United States Government Accountability Office

Report to Congressional Committees

May 2013

# EXPORT-IMPORT BANK

# More Detailed Information about Its Jobs Calculation Methodology Could Improve Transparency

GAO-13-446

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## More Detailed Information about Its Jobs Calculation Methodology Could Improve Transparency

GAO Highlights

Highlights of GAO-13-446, a report to congressional committees

### Why GAO Did This Study

Ex-Im provides loans, guarantees, and insurance to U.S. exporters. One of Ex-Im's primary missions is to support U.S. jobs through exports. In its 2012 annual report, Ex-Im stated that its financing helped support an estimated 255,000 export-related U.S. jobs.

In 2012, Congress passed the Export-Import Bank Reauthorization Act of 2012. The act required GAO to report on the process and methodology used by Ex-Im to calculate the effects of export financing on U.S. employment. This report (1) describes the methodology and processes Ex-Im uses to calculate the effects of its financing on U.S. employment and (2) examines the limitations of Ex-Im's approach and how Ex-Im reports on its methodology, and provides additional related information.

To address these objectives, GAO reviewed relevant Ex-Im documents, obtained and reviewed the data Ex-Im uses for its calculations, and interviewed agency officials and trade policy researchers.

### What GAO Recommends

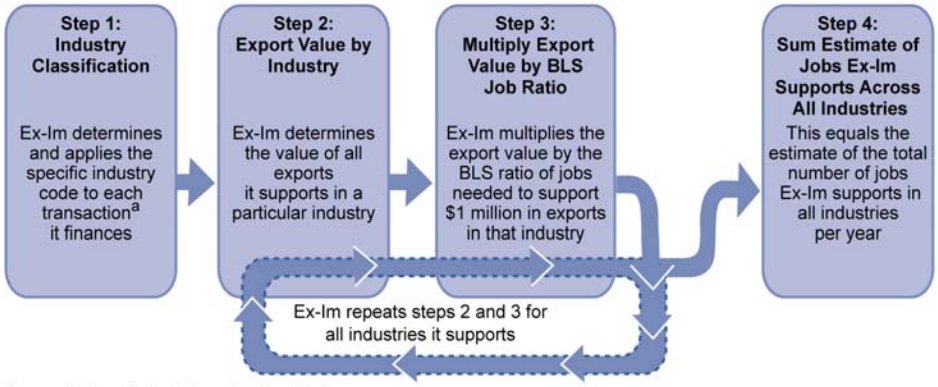
To ensure better understanding of its jobs calculation methodology, GAO recommends that Ex-Im improve reporting on the assumptions and limitations in the methodology and data used to calculate the number of jobs Ex-Im supports through its financing. Ex-Im agreed with the recommendation and stated that it would begin reporting more detailed information in its fiscal year 2013 annual report.

View GAO-13-446. For more information, contact Lawrance L. Evans, Jr. at (202) 512-5366 or evansl@gao.gov.

### What GAO Found

The U.S. Export-Import Bank's (Ex-Im) methodology to calculate the number of U.S. jobs associated with the exports it helps finance has four key steps. First, Ex-Im determines the industry associated with each transaction it finances. Second, Ex-Im calculates the total value of exports it supports for each industry. Ex-Im implements these first two steps using its own data. Third, Ex-Im multiplies the export value for each industry by the Bureau of Labor Statistics (BLS) ratio of jobs needed to support $1 million in exports in that industry—a figure known as the "jobs ratio." Finally, Ex-Im aggregates across all industries to produce an overall estimate. The following figure depicts each step of the process.

**The Four-Step Process Involved in Ex-Im's Jobs Calculation Methodology**




Source: GAO analysis of information from Ex-Im.
[a]According to Ex-Im, one transaction could have multiple contracts and therefore multiple industry codes. Each industry code is associated with a specific contract.

Ex-Im reports the number of jobs its financing supports and the methodology it uses but does not describe limitations of the methodology or fully detail its assumptions. Although the BLS data tables that Ex-Im relies on are based on a commonly used methodology, this methodology has limitations. For example, the employment data are a count of jobs that treats full-time, part-time, and seasonal jobs equally. In addition, the data assume average industry relationships, but Ex-Im's clients could be different from the typical firm in the same industry. Further, the underlying approach cannot answer the question of what would have happened without Ex-Im financing. Ex-Im does not report these limitations or fully detail the assumptions related to its data or methodology. GAO's *Standards for Internal Controls in the Federal Government* states that, in addition to internal communication, management should ensure adequate communication with external stakeholders, which could include Congress and the public. Because of a lack of reporting on the assumptions and limitations of its methodology and data, Congressional and public stakeholders may not fully understand what the jobs number that Ex-Im reports represents and the extent to which Ex-Im's financing may have affected U.S. employment.

# Contents

## Abbreviations

| | |
|---|---|
| BEA | Bureau of Economic Analysis |
| BLS | Bureau of Labor Statistics |
| Commerce | Department of Commerce |
| ERT | Employment Requirements Tables |
| Ex-Im | Export-Import Bank of the United States |
| G-7 | Group of Seven |
| ITA | International Trade Administration |
| NAICS | North American Industry Classification System |

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May 23, 2013

The Honorable Tim Johnson
Chairman
The Honorable Mike Crapo
Ranking Member
Committee on Banking, Housing, and Urban Affairs
United States Senate

The Honorable Jeb Hensarling
Chairman
The Honorable Maxine Waters
Ranking Member
Committee on Financial Services
House of Representatives

As the nation's official export credit agency, the Export-Import Bank of the United States (Ex-Im) supports U.S. exporters by providing loans, loan guarantees, working capital guarantees, and insurance. One of Ex-Im's primary objectives is to contribute to maintaining or increasing employment of U.S. workers through its financing. In its 2012 annual report, Ex-Im stated for fiscal year 2012 it had authorized financing to support 3,796 export transactions with a total estimated value of almost $50 billion. It reported that this financing helped support an estimated 255,000 export-related U.S. jobs.

In 2012, Congress passed the Export-Import Bank Reauthorization Act of 2012.[1] The act required GAO to report on the process and methodology used by Ex-Im to calculate the effects of its export financing on the creation and maintenance of employment in the United States. This report (1) describes the methodology and processes Ex-Im uses to calculate the effects of its financing on employment in the United States, (2) examines the limitations of Ex-Im's approach and how Ex-Im reports on its methodology, and (3) describes alternative methodologies and their limitations.

[1]Pub. L. No. 112-122, 126 Stat. 350 (May 30, 2012).

To address these objectives, we reviewed relevant documentation related to Ex-Im, including annual reports, descriptions of the bank's jobs calculation methodology, and press releases that included information on the jobs supported by Ex-Im financing. We also obtained the data Ex-Im uses to calculate the number of jobs supported by its financing and used this data to replicate Ex-Im's calculation. We found these data to be sufficiently reliable for the purposes of this report. We interviewed Ex-Im officials from various divisions of the organization. We spoke with officials from the Bureau of Economic Analysis (BEA) and International Trade Administration (ITA) in the Department of Commerce (Commerce) as well as the Bureau of Labor Statistics (BLS) in the Department of Labor. We also reviewed relevant documentation from these agencies. In addition, we spoke with officials from other countries' export credit agencies to obtain information on their efforts to determine the number of jobs associated with their financing, and with selected trade policy researchers to obtain their perspectives on Ex-Im's methodology. We selected these researchers because GAO had consulted with them on prior engagements related to export credit agencies based on their knowledge of the issues, or they had been recommended to us through interviews with knowledgeable government officials due to their expertise in the area. In addition, we reviewed GAO's Standards for Internal Control in the Federal Government,[2] which states that management should ensure there are adequate means of communicating with, and obtaining information from, external stakeholders that may have a significant impact on the agency achieving its goals. Appendix I provides more information on our scope and methodology.

We conducted this performance audit from August 2012 to May 2013 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

[2]GAO, *Standards for Internal Control in the Federal Government*, GAO/AIMD-00-21.3.1 (Washington, D.C.: November 1999).

## Background

Ex-Im operates under the authority of the Export-Import Bank Act of 1945, as amended.[3] It is an independent agency of the U.S. government.[4] Ex-Im's mission is to support jobs in the United States by facilitating the export of U.S. goods and services. In fiscal year 2012, Ex-Im authorized about $35.8 billion, for 3,796 transactions, to support U.S. exports.[5] Ex-Im is part of the U.S. Trade Promotion Coordinating Committee, an interagency committee chaired by Commerce and tasked with coordinating the export promotion and financing activities of federal agencies. Ex-Im is also a key participant in the National Export Initiative, a strategy announced in 2010 to double U.S. exports by 2015 to support U.S. employment.

Ex-Im provides four types of financing: direct loans, loan guarantees, working capital guarantees, and export credit insurance.

- Direct loans: Medium- and long-term fixed-rate loans Ex-Im provides directly to foreign buyers of U.S. goods and services.
- Loan guarantees: Medium- and long-term loan guarantees to lenders that Ex-Im will pay the lender if the foreign buyer of U.S. goods and services, who received the loan, defaults.
- Working capital guarantees: Guarantees to lenders for U.S.-based companies to obtain short-term loans that facilitate the export of goods and services. Working capital guarantee loans may be approved for a revolving line of credit that supports multiple export sales or a single loan that supports a specific export contract.
- Insurance: Short- and medium-term insurance Ex-Im provides to U.S. exporters to protect them against the risk of nonpayment by foreign buyers for commercial or political reasons.

To balance the interests of multiple stakeholders and Ex-Im's mission to support U.S. jobs through export financing, Ex-Im has a domestic content policy regarding the amount of U.S. content directly associated with the

[3]12 USC 635 et seq.

[4]Since fiscal year 2008, Ex-Im has been "self-sustaining" for appropriations purposes, financing its operations from receipts collected from its borrowers.

[5]After Ex-Im authorizes a transaction, it issues a loan, loan guarantee, or insurance policy. The amount actually exported or shipped as a result of the transaction may differ from the authorized value of the transaction. Therefore, in fiscal year 2012, Ex-Im estimated that its authorization of about $35.8 billion would have an estimated export value of almost $50 billion.

goods and services exported from the United States. Ex-Im's short-term transaction content policy requires at least 50 percent U.S. content. For medium- and long-term transactions, there is no minimum U.S. content requirement to receive a portion of financing, but Ex-Im's support is limited to the lesser of (1) 85 percent of the total value of all eligible goods and services in the U.S. export transaction,[6] or (2) 100 percent of the value of the domestic content in all eligible goods and services in the U.S. export transaction.[7] To be eligible for support, goods must be shipped from the United States.

Other industrial countries have their own export credit agencies. For example, the other Group of Seven (G-7) countries all have at least one export credit agency.[8] G-7 agencies differ in the magnitude and types of their activities. All offer medium- and long-term officially supported export credits. Export credit agencies also can provide other products and services that can complicate comparisons among institutions. Ex-Im's mission emphasizing supporting domestic jobs through exports is unique among the G-7 agencies. Ex-Im's charter states that the bank's objectives are to contribute to maintaining or increasing the employment of U.S. workers by financing and facilitating exports through loans, guarantees, insurance, and credits. This mission underlies certain Ex-Im policies, such as its economic impact analysis requirement and its domestic content policy. Other export credit agencies' missions range from promoting and supporting domestic exports to securing natural resources.

[6]Financing 85 percent of the total value of a transaction is considered full financing because of the provision under the Organization for Economic Cooperation and Development arrangement that export credit agencies can finance only 85 percent of a transaction's value.

[7]The U.S. content percentage is calculated in different ways depending on the type of transaction and size of the business. For short-term transactions involving small businesses, the U.S. content percentage is based on the total costs (i.e., labor, materials, overhead, etc.) exclusive of profit. For short-term transactions involving businesses other than small businesses, the percentage is based on only the costs of production (i.e., labor and materials). For medium- and long-term transactions, the content percentage for all businesses is calculated based on the total price (i.e., total costs plus profit).

[8]The G-7 comprises Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States. These countries have been meeting regularly as a group since the mid-1980s to discuss economic issues.

## Ex-Im Methodology to Estimate the Number of Jobs It Supports Is Based on Export Values and Labor Statistics

To estimate the number of U.S. jobs associated with the exports it helps finance, Ex-Im uses a methodology based on the input-output approach. To apply this methodology, Ex-Im uses a BLS data product, known as employment requirements tables (ERT) which are based on the input-output methodology. It is important to understand the ERT because these tables play an essential role in Ex-Im's jobs calculation process. The ERT provide the total number of jobs (on average) supported by production in each industry. These BLS data allow Ex-Im to produce a measure that translates the value of the exports it supports in each industry into an employment estimate for that industry. In order to use the ERT, Ex-Im must rely on data from its own system. Ex-Im's four-step process estimates the value of all the exports it supports by the industries associated with those exports. By combining data from the ERT and its own system and aggregating across industries, Ex-Im produces an estimate of the total jobs its financing supported.

### Ex-Im Uses BLS Tables to Obtain Jobs Ratios—The Numbers of Jobs Supported by Exports in Particular Industries

The methodology Ex-Im uses relies on a basic input-output approach. According to Ex-Im and Commerce officials, the basic input-output approach was designated as the standard for U.S. government agencies by the Trade Promotion Coordinating Committee and has the advantage of generating a uniform jobs calculation methodology across the federal government.[9] The logic underlying the input-output modeling approach assumes that the production of goods and services in an economy uses inputs (such as labor) in fixed proportions. Consequently, it is possible to determine the quantity of labor required for a given level of production. To apply this methodology, Ex-Im uses the ERT, data tables created by BLS, to estimate the number of jobs associated with the specific value of exports Ex-Im supports, rather than the value of total U.S. exports. The ERT are derived from a set of data showing the relationship between industries, known as input-output tables.[10] For researchers using an input-

[9]The Trade Promotion Coordinating Committee's Working Group on Analysis and Data brings together experts from key government agencies who have examined the broader relationship between federal programs and activities, such as Ex-Im's export financing efforts and the jobs they support.

[10]The tables are based on historical relationships between industry inputs (such as labor), and outputs (such as goods for consumption). BLS then scales these relationships using estimates about labor productivity (output per person employed) into employment required for one million dollars of output in that industry (jobs ratios). Incorporating information on labor productivity is important because the input-output tables are in terms of total cost, not number of workers.

output approach, the ERT can be used for analyses that attempt to estimate the employment effects of exports.

BLS develops the ERT so that users can analyze the job impact of various types of expenditures, such as exports. The ERT contain, for 195 industries, the number of jobs required to produce one million dollars of value in each industry (this report refers to this factor as the "jobs ratio"). Because industries may vary widely in how many jobs they support per million dollars of expenditure, it is important for Ex-Im to correctly identify the industry associated with each export transaction it finances.[11] BLS produces two types of ERT, one that includes the employment effects of both domestic and imported production and another that removes the employment effects of imports so that only domestic production is captured.[12] Ex-Im uses the domestic ERT to estimate the number of U.S. jobs associated with its exports. While annual versions of the ERT are produced, the most current year available as of May 2013 is 2010.[13]

Using the ERT, it is possible to obtain either the jobs supported directly in a particular industry, or in a particular industry plus the industries that support its production. For example, construction directly supports jobs in the construction industry but also indirectly supports jobs in industries that supply the material necessary for construction, such as the steel industry. Ex-Im uses the value that also includes employment in supporting industries, which produces a larger jobs ratio. Sometimes this larger estimate is called the "direct plus indirect effect" or "supply chain."

[11]For example, "Pharmaceutical and Medicine Manufacturing" supports 3.51 jobs per million dollars of purchases from that industry. In contrast, "Retail Trade" supports 14.6 jobs per million dollars.

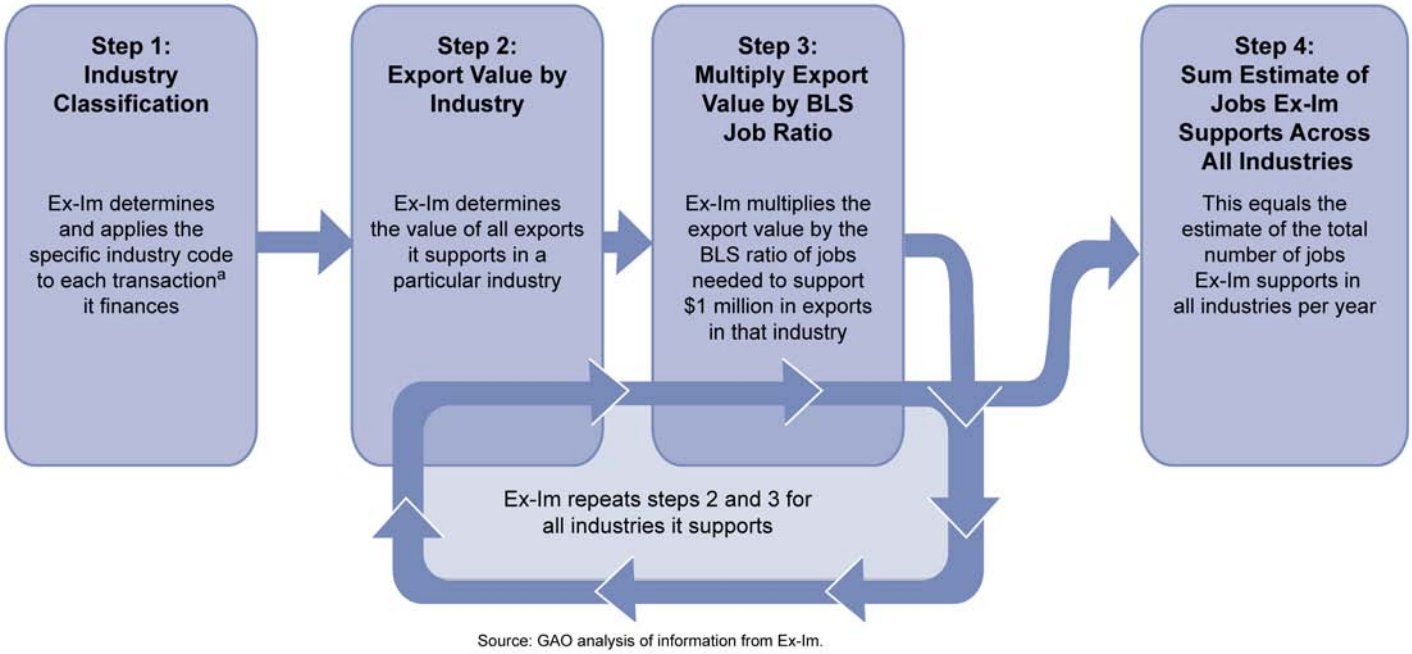
[12]So that the domestic ERT only reflects domestic employment, international inputs into production are netted out. BLS does this by assuming that each industry's share of domestic versus international use of a particular input is constant across industries. For example, it assumes that the automobile industry uses the same proportion of imported steel as the construction industry.

[13]The industry relationships are based on the 2002 benchmark BEA input-output tables (published in 2009). BLS then updates the tables using annual input-output tables, also obtained from BEA. BLS then uses productivity measures, which are based on data from surveys of establishments and households, to translate the cost of labor into jobs. Ex-Im deflated the 2012 export values to coincide with the 2010 ERT using BEA's price index for exports of goods and services.

## Ex-Im Follows a Four-Step Process to Calculate the Number of Jobs Associated with Its Support

Ex-Im's process for using the ERT has four steps. First, it determines the industry associated with each transaction. In some cases, there could be multiple industries associated with a transaction, if Ex-Im financed multiple products in the transaction. Second, it determines the total value of exports Ex-Im supports for each industry. Third, it multiplies these export values by BLS's jobs ratio for each industry to obtain the jobs for that industry. Finally, it aggregates across all industries to produce an overall estimate. Figure 1 depicts each step of the process.

**Figure 1: The Four-Step Process Involved in Ex-Im's Jobs Calculation Methodology**




Source: GAO analysis of information from Ex-Im.

[a]According to Ex-Im, one transaction could have multiple contracts and therefore multiple industry codes. Each industry code is associated with a specific contract.

In step 1, Ex-Im either uses the industry code provided by the applicant (the exporter or the lender) or relies on its engineers (whom Ex-Im considers its in-house industry experts) to identify the appropriate North American Industry Classification System (NAICS) code for the contracts

associated with each transaction Ex-Im finances or supports.[14] Ex-Im translates its data on transactions into the same industry groups (i.e., NAICS-based codes) used by BLS. The method by which Ex-Im obtains the NAICS code varies by length of repayment term. For short- and medium-term financing and working capital credit, the applicant (either the exporter or the lender) provides the NAICS code. For long-term financing, Ex-Im engineers work with the exporters and project sponsor to determine the NAICS code. According to Ex-Im officials, to verify and assign NAICS codes in long-term financing, Ex-Im uses both the guidance provided by the codebook for assigning NAICS codes and the experience of the engineer.[15]

In step 2, Ex-Im estimates a dollar value of exports it supports, referred to as the export value. It does this for each transaction it finances. However, according to Ex-Im officials, because Ex-Im provides different types of financial products, it uses two different methods to determine the export values.

1. For some financial products, such as direct loans and loan guarantees, Ex-Im determines the export value after authorization—but before disbursement—by using information provided on the exporter's certificate.[16] Specifically, Ex-Im determines the export value by using the net contract price—the aggregate price of all goods and services to be exported (i.e., U.S. content plus eligible foreign content that does not include local costs). Ex-Im includes the value of the purchase of goods and services that were financed by entities other than Ex-Im. In other words, the export value is the value of exports in purchase orders that were at least partially financed by Ex-Im. According to Ex-Im officials, they generally provided approximately 83

[14]According to Ex-Im officials, NAICS code data are used for many purposes and are part of the Ex-Im data that is reviewed and audited every year by Ex-Im's external auditor.

[15]Using the underlying transaction data for fiscal year 2012, we found that in approximately 6 percent of the transactions (by export value), the NAICS code was missing. In the next section, we discuss this issue as one of the limitations we identified in the jobs calculation methodology.

[16]Ex-Im's exporter's certificate, which is used for loans and some guarantee products, includes representations and certifications required of the exporter by Ex-Im and the U.S. government, in general. Ex-Im uses information provided in the certificate, such as net contract price, to determine the amount and percentage of U.S. content and to establish the financed amount of each transaction.

percent of the financing for medium and long-term transactions for fiscal year 2010 through fiscal year 2012.

2. For other financial products, such as short-term insurance or working capital, Ex-Im uses the entire value of the credit or the insurance policy as the proxy for the export value. Because the export value is not known at the time of authorization, Ex-Im cannot use the net contract price to determine the export value. These products include revolving lines of credit that may be drawn down multiple times during the available period. Under this type of support, a domestic exporter can access the credit to make purchases and later repay the debt, thereby making additional credit available. According to Ex-Im, this approach may result in an understatement of the total value of the exports, as multiple purchases can occur without ever reaching the limit. However, Ex-Im also confirmed that using the entire value of the credit or insurance policy could result in an overstatement, if all the credit is not used.

At the end of step 2, Ex-Im creates a summary table, where each row contains the sum of export value in an industry. In step 3, Ex-Im multiplies the export values for each industry by the appropriate jobs ratio from the ERT. Finally, in step 4 it sums across all of the industries to obtain a single estimate for the number of jobs it supports.

Using this process, Ex-Im estimated 255,000 jobs supported in 2012. To illustrate, on average, Ex-Im used the following steps:

- Ex-Im determined that it supported approximately $40 billion of exports.
- On average, in fiscal year 2012, every million dollars of exports supported by Ex-Im was associated with 6.5 jobs (based on the industries that used Ex-Im financing, and the ERT).[17]
- Finally, multiplying approximately 40 billion dollars of exports by 6.5 jobs per million results in approximately 255,000 jobs.

[17]This is based on the mix of industries that Ex-Im supports, which might be different from U.S. exports overall. For example, in a February 26, 2013 paper, Commerce reported that, in 2011, every million dollars of U.S. exports supported about 5.1 jobs. The number of jobs also varies by type of export. Commerce reported that goods exported from the United States supported 5.6 jobs per million dollars of goods, while services supported 4.1 jobs per million. Department of Commerce, International Trade Administration, *Jobs Supported by Exports 2012: An Update*, (Washington, D.C.: February 2013).

In order to verify our understanding of Ex-Im's jobs calculation process, we obtained the individual transaction level data from Ex-Im, including the export values and industry codes for each transaction. We then merged that data with the most recent ERT from the BLS and summed across all transactions. Using this data, we were able to obtain close to Ex-Im's exact value for the total number of jobs supported, thus confirming the process that Ex-Im described to us. For more detail about our analysis, see appendix I.

## Ex-Im Does Not Report Important Details about Its Approach, Including Limitations

The basic methodology used by Ex-Im has recognized limitations, and Ex-Im also makes certain assumptions about its data. However, in its reports, Ex-Im does not describe limitations or fully detail assumptions that are inherent to the methodology. As a result, stakeholders may not fully understand what the job number represents or how to interpret it in the proper context.

### Ex-Im Employs a Commonly Used Methodology; However, This Approach Has Limitations

Although the input-output approach on which the ERT are based is a commonly used methodology, this approach has several limitations. Some of these limitations are inherent to the ERT. Additional limitations result from assumptions Ex-Im makes about its data on the industry codes and export values for the export transactions it finances.

The limitations specific to the ERT are outside of Ex-Im's direct control. For example, officials from Commerce and Ex-Im said that the data in the ERT cannot be used to distinguish between jobs that were newly created and those that were maintained. The ERT simply show the direct and indirect (also known as supply chain) employment per $1 million of sales of goods to final users for each commodity, not whether these are "jobs created" (employing previously unemployed people or people out of the labor force, such as students), or "jobs maintained" (continuing pre-existing employment). According to BLS officials, it would be challenging to find data that can distinguish between newly created and maintained jobs. Obtaining data detailed enough to allow a researcher to make that distinction would require many more resources than are currently available to BLS, according to these officials. They added that this is a general limitation of the input-output methodology, upon which the ERT are based, and which is a standard methodology used to calculate average employment and other inputs needed for a certain level of production. Because of the lack of specificity and limitations, Ex-Im

officials report that the jobs are “associated with” or “supported by” Ex-Im financing.

Moreover, the documentation accompanying the ERT also describes several limitations and assumptions to those data, including the following:[18]

- The employment data are a count of jobs, not of persons employed, and treat full-time, part-time, and seasonal jobs equally.[19] Persons who hold multiple jobs show up multiple times in the employment data.
- The age of the data underlying the ERT is a general limitation of BLS’s employment requirements tables. The ERT incorporate a large amount of data, which takes time to collect and put in the ERT framework, according to BLS officials. Ex-Im is using the latest available ERT, the 2010 ERT; however the industry relationships that the ERT are based on come from 2002 data from BEA. BLS officials stated that the current economy may be very different from the economy in 2002, and the relationships reflected in the latest available ERT are a decade old. BLS officials acknowledged, however, these data are the best currently available for Ex-Im to use.[20]

Furthermore, the ERT data assume average industry relationships; however Ex-Im’s clients could be different than the typical firm in the same industry. For example:

- The ERT that are adjusted to reflect only domestic employment assume that each industry’s share of domestic versus international

[18]Department of Labor, Bureau of Labor Statistics and Office of Occupational Statistics and Employment Projections, *Employment Outlook: 2010-2020: Layout and Description for 195-Order Employment Requirements Tables: Historical 1993 through 2010* (Washington, D.C.: February 2012).

[19]BLS officials stated that this is the same concept used in the domestic monthly payroll employment numbers that BLS produces. This consistency allows for comparability. For more information see http://www.bls.gov/ces/home.htm.

[20]Although it is based primarily on the 2002 BEA benchmark input-output tables, BLS does update the ERT with the annual BEA tables, Census data, and other surveys. BLS officials will update the relationships in the ERT when they obtain the 2007 update from BEA. Therefore, after the tables are updated, the resulting ERT will have better data than what is currently available. Using the updated ERT could result in slightly different figures from calculations performed using the current ERT.

use of a particular input is constant across industries. For example, these ERT assume that the automobile industry uses the same proportion of imported steel as the construction industry. Because of Ex-Im's domestic content policy, agency officials said that Ex-Im does not consider the exports supported by its financing to contain the same level of imports as the industry averages. Ex-Im officials agreed that this is a limitation but said that using BLS's adjusted ERT helps ensure that imported content is accounted for to some extent. Ex-Im officials told us they had not assessed the extent to which this limitation affects the overall jobs estimate.

- In addition, officials from Export Development Canada[21] and Ex-Im and a trade policy researcher said that using input-output methodology to calculate employment estimates for specific transactions is also a limitation, since a particular export may be different than the average for that industry.

The ERT also exclude the impact of spending that results from income generated by Ex-Im supported jobs, sometimes called the multiplier effect. For example, an increase in employment in a factory may result in employment at a nearby restaurant. According to BLS, including these additional consumer expenditures would result in a larger employment impact.

Some limitations stem from Ex-Im's process for determining the industry and export value. As discussed previously, during step 1 (as shown in fig. 1), Ex-Im determines the industry associated with each transaction. However, in some cases, Ex-Im has been unable to determine the industry code. In cases where the NAICS code is missing for transactions, Ex-Im has used the average across all of its other industries as the jobs ratio.[22] In almost all of those cases we identified with missing NAICS codes (that had positive export values), the type of support was short-term insurance. According to Ex-Im, in short-term insurance, the lender may not know at the time of authorization which exporter will

[21]Of export credit agencies we contacted, only Export Development Canada calculates the effects of its financing on employment. Officials from the French, British, and Japanese export credit agencies said that their agencies do not perform this type of calculation.

[22]The average jobs ratio that Ex-Im uses is 6.5 jobs per million dollars of exports. However, if the actual ratio was plus or minus 5, this would translate into plus or minus 12.5 thousand jobs (since 6 percent is approximately 2.5 billion dollars).

benefit from the insurance coverage, and this may explain why the NAICS code is not identified.

Ex-Im's jobs calculation methodology is also sensitive to certain assumptions about how it determines the export value based on its financing. For example, as discussed previously in step 2, using the authorized amount as the export value for short-term insurance transactions could overstate or understate the actual export value. In addition, according to Ex-Im officials, the export value includes the value of the purchase of goods and services that were financed by entities other than Ex-Im.

Finally, according to government officials and trade policy researchers, the methodology that Ex-Im uses does not answer the question of what would have happened without Ex-Im financing. A Commerce report[23] and trade policy researchers we consulted noted that in a high unemployment economy, additional exports may result in additional jobs. However, in a low unemployment economy, additional exports may result in jobs shifting from one firm to another, without an increase in total employment.

## Ex-Im Does Not Describe Limitations or Fully Detail Assumptions in Its Reporting on Employment Effects

Ex-Im reports the number of jobs its financing supports and the methodology it uses but does not describe the limitations or fully detail the assumptions related to its data or methodology. Ex-Im first reported the total number of jobs it supports in its 2010 annual report and started providing an overview of its methodology in its 2011 report. The 2012 report states that the Trade Promotion Coordinating Committee identified this basic methodology as the official U.S. government calculation of jobs supported through exports. The report further states that Ex-Im uses the latest available domestic ERT from BLS (which is based on input-output tables from BEA), National Income and Product Accounts data (also from BEA), and BLS industry employment data to calculate the number of jobs associated with Ex-Im supported exports of goods and services.

Ex-Im has also reported the number of jobs it supports in various other documents, including reporting to comply with the Government Performance and Results Act, the Chairman's statements to Congress, its

[23]Department of Commerce, International Trade Administration, *Exports Support American Jobs: Updated Measure Will Quantify Progress As Global Economy Recovers* (Washington, D.C.: Undated).

website, and press releases. Some press releases that announce new transactions also state the number of jobs associated with a specific transaction. Most of the press releases we reviewed provide only a brief statement about how Ex-Im calculates its job estimate. For example, an October 2, 2012, press release announcing $105 million in financing for an aquarium in Brazil states: “The transaction will support approximately 700 American jobs, according to bank estimates derived from Departments of Commerce and Labor data and methodology.”

Ex-Im officials told us they use the results of its jobs calculations for reporting purposes only. According to Ex-Im officials, Ex-Im calculates the number of jobs supported for the transactions reviewed by Ex-Im’s Board of Directors, at the request of one of its board members.[24] Ex-Im board members stated that the purpose of reporting these numbers is to give Congress a sense of the employment effects of Ex-Im activities; they do not use them for decision making. Board members also told us that the chief consideration when making a financing decision is the credit worthiness of the firm. Officials stated that they do not make decisions based on how many jobs would be supported by a particular transaction.

However, none of Ex-Im’s reporting discusses limitations or fully details the assumptions in its data or in the methodology it uses. Most of the limitations and assumptions are not specific to Ex-Im, but are common to the methodology. For example, Ex-Im’s brief discussion of the methodology in its 2012 annual report does not explain that the methodology does not allow it to differentiate between the number of new jobs that were created and the number of jobs maintained as a result of its financing. In addition, Ex-Im does not specify that jobs associated with the multiplier effect are not captured in its jobs estimates. Further, the report does not state that the employment estimate is an overall count of jobs, not full-time equivalents. Thus, the number of jobs that Ex-Im says it supports can include part-time and seasonal jobs. Similarly, its press releases that include the number of jobs associated with a specific transaction also do not state the limitations and assumptions associated with the methodology. Officials said that, in reporting the number of jobs associated with Ex-Im financing, they clearly state that it is an estimate.

[24]According to Ex-Im officials, the Board of Directors reviews all long-term transactions and generally other transactions over $10 million in authorization value. The board also receives the results of an economic impact analysis that assesses whether a project will negatively affect the U.S. economy.

Because it is a nonfinancial and unaudited number, the caveat of "estimate" seemed sufficient, according to Ex-Im officials. According to GAO's Standards for Internal Control in the Federal Government, effective communications should occur in a broad sense with information flowing down, across, and up the organization.[25] Management should ensure there are adequate means of communicating with, and obtaining information from, external stakeholders that may have a significant impact on the agency achieving its goals. By not including more information in its report, Ex-Im does not allow readers, including Congressional and public stakeholders, to fully understand what the jobs number represents or how to interpret it in the proper context.

## Alternative Methodologies Address Some Limitations but Have Other Drawbacks

Although alternative methodologies may address some of the limitations in Ex-Im's jobs calculation methodology, these alternatives have their own limitations. Trade policy researchers we spoke to suggested alternative methodologies that Ex-Im could potentially use to calculate the effects of its financing on employment. However, these methodologies have their own limitations, such as not including the effects of Ex-Im financing on indirect jobs (the supply chain) and would require a significant amount of data collection by Ex-Im that would be time consuming, require more technical expertise, and cost more.

One trade policy researcher we spoke to suggested that Ex-Im could conduct an assessment of firms that received Ex-Im financing in comparison to firms that did not receive Ex-Im financing. This approach, using firm-specific data, could potentially estimate whether the jobs would have existed without Ex-Im financing. For example, the German Ministry of Economics and Technology commissioned a study by the University of Munich on the employment effects of the export credit guarantees provided by the German export credit agency. This 6-month study used econometric analysis to examine firm-level data while taking into account other potential causes of export success and found that the German export credit agency's guarantees had increased exports and created jobs. According to their report, their estimate of jobs created using this approach was comparable to estimates derived from an input-output

[25]GAO, *Standards for Internal Control in the Federal Government*, GAO/AIMD-00-21.3.1 (Washington, D.C.: November 1999).

approach. However, Ex-Im officials noted that the type of data used in the German study may not be readily available in the United States to Ex-Im.

Another trade policy researcher suggested a different approach using firm-level data from Census or BLS to examine job creation and destruction over time. This approach could be potentially informative of changes in the labor market not captured by a total jobs number, such as whether these are new jobs, or whether firms supported by Ex-Im are less likely to reduce employment. In contrast, the current input-output method used by Ex-Im provides a static look at the number of jobs supported by Ex-Im financing and does not show how the economy has gained or lost jobs over time. While the approach of using firm-level data may yield information about the creation and destruction of jobs, it may not yield a static estimate of the number of jobs supported. In addition, BLS officials stated that such an analysis would only identify whether a firm's total employment increased or decreased over time, but would not identify a new set of jobs in the firm and would not control for factors other than Ex-Im financing that could cause a change in employment. An Export Development Canada official also stated that such a methodology introduces the potential for selection bias. Furthermore, Commerce officials stated that such an analysis would be too time consuming to conduct every year.

Two trade policy researchers and Ex-Im and Export Development Canada officials we spoke with said that these alternative approaches that rely on firm-level data would require more resources for data collection and analysis than does Ex-Im's current input-output based methodology. In particular, a methodology using firm-level data would require a significant amount of data collection by Ex-Im that would be time consuming, require more technical expertise, and have a monetary cost. Moreover, these alternatives may not capture the indirect (the supply chain) effect of Ex-Im financing. These trade policy researchers said that the input-output approach is appropriate given Ex-Im's limited resources and how the agency uses the number of jobs supported.

Export Development Canada officials said they use an input-output based approach, which also captures the indirect (the supply chain) effect, similar to the methodology used by Ex-Im to calculate the number of jobs

supported by its financing.[26] However, for insurance products, Export Development Canada uses the contracts for the exports it is supporting to calculate the export value. This approach allows this agency to capture export values that differ from authorized amounts since the authorized amount could overstate or understate the actual export value. Ex-Im officials said they lack the staff and resources to adopt Export Development Canada's method and that Ex-Im faced some limitations with its data systems. Additionally, using the authorized value for the short-term insurance products, Ex-Im officials said, ensures that the value is only counted once in the fiscal year it was authorized and is not counted again in subsequent fiscal years.

Prior to the use of the input-output based approach, Ex-Im, as well as Export Development Canada, tried to collect information on the number of jobs associated with their financing directly from the companies that received the financing. Officials from both agencies said that they had problems with the data they received from the companies. An official from Export Development Canada also said that smaller companies found this process burdensome. According to Ex-Im, surveyed firms responded in inconsistent ways, such as claiming all employed workers at a firm were supported by the exports. They also reported that since financial intermediaries or foreign buyers often submit the applications for Ex-Im financing, they do not know the jobs impact for the U.S. exporter or service provider. Moreover, any jobs-impact information from applicants does not account for indirect jobs created in the supply chain, which the input-output approach does include.

## Conclusions

Ex-Im's primary mission is to support U.S. jobs through the exports that it finances, and it estimates the number of jobs supported by its financing in order to provide Congress and the public with a broad sense of its impact on U.S. employment. The jobs number reported by Ex-Im is an estimate, used by Ex-Im as an indicator of how the agency is fulfilling its mission to support U.S. employment. Although the methodology Ex-Im uses does not distinguish between jobs that were newly created or jobs that were

[26]Export Development Canada's mission is not directly focused on creating Canadian jobs, unlike Ex-Im's mission to support U.S. jobs through exports. Furthermore, Export Development Canada has a commercial market orientation and is not restricted from competing with the private sector. In contrast, Ex-Im's charter emphasizes its role as a lender of last resort.

maintained, its current methodology has certain advantages. For example, it is based on the input-output approach commonly used in economic analysis; it includes indirect jobs in the supply chain; and it can be performed using limited resources. Providing a precise accounting of the jobs supported by Ex-Im's financing may not be feasible because of the complexity and cost of doing so. While trade policy researchers we consulted identified other methodologies, they also identified limitations of those methodologies. For example, these methodologies would require more resources to conduct, would be difficult to perform on a regular basis, and would not include indirect jobs in the supply chain. Nonetheless there are important limitations and assumptions that affect Ex-Im's estimate of the number of jobs supported by its financing. While Ex-Im's reporting includes a brief overview of its methodology, it has not included a discussion of the limitations or fully detailed the assumptions of the methodology and data. The lack of detailed reporting reduces the ability of congressional and public stakeholders to fully understand what the jobs number represents and the extent to which Ex-Im's financing may have affected U.S. employment.

## Recommendation for Executive Action

To ensure better understanding of its jobs calculation methodology, the Chairman of Ex-Im Bank should increase transparency by improving reporting on the assumptions and limitations in the methodology and data used to calculate the number of jobs Ex-Im supports through its financing.

## Agency Comments and Our Evaluation

We provided a draft of this report to Ex-Im, Commerce, and Labor for comment. We also provided relevant sections to Export Development Canada for technical comment.

In its written comments, which are reproduced in appendix II, Ex-Im stated that it agrees with GAO's recommendation and will provide greater detail on the assumptions and limitations associated with its jobs calculation methodology. Ex-Im further stated that it will begin implementation of the recommendation this fiscal year with its 2013 annual report, which will include greater information on the assumptions and limitations of its methodology. Ex-Im will provide this information in annual reports and on its website.

Commerce stated that it agrees with GAO's recommendation for improved reporting on how Ex-Im calculates the number of jobs that are supported by exports for which it provides financing. Commerce also recommended that Ex-Im make it clear that its jobs estimate is indicative

of jobs supported by Ex-Im financing and is different than the estimate of jobs supported by total U.S. exports that Commerce publishes as the official estimate of the U.S. government. Commerce's comments are reproduced in appendix III.

Export Development Canada stated that it recognizes the deficiencies in the input-output approach, but that it believes that compared with other potential methodologies, this approach provides the best solution. According to Export Development Canada, the input-output approach uses a simple method to capture the indirect impact of the supply chain on domestic employment. In addition, Export Development Canada said that while using firm-level data to estimate the effect of financing might offer other insights, it would also be complex to analyze, and could introduce another bias. Further, Export Development Canada said that in its experience, surveying firms directly may not lead to reliable information, and also could be burdensome to smaller firms.

Ex-Im, Commerce, and Export Development Canada also provided technical comments that were incorporated, as appropriate. We received no comments from Labor.

We are sending copies of this report to interested congressional committees, the Chairman of the Export-Import Bank of the United States, and the Secretaries of Commerce and Labor. In addition, the report is available at no charge on the GAO website at http://www.gao.gov.

Lawrance L. Evans, Jr.,
Director, International Affairs and Trade

# Appendix I: Objectives, Scope, and Methodology

The objectives of this report were to (1) describe the methodology and processes the Export-Import Bank of the United States (Ex-Im) uses to calculate the effects of its financing on employment in the United States, (2) examine the limitations of Ex-Im's approach and how Ex-Im reports on its methodology, and (3) describe alternative methodologies and their limitations.

To describe the methodology and processes Ex-Im uses to calculate the effects of its financing on employment in the United States, we interviewed Ex-Im staff involved with producing the estimate and reviewed descriptions of the estimate in the most recent annual reports and other documentation provided by Ex-Im. Because Ex-Im's method uses the Bureau of Labor Statistics' (BLS) employment requirements tables (ERT), we interviewed BLS staff and reviewed technical documentation on the ERT. In addition, we reviewed the Microsoft Excel spreadsheet Ex-Im uses to perform the estimate, by examining formulas in the sheet used to produce the estimate. Because Ex-Im provided the underlying raw data used by the spreadsheet, we were able to combine its data with the ERT data and replicate Ex-Im's jobs estimate by the following steps. First, we downloaded the ERT directly from the BLS website. Then, we merged the ERT with the raw data provided by Ex-Im, by industry. Finally, we multiplied the jobs ratio by Ex-Im data's export value (for the appropriate industry), and aggregated across transactions. Following this procedure, we obtained a value close to Ex-Im's exact value for a jobs estimate. Replicating Ex-Im's estimate helped to verify that Ex-Im followed the process and used the specific ERT that it stated it did, and that all of the raw data were reflected in its jobs estimate. We performed our replication using SAS, a computer program distinct from Excel. Based on our interviews with knowledgeable agency officials, review of relevant documentation, and replication of Ex-Im's calculation, we determined the data were sufficiently reliable for the purposes of our report.

To examine the limitations of Ex-Im's approach, how Ex-Im reports on its methodology, and alternative methodologies, we reviewed relevant documentation related to Ex-Im, including recent annual reports, descriptions of Ex-Im's jobs calculation methodology, and press releases that included information on jobs supported by Ex-Im financing. We also

reviewed recent GAO reports on Ex-Im and export credit agencies,[1] and literature related to input-output methodology.[2] In addition, we interviewed Ex-Im officials from various divisions of the organization about how they calculate the number of jobs supported by Ex-Im's financing, how they obtain data about Ex-Im's transactions, and how the jobs number is used. We also interviewed officials from the BLS at the Department of Labor to discuss the employment requirements tables (ERT). In addition, we interviewed officials from the Department of Commerce, specifically from the Bureau of Economic Analysis—which develops the data in the input-output tables that BLS uses in its ERT—and from the International Trade Administration—which also calculates the number of jobs supported by U.S. exports overall. We reviewed relevant documentation from these agencies such as technical documentation on the ERT. We also spoke with officials from four other countries' export credit agencies to obtain information on their efforts to determine the number of jobs associated with their financing, including the export credit agencies of Canada, Japan, France, and the United Kingdom. We selected these countries' export credit agencies because GAO had consulted with them on prior engagements based on their similarities to Ex-Im. We obtained information on a study that analyzed the employment effects of Germany's export credit agency as an example of an alternative methodology.[3] We met with three selected trade policy researchers to obtain their perspectives on Ex-Im's methodology and discuss potential alternative methodologies to calculate the effect of Ex-Im's financing on employment. We selected these researchers because GAO had consulted with them on prior engagements related to export credit agencies based on their knowledge of the issues, or they had been recommended to us through interviews with knowledgeable government officials due to their expertise in the area. In addition, we reviewed GAO's

[1]GAO, *U.S. Export-Import Bank: Actions Needed to Promote Competitiveness and International Cooperation*, GAO-12-294 (Washington, D.C.: Feb. 7, 2012); GAO, *Export-Import Bank: Improvements Needed in Assessment of Economic Impact*, GAO-07-1071 (Washington, D.C.: Sept. 12, 2007).

[2]Department of Commerce, Bureau of Economic Analysis, *Measuring the Nation's Economy: An Industry Perspective: A Primer on BEA's Industry Accounts* (Washington, D.C.: May 2011); Ronald E. Miller and Peter D. Blair, *Input-Output Analysis: Foundations and Extensions* (New Jersey: 1985); Wassily Leontief, *Input-Output Economics* (New York: 1966).

[3]Ifo Institute, Leibniz Institute for Economics Research, University of Munich, *Employment Effects of Export Credit Guarantees by the Federal Republic of Germany "Hermesdeckungen"* (Munich: October 2011).

Standards for Internal Control in the Federal Government to assess Ex-Im's communication regarding its jobs calculation methodology.[4]

We conducted this performance audit from August 2012 to May 2013 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

[4]GAO, *Standards for Internal Control in the Federal Government*, GAO/AIMD-00-21.3.1 (Washington, D.C.: November 1999).

# Appendix II: Comments from the Export-Import Bank of the United States

EXPORT-IMPORT BANK
OF THE UNITED STATES

May 6th, 2013

Lawrance L. Evans, Jr.
Director, International Affairs and Trade
U.S. Government Accountability Office
Washington, D.C. 20548

Dear Mr. Evans:

Thank you for providing the Export-Import Bank with the opportunity to comment on the subject draft report dated May 2013 regarding the Bank's job calculation methodology.

Ex-Im Bank's mission is to support U.S. jobs through exports. With limited staff and resources, the Bank has developed a practical, easy to use tool that provides an effective approximation of Ex-Im Bank supported jobs; it utilizes publically available Commerce Department and Bureau of Labor Statistics data, and is also used by other agencies to calculate jobs numbers. We are pleased that the GAO validated the Bank's jobs calculation methodology and recognizes the advantages of the Bank's current jobs calculation methodology. The Bank's methodology is consistent with those commonly used in economic analysis. The GAO report also recognized that the Bank's current jobs calculation methodology is appropriate, accurate, and cost effective. The report does not recommend any changes to the underlying methodology.

Ex-Im Bank appreciates the GAO's cooperative approach on this audit. GAO's review and assessment of the Bank's jobs calculation methodology has been a positive experience for Ex-Im Bank.

The following is GAO's recommendation and Ex-Im Bank's response:

> **To ensure better understanding of its job calculation methodology, the Chairman of Ex-Im Bank should increase transparency by improving reporting on the assumptions and limitations in the methodology and data it uses to calculate the number of jobs it supports through its financing.**
> Ex-Im Bank has been and continues to be committed to openness and transparency. In the Bank's annual report—which is submitted to Congress and made publicly available on the Bank's website—we detail the methodology used to calculate the number of jobs supported by Ex-Im Bank financing. The Ex-Im Bank agrees with the GAO recommendation and will provide greater detail on the assumptions and limitations associated with the jobs calculation methodology in the Bank's Annual Reports. This information will also be available on the Bank's website.

Ex-Im Bank will implement the GAO recommendation this fiscal year. In prior annual reports, the Bank detailed the methodology for the jobs calculation. Starting with the FY 2013 Annual Report, the section on "Supporting U.S. Jobs" will include greater information on the assumptions and limitations associated with this methodology. This information will be consistent with the assumptions and limitations highlighted in the GAO report.

Sincerely,

John A. McAdams
Chief Operating Officer
Export-Import Bank of the United States

811 VERMONT AVENUE, N.W. WASHINGTON, D.C. 20571

# Appendix III: Comments from the Department of Commerce

**UNITED STATES DEPARTMENT OF COMMERCE**
**International Trade Administration**
Washington, D.C. 20230

Dr. Lawrance L. Evans, Jr.
Director, International Affairs and Trade
U.S. Government Accountability Office
Washington, DC 20548

Dear Dr. Evans:

Thank you for the opportunity to review the draft Government Accountability Office (GAO) report, *Export-Import Bank More Detailed Information about Its Job Calculation Methodology Could Improve Transparency* (GAO-13-446). In this report, the GAO examined how the Export-Import Bank calculates the number of jobs that are supported by exports for which it provides financing.

We generally agree with the GAO recommendation that Export-Import Bank (Ex-Im) improve its reporting on how it calculates the number of jobs that are supported by exports for which it provides financing. As part of its improved reporting, we recommend that Ex-Im make it clear that its estimate is different than the jobs supported estimates published by the Department of Commerce where both the methodology and the numbers themselves are reviewed and approved as official estimates of the U.S. Government. In so doing, Ex-Im would avoid confusion with the official DOC estimates that are used government-wide, emphasize that the number has no general application, and confirm that the figure is only indicative of jobs supported by Ex-Im financing.

A technical comment is enclosed for your consideration. It is intended to provide further clarity in how Ex-Im's approach differs from numbers used government-wide.

We look forward to the final GAO report.

Sincerely,

Praveen Dixit
Deputy Assistant Secretary
for Industry Analysis

# Appendix IV: GAO Contact and Staff Acknowledgements

## Contact

Lawrance L. Evans, Jr. (202) 512-4802 or EvansL@gao.gov

## Staff Acknowledgments

In addition to the person named above, Jose Alfredo Gomez (Director), Juan Gobel (Assistant Director), Christina Werth, Rachel Girshick, and Benjamin Bolitzer made key contributions to this report. Also contributing to this report were Karen Deans, Susan Offutt, Martin de Alteriis, Etana Finkler, Robert Alarapon, and Ernie Jackson.