightly. Of course, imports rise substantially, as much as about 80 percent, from a small share of U.S. consumption. Although large in percentage terms, these percentage increases are in line with the U.S. experience during the period 2004 to 2008.

As with the impacts on the price and production of U.S. wine, the effects on grape prices and production are also negative. Grape prices (for grapes in districts 12, 13 and 14 that produce most of the bulk wine) fall by between 2.7 and 5.7 percent and production falls by half these percentages (in line with the elasticity of supply of 0.5). Between about 2004 and 2007, when bulk imports were well below bulk exports, the import incentive most likely applied. During this period, the drawback likely depressed or suppressed the price of U.S.-produced bulk wine and the quantity produced and demanded domestically. The negative implications for grape prices were likely significant during this period.

Calculations E apply to the situation when imports for the category of wine exceed exports. This situation applies to all U.S. wine as a group and may apply after 2009 for red or white bulk wine. In this case, the drawback clearly improves the situation for the U.S. wine and grape industry. We use shares that apply in the 2009 and 2010 period for bulk wine in calculations E. In this case, exports expand substantially and the market price of wine increase by between four and almost eight percent. As a result, domestic wine production rises between five and almost 10 percent. Of course, the quantity of U.S. wine sold in the domestic market falls in response to the higher price. U.S. grape prices rise by between 10 to about 20 percent.

Calculations I: The projected effects of applying the drawback when wine exports exceed wine imports (D_i applies)

	$\eta_{eu} = -2.0$		$\eta_{eu} = -4.0$	
	$\sigma_{ui}=2$	$\sigma_{ui}=3$	$\sigma_{ui}=2$	$\sigma_{ui}=3$
η_{uu}	-1.10	-1.20	-1.10	-1.20
η_{ii}	-1.90	-2.80	-1.90	-2.80
η_{ui}	0.10	0.20	0.10	0.20
η_{iu}	0.90	1.80	0.90	1.80
% change in:	(percentage change)			
U.S. wine price	-1.0	-2.0	-0.9	-1.8
U. S. wine production	-1.3	-2.5	-1.2	-2.3
U.S. consumption of US wine	-1.9	-3.6	-2.0	-3.8
U.S. wine exports	2.1	4.0	3.7	7.3
Imports	56.1	80.4	56.2	80.7
U.S. grape prices	-2.6	-5.0	-2.3	-4.5
U.S. grape production	-1.3	-2.5	-1.2	-2.3

Source: Author calculations based on model developed in the paper. For these calculations, D_i is -0.3, the share of exports of U.S. production, S_e , is 0.14, the overall demand elasticity for wine, η_w , is -1.0, the share of imports in U.S. consumption, S_i is 0.10, the supply elasticity for grapes, ϵ , is 0.5 and share of grapes in the cost of wine production, s_g , is 0.4.

Calculations E: The projected effects of applying the drawback when wine imports exceed wine exports (D_e applies).

	$\eta_{eu} = -2.0$		$\eta_{eu} = -4.0$	
	$\sigma_{ui}=2$	$\sigma_{ui}=3$	$\sigma_{ui}=2$	$\sigma_{ui}=3$
η_{uu}	-1.16	-1.32	-1.16	-1.32
η_{ii}	-1.84	-2.68	-1.84	-2.68
η_{ui}	0.16	0.32	0.16	0.32
η_{iu}	0.84	1.68	0.84	1.68
% change in:	(percentage change)			
U.S. wine price	4.4	4.2	7.8	7.4
U. S. wine production	5.5	5.2	9.7	9.3
U.S. consumption of US wine	-5.1	-5.5	-9.0	-9.8
U.S. wine exports	57.2	57.6	101.0	102.3
Imports	3.7	7.0	6.5	12.5
U.S. grape prices	11.0	10.4	19.4	18.5
U.S. grape production	5.5	5.2	9.7	9.3

Source: Author calculations based on model developed in the paper. For these calculations, D_e is -0.33, the share of exports in domestic production, S_e , is 0.17, the overall demand elasticity for wine, η_w , is -1.0, the share of imports in domestic consumption, S_i , is 0.16, the supply elasticity of grapes, ϵ , is 0.5 and share of grapes in the cost of wine production, s_g , is 0.4.

6.0 Final remarks

This study explores the operation of U.S. drawbacks of import duties and excise taxes for wine. Drawbacks apply to many products and have a history of more than 200 years of application in the United States. The simple logic is that if a product is imported and subsequently exported, it has no net trade effect and it is as if the product was just passing through the United States. It should therefore not be subject to import duties or domestic taxes. This logic was extended to cover imports and exports of identical or similar products. However, despite the rationale for the drawbacks, they can have significant impacts on domestic producers and consumers. For wine, the program became established and expanded rapidly during the decade after 1999.

We document the magnitude of wine imports and exports and the patterns of import and export prices. We show that the sum of the excise tax and duty is small (about 10 percent) relative to the import price of bottled wine, but large (about 30 percent or more) relative to the import price of bulk wine. We also show that much of the potential remains unclaimed, especially for bottled wine, but that over the past decade the use of the drawback has been climbing rapidly for bulk wine.

We find that the impact of the drawbacks depend crucially on the relative magnitudes of imports and exports. When imports exceed exports, as they do for higher-priced wines, the drawback creates an incentive to expand exports. The per-unit value of the drawback applies as a per unit export incentive, with only indirect effects on the import quantities. When exports are the limiting factor, the drawback stays in the hands of exporters rather than being transferred back to importers. The opposite occurs in the case when exports exceed imports, as they did for low-priced wines from about 2001 through 2007. During those years, the drawback acted as an incentive to import more because, in most cases, matching exports were readily available.

We use data on market shares, relative magnitudes of the drawback and plausible supply and demand elasticities to illustrate the likely magnitude of impact that the drawback program may have had in recent years. Using central estimates of parameters applied to relatively low-priced imports and exports (bulk wine), we find that when imports exceed exports, the drawback would expand exports substantially, likely raise the price of U.S.

wines by about four to eight percent, and raise production by about two to four percent. Grape prices likely would rise in that case by between about 10 and 20 percent.

With the same model and shares that apply during 2006, we find that when exports exceed imports, the drawback would cause imports to increase substantially, the price of U.S. wine to fall by about one to two percent, and production to increase by about 1.5 to three percent. Grape prices would fall by about three to six percent.

There remains much to learn about the magnitudes of impacts of the drawback program. Unfortunately, without better data on wine exports and imports by color and without more detail on import and export prices, it is difficult to know when imports exceed matching exports or exports exceed matching imports. Moreover, because firm-level data is not available, we cannot know where individual importers or exporters face constraints in fully using the drawback because their firm does not import or export enough commercially interchangeable wine during the relevant periods.

Despite these limitations, our understanding of the drawback program is sufficient to show that it may stimulate imports under some conditions and stimulate exports under other conditions. Moreover, both sets of conditions are likely to have been and continue to be relevant for U.S. wine markets.

Table 1: Volume of U.S. wine exports by container size, annual and 3-year moving average 2004-2010

Year	Container size		Total exports	Share of export volume: containers over two liters
	Two liters or less HTS code: 2204214000 ^a	Over two liters HTS code: 2204290020 ^b		
(thousand liters)				
2004	259,287	68,071	327,358	20.8
2005	177,261	100,421	277,682	36.2
2006	188,608	138,027	326,635	42.3
2007	206,691	168,826	375,517	45.0
2008	208,705	200,847	409,552	49.0
2009	177,224	171,493	348,717	49.2
2010	173,066	196,375	369,441	53.2
3-year moving average				
2004-2006	208,385	102,173	310,558	32.9
2005-2007	190,853	135,758	326,611	41.6
2006-2008	201,335	169,233	370,568	45.7
2007-2009	197,540	180,389	377,929	47.7
2008-2010	186,332	189,572	375,904	50.4

Source: U.S. International Trade Commission. 2011. "Interactive Tariff and Trade DataWeb." <http://dataweb.usitc.gov/>

^a Wine of fresh grapes, nesoi, of an alcoholic strength by volume of not over 14 percent, in containers holding 2 liters or less

^b Wine of fresh grapes, nesoi, of an alcoholic strength by volume of not over 14 percent, in containers holding over 2 liters

Table 1A: Volume of U.S. wine exports excluding exports to Canada and Mexico, by container size, annual and 3-year moving average 2004-2010

Year	Container size		Total exports	Share of export volume: containers over two liters
	Two liters or less HTS code: 2204214000 ^a	Over two liters HTS code: 2204290020 ^b		
(thousand liters)				
2004	243,328	47,111	290,439	16.2
2005	160,173	82,881	243,054	34.1
2006	163,868	122,859	286,727	42.8
2007	175,134	150,126	325,260	46.2
2008	175,427	178,845	354,272	50.5
2009	143,650	157,483	301,133	52.3
2010	142,891	182,455	325,346	56.1
3-year moving average				
2004-2006	189,123	84,284	273,407	30.8
2005-2007	166,392	118,622	285,014	41.6
2006-2008	171,476	150,610	322,086	46.8
2007-2009	164,737	162,151	326,888	49.6
2008-2010	153,989	172,928	326,917	52.9

Source: U.S. International Trade Commission. 2011. "Interactive Tariff and Trade DataWeb." <http://dataweb.usitc.gov/>

^a Wine of fresh grapes, nesoi, of an alcoholic strength by volume of not over 14 percent, in containers holding 2 liters or less

^b Wine of fresh grapes, nesoi, of an alcoholic strength by volume of not over 14 percent, in containers holding over 2 liters

Table 2: Volume of U.S. wine imports by container size and value grouping, annual and 3-year moving average 2004-2010

Year	Container size and value grouping and associated HTS codes											
	Two liters or less, valued less than \$1.05/liter			Two liters or less, valued over \$1.05/liter			Over 2 liters but not over 4 liters, valued not over \$1.05/liter		Over two liters but not over four liters, valued over \$1.05/liter			Over four liters
	220421 5005 Red	220421 5015 White	22042 15025 NESOI	2204215 030 Red	2204215 046 White	220421 5060 NESOI	22042 92005 Red	220429 2015 White	220429 2030 Red	220429 2045 White	220429 2060 NESOI	220429 6000
(thousand liters)												
2004	1,123	607	169	324,058	225,096	4,831	44	7	3,331	1,404	84	20,059
2005	970	297	16	343,008	250,663	6,637	37	0	3,337	1,063	126	39,579
2006	985	421	462	346,352	261,387	7,053	73	50	3,242	933	140	84,178
2007	1,109	476	37	375,697	275,202	8,441	111	85	3,370	805	65	92,033
2008	650	216	14	347,499	267,243	8,280	22	9	3,543	946	80	111,554
2009	365	204	35	345,142	259,477	8,070	65	3	4,020	830	44	218,142
2010	413	184	38	363,233	286,076	8,384	144	35	4,009	1,087	45	168,088
3-year moving average												
2004-2006	1,026	442	216	337,806	245,715	6,174	51	19	3,303	1,133	117	47,939
2005-2007	1,021	398	172	355,019	262,417	7,377	74	45	3,316	934	110	71,930
2006-2008	915	371	171	356,516	267,944	7,925	69	48	3,385	895	95	95,922
2007-2009	708	299	29	356,113	267,307	8,264	66	32	3,644	860	63	140,576
2008-2010	476	201	29	351,958	270,932	8,245	77	16	3,857	954	56	165,928

Source: U.S. International Trade Commission. 2011. "Interactive Tariff and Trade DataWeb." <http://dataweb.usitc.gov/>

Table 3: Share of U.S. wine imports by container size and value grouping, annual and 3-year moving average 2004-2010

Year	Container size and value grouping and associated HTS codes											
	Two liters or less, valued less than \$1.05/liter			Two liters or less, valued over \$1.05/liter			Over two liters but not over four liters, valued not over \$1.05/liter		Over two liters but not over four liters, valued over \$1.05/liter			Over four liters
	220421 5005 Red	220421 5015 White	220421 5025 NESOI	220421 5030 Red	220421 5046 White	220421 5060 NESOI	220429 2005 Red	220429 2015 White	220429 2030 Red	220429 2045 White	220429 2060 NESOI	220429 6000
(percent)												
2004	0.2	0.1	0.0	55.8	38.8	0.8	0.0	0.0	0.6	0.2	0.0	3.5
2005	0.2	0.0	0.0	53.1	38.8	1.0	0.0	0.0	0.5	0.2	0.0	6.1
2006	0.1	0.1	0.1	49.1	37.1	1.0	0.0	0.0	0.5	0.1	0.0	11.9
2007	0.1	0.1	0.0	49.6	36.3	1.1	0.0	0.0	0.4	0.1	0.0	12.2
2008	0.1	0.0	0.0	47.0	36.1	1.1	0.0	0.0	0.5	0.1	0.0	15.1
2009	0.0	0.0	0.0	41.3	31.0	1.0	0.0	0.0	0.5	0.1	0.0	26.1
2010	0.0	0.0	0.0	43.7	34.4	1.0	0.0	0.0	0.5	0.1	0.0	20.2
3-year moving average												
2004-2006	0.2	0.1	0.0	52.5	38.2	1.0	0.0	0.0	0.5	0.2	0.0	7.4
2005-2007	0.1	0.1	0.0	50.5	37.3	1.0	0.0	0.0	0.5	0.1	0.0	10.2
2006-2008	0.1	0.1	0.0	48.6	36.5	1.1	0.0	0.0	0.5	0.1	0.0	13.1
2007-2009	0.1	0.0	0.0	45.8	34.4	1.1	0.0	0.0	0.5	0.1	0.0	18.1
2008-2010	0.1	0.0	0.0	43.8	33.8	1.0	0.0	0.0	0.5	0.1	0.0	20.7

Source: U.S. International Trade Commission. 2011. "Interactive Tariff and Trade DataWeb." <http://dataweb.usitc.gov/>

Table 4: Unit values of U.S. wine imports by container size and value grouping, annual 2004-2010

Year	Container size and value grouping and associated HTS codes											
	Two liters or less, valued less than \$1.05/liter			Two liters or less, valued over \$1.05/liter			Over two liters but not over four liters, valued not over \$1.05/liter		Over two liters but not over four liters, valued over \$1.05/liter			Over four liters
	220421 5005 Red	220421 5015 White	220421 5025 NESOI	220421 5030 Red	220421 5046 White	220421 5060 NESOI	220429 2005 Red	220429 2015 White	220429 2030 Red	220429 2045 White	220429 2060 NESOI	220429 6000
	(\$/liter)											
2004	0.91	0.84	0.63	4.98	4.52	4.09	0.79	0.85	2.69	2.40	2.00	0.95
2005	0.85	0.74	0.84	5.01	4.56	4.18	0.97	N/A	3.02	3.06	2.15	0.91
2006	0.93	0.88	1.01	5.44	4.68	4.56	0.90	0.93	2.95	3.01	2.91	0.80
2007	0.82	0.88	0.99	5.58	4.91	4.69	0.93	0.97	2.74	2.51	2.08	0.84
2008	0.72	0.74	0.92	5.99	5.12	5.06	0.81	0.83	2.82	2.50	3.59	1.01
2009	0.71	0.78	0.82	5.08	4.73	4.79	0.87	0.85	2.78	2.33	4.75	0.72
2010	0.93	0.80	0.91	4.83	4.69	4.76	0.66	0.75	2.42	2.49	2.57	0.89

Source: U.S. International Trade Commission. 2011. "Interactive Tariff and Trade DataWeb." <http://dataweb.usitc.gov/>

Table 5: Volume of wine imports, grouped by unit value

Year	Low unit-value wine ^a (thousand liters)	High unit-value wine ^b				Total
		Red	White	NESOI	Subtotal	
2004	22,009	327,389	226,500	4,915	558,804	580,813
2005	40,899	346,345	251,726	6,763	604,834	645,733
2006	86,169	349,594	262,320	7,193	619,107	705,276
2007	93,851	379,067	276,007	8,506	663,580	757,431
2008	112,465	351,042	268,189	8,360	627,591	740,056
2009	218,814	349,162	260,307	8,114	617,583	836,397
2010	168,902	367,242	287,163	8,429	662,834	831,736
3 year moving average						
2004-2006	49,692	344,413	247,982	6,407	594,248	643,941
2005-2007	73,640	361,652	264,285	7,598	629,174	702,813
2006-2008	97,495	363,286	269,733	8,115	636,759	734,254
2007-2009	141,710	363,401	269,028	8,390	636,251	777,961
2008-2010	166,727	359,673	272,841	8,357	636,003	802,730

Source: U.S. International Trade Commission. 2011. “Interactive Tariff and Trade DataWeb.” <http://dataweb.usitc.gov/>

^a includes wines with HTS codes 2204296000, 2204215005, 2204215015, 2204215025, 2204292005 and 2204292015. See table 4 for a breakdown of unit values by HTS code

^b includes wines with HTS codes 2204215030, 2204292030, 2204292045, 2204292060, 2204215060 and 2204215046. See table 4 for a breakdown of unit values by HTS code

Table 6: Unit values and shares for imported wine, by origin, 2010

Container size and HTS codes	Australia	Chile	Italy	France	Spain
	(\$/liter)				
Unit value					
Two liters or less:					
2204215030 (Red)	3.58	3.32	5.44	8.54	4.91
2204215046 (White)	3.30	3.29	4.57	7.90	5.24
Over four liters:					
2204296000	0.78	0.64	1.37	2.18	0.86
Import share by volume (percent)					
Two liters or less:					
2204215030 (Red)	23.0	13.0	26.9	11.4	7.4
2204215046 (White)	18.6	6.4	40.4	8.2	2.1
Over four liters:					
2204296000	38.3	31.7	2.2	2.2	0.6

Source: U.S. International Trade Commission. 2011. "Interactive Tariff and Trade DataWeb." <http://dataweb.usitc.gov/>

Table 7: Unit values of U.S. wine exports by container size, annual 2004-2010

Year	Container size and associated HTS codes	
	Two liters or less 2204214000	Over two liters 2204290020
	(\$/liter)	
2004	2.32	1.20
2005	2.55	0.91
2006	3.27	0.88
2007	3.07	0.89
2008	3.09	0.91
2009	3.10	1.18
2010	4.05	1.08

Source: U.S. International Trade Commission. 2011. "Interactive Tariff and Trade DataWeb." <http://dataweb.usitc.gov/>

Table 7A: Unit values of U.S. wine exports by container size, excluding Canada and Mexico, annual 2004-2010

Year	Container size and associated HTS codes	
	Two liters or less 2204214000	Over two liters 2204290020
	(\$/liter)	
2004	2.15	1.45
2005	2.26	0.94
2006	3.06	0.88
2007	2.86	0.89
2008	2.85	0.91
2009	2.85	1.19
2010	3.60	1.07

Source: U.S. International Trade Commission. 2011. "Interactive Tariff and Trade DataWeb." <http://dataweb.usitc.gov/>

Table 8: Unit values of U.S. wine bulk^a exports and share of export volume, by destination, annual 2004-2010

Year	Canada	Germany	Italy	Japan	United Kingdom
	(\$/liter)				
Unit value:					
2004	0.64	1.19	0.83	1.59	1.74
2005	0.72	0.81	0.81	1.59	1.12
2006	0.86	0.70	0.85	1.08	0.89
2007	0.97	0.74	0.89	0.96	0.88
2008	0.92	0.82	0.94	0.86	0.84
2009	1.01	0.72	1.12	2.26	0.97
2010	1.15	0.92	0.88	0.87	0.91
Share of U.S. export volume:					
2004	30.7	4.0	11.9	6.4	34.1
2005	17.4	6.1	47.0	3.0	18.2
2006	10.8	4.7	38.9	3.5	34.0
2007	9.4	11.5	31.1	3.4	28.5
2008	10.7	9.1	29.7	4.7	28.6
2009	8.0	11.6	29.8	7.1	30.6
2010	6.9	4.9	32.0	4.6	38.7

Source: U.S. International Trade Commission. 2011. "Interactive Tariff and Trade DataWeb." <http://dataweb.usitc.gov/>

^a Bulk wine refers to exported wine in containers of more than two liters (HTS code 2204290020).

Table 9: Excise taxes and import duty rates

	Two liters or less	Over two liters but not over four liters	Over four liters (MFN)	Over four liters from Chile or Australia^a
(\$/liter)				
Import duty rate	0.063	0.084	0.14	0.048
Excise tax	0.2827	0.2827	0.2827	0.2827
Total	0.3457	0.3667	0.4227	0.3307

Source: U.S. International Trade Commission. 2011. "Interactive Tariff and Trade DataWeb." <http://dataweb.usitc.gov/>

^a Import duty rates have been declining gradually for Australia and Chile in accordance with the Free Trade Agreements. Here we report and use the 2010 rates.

Table 10: Approximate excise tax and import duties levied on bulk wine imports, 2005-2010

Year	Bulk wine imports								
	Non-Australian or Chilean wine			Australian and Chilean wine			Total bulk excise taxes ^a	Total bulk import duties ^a	Total bulk excise taxes and import duties ^a
	Excise taxes	Import duties	Sum	Excise taxes	Import duties	Sum			
	(\$US millions)								
2005	4.6	2.3	6.8	6.6	1.1	7.7	11.2	3.4	14.6
2006	10.7	5.3	16.0	13.1	2.2	15.3	23.8	7.5	31.3
2007	18.9	9.4	28.2	7.1	1.2	8.3	26.0	10.6	36.6
2008	22.5	11.1	33.7	9.0	1.5	10.6	31.5	12.7	44.2
2009	16.1	8.0	24.1	45.6	7.7	53.3	61.7	15.7	77.4
2010	14.3	7.1	21.3	33.2	5.6	38.9	47.5	12.7	60.2

Source: U.S. International Trade Commission. 2011. “Interactive Tariff and Trade DataWeb.” <http://dataweb.usitc.gov/>
 U.S. Customs and Border Protection, Department of Commerce. Special data request, 2011.

^a includes wine with HTS code 2204296000.

Note: Approximate excise tax and import duty values obtained by multiplying import quantities of wine in particular container sizes and countries of origin with excise tax rate of \$0.2827/liter and relevant import duty rates in Table 9.

Table 11: Approximate excise tax and import duties levied on all bottled wine imports, 2005-2010

Year	Bottled wine imports											
	Red			White			NESOI			Total bottled excise taxes ^a	Total bottled import duties ^a	Total bottled excise taxes and import duties ^a
	Excise taxes	Import duties	Sum	Excise taxes	Import duties	Sum	Excise taxes	Import duties	Sum			
	(\$US millions)											
2005	91.9	20.5	112.4	63.8	14.2	78.0	1.4	0.3	1.7	157.1	35.0	192.2
2006	97.2	21.7	118.9	70.9	15.8	86.8	1.9	0.4	2.3	170.1	37.9	208.0
2007	98.2	21.9	120.1	74.0	16.5	90.5	2.1	0.5	2.6	174.3	38.8	213.2
2008	106.5	23.7	130.3	77.9	17.4	95.3	2.4	0.5	2.9	186.9	41.6	228.5
2009	98.4	21.9	120.4	75.6	16.8	92.5	2.3	0.5	2.9	176.4	39.3	215.7
2010	97.7	21.8	119.4	73.4	16.4	89.8	2.3	0.5	2.8	173.4	38.6	212.0

Source: U.S. International Trade Commission. 2011. "Interactive Tariff and Trade DataWeb." <http://dataweb.usitc.gov/>
 U.S. Customs and Border Protection, Department of Commerce. Special data request, 2011.

^a includes wines with HTS codes 2204215005, 2204215015, 2204215025, 2204215030, 2204215046, and 2204215060. See table 4 for a breakdown of unit values by HTS code.

Note: Approximate excise tax and import duty values obtained by multiplying import quantities of wine in particular container sizes and countries of origin with excise tax rate of \$0.2827/liter and relevant import duty rates in Table 9.

Table 12: Drawbacks for wine of 14 percent alcohol content or less, by import container size in liters

Year ^a	Container size							Total
	Two liters or less			Over two liters but not over four liters			Over four liters	
	Red	White	NESOI	Red	White	NESOI		
(thousand liters)								
2005	35,841	33,967	8	29	26	N/A	13,213	83,084
2006	40,654	37,533	233	390	106	N/A	43,608	122,525
2007	42,490	43,747	921	316	191	10	77,585	165,260
2008	26,853	28,694	438	180	N/A	N/A	68,324	124,492
2009	42,261	38,047	2,113	259	18	0	96,026	178,723
2010	37,173	28,814	367	141	159	N/A	121,396	188,050

Source: U.S. Customs and Border Protection, Department of Commerce. Special data request, 2011.

^a Year in which drawback was claimed, not year of importation.

Table 13: Approximate aggregate “potential” drawback quantities

Year^a	Bottled wine^b	Bulk wine^c	Total
	(thousand liters)		
2005	166,392	40,899	207,291
2006	171,476	86,169	257,645
2007	164,737	93,851	258,588
2008	153,989	112,465	266,454
2009	143,271	218,814	362,085
2010	142,891	168,902	311,793

Source: U.S. International Trade Commission. 2011. “Interactive Tariff and Trade DataWeb.” <http://dataweb.usitc.gov/>
 U.S. Customs and Border Protection, Department of Commerce. 2011.

^a Year refers to year when wine is imported, not the year during which drawback is claimed.

^b Bottled wine refers to “high value” wines for export with HTS code 2204214000. Because imports are much larger than exports, potential drawback quantity of bottled wine is equal to the three-year moving average of exports starting with the current year. Except for 2009 which uses a two-year average and 2010 which uses the single year. (We ignore color information because there are no data on color of exports.) Exports to Canada and Mexico have been removed.

^c Bulk wine refers to imported “low value” wines with HTS codes 2204296000, 2204215005, 2204215015, 2204215025, 2204292005 and 2204292015. Potential drawback quantity for bulk wine is equal to bulk imports in each year. The average exports for 2009 and 2010 was 169,919 liters which was less than imports in 2009. Import drawback may be claimed based on exports in subsequent years, so although imports in 2009 exceeded the average of 2009 and 2010 exports of bulk wine, excess imports in that year could be claimed based on 2010 and 2011 exports. Likewise, if exports continued to exceed imports in subsequent years, the drawback claims could continue to be rolled forward until all claims were satisfied.

Table 14: Approximate aggregate “potential” drawback value (including duty and excise taxes)

Year ^a	Bottled wine ^b	Bulk wine ^c	Total
	(\$US millions)		
2005	57.1	17.2	74.3
2006	58.8	36.2	95.0
2007	56.5	39.4	95.9
2008	52.8	47.2	100.0
2009	49.1	91.9	141.0
2010	49.0	70.9	119.9

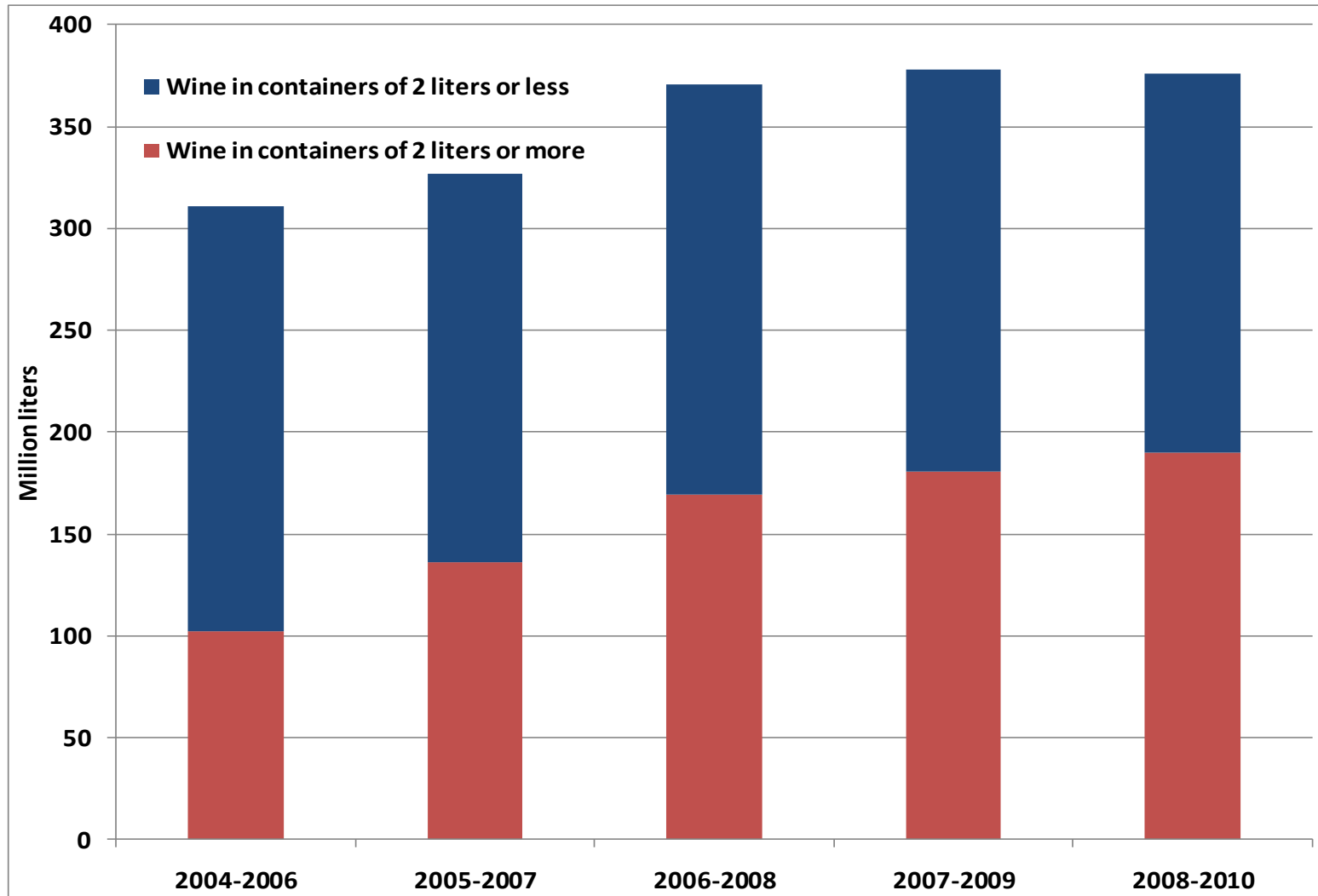
Source: U.S. International Trade Commission. 2011. “Interactive Tariff and Trade DataWeb.” <http://dataweb.usitc.gov/>
 U.S. Customs and Border Protection, Department of Commerce. 2011.

^a Year refers to year when wine is imported, not the year during which drawback is claimed

^b Bottled wine refers to “high value” wines for export with HTS code 2204214000. Because imports are much larger than exports, potential drawback quantity of bottled wine is equal to the three-year moving average of exports starting with the current year. Except for 2009, which uses a two-year average, and 2010, which uses the single year. (We ignore color information because there are no data on color of exports.) Exports to Canada and Mexico have been removed. Potential drawback quantities for bottled wine from Table 13 are multiplied by the excise tax rate of \$0.2827/liter and the relevant import duty rate in Table 9.

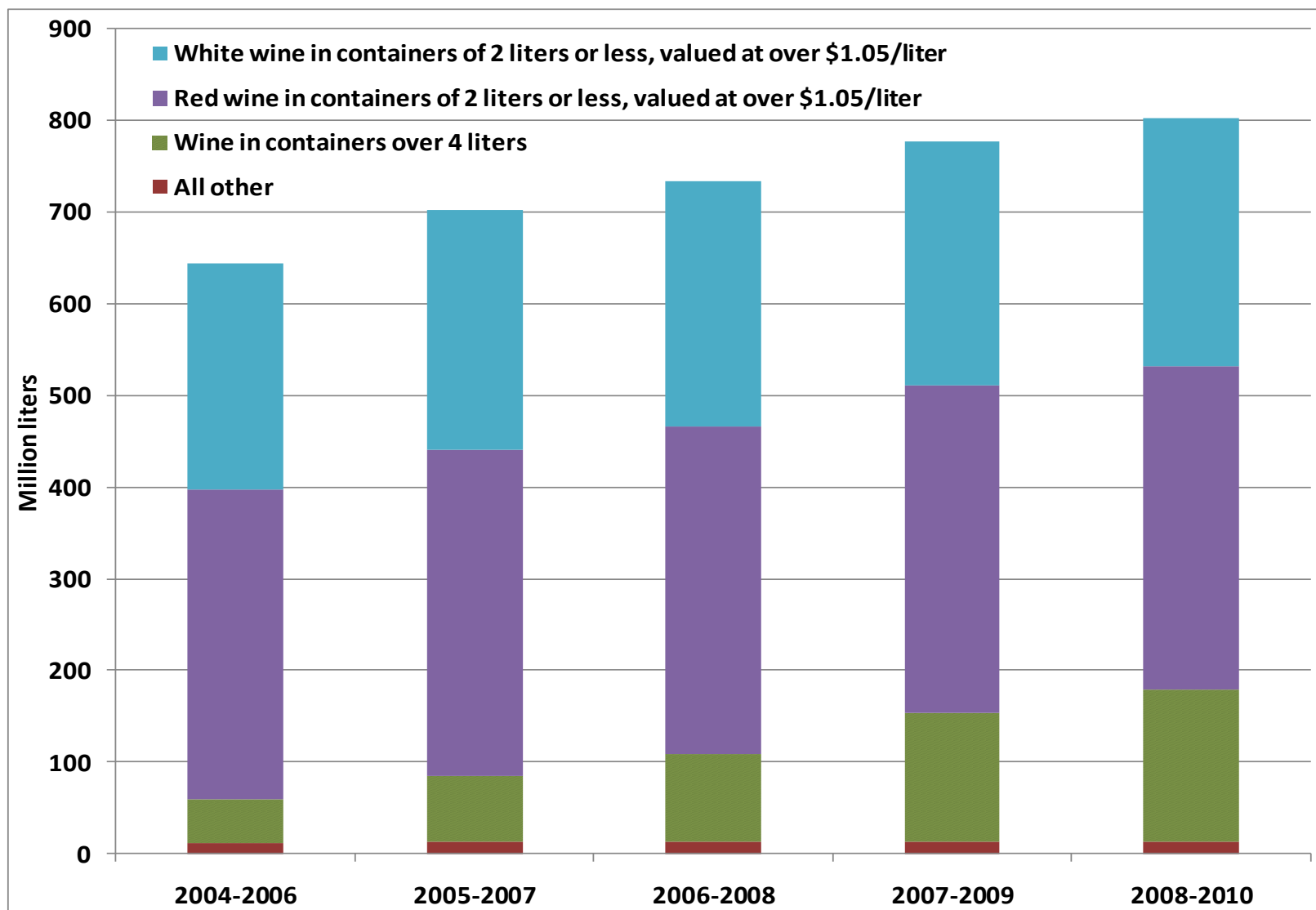
^c Bulk wine refers to imported “low value” wines with HTS codes 2204296000, 2204215005, 2204215015, 2204215025, 2204292005 and 2204292015. Potential drawback quantity for bulk wine is equal to bulk imports in each year. Estimated values for aggregate drawbacks on bulk wine are weighted estimates based on Australia and Chile’s shares of actual drawbacks. Potential drawback quantities for bulk wine from Table 13 are multiplied by the excise tax rate of \$0.2827/liter and the relevant import duty rate in Table 9. Import drawback may be claimed based on exports in subsequent years, so although imports in 2009 exceeded the average 2009 and 2010 exports of bulk wine, excess imports in that year could be claimed based on 2010 and 2011 exports. Likewise, if exports continued to exceed imports in subsequent years, the drawback claims could continue to be rolled forward until all claims were satisfied.

Figure 1: Volume of wine exports by container size, 3-year moving average 2004-2010



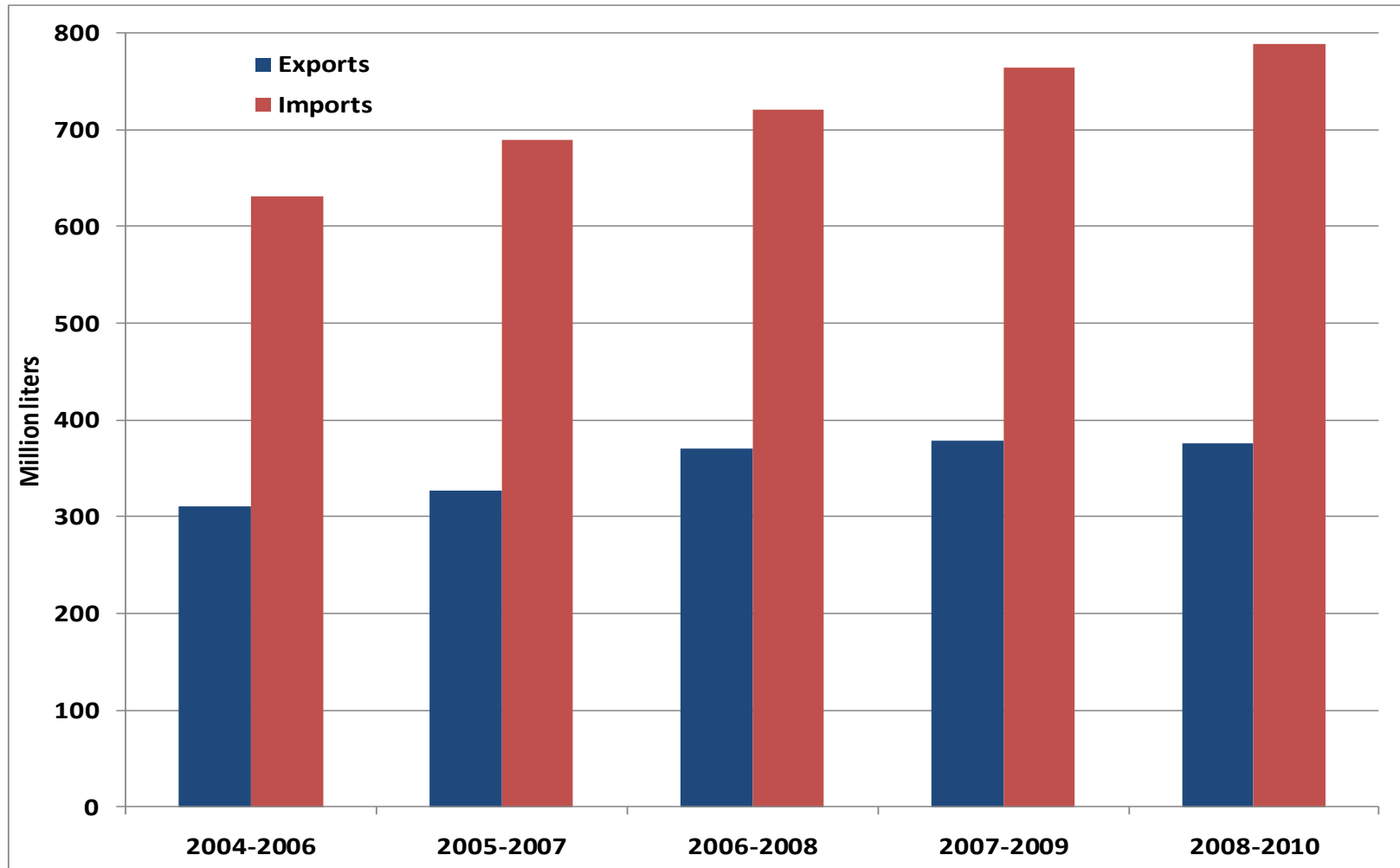
Source: U.S. International Trade Commission. 2011. "Interactive Tariff and Trade DataWeb." <http://dataweb.usitc.gov/>

Figure 2: Volume of wine imports by container size, 3-year moving average 2004-2010



Source: U.S. International Trade Commission. 2011. "Interactive Tariff and Trade DataWeb." <http://dataweb.usitc.gov/>

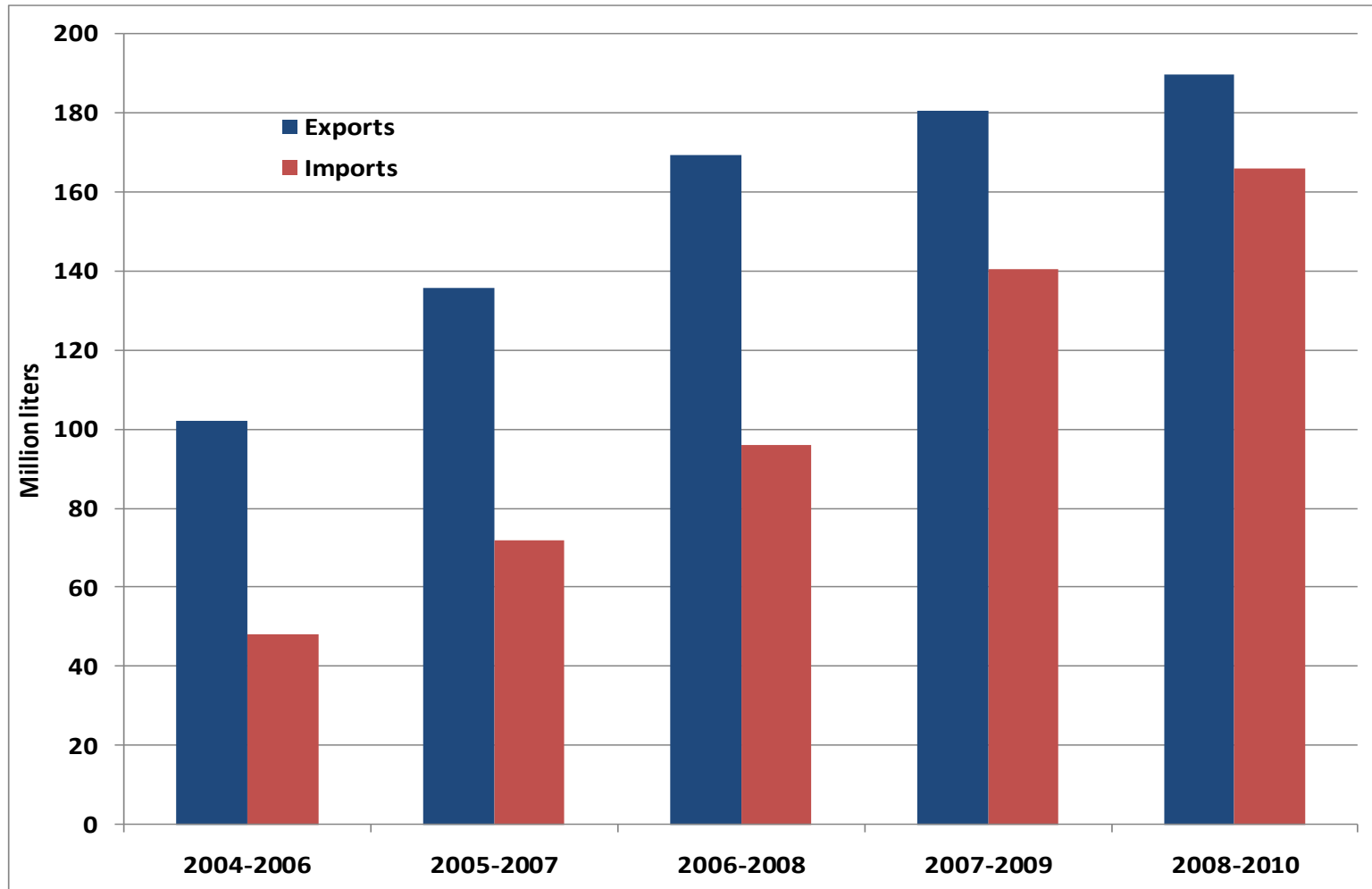
Figure 3: Volume of wine imports and exports, 3-year moving average 2004-2010



Source: U.S. International Trade Commission. 2011. "Interactive Tariff and Trade DataWeb." <http://dataweb.usitc.gov/>

Note: Imports and exports include all non-sparkling wine of 14 percent alcohol or less by volume, in all container sizes and all value groups.

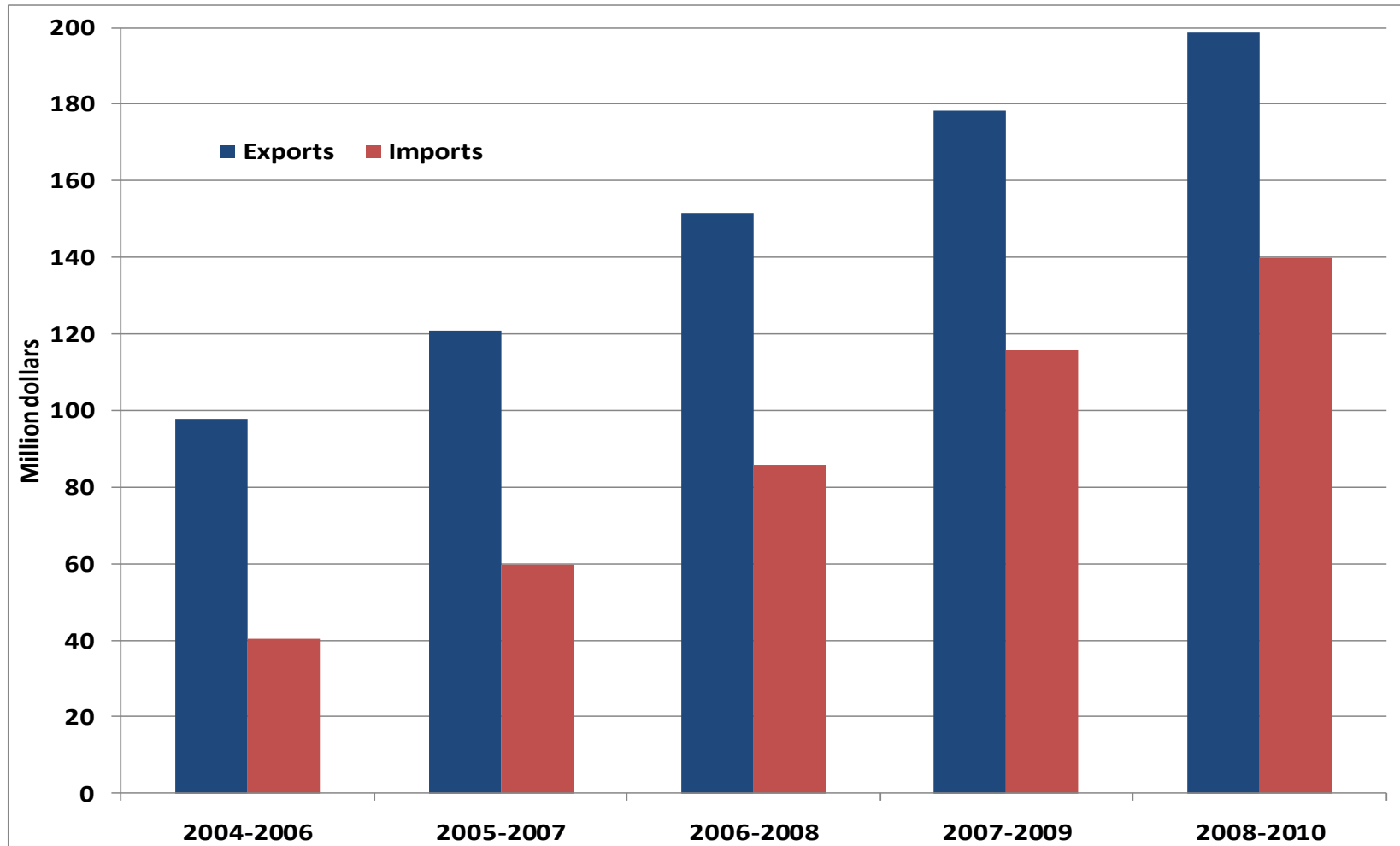
Figure 4: Volume of bulk wine imports and exports, 3-year moving average 2004-2010



Source: U.S. International Trade Commission. 2011. "Interactive Tariff and Trade DataWeb." <http://dataweb.usitc.gov/>

Note: Bulk imports include all non-sparkling wines in containers over 4 liters. Bulk exports include all non-sparkling wines in containers over 2 liters.

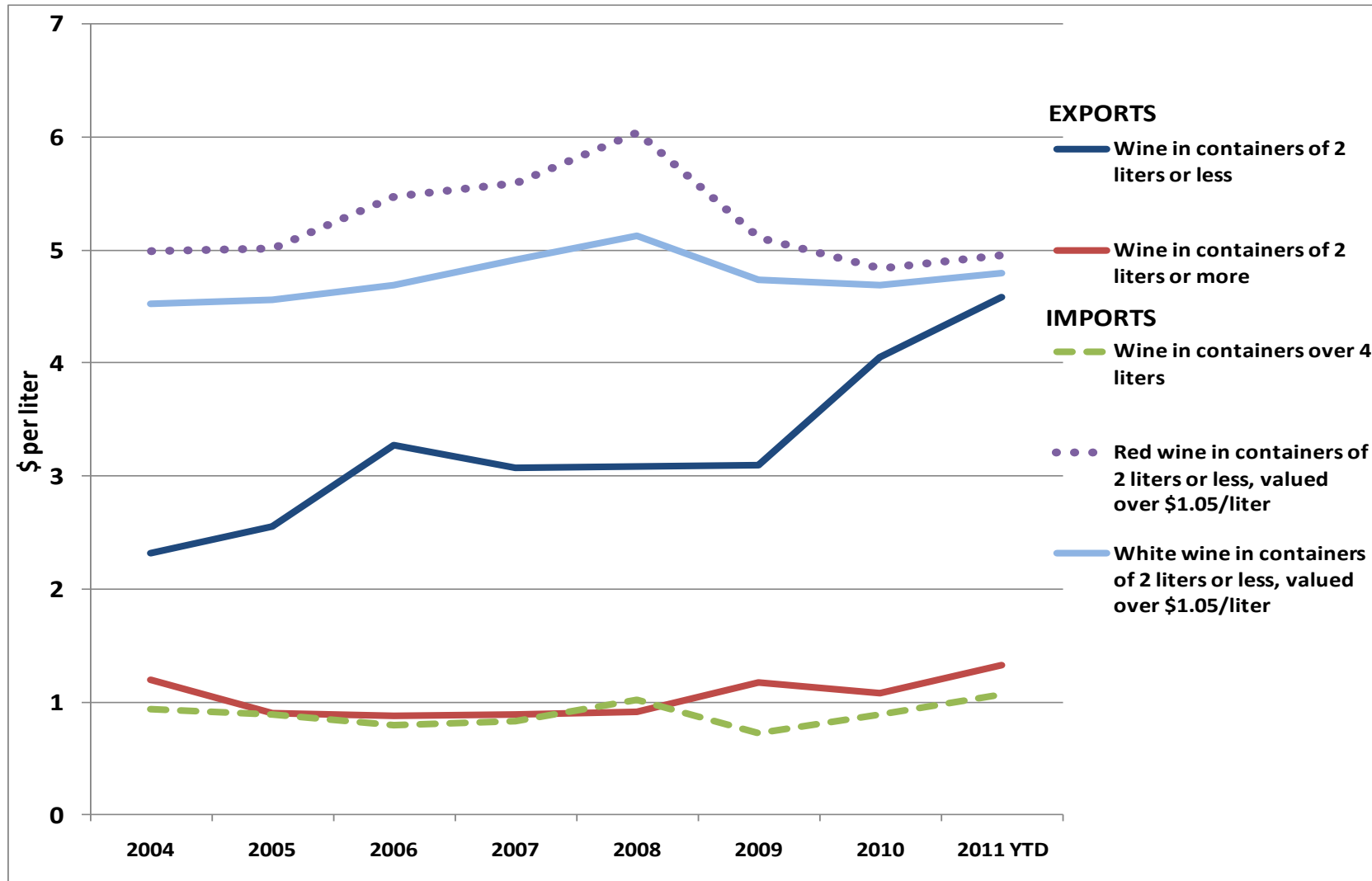
Figure 5: Value of bulk wine imports and exports, 3-year moving average 2004-2010



Source: U.S. International Trade Commission. 2011. "Interactive Tariff and Trade DataWeb." <http://dataweb.usitc.gov/>

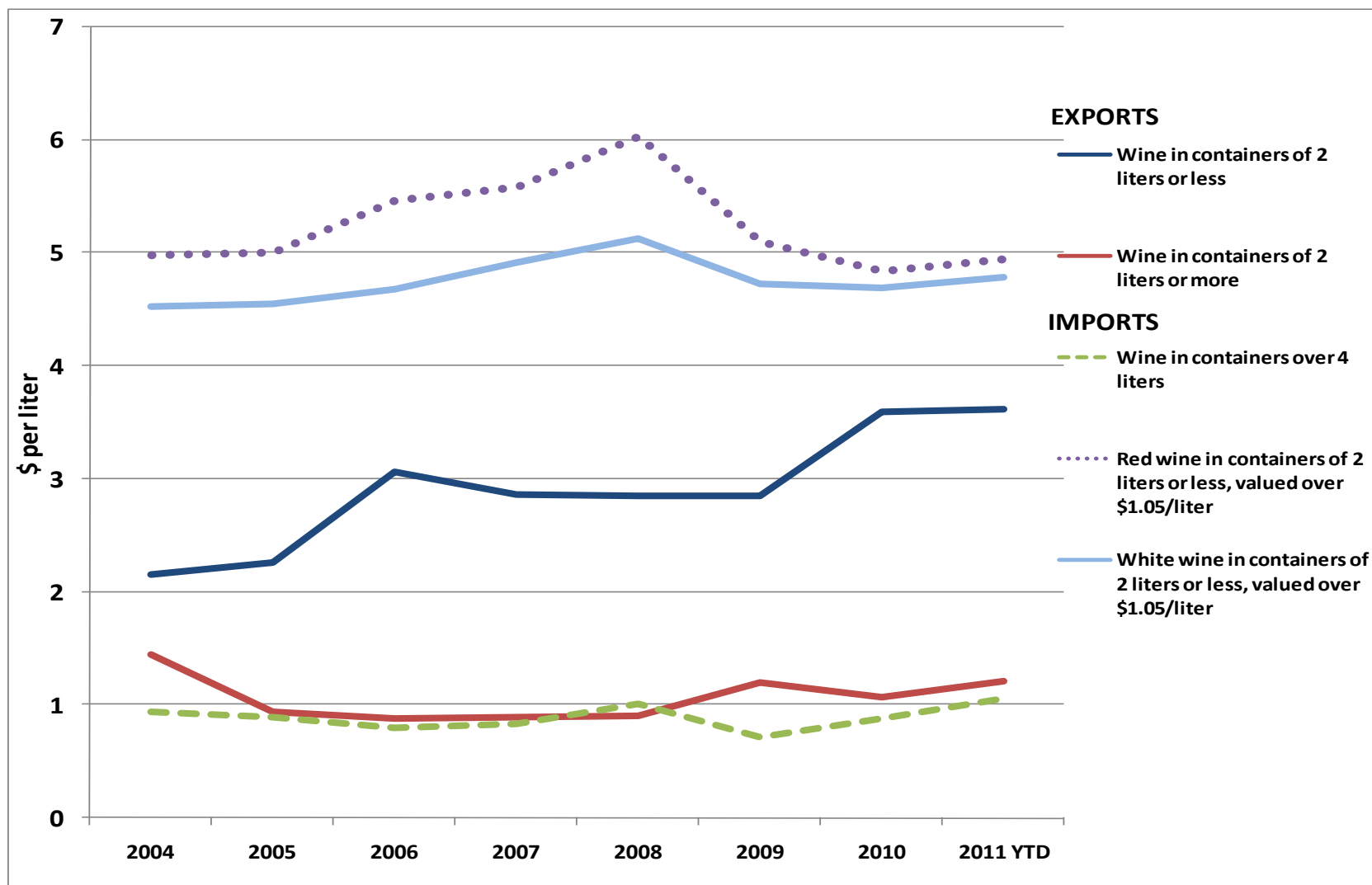
Note: Bulk imports include all non-sparkling wines in containers over 4 liters. Bulk exports include all non-sparkling wines in containers over 2 liters.

Figure 6: Unit values of wine imports and exports by container size, 2004-2010



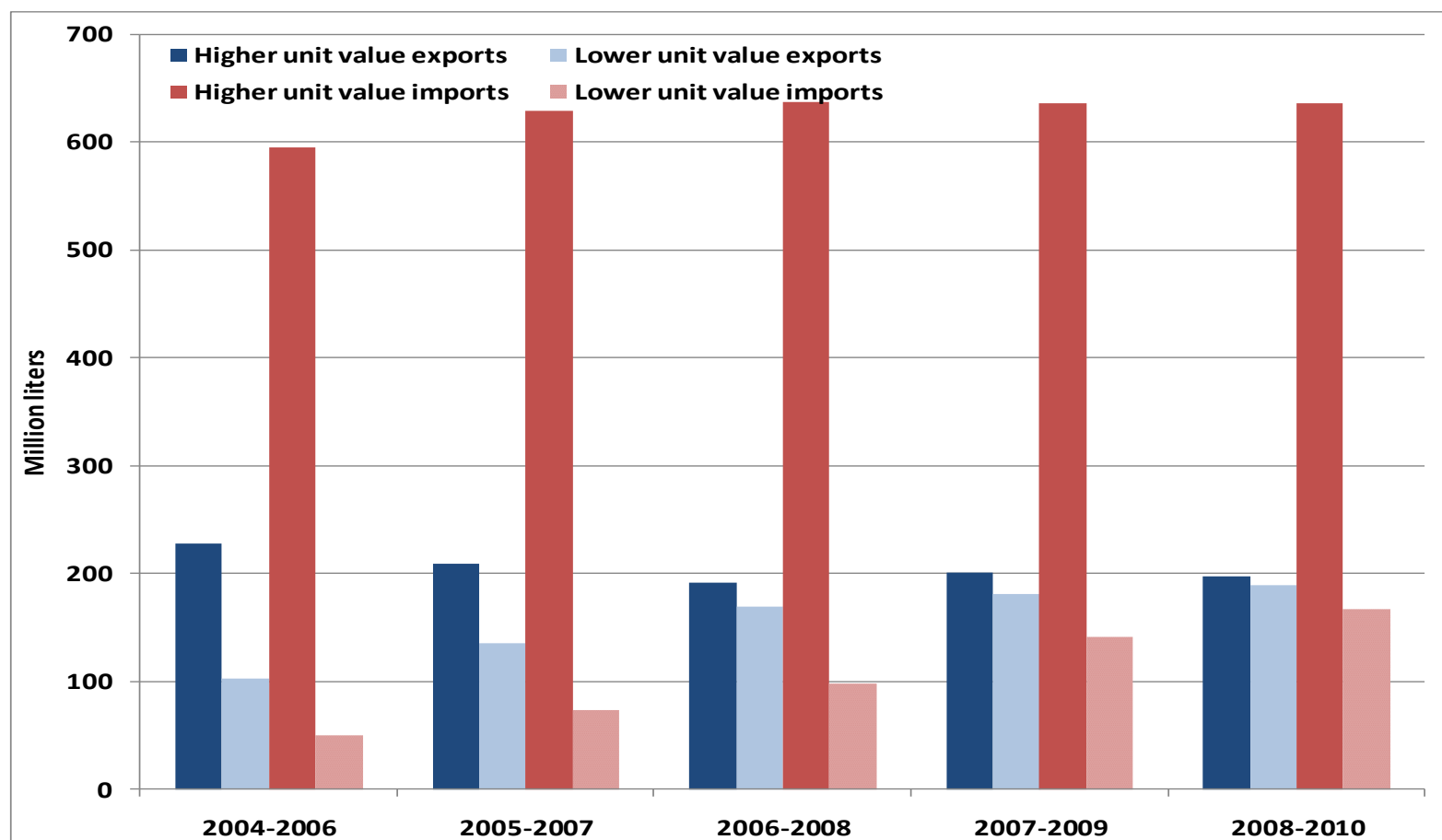
Source: U.S. International Trade Commission. 2011. "Interactive Tariff and Trade DataWeb." <http://dataweb.usitc.gov/>

Figure 6A: Unit values of wine imports and exports by container size, (exports excluding Canada and Mexico), 2004-2010



Source: U.S. International Trade Commission. 2011. "Interactive Tariff and Trade DataWeb." <http://dataweb.usitc.gov/>

Figure 7: Volume of wine imports and exports, by unit-value grouping, 3-year moving average 2004-2010

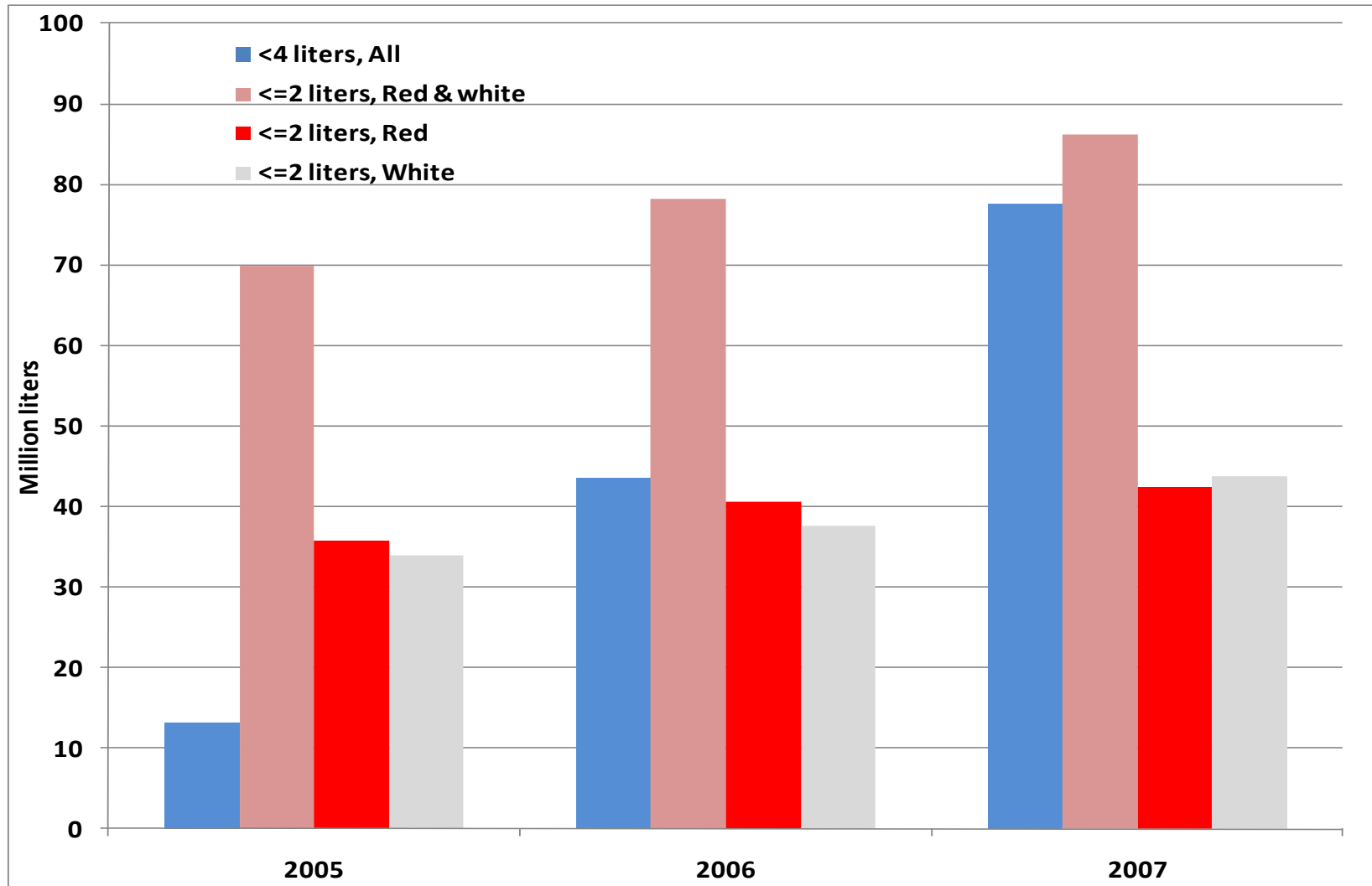


Source: U.S. International Trade Commission. 2011. "Interactive Tariff and Trade DataWeb." <http://dataweb.usitc.gov/>

Note: low value wine includes wines with HTS codes 2204296000, 2204215005, 2204215015, 2204215025, 2204292005 and 2204292015. High value wine includes wines with HTS codes 2204215030, 2204292030, 2204292045, 2204292060, 2204215060 and 2204215046. See table 4 for a breakdown of unit values by HTS code.

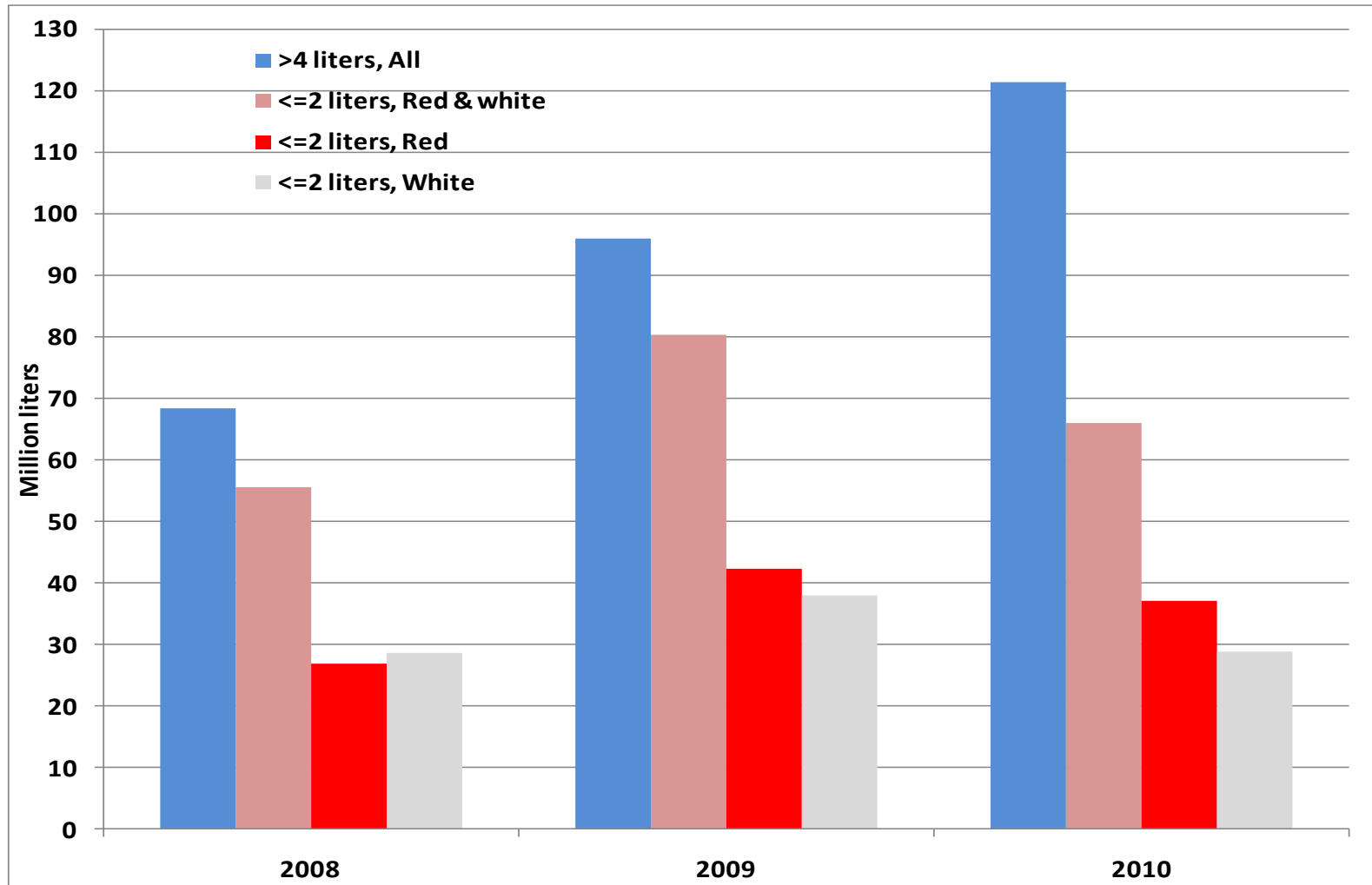
Note: Not excluding Canada and Mexico data from totals.

Figure 8a: Drawbacks for wine of 14 percent alcohol content or less, by container size (in liters) and wine type, 2005-2007



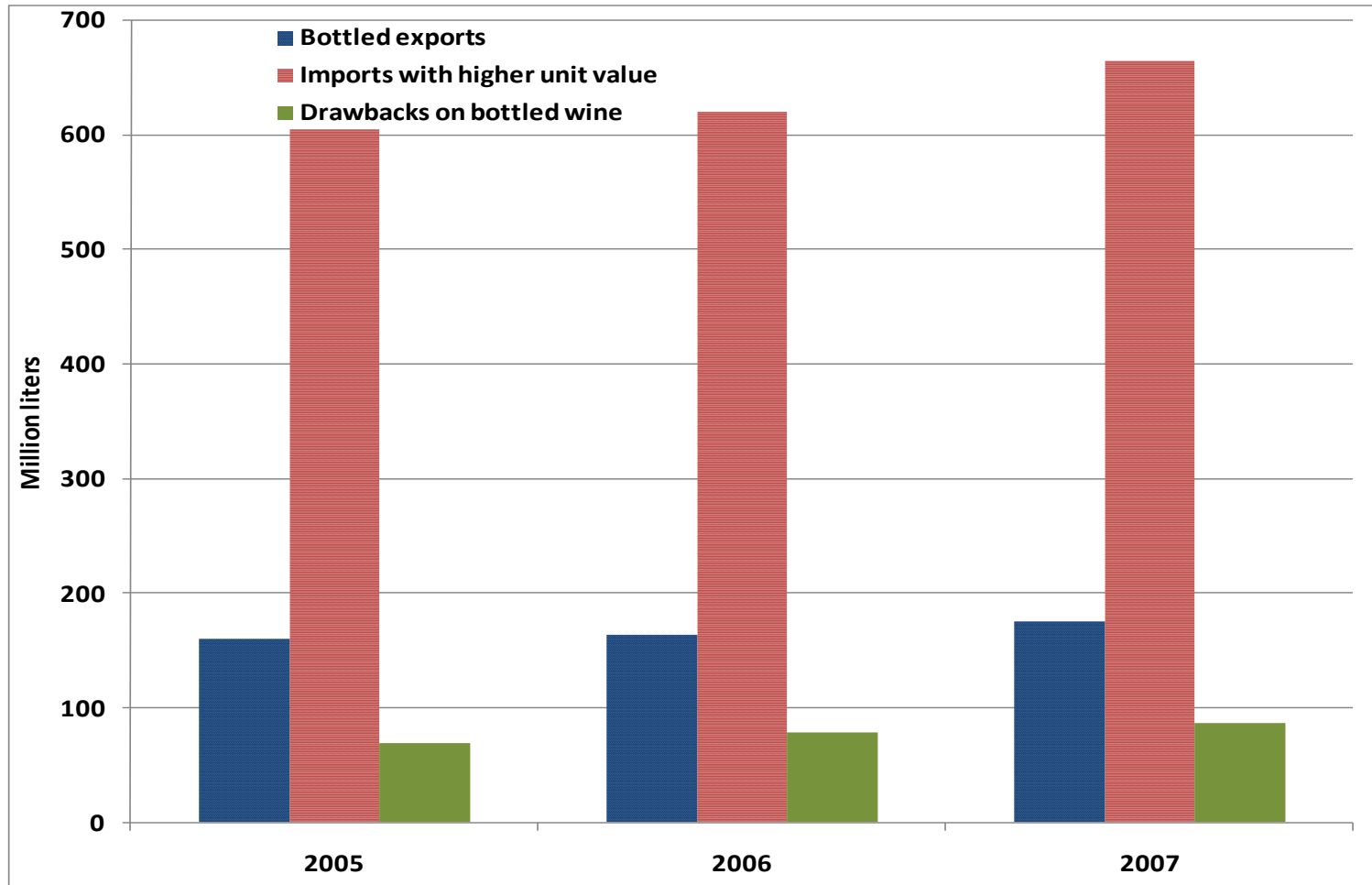
Source: U.S. International Trade Commission. 2011. "Interactive Tariff and Trade DataWeb." <http://dataweb.usitc.gov/>
U.S. Customs and Border Protection, Department of Commerce. 2011.

Figure 8b: Drawbacks for wine of 14 percent alcohol content or less, by container size (in liters) and wine type, 2008-2010



Source: U.S. International Trade Commission. 2011. "Interactive Tariff and Trade DataWeb." <http://dataweb.usitc.gov/>
 U.S. Customs and Border Protection, Department of Commerce. 2011.

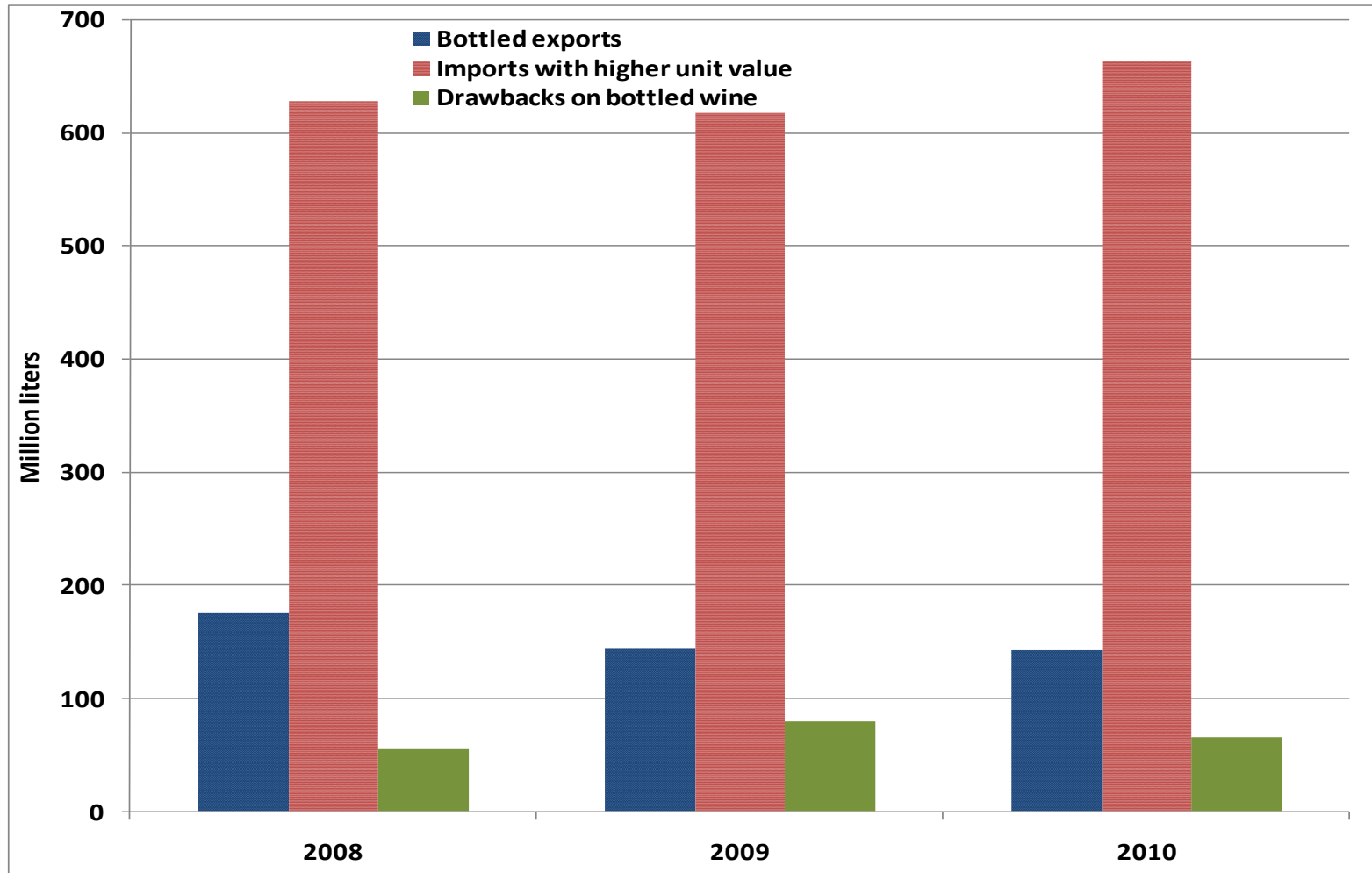
Figure 9a: Volume of exports, imports with higher unit value, and drawbacks on bottled wine, 2005-2007, annual



Source: U.S. International Trade Commission. 2011. "Interactive Tariff and Trade DataWeb." <http://dataweb.usitc.gov/>
U.S. Customs and Border Protection, Department of Commerce. 2011.

Note: Exports to Canada and Mexico have been removed from data displayed.

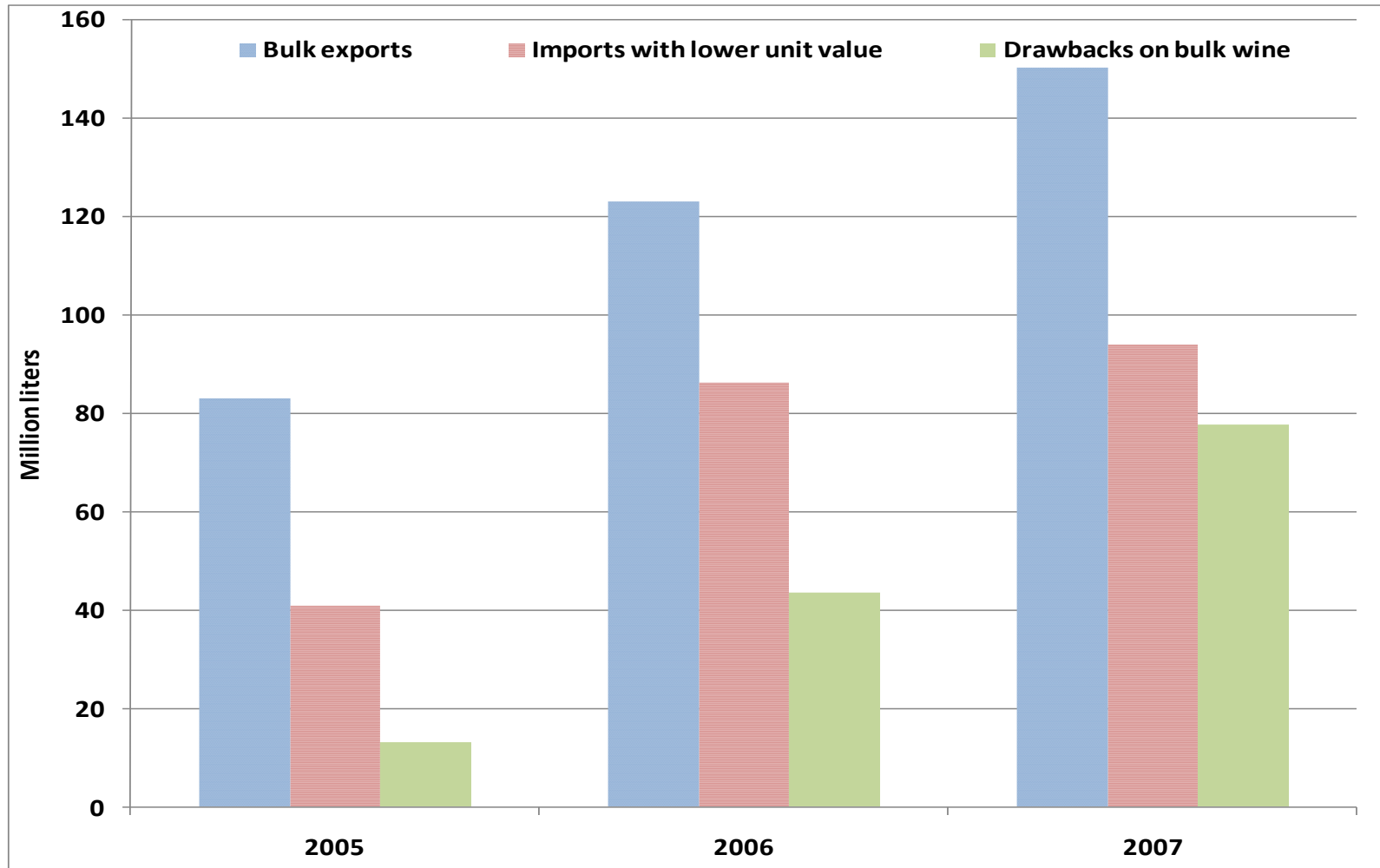
Figure 9b: Volume of exports, imports with higher unit value, and drawbacks on bottled wine, 2008-2010, annual



Source: U.S. International Trade Commission. 2011. "Interactive Tariff and Trade DataWeb." <http://dataweb.usitc.gov/>
U.S. Customs and Border Protection, Department of Commerce. 2011.

Note: Exports to Canada and Mexico have been removed from data displayed.

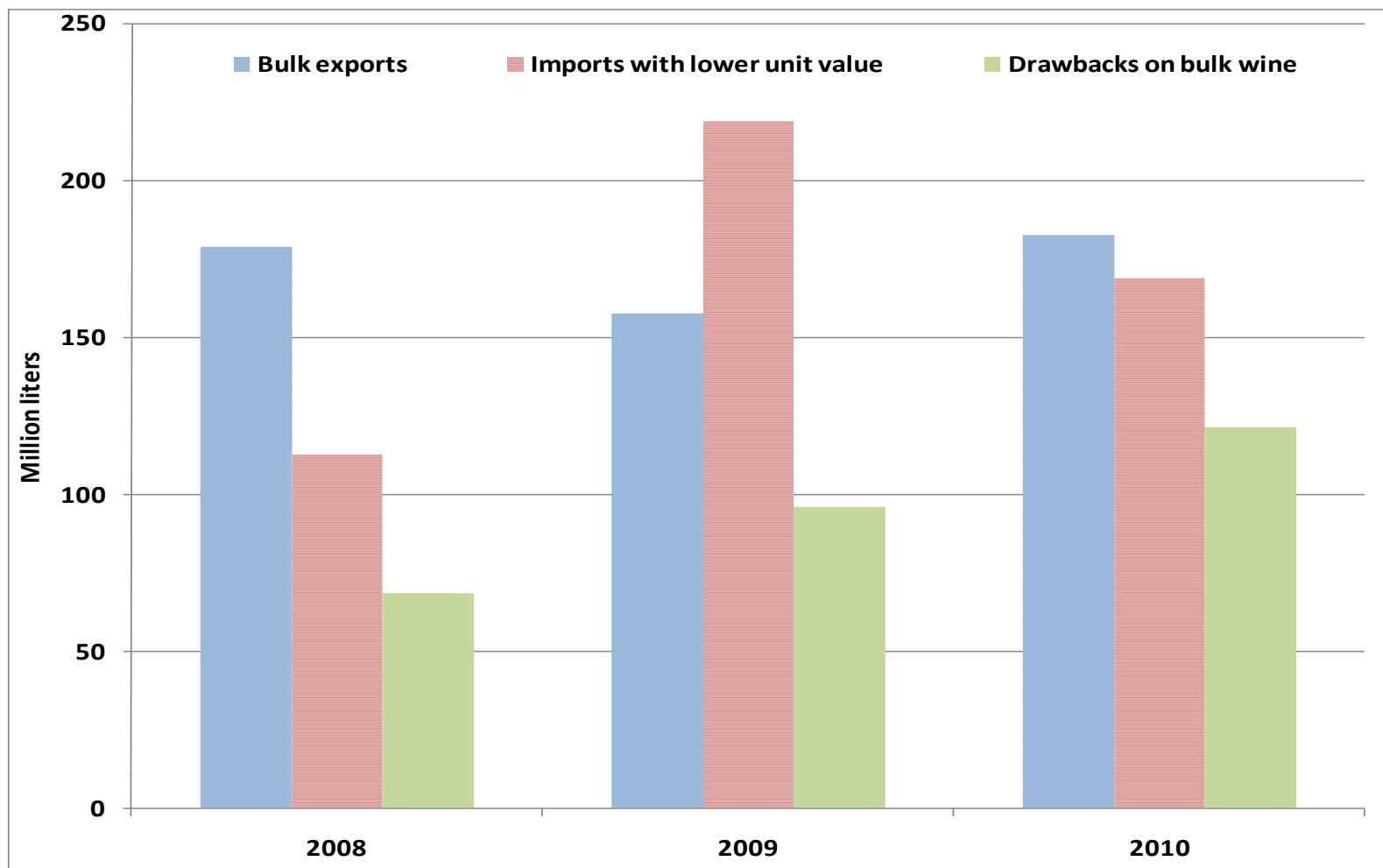
Figure 10a: Volume of bulk exports, imports with lower unit value, and drawbacks on bulk wine, 2005-2007, annual



Source: U.S. International Trade Commission. 2011. "Interactive Tariff and Trade DataWeb." <http://dataweb.usitc.gov/>
U.S. Customs and Border Protection, Department of Commerce. 2011.

Note: Exports to Canada and Mexico have been removed from data displayed.

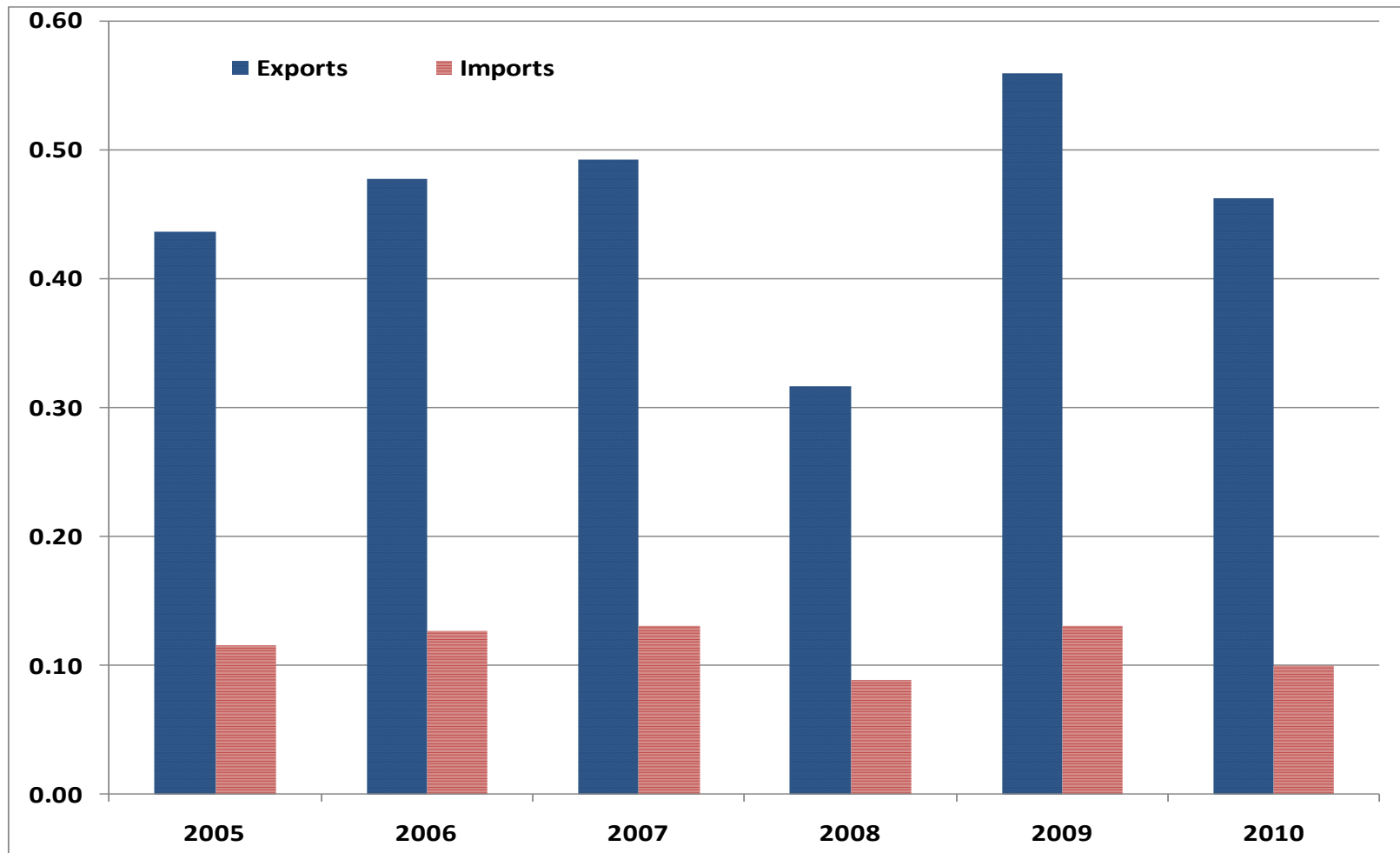
Figure 10b: Volume of bulk exports, imports with lower unit value, and drawbacks on bulk wine, 2008-2010, annual



Source: U.S. International Trade Commission. 2011. "Interactive Tariff and Trade DataWeb." <http://dataweb.usitc.gov/>
U.S. Customs and Border Protection, Department of Commerce. 2011.

Note: Exports to Canada and Mexico have been removed from data displayed.

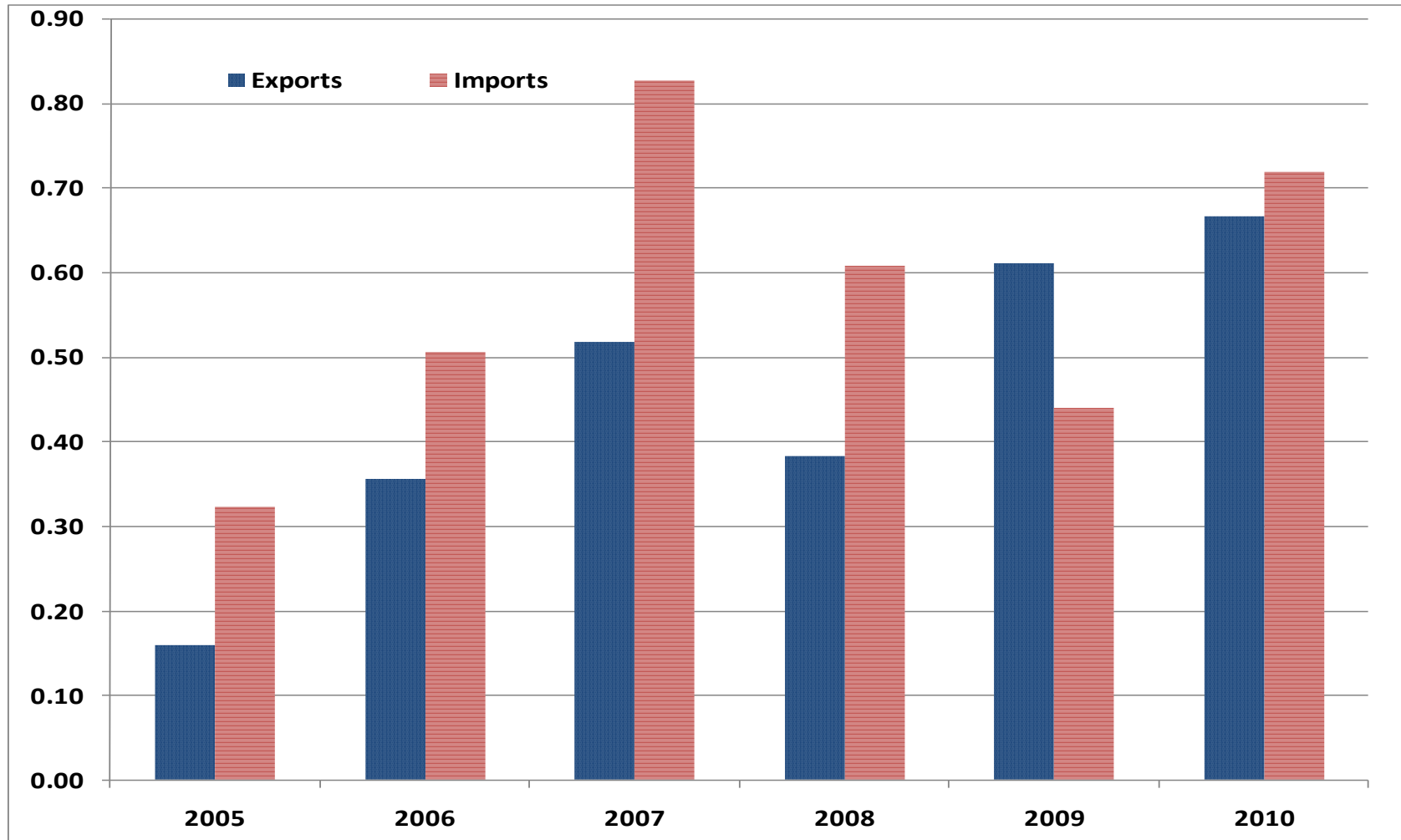
Figure 11: Ratio of drawbacks on bottled wine to bottled exports and imports with a higher unit value, 2005-2010, annual



Source: U.S. International Trade Commission. 2011. "Interactive Tariff and Trade DataWeb." <http://dataweb.usitc.gov/>
U.S. Customs and Border Protection, Department of Commerce. 2011.

Note: Exports to Canada and Mexico have been removed from data displayed.

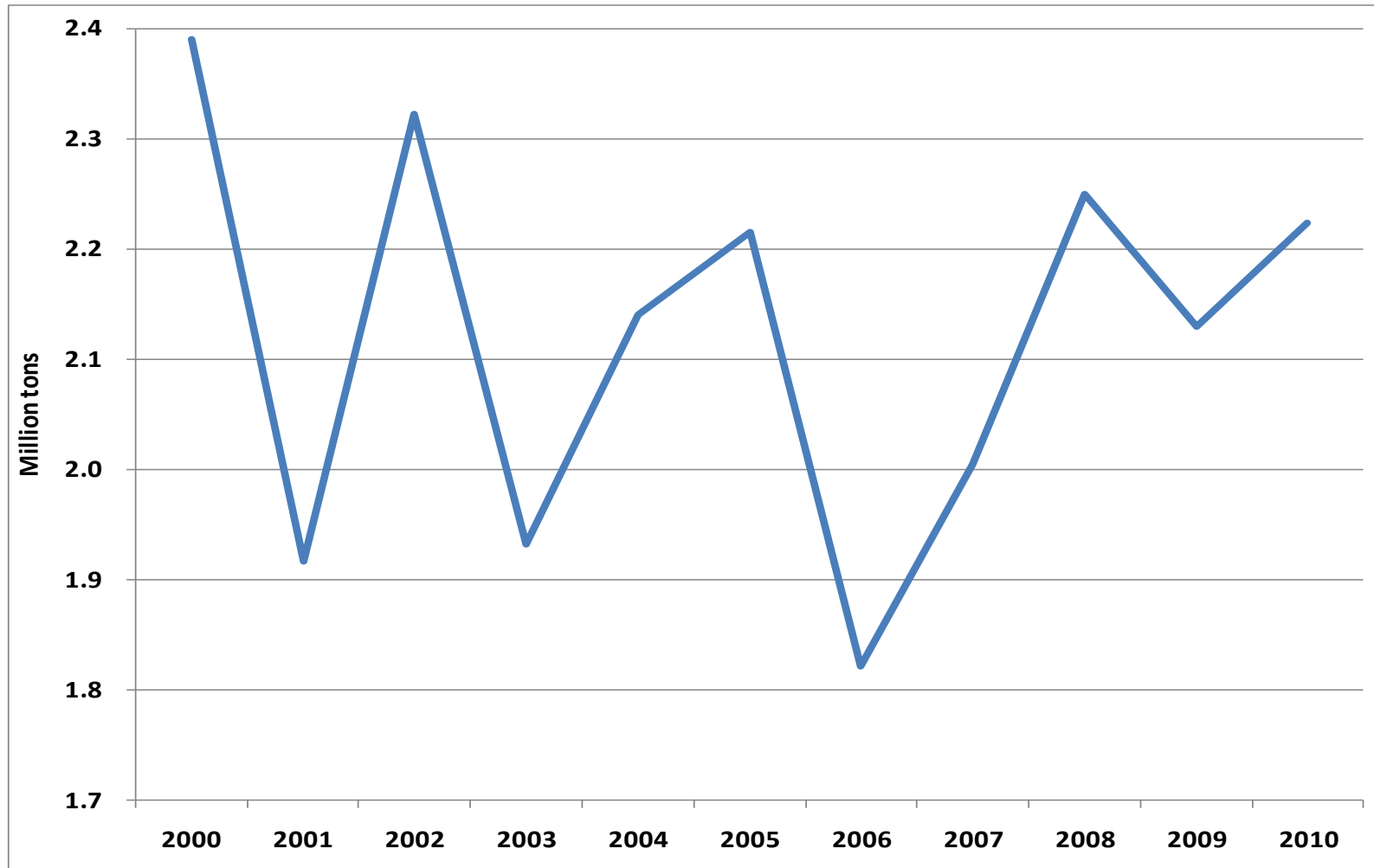
Figure 12: Ratio of drawbacks on bulk wine to bulk exports and imports with a lower unit value, 2005-2010, annual



Source: U.S. International Trade Commission. 2011. "Interactive Tariff and Trade DataWeb." <http://dataweb.usitc.gov/>
U.S. Customs and Border Protection, Department of Commerce. 2011.

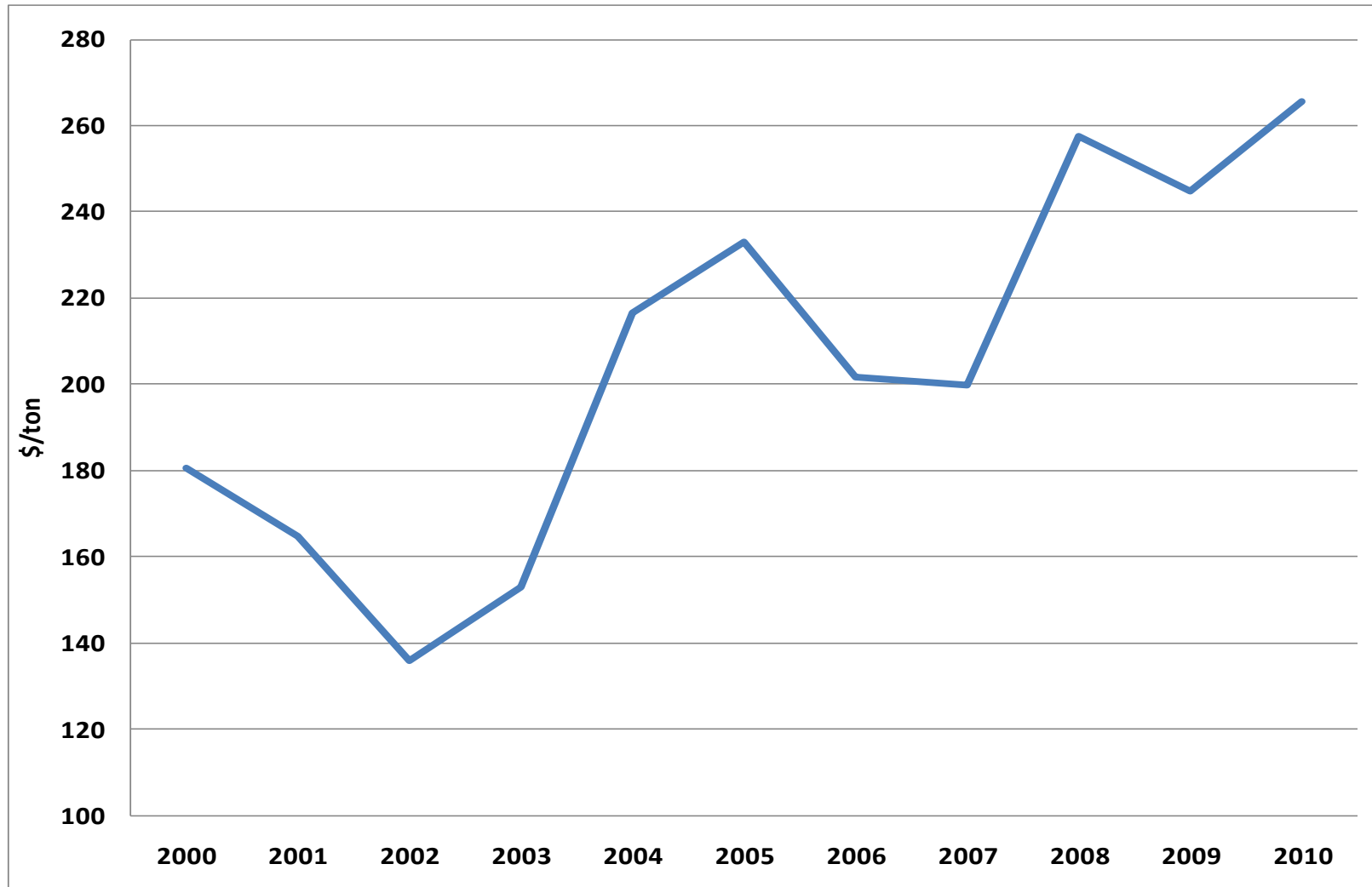
Note: Exports to Canada and Mexico have been removed from data displayed.

Figure 13: Volume of grapes crushed by year, California San Joaquin Valley



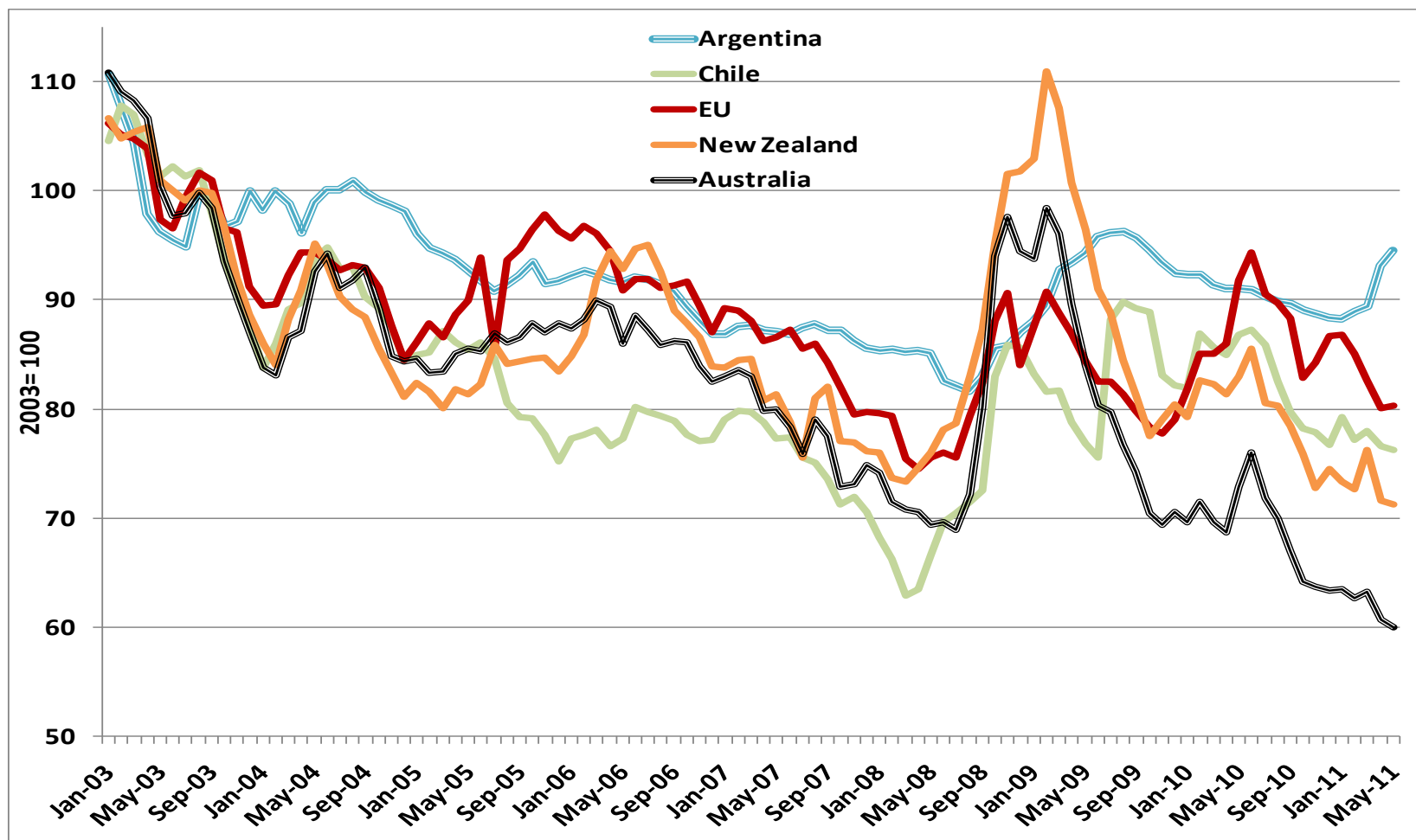
Source: U.S. Department of Agriculture, NASS, 2011. "Grape Crush Report."
http://www.nass.usda.gov/Statistics_by_State/California/Publications/GrapeCrush
Data applies to California crush districts 12, 13 and 14, 2000-2010.

Figure 14: Price of grapes for crush by year, California Southern San Joaquin Valley



Source: U.S. Department of Agriculture, NASS, 2011. "Grape Crush Report."
<http://www.nass.usda.gov/StatisticsbyState/California/Publications/GrapeCrush>
Data applies to crush district 13, 2000-2010.

Figure 15: Indexes of currency exchange rates between the U.S. dollar and sources of bulk wine imports, (local currency/ \$) Jan - Dec 2003=100

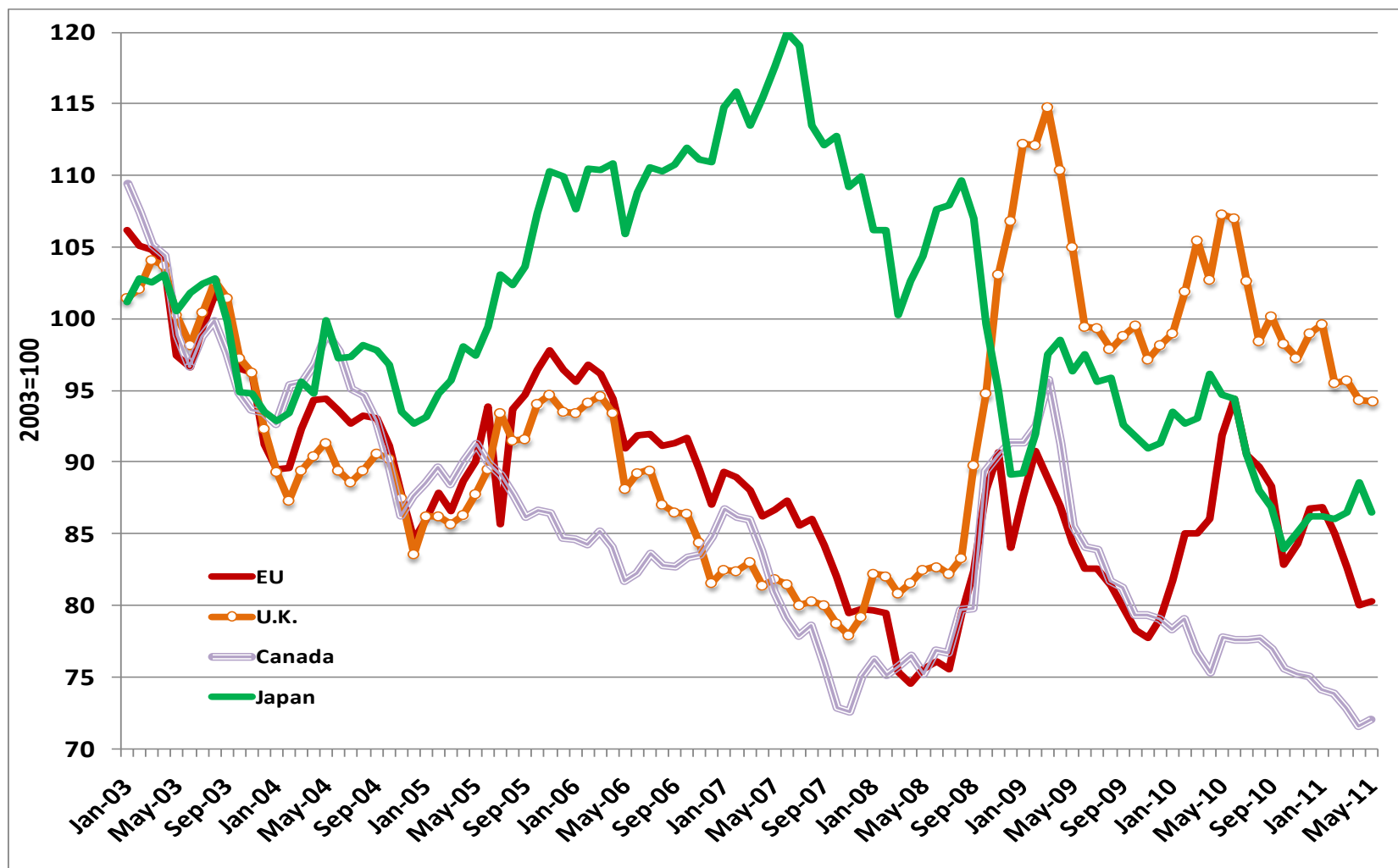


Source: U.S. Department of Agriculture, ERS. 2011. "Agricultural Exchange Rate Data Set."

<http://www.ers.usda.gov/data/exchangerates/>

Based on International Financial Statistics of the International Monetary Fund and Financial Statistics of the Federal Reserve Board.

Figure 16: Indexes of real currency exchange rates between the U.S. dollar and important destination for bulk wine exports (> 4 liters), (local currency/\$) Jan- Dec 2003=100

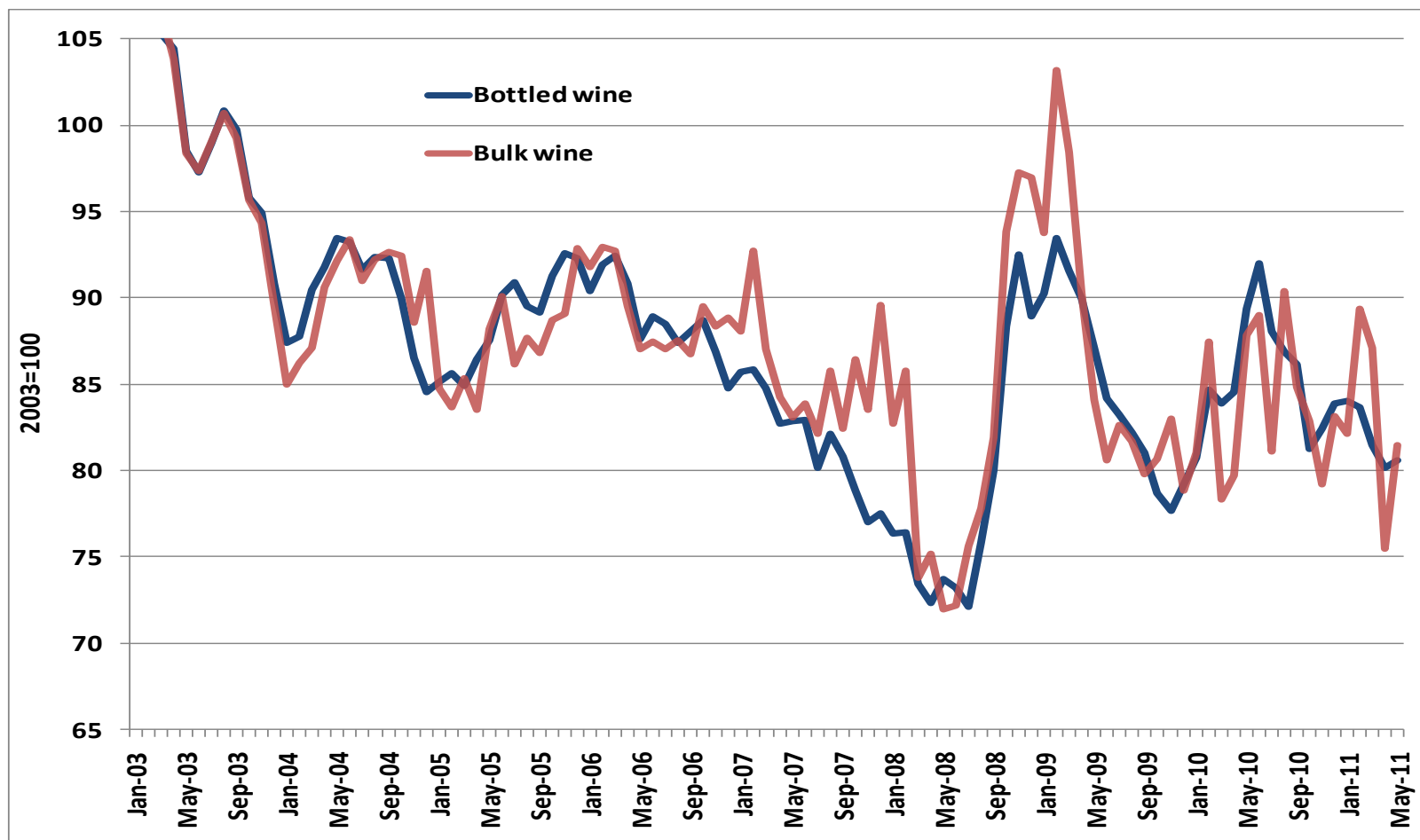


Source: U.S. Department of Agriculture, ERS. 2011. "Agricultural Exchange Rate Data Set."

<http://www.ers.usda.gov/data/exchangerates/>

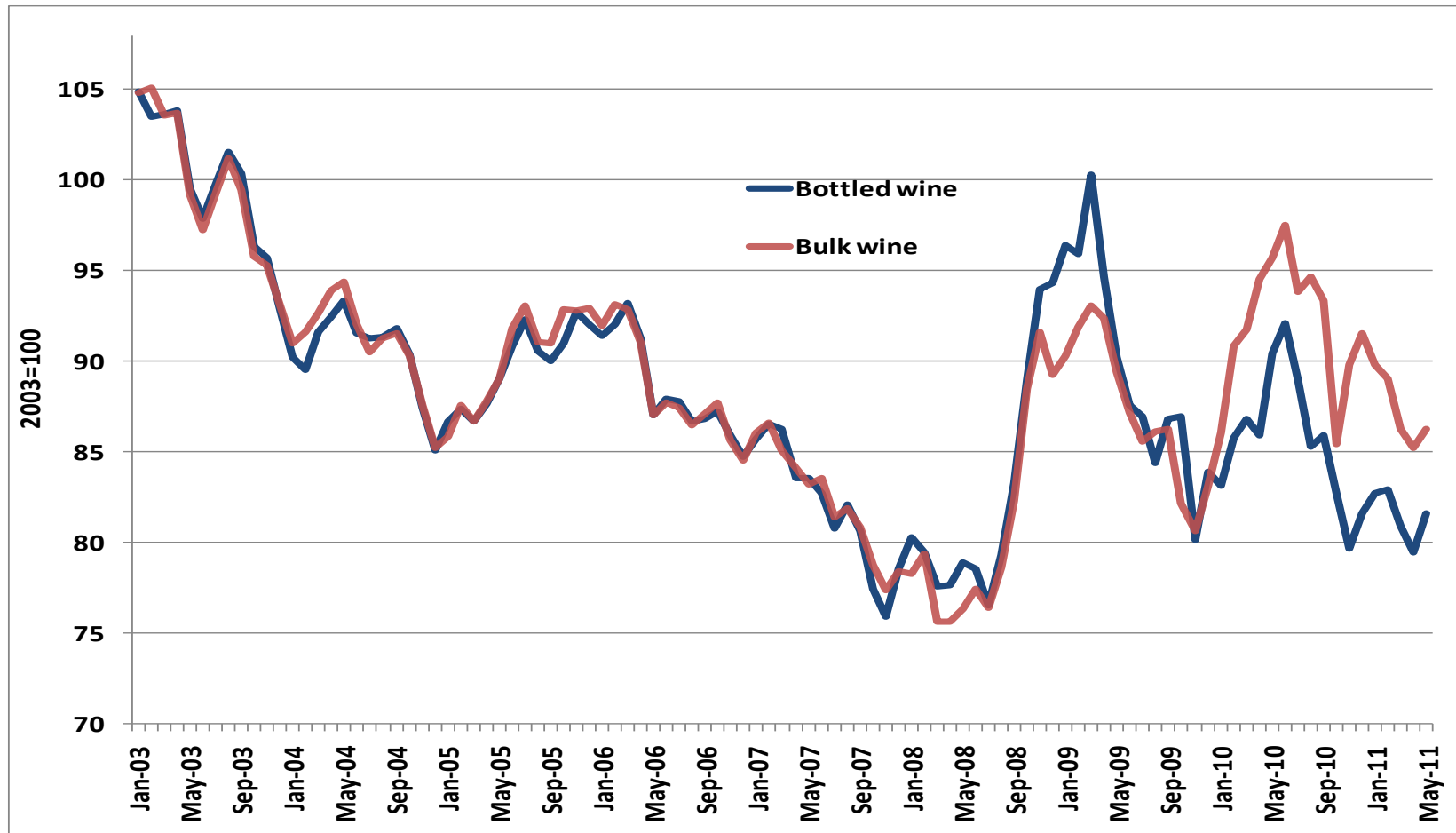
Based on International Financial Statistics of the International Monetary Fund and Financial Statistics of the Federal Reserve Board.

Figure 17: Indexes of monthly trade-weighted exchange rates for imports of bulk wine (> 4 liters) and bottled wine (≤ 4 liters), Jan – Dec 2003=100



Calculated using import data from U.S. International Trade Commission, 2011. “Interactive Tariff and Trade DataWeb.” <http://dataweb.usitc.gov/>. Currency exchange rate data from U.S. Department of Agriculture, ERS. 2011. “Agricultural Exchange Rate Data Set.” <http://www.ers.usda.gov/data/exchangerates/>
 Based on International Financial Statistics of the International Monetary Fund and Financial Statistics of the Federal Reserve Board.

Figure 18: Indexes of monthly trade-weighted exchange rates for exports of bulk wine (>2 liters) and bottled wine (≤ 2 liters), Jan –Dec 2003=100



Calculated using export data from U.S. International Trade Commission, 2011. “Interactive Tariff and Trade DataWeb.” <http://dataweb.usitc.gov/>. Currency exchange rate data from U.S. Department of Agriculture, ERS. 2011. “Agricultural Exchange Rate Data Set.” <http://www.ers.usda.gov/data/exchangerates/>
 Based on International Financial Statistics of the International Monetary Fund and Financial Statistics of the Federal Reserve Board.