

FOOD AID AND AGRICULTURAL CARGO PREFERENCE

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Abstract *This paper uses an unprecedentedly rich data set to estimate the cost of agricultural cargo preference (ACP) restrictions on United States food aid programs, and to document some of the programs' competitiveness and national security impacts. ACP cost U.S. taxpayers \$140 million in 2006, 46% more than competitive freight costs would have. This roughly equals the cost of non-emergency food aid to Africa. Furthermore, 70% of ACP vessels did not satisfy the criteria that deem them militarily useful, a large share were ultimately owned by foreign corporations, and no ACP vessel crew has been mobilized for national service.*

Introduction

For at least half a century, food aid has been a key resource for responding to food crises ranging from chronic food insecurity associated with endemic poverty, to acute humanitarian emergencies following natural or manmade disasters. Over the past decade, considerable reforms have been made to food aid policies, as donors have begun to distribute cash or vouchers in lieu of food, or if they are distributing food, to purchase commodities in developing countries rather than in the donor country. Notably, the last and slowest donor to reform its food aid policies has been the United States (U.S.), which has accounted for more than one-half of yearly global food aid deliveries for decades.

Why has the U.S. been slow to change its food aid policies? The sheer size and history of U.S. food aid programs obviously create an inertia that differentiates it from most donors. But in political economy terms, arguably the most distinctive feature of U.S. food aid programs is the intimate involvement of ocean carriers, which benefit from little-known agricultural cargo preference (ACP) requirements that are absent in other donor countries. While food aid policy reforms have had to overcome resistance from agribusiness and some non-governmental organization (NGO) interests in every donor nation, the “iron triangle” of interests formed by agribusiness, some NGOs and ocean carriers has been a uniquely effective lobby for the status quo in U.S. food aid policy (Barrett and Maxwell 2005).

Although ocean carriers are a unique and powerful player in the political economy of U.S. food aid policy, and ACP seems to matter to the performance of the world’s largest food aid program, very little is known empirically about the cost and effects of ACP. This paper helps to fill that evidence gap, exploiting an unprecedentedly rich data set, which covers every United States Agency for International Development (USAID) food aid shipment in fiscal year 2006, to estimate the cost of ACP restrictions and to document some of the competitiveness and national security impacts of ACP. Many experts have argued that cargo preference laws have proven ineffective in maintaining the viability of the U.S. maritime industry, and divert valuable resources away from food aid and development assistance programming (Barrett and Maxwell, 2005; Murphy and McAfee 2005; GAO, 2007). A recent simulation-based analysis suggests that eliminating ACP would be the donor policy reform with the greatest potential to increase the well-being of food-insecure households globally (Lentz and Barrett 2008).

This paper adds more precise and comprehensive empirical support to those arguments. We find that the ACP program operates at a substantial financial cost to U.S. taxpayers and to U.S. government agencies shipping agricultural cargoes, and at a potentially significant humanitarian cost to underserved eligible beneficiary populations. We estimate that in fiscal year 2006, ACP compliance by USAID and the United States Department of Agriculture (USDA) cost U.S. taxpayers \$140 million, a 46% markup over competitive freight costs. This is nearly equivalent to the value of USAID’s entire 2006 Title II non-emergency food aid to Africa, which served 1.2 million beneficiaries and is widely deemed important to preventing food emergencies.¹ There is no specific appropriation by Congress to compensate USAID and USDA for ACP costs, though several inter-agency reimbursement mechanisms exist (these are discussed in detail below). Additionally, 70% of U.S.-flag vessels eligible to carry food aid in 2006 failed to meet the Department of Defense’s (DoD) definition of militarily useful vessels, calling into question the effectiveness of ACP vessels in supporting national security. Furthermore, vessels ultimately owned by foreign corporations carry a considerable share of food aid shipments under cargo preference. We thus find that: ACP rules are costly, especially to USAID, a resource-poor international development agency whose mission does not involve shouldering the cost of subsidies to the shipping industry; that ACP fails to advance national security objectives as effectively as a parallel program, the Maritime Security Program; and that, ironically, ACP rules support foreign carriers, which undercuts the purpose of

¹ See *Appendix 6 of USAID IFAR (2006)*.

promoting American interests. In the paper's closing section, we offer some suggestions for policy remedies to these problems. The key message of the paper is that ACP is relatively ineffective in advancing its stated objectives, and that direct subsidies to the U.S. shipping industry would likely more effectively advance national security and shipping goals while also liberating U.S. food aid programs from inefficiencies that complicate the humanitarian task of emergency food delivery and add substantial cost for taxpayers.

Background Information

Several government agencies cooperate to deliver U.S. food aid. USAID administers Titles II and III of the Food for Peace Act. Title III was unfunded in fiscal year 2006 (FY06), and remains so today, while Title II and the Bill Emerson Humanitarian Trust cumulatively accounted for 74% of total 2002-2006 U.S. food aid funding (GAO, 2007). USDA's Foreign Agricultural Service administers Title I (which, although historically the largest U.S. food aid program, has gone unfunded since FY07), as well as Food for Progress, the McGovern-Dole International Food for Education and Child Nutrition program, Section 416(b) donations of commodity stockpiles held by the Commodity Credit Corporation (CCC), and the Local and Regional Procurement pilot projects authorized under the 2008 Farm Bill. USDA's Farm Service Agency (FSA) serves as the buying agent for all U.S. food aid programs. FSA extends invitations for bids (IFBs) to prospective sellers of food commodities and providers of freight services for commodity delivery to overseas ports. The Kansas City Commodity Office (KCCO) of FSA is responsible for price discovery and commodity purchase. Freight contracts are awarded by NGOs to ocean carriers based on KCCO's lowest landed cost price analysis.

Maritime interests have always played a major role in U.S. food aid policy, and ACP has long been one of the most controversial of the many regulations imposed upon the U.S. government food aid agencies, USAID and the USDA.² U.S. law requires that a minimum share of U.S. food aid be shipped on U.S.-flag vessels, in accordance with the Cargo Preference Act of 1954 and Section 901 of the Merchant Marine Act of 1936, each of which has been amended several times, as well as the Cargo Preference Act, enacted in 1954 alongside Public Law 480, the key law governing U.S. food aid programs. There are several stated policy objectives of cargo preference. As described by the Department of Transportation's Maritime Administration (MARAD), cargo preference laws are intended to provide essential sealift capability in wartime, and to maintain skilled jobs for American seafarers and the financial viability of U.S.-flag vessel operating companies, thereby ensuring that vessels, trained crews, and vessel service industries continue to exist in order to protect U.S. ocean commerce from foreign domination (MARAD n.d.).

From 1954 until 1985, cargo preference restrictions required that at least 50% of the gross tonnage of U.S. food aid commodities be shipped on privately owned, registered U.S.-flag commercial vessels. The 1985 Farm Bill increased that proportion from 50% to 75%, despite opposition by both USDA and USAID. Based on calculations submitted to them by USDA and USAID, MARAD is responsible for reimbursing the excess ocean freight costs associated with the increased use of U.S.-flag commercial vessels. This increase applied only to food aid and did not apply to other government-directed shipments. Congress did mandate that MARAD reimburse USAID and USDA any extra costs associated with this change, although the reimbursement system has been the subject of considerable inter-agency dispute over the years and, at one point, hundreds of millions of dollars in MARAD reimbursements were in arrears (USAID 2001, Barrett and Maxwell 2005). MARAD's Office of Cargo Preference and Domestic Trade is responsible for identifying whether food aid carriers qualify for ACP, and therefore plays a central role in monitoring ACP compliance.

Vessel Eligibility

² See Ruttan (1993) or Barrett and Maxwell (2005) for extensive discussions of this topic.

MARAD's determination of U.S.-flag status requires that a vessel be a privately owned, U.S.-flag commercial vessel registered in and operated under the laws and regulations of the U.S. (USAID 2007).³ U.S.-flag registry is costly due to taxes, safety, health and environmental regulations, as well as the higher labor costs typically associated with hiring U.S. citizen mariners. In order to be a U.S.-flag vessel, at least 75% of crewmembers must be U.S. citizens, while the remaining 25% can be resident aliens (as reported in GAO 2004, MARAD 2006a). A vessel must be U.S.-flagged for three years in order to be eligible for the agricultural cargo preference program, which limits the flexibility of the U.S.-flag shipping industry to meet short-term changes in demand for U.S.-flag shipments.

Under ACP policy adopted by MARAD, food aid freight contracts are awarded based on a priority system. MARAD Priority 1 (P1) bids offer direct U.S.-flag vessel service, or U.S.-flag vessel service with transshipment to another U.S.-flag vessel, or intermodal services to the final destination utilizing only U.S.-flag vessels for any waterborne segments. P1 bids tend to be carried on bulkers, breakbulk carriers, or tankers rather than container ships or other vessels providing liner service. As the most modern and efficient vessels for carrying containerized cargo, those providing liner service use hub and spoke operations to dominate the commercial ocean freight industry today. MARAD Priority 2 (P2) bids include U.S.-flag to foreign-flag transshipment, with the exception of transfers to foreign-flag vessels within the territorial waters of the receiving country (Bloom 2008). P2 shipments may be the most viable in many developing countries, where ports are often too small to accommodate large, transoceanic container ships. P2 bids tend to be awarded to vessels providing liner service, though priority policy may induce more container lines to offer transshipment service using only U.S.-flag vessels. Thus, container lines increase their status on the priority scale, at the cost of the efficiency of U.S.- to foreign-flag transshipment. MARAD Priority 3 (P3) bids are direct service bids using a foreign-flag vessel or foreign-flag to foreign-flag transshipments.

In the bid selection process used to ensure compliance with ACP laws, P1 bids always take precedence. Price-based competition occurs only among P1 bids, regardless of whether P2 or P3 bids have lower costs. P2 bids are only accepted in cases where P1 bids are not available, and P3 bids are only accepted in cases where P1 and P2 bids are not available. USAID tracks P1 and P2 classifications by coding each accepted bid according to its priority status.⁴

Ocean Freight Differential and Inter-Agency Reimbursement

The ocean freight differential (OFD) is the difference between the winning U.S.-flag vessel's ocean freight rate and that of a competing foreign-flag carrier. The OFD does not cover non-ocean costs associated with the award of freight contracts to U.S.-flag vessels under ACP, such as overland transport and fumigation. Insiders offer anecdotal claims that these costs are often higher than for the lowest cost (but non-U.S. flag) ocean freight bid, but we know of no solid evidence for this claim. Partial reimbursement for OFD incurred due to cargo preference regulations is provided under a July 18, 1987 Memorandum of Understanding (MOU) between MARAD, USAID and the Commodity Credit Corporation (CCC). Under the MOU, the OFD eligible for reimbursement is based on the average OFD paid for shipping on U.S.-flag vessels that are under 25 years old, or vessels rebuilt within the last five years that received competing foreign-flag bids. For each food aid agency, this average is then multiplied by the total U.S.-flag tonnage with a competing foreign-flag bid. This average is computed separately for bagged and bulk cargo. MARAD is required to reimburse agencies for one-third of OFD costs to compensate for the additional 25 percentage point increase in cargo preference coverage on food aid

³ *Foreign-built vessels re-registered in the United States that wish to participate in the ACP program must also wait at least three years after re-flagging before being eligible to carry ACP cargo. For vessels participating in both the Maritime Security Program (described below) and ACP, the three-year wait provision is waived (Bloom, 2008).*

⁴ *USAID's original flagging status sometimes differs from the final flagging classification by MARAD.*

shipments from 50% to 75% under the Food Security Act of 1985. OFD reimbursement does not include the additional costs incurred for using a vessel over 25 years of age, nor does reimbursement include bids for which there was no competing foreign-flag bid. As we demonstrate below, these are significant omissions, especially because parallel legislative restrictions on food aid shipments – the Great Lakes Set Aside discussed below – effectively discourage foreign-flag vessels from bidding on ocean freight service outside the Great Lakes, thereby increasing the unreimbursed share of ACP costs incurred by food aid agencies.

Twenty Percent Excess Freight

An additional reimbursement known as the “Twenty Percent Excess Freight” (TPEF) provision allows for additional payments by MARAD to food aid agencies to offset the costs incurred through adhering to cargo preference regulations in years when global shipping prices are unusually high. The TPEF reimbursement is calculated according to the 1987 Memorandum of Understanding between USAID, CCC and MARAD, which states:

“...if in any fiscal year the total cost of ocean freight and ocean freight differential incurred by CCC on the export of commodities and products thereof under export activities specified in section 901b exceeds 20 percent of the total of the value of such commodities and products and the costs of such ocean freight and the ocean freight differential incurred by CCC during such fiscal year, the Secretary of Transportation shall reimburse the CCC for the amount of such excess.”

This reimbursement can be quite significant during years when shipment costs are high and commodity costs are low. TPEF payments affect the inter-agency distribution of ACP costs, but neither add to nor reduce the aggregate costs of ACP to the federal government. However, every dollar reimbursed to food aid agencies increases the amount spent on food aid programming.

Great Lakes Set-Aside

Prior to 1985, most food aid that passed through the Great Lakes region was carried by foreign-flag ships due to their size and ease of navigation of Great Lakes waterways. By increasing cargo preference requirements from 50% to 75%, the passage of the Food Security Act of 1985 was expected to harm the Great Lakes ports, given the dominance of foreign-flag ships in that region. As a political solution designed to ease the transition to the newly-expanded U.S.-flag-based shipping system, the act mandated that the percentage share or metric tonnage of fortified, bagged, or processed commodities exported from Great Lakes ports be preserved (United States Congress, 1985). Known as the “Great Lakes Set Aside”, in effect this provision exempted Great Lakes ports from cargo preference requirements for up to 25% of total bagged or packaged government agricultural cargo shipped from all U.S. ports from 1986 to 1989.⁵ The tonnage set-aside provision expired in 1990, at which point Great Lakes ports had to compete for the 25% of food aid cargoes permitted to be “flag-blind”. As a result, virtually no food aid was shipped from Great Lakes ports for several years (GAO 2004).

In 1996, in light of the decline of Great Lakes ports, a new, compromise variant of the Great Lakes Set Aside was reinstated as Section 17 of the Maritime Security Act of 1996 (MSA-17). MSA-17 requires that 25% of bagged food aid cargo be “handled” in the Great Lakes port range, and requires that this 25% of tonnage be awarded based on lowest landed cost without regard to flagging and the prioritization system described earlier. This has important effects. Because the MSA-17 requirement is

⁵ Note that the Great Lakes Set Aside and MSA-17 do not apply to bulk cargo. This exemption of bulk food aid has limited effect, however, since the 1985 Farm Bill also established that at least 75% of non-emergency U.S. food aid must be bagged.

only for handling, not lifting, cargoes are now often containerized at Great Lakes port facilities and then carried by rail to a coastal port for lifting. U.S.-flag liner vessels often have a competitive advantage over foreign breakbulk vessels in these intermodal operations. However, MARAD does not count cargo transported intermodally on U.S.-flag vessels as complying with ACP requirements. As a result, virtually no freight contracts from Great Lakes ports meet the U.S.-flag requirement. The secondary effect of this legislation, following directly from the first, is that the remaining 75% of bagged food aid shipped from outside the Great Lakes port range effectively must be carried entirely on U.S.-flag vessels in order to comply with cargo preference regulations (Bloom 2008, p. 295).

Maritime Security Program

ACP is not the only means used by the U.S. government to support the merchant marine. The Maritime Security Program (MSP), also administered by MARAD, was established in 1996 to help the U.S. merchant marine fleet meet the higher costs of maintaining U.S.-citizen crews and meeting DoD standards for military readiness.

“The MSP maintains a modern US-flag fleet providing military access to vessels and vessel capacity, as well as a total global, intermodal transportation network. This network includes not only vessels, but logistics management services, infrastructure, terminals facilities and US citizen merchant mariners to crew the government owned/controlled and commercial fleets,” (MARAD 2009).

Thus, the objectives of MSP are effectively identical to those of ACP. In late 2003, MSP was renewed through fiscal year 2015. In 2007, MSP enrolled 60 vessels, 47 of which also qualified for ACP shipments. In 2009, MSP enrolled 59 vessels, 39 of which were eligible for ACP shipments.⁶

Vessels participating in the MSP are required to be “militarily useful,” defined as being less than 15 years old, U.S.-flagged and providing primarily liner service.⁷ MSP vessels also must be available for call-up to meet national security needs and DoD shipping needs. In 2009, each vessel in the Maritime Security Fleet (MSF) received a subsidy of \$2.9 million (up from \$2.6 million in 2008) to compensate for the added costs of maintaining U.S.-flag status (GAO 2004, p.13, MARAD 2006b). These subsidies are essentially call options that give DoD the legal right to use ships and crews for military operations when necessary. DoD has employed MSP vessels, for example, during conflicts in the Persian Gulf, Bosnia, Kosovo, Somalia and Iraq (Econometrica 2009).

⁶ See http://www.marad.dot.gov/documents/MSP_Fleet.pdf for a listing of vessels enrolled in the Maritime Security Fleet as of July 2009. See [http://www.marad.dot.gov/documents/MAR730-MasterVesselListforCargoPreference_06_sept_06\(2\).pdf](http://www.marad.dot.gov/documents/MAR730-MasterVesselListforCargoPreference_06_sept_06(2).pdf) for a June 2009 listing of the ACP fleet. A 2006 list of MSP-eligible vessels was not available. Throughout this paper, we therefore use the 2007 vessel list to identify likely MSP vessels in 2006. A comparison of the 2007 list with that of 2008 indicates a difference of 11 vessels, only 4 of which participated in 2006. Given the minor year-on-year change in MSP and ACP vessel listings, any error introduced by using the 2007 listing is surely small.

⁷ This generally limits MSP to container ships rather than bulk, breakbulk or tanker vessels (GAO 2004, pp. 6-10). Additionally, “roll-on/roll-off” vessels that specialize in carrying vehicles are considered militarily useful under the MSP, but are less useful for shipping food aid. ACP vessels cannot “double dip” by also receiving MSP payments on days when they carry more than 7,500 metric tons of bulk (not bagged) food aid (Barrett and Maxwell, 2005). Given how few bulkers participate, this seems to be a phantom restriction.

MARAD estimates that the MSP payments cover, on average, 13% of vessels' operating costs (GAO 2004).⁸ Yet according to MARAD, ACP premia, not MSP payments, provide the primary governmental support for MSP vessels, thereby justifying the continuation of ACP. As we show below, our estimates call this claim into question.

Unlike MSP, "military usefulness" is not an explicit requirement for ACP eligibility. While 47 vessels qualify for both ACP and MSP programs, of the remaining 95 vessels that participate in ACP, a vast majority (84/95) do not meet the military usefulness criteria. These vessels are either more than 15 years old or do not appear to offer liner service. Therefore, over 88% of the non-MSP vessels eligible for ACP trade are not militarily useful vessels by MARAD standards.⁹ Further, 31 of the 42 militarily useful vessels eligible for ACP are already enrolled in the MSP program. In 2006, only 15 militarily useful vessels actually participated in ACP shipments of U.S. food aid.

Data and Analytical Methods

In order to more precisely estimate the costs associated with ACP and its effectiveness in advancing national security objectives, we analyze transactions-level data obtained from USAID on all USAID bulk and bagged food aid shipments – 1,741 in total – for fiscal year 2006 (October 1, 2005-September 30, 2006).¹⁰ These data include information on individual shipment tonnage, vessels, flag status, carriers, load/discharge ports, priority status, ocean freight costs, total shipping costs and alternate bids, if any were received. Data on foreign-flag bids used to compute the ocean freight differential were provided when a losing competing foreign-flag bid was also made. These data were matched to data on participating vessels obtained from MARAD's website, including vessel type, age, ownership and eligibility for ACP and MSP. MARAD ownership data were complemented with internet-based research on the corporate parentage of companies carrying ACP shipments.

Using this information, we estimated differential costs between U.S.-flag vessels and their foreign competitors, as well as between older and younger vessels, disaggregating the analysis between bagged and bulk food aid shipments. We should note as well that USDA (CCC), USAID, and MARAD disagree on how to compute ocean freight costs. The 1987 inter-agency MOU that specifies administration, computation and distribution of ocean freight costs among these agencies is widely considered outdated and unclear (Simmons 2009, GAO 2009). In discussing our results, we note where limited data or unclear guidance on computational methods may affect our estimates; in such cases we chose the more conservative estimation method in order to avoid overstating our findings.

We are restricted to analyzing FY06 due to data availability. However, this year appears reasonably representative, as average open market freight rates in 2006 were comparable to those prevailing in the first half of 2010 and to historical averages 2003-2010, according to grain vessel rates reported by the USDA Agricultural Marketing Service in its weekly *Grain Transportation Report*.¹¹

⁸ This estimate was based on the then-\$2.1 million subsidy. The subsidy for MSP vessels increased to \$2.6 million for fiscal years 2006 to 2008, \$2.9 million for fiscal years 2009 to 2011, and \$3.1 million for fiscal years 2012 to 2015 (GAO 2004, p.14).

⁹ Some MSP vessels are over 15 years old. We assume that most of these vessels met the militarily useful criteria when they entered MSP and have since aged. However, it appears that some older MSP vessels had age requirements waived when entering MSP. Such waivers are given, "...based on a finding that such an action is in the national interest," (Econometrica 2009, p.14). For example, two MSP vessels are listed as 31 years old in 2006. Given that the MSP program began in 1996, using just the age-limit criterion, these vessels could not have qualified for MSP without a waiver.

¹⁰ The data include shipments for Title II programs and the Bill Emerson Humanitarian Trust. The complete data are available from the authors by request for purposes of replication.

¹¹ Archived copies are available online at <http://www.ams.usda.gov/AMSV1.0/ams.fetchTemplateData.do?template=TemplateV&navID=AgriculturalTransportation>

Estimated Cargo Preference Costs

USAID procured and delivered approximately 2.5 million metric tons of food aid in FY2006, for which the ocean freight costs were \$332 million. Of this, we estimate ACP requirements for USAID generated at least \$104 million in extra costs to taxpayers, a 46% mark-up over competitive freight costs. Of these excess ACP-related expenses, we estimate \$50 million was borne ultimately by USAID, directly reducing resources available to attend to the food security objectives of the PL 480 Title II food aid program. Including approximate ACP costs borne by USDA food aid programs, as well as MARAD reimbursements to the food aid agencies, the estimated total cost to U.S. taxpayers increases to \$140 million.¹² The remainder of this section explains how we arrive at these estimates.

Under-representation of the Ocean Freight Differential

As previously noted, MARAD requires a competing foreign-flag bid if a shipment is to be eligible for OFD reimbursement to a U.S. food aid agency (USAID or USDA). Shipments without a foreign-flag bid are omitted from OFD calculations and are ineligible for reimbursement even though ACP and, importantly, MSA-17 restrictions induce foreign-flag carriers to rationally opt out of bidding on (especially bagged) food aid shipments and limit price-based competition even among U.S.-flag carriers with different priority status. The GAO (2007, p.30) reports that in 2005, 14% of all food aid shipments received no foreign-flag bid. FY06 USAID data indicate that 27% of all U.S.-flag shipments received no foreign-flag bid, representing 30% of total U.S.-flag tonnage and costing USAID almost \$27 million in excess freight charges.^{13,14}

USAID absorption of ocean freight differential costs

In 2006, OFD on U.S.-flag vessels that had a competing foreign-flag bid represented \$77 million of the \$332 million USAID spent on food aid shipments costs (Tables 1 and 2). The reimbursable portion of OFD, however, is based on the 1987 inter-agency MOU, which uses only average OFD on vessels under 25 years old.¹⁵ However, average OFD per ton paid for shipments on older vessels is significantly higher than on younger, militarily-useful vessels (Table 3). Ocean carriers can move older vessels that may no longer be competitive in the commercial shipping market – e.g., due to poor fuel efficiency, slow travel, greater labor requirements, greater risk of cargo loss, or other reasons – to the U.S.-flag fleet, where they remain profitable at the expense of taxpayers and government food aid agencies.

*tation&leftNav=AgriculturalTransportation&page=ATGTRArchive&description=GTR%20Archive&acct=graintra
nsrpt.*

¹² Note that this estimate is quite conservative in that it includes none of the additional administrative costs involved in verifying compliance with ACP rules, arranging compensatory transfers between agencies, etc. The staff and other bureaucratic costs involved in ACP administration are non-trivial, but entirely omitted in this estimate, as we have no good basis for allocating staff time, space and other costs to ACP.

¹³ The details of these and the implementation of all the calculations described in this paper can be found in a supporting data and calculations spreadsheet available from the authors by request.

¹³ However, average OFD per ton paid for shipments on older vessels is significantly higher than on younger, militarily useful vessels (Table 3). Ocean carriers can move older vessels that may no longer be competitive in the commercial market.

¹⁴ Costs are estimated using average OFD per ton for vessels 24 years old and under. We do not have data on which vessels have been rebuilt in the past five years, so we treat all vessels at least 25 years old as being ineligible for inclusion in the average OFD reimbursement rate computations. We also exclude the small number of vessels for which we lack age data. The average eligible OFD is calculated separately for bagged and bulk vessels. These averages are then multiplied by the total tonnage for U.S.-flag bids on that type of commodity that received no alternate bid in order to arrive at the total reimbursable OFD.

¹⁵ MOU section V.B.3(ii).

Table 1: FY2006 ocean freight differential costs and reimbursements to USAID (millions of \$)

	Total shipment costs ¹⁶	Total OFD incurred ¹⁷	“Reimbursable” OFD ¹⁸	OFD amount reimbursed by MARAD ¹⁹	OFD amount absorbed by USAID ²⁰
Bagged	152.5	23.7	20.0	6.6	17.1
Bulk	179.2	53.4	38.5	12.8	40.6
Total	331.8	77.1	58.5	19.5	57.6

Table 2: FY2006 All ACP-related costs and payments to USAID (millions of \$)

	Costs accrued to USAID	Costs accrued to MARAD	Costs to Taxpayers
Total OFD incurred due to ACP ²¹	57.6	19.5	77.1
Total costs due to missing alternative bids ²²	26.8		26.8
MARAD TPEF payment to USAID ²³	(34.8)	34.8	
Total Payments	49.6	54.4	103.9

Table 3: Average OFD per ton for vessels carrying food aid

Vessel Age	Bulk	Bagged
0-24	\$45.44	\$51.09
25+	\$74.59	\$75.66

This accounting technicality matters because more than 30% (44/144) of the ACP vessels eligible for ACP shipments in 2006 were 25 years or older, and these vessels carried approximately 23% of USAID food aid tonnage.²⁴ In 2006, we estimate that the per-ton shipment costs on vessels 25 years or older were 64 and 48% higher for bulk and bagged cargo, respectively, than the cost of shipments on younger vessels (Table 3). This cost differential for vessels over 25 years of age both increases the cost of ACP to taxpayers and reduces the reimbursable portion of the OFD that food aid agencies incur. The cost

¹⁶ This total includes both ocean freight costs and non-ocean costs such as fumigation and overland transport, but it excludes the value of commodities shipped.

¹⁷ Calculated on a per shipment basis by multiplying the OFD rate per ton, as reported by USAID, by the tonnage shipped. This does not account for reimbursements received, shipments receiving no alternative bids, nor additional non-OFD costs of cargo preference.

¹⁸ To receive OFD reimbursements, a shipment must be on a U.S.-flag vessel and have an alternate bid with which to calculate OFD. The additional cost of shipment on older vessels is deducted from the OFD incurred by applying the average OFD per ton to all tonnage eligible to receive OFD reimbursement.

¹⁹ OFD amount reimbursable by MARAD is one-third of reimbursable OFD, which does not include the additional costs of older vessels.

²⁰ OFD costs absorbed by USAID are the difference between the total OFD incurred and the estimated amount reimbursed by MARAD. This figure includes additional costs of older vessels, but does not take into account the costs of missing alternate bids or the TPEF payment.

²¹ See Table 1.

²² This is a conservative estimate using the average OFD per ton for vessels aged 0-24, multiplied by the total tonnage with no alternate bid.

²³ BEHT shipment costs are included in TPEF calculations, as indicated by the 1987 Memorandum of Understanding, sections V.C. 1 and VIII. B.

²⁴ Based on MARAD, “Active U.S. flag vessels eligible for Agricultural Preference Trade,” September 6, 2006. This list was originally retrieved online, but is no longer available on the MARAD website.

to USAID associated with shipment on older vessels totaled an estimated \$16.5 million, none of which is compensated for by the reimbursement guidelines set forth in the 1987 MOU.²⁵

In FY06, we thus estimate that ACP added 46% (\$104 million) to the government's USAID food aid cargo costs, compared to the competitive foreign-flag rates without ACP.²⁶ USAID incurred 48% of these costs, totaling \$50 million (Table 2), which is equivalent to 3.3% of USAID's total food aid commodity expenditures in FY06.

Adjusted for USAID's (74%) share of total U.S. food aid, we obtain a crude estimate of \$140 million in total ACP costs to the U.S. government in 2006. This estimate is a bit lower than GAO estimates from 15-20 years ago. The GAO (1994, p.2) estimated, "...an average of about \$200 million per year in government funds has been used to pay the added cost of shipping US food aid to foreign countries on US-flag ships rather than on lower-cost foreign-flag ships," and estimated \$150 million annually in ACP costs (1990). ACP costs vary on an annual basis due to international and domestic demand for shipping, fuel prices, etc. Therefore, some variation across years is expected.

ACP Carrier Competitiveness

The preceding analysis indicates that ACP is costly because U.S.-flag carriers are rarely the lowest-cost freight service providers for food aid agencies. We find that U.S.-flag vessels carrying bagged food aid (primarily container ships providing liner service) are more able to compete with their foreign-flag counterparts than are U.S.-flag bulk, tanker or breakbulk vessels. The additional cost of U.S.-flag vessels that carry bulk commodities appears to be due in large measure to their age and outdatedness, rather than the costs associated with U.S.-flag status. U.S.-flag vessels carrying bagged food aid use different, more modern liners, which allow them to compete more effectively.

For bagged tonnage that received both foreign and U.S.-flag bids, U.S.-flag carriers had lower ocean freight bids than their foreign-flag competitors in 21% (180/850) of shipments (or 9.6% of cargo tonnage). This was the case in 1.2% (1/79) of bulk food aid shipments.²⁷ Overall, U.S.-flag carriers' bids were competitive for just 3.4% of USAID food aid tonnage, 17% of bagged commodities, but less than 0.2% of bulk tonnage (Table 4). Foreign-flag vessels win virtually all of the MSA-17 reservation of 25% of bagged food aid shipments for Great Lakes ports. Because foreign-flag vessels cannot carry more than 25% of total food aid shipments, few foreign-flag vessels are awarded bids outside of the Great Lakes. U.S.-flag carriers of bagged tonnage are most likely to offer competitive bids when bidding for cargo from one port (Jacinto, Texas) for reasons that are not entirely clear. Jacinto is a major port for U.S.-flag liner services; thus, this may reflect localized competition for bagged cargo to top-up any regularly-departing commercial vessels with excess capacity.

²⁵ This figure represents the difference between average OFD of shipment on vessels 25 years and older and vessels under 25 years old, multiplied by the total tonnage shipped on older vessels. A few vessels without age data were excluded from the rate estimates. This results in a slight discrepancy between the reimbursable OFD reported in Table 1, which is based on the actual OFD incurred, and the product of total tonnage and rate estimates based on an incomplete vessel roster.

²⁶ These estimates ignore the significant costs of USAID, USDA and MARAD staff and facilities devoted to managing compliance with cargo preference restrictions.

²⁷ These comparisons consider only ocean rate costs and exclude additional non-ocean costs. Bids for which there was no foreign-flag competitor reported are excluded from the calculation.

Table 4: FY2006 USAID food aid tonnage allocated to U.S. and foreign-flagged vessels

		BAGGED		BULK	
		MT	Percent	MT	Percent
Foreign-flag	Percent foreign-flag winning bids	MSA-17: 204,786 ²⁸	24.4%	362,520	22%
		Non-MSA-17: 3,360	0.4%		
U.S.-flag	Competitive ocean rate	80,510	9.6%	3,150	0.2%
	Non-competitive ocean rate	391,383	46.6%	848,020	52%
	Missing foreign-flag bid	MSA-17: 1,851	0.2%	409,840	25%
Non-MSA-17: 158,370		18.8%			
Total		840,260	100%	1,623,530	100%

Cargo Preference and National Security

The statutory objective of ACP is to advance the national security objective of maintaining essential sealift capacity – both vessels and skilled mariners – in times of war. If ACP effectively promotes such objectives, then its cost might be desirable, although there may still be less costly ways to organize support for U.S. shipping interests while fulfilling the same national security objectives.

But the efficacy of and need for ACP to advance these objectives has been repeatedly questioned. For example, the GAO (1994, p.3) concluded that: “The application of cargo preference to food aid programs does not contribute to meeting the intended objectives of helping to maintain U.S.-flag ships as a naval and military auxiliary in time of war or national emergency or for the purposes of domestic or foreign commerce.” Indeed, over the past quarter century, informal DoD support for ACP has wavered.²⁹ Concerns about the efficacy of ACP for promoting national security interests with respect to sealift capacity were one reason for the creation of the Maritime Security Program (MSP) in 1996, which, unlike ACP, imposes explicit restrictions on eligibility based on “military usefulness.”

²⁸ Bagged cargo does not need to be loaded onto a ship from a Great Lakes port in order to satisfy the requirements of MSA-17. Cargo that is bagged or containerized at a facility contiguous to a Great Lakes port can then be shipped overland to a coastal port and still be considered a Great Lakes shipment, regardless of the flag of the vessel on which it is ultimately shipped.

²⁹ In 1994, the Department of Defense wrote, “There would be no significant impact to DoD in the loss of bulk ships used to transport food aid,” (in Appendix V, GAO 1994, p. 106).

According to MARAD (2006, p.21), the \$2.1 million annual payment per vessel under MSP “provides limited direct assistance”, while “the primary form of assistance to 118 U.S.-flagged vessels is provided through the cargo preference laws.”³⁰ There are multiple reasons to doubt this assertion.

First, MSP enrolls more modern ships that mostly offer liner service, in which cargo is placed on a vessel with a predetermined route rather than on a vessel chartered specifically to the desired destination. Liner service increases the likelihood that food cargo will be transshipped, i.e., transferred to a foreign-flag vessel en route. Because the priority system used to award bids under ACP favors carriers offering charter service rather than transshipped liner service, MSP vessels operate at a disadvantage when competing with non-MSP ACP vessels (GAO 2004, p.22). As presently operationalized, ACP directly disadvantages the most militarily useful U.S.-flag vessels, those that are MSP-eligible.

Second, relatively few cargo preference vessels are militarily useful. Using the best available listings we could obtain for each program, we find that of the 142 ACP-eligible vessels in 2006, 100 were not considered militarily useful under MSP criteria due to their vessel type, age, or both. Therefore, 70% of ACP vessels do not meet the most current militarily useful criteria enforced under the MSP. As a rule, bulkers are not considered militarily useful due to DoD preference for container and roll-on/roll-off capability. For food aid shipments, however, bulk and breakbulk vessels are necessary to carry bulk grains. This creates an inherent conflict when vessels that ship food aid are also expected to contribute to national security.

The FY2006 USAID food aid shipment data allow us to explore the extent to which ACP in fact supplements MSP payments. Only 25 of the 47 MSP vessels eligible for ACP shipments were awarded USAID food aid shipments in FY2006. By our calculations, following the methods described above, the average total OFD premium received in FY2006 by these MSP vessels was approximately \$271,000, putting the total cost of ACP support to these 25 vessels at \$6.8 million. In contrast, the total cost of ACP for all vessels was \$140.4 million. In other words, less than 7% of cargo preference expenditures on USAID food aid shipments actually support vessels selected by DoD for inclusion in the Maritime Security Fleet. Further, the magnitude of this support was just over 10% of the MSP payments received by those same vessels. Therefore, ACP hardly seems to be, “the primary form of [federal government] assistance,” for the militarily useful vessels DoD most wants to support within the merchant marine fleet.

Beyond supporting vessels and their owners, ACP and MSP support the employment of U.S. citizen and legally resident merchant mariners. Non-militarily useful vessels are still useful in so far as they cultivate and maintain a pool of well-trained sailors available for call-up in times of heightened national security measures. Definitive information on the employment effects of ACP has proven elusive, however.³¹ The GAO (2007, p.13) reports that, “5,000 U.S. citizen mariners...have carried U.S. food aid cargoes in the past several years...” on 100 vessels. A 2009 study commissioned by MARAD states that the Maritime Security Program provides employment for approximately 2,400 U.S. mariners (Econometrica 2009). Our rough estimates, based on vessel-specific crew estimates, are that 1,414 crew members participated in ACP shipments in 2006.³² Given our earlier estimate of \$140 million in total

³⁰ Note that the MSP payment has now increased to \$2.9 million per year per vessel. A list of ACP eligible vessels for 2006 was obtained from MARAD, which reports 144 eligible vessels, contradicting the MARAD (2006b)) annual Report figure of 118. The reason for this reporting discrepancy remains unclear.

³¹ Using 1992 data, Nathan Associates (1995) estimated that direct, indirect, and induced employment from all cargo preference requirements (including military, agricultural, and EXIM preferences) and OFD reimbursement was 71,000 positions. The authors did not disaggregate the employment effects by cargo preference requirement.

³² Averages are drawn from foreign flag crewing practices reported by MARAD (2006a). Crewing information in ILO (2004) is consistent with the MARAD data. To the best of our knowledge, estimates for U.S. vessels were not publicly available. Therefore, we applied average crews by vessel type for foreign vessels to U.S. vessels of similar

ACP costs to taxpayers for U.S. food aid shipments, this amounts to a minimum annual subsidy per mariner of \$99,342. Moreover, since the enactment of the 1954 Cargo Preference Act, there has been no documented call-up of civilian mariners from ACP vessels for national security purposes. This seems a rather generous price to pay for call-up options that have never been exercised over a 56-year period that has spanned seven major U.S. military operations.³³

Cargo Preference and Foreign-owned Vessels

In addition to the national security objectives of ACP, cargo preference restrictions are designed to nurture the American shipping industry. However, according to the American Maritime Congress, in 2005, cargo preference accounted for only 5-15% of U.S.-flag ships' total containerized cargoes.³⁴ Thus, while food aid shipments are lucrative for U.S.-flag carriers that get the business, the volumes involved are small at industry scale.

The U.S. Code Title 46, Subtitle V, Part A, Chapter 501, Sec. 50101, states that the U.S. merchant marine should include vessels that are "...owned and operated as vessels of the United States by citizens of the United States." Therefore, one of the criteria for being classified as a U.S.-flag vessel is that it must be owned by an American company. However, "American" companies can be subsidiaries of foreign corporations.³⁵ It is therefore important to ascertain the ultimate ownership of ACP vessels, and thus the ultimate recipients of the estimated \$140 million in excess government freight payments that result from ACP.

The ownership structures of ACP-eligible U.S.-flag vessels are difficult to trace conclusively, as many of the holding companies are privately held and do not report sufficient data to establish ownership structures definitively. Research using publicly available data on the ownership structures of U.S.-flag vessels enabled us to establish the ownership structure for only a portion of the ACP vessels, accounting for only 43% of FY06 USAID food aid tonnage. But from that sample, we conclude that while all U.S.-flag vessels are indeed owned by American companies, many of those companies are merely subsidiaries of foreign companies. Figure 1 offers one example, showing how the world's largest maritime container carrier, A.P. Moller-Maersk Group, headquartered in Denmark, is the ultimate owner of at least 20 of the 144 vessels in the ACP fleet. Almost 40% of the tonnage we can definitively link to ultimate owners was hauled on vessels whose companies are owned by foreign corporations. Since these are limited liability companies incorporated in the U.S., the business risk remains in the U.S., including with U.S. mariners, while the profits move offshore to the corporate parent. These profits are then reinvested in the corporate parent's entire fleet. Thus, ACP indirectly supports vessels that compete directly with U.S.-flag vessels.

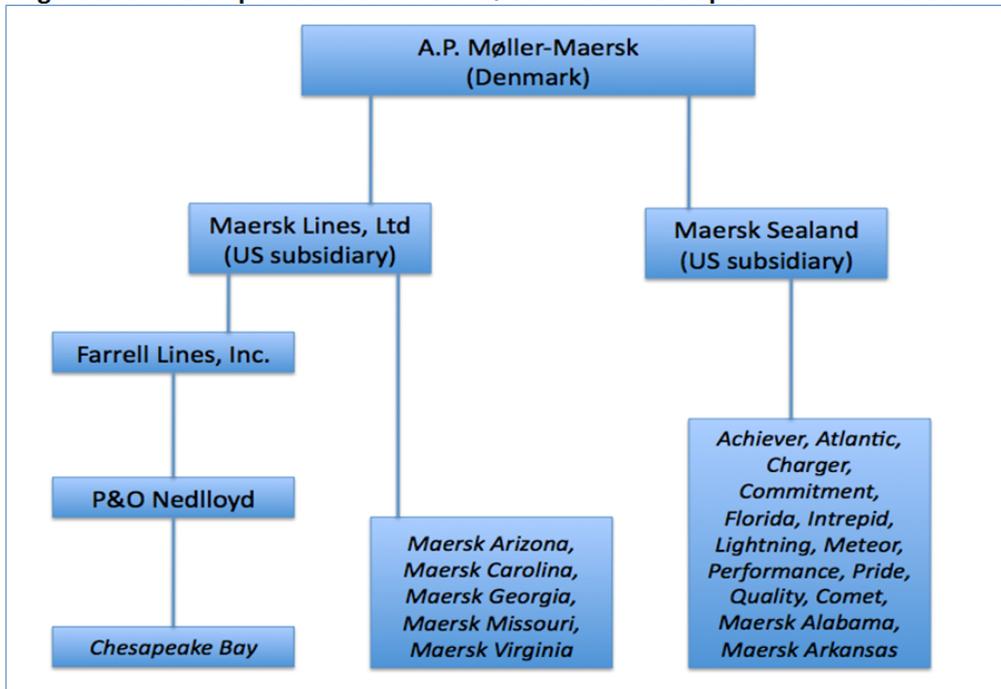
age and size. U.S. employment regulations tend to be more stringent than foreign labor laws, and thus we may somewhat overestimate the employment effects.

³³ *Vietnam (1960-75), Grenada (1983), Panama (1989), the Persian Gulf (1990-91), Bosnia and Herzegovina (1995-96), Afghanistan (2001-present), and Iraq (2003-present).*

³⁴ *American Maritime Congress website: <http://www.americanmaritime.org/>. Visited July 2009.*

³⁵ *Such companies are known as "Documentation Citizen" companies. See *Econometrica* (2009) and 46 CFR 296.10 for details.*

Figure 1: Ownership Structure for A.P. Møller-Maersk Group-owned ACP Vessels



Conclusions

Although many observers have argued that the political economy of U.S. food aid policy is heavily influenced by the interests of ocean carriers and its associated labor interests, to date the empirical evidence on how these constituencies benefit from agricultural cargo preference restrictions on U.S. food aid shipments has been remarkably thin.

In this paper, we used an unprecedentedly detailed and comprehensive transactions-level data set to estimate the total costs of ACP and to explore its consequences. We find that meeting ACP requirements for USDA and USAID programs cost U.S. taxpayers roughly \$140 million per year in FY06, and that roughly half of those costs were borne by food aid agencies rather than by the Maritime Administration. ACP costs USAID a significant portion of its food aid programming resources under Title II of Public Law 480, a percentage nearly equivalent to the value of USAID's entire Title II non-emergency food aid to Africa. Contrary to its national security and "Buy American" objectives, ACP depends heavily on vessels not deemed militarily useful, provides minimal supplementary support to militarily useful vessels (in particular, those in the Maritime Security Program), and a considerable share of food aid shipments under cargo preference are carried by vessels ultimately owned by foreign corporations. Thus, ACP functions as a subsidy of the shipping industry under the guise of humanitarian assistance.

It would seem that more efficient and effective ways could be found to fulfill the multiple objectives of cargo preference policy; appropriate reforms will depend on which objectives are prioritized. Perhaps the most effective means of achieving national security objectives associated with agricultural cargo preference would be to directly subsidize the Maritime Security Program, decoupling such support from food aid shipments. Indeed, the \$140 million cost of ACP could instead be used to support an additional 40 MSP vessels at the FY06 MSP subsidy level. Alternatively, eligibility for ACP could be restricted to only those vessels that are clearly militarily useful, thus eliminating the substantial,

costly support to older, more expensive vessels; though by further restricting competition, this could increase costs and benefit foreign-owned carriers with newer U.S.-flag vessels operated by their U.S. subsidiaries.³⁶ This might, however, help induce investment by U.S. companies in vessels that are militarily useful. Savings generated by this restriction could be used to directly subsidize the Maritime Security Program, to expand popular food aid programs such as McGovern-Dole, or be used for general budget deficit reduction.³⁷

Several reforms could increase competition and efficiency in the shipment of American food aid. Most importantly, the Great Lakes Set Aside requirements under MSA-17 represent the single most anti-competitive influence on the U.S. food aid shipping market. Relaxing or entirely eliminating MSA-17 would allow for greater price-based competition among ocean carriers. Additionally, the three-year waiting period for entry into the ACP program could be eliminated in order to allow the U.S.-flag shipping industry to meet short-term changes in demand for U.S.-flag services. Prioritization rules for awarding bids might also be updated in order to be more compatible with modern commercial practices in liner services. To better support American ownership of ocean carriers, more stringent guidelines regarding the corporate parentage of eligible carriers could increase the benefits afforded to American carriers, American merchant mariners, and other employees.

The most salient problem with the current formulation of the agricultural cargo preference program is the difficulty inherent to pursuing multiple policy objectives through a single policy instrument. Untangling the multiple policy objectives outlined above is an important step toward increased efficiency and improved performance for all U.S. agencies involved. Furthermore, it would reduce the necessary extent of coordination between agencies, allowing USAID and USDA to channel their efforts into providing food for those who need it most, and freeing MARAD to focus more specifically on maritime and related national security interests.

While the complex “iron triangle” political economy of U.S. food aid continues to make reforms more difficult than in other food aid donor nations, with clearer evidence now as to the costs and efficacy of agricultural cargo preference restrictions in advancing their stated goals, it may be time to revisit the role of agricultural cargo preference as it applies to humanitarian international food assistance. Present ACP policy effectively promotes shipping subsidies under the guise of humanitarian assistance and national security.

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³⁶ An exception may need to be granted to include vessels suitable for bulk cargoes, given that bulker vessels are not considered militarily useful by the DoD definition. U.S. food aid programs will continue to require access to appropriate vessels for bulk commodity cargo.

³⁷ Investment in the Ready Reserve Force, a MARAD/DoD program aimed at increasing maritime surge capabilities in national emergencies, may also be an option. The strengths and weaknesses of this program, and its role in maritime security, are outlined in *Econometrica* (2009).

References

- Barrett, Christopher B. and Daniel G. Maxwell. 2005. *Food Aid After 50 Years: Recasting Its Role*. New York, NY: Routledge.
- Bloom, Murray A. 2008. The Cargo Preference Act of 1954 and Related Legislation. *Journal of Maritime Law & Commerce* 39(3): 289-313.
- Econometrica, Inc. 2009. *Maritime Security Program Impact Evaluation*. Report submitted to the US Maritime Administration.
- International Labour Office. 2004. *The Global Seafarer: Living and Working Conditions in a Globalized Industry*. Geneva: ILO.
- Lentz , Erin C. and Christopher B. Barrett. 2008. Improving Food Aid's Impact: What Reforms Would Yield the Highest Payoff? *World Development* 36(7): 1152-1172.
- Maritime Administration, U.S. Department of Transportation. N.D. *The Maritime Administration and Cargo Preference*.
- Maritime Administration, U.S. Department of Transportation. 2006a. Foreign Flag Crewing Practices: A Review of Crewing Practices in U.S. – Foreign Ocean Cargo Shipping. Accessed at http://www.marad.dot.gov/documents/Crewing_Report_Internet_Version_in_Word-update-Jan_final.pdf.
- Maritime Administration, U.S. Department of Transportation. 2006b. Annual Report to Congress Fiscal Year 2006. Accessed at http://www.marad.dot.gov/documents/MARAD_Report_to_Congress.pdf.
- Maritime Administration, U.S. Department of Transportation. 2009. *The Maritime Security Program: Meeting National Sealift Needs*.
- Murphy, Sophia and Kathy McAfee. 2005. US Food Aid: Time to Get it Right. Institute for Agriculture and Trade Policy. Accessed at www.tradeobservatory.org/library.cfm?refid=73512.
- Nathan Associates, Inc. 1995. Economic Analysis of Federal Support for the Private Merchant Marine. Report submitted to the American Maritime Congress.
- Ruttan, Vernon W., ed. 1993. *Why Food Aid?* Baltimore, MD: Johns Hopkins University Press.
- Simmons, Emmy. 2009. *Monetization of Food Aid: Reconsidering U.S. Policy and Practice*. Washington, D.C.: Partnership to Cut Hunger and Poverty in Africa.
- United States Code U.S. Code Title 46, Subtitle V, Part A, Chapter 501, Sec. 50101.
- United States Congress, 1985. *Food Security of 1985 (P.L. 99-198)*. Washington D.C.
- United States General Accounting Office. 1990. Cargo Preference Requirements: Their Impact on U.S. Food Aid Programs and the U.S. Merchant Marine. Report to the Chairman, Committee on Agriculture, House of Representatives, Washington, D.C.
- United States General Accounting Office. 1994. Cargo Preference Requirements: Objectives Not Significantly Advanced When Used in U.S. Food Aid Programs. Report GAO/GGD-94-215.
- United States Government Accountability Office. 2004. Maritime Security Fleet: Many Factors Determine Impact of Potential Limits on Food Aid Shipments. Report GAO-04-1065.
- United States Government Accountability Office. 2007. Foreign Assistance: Various Challenges Impede the Efficiency and Effectiveness of U.S. Food Aid. Report GAO-07-560.
- United States Government Accountability Office. 2009. International Food Assistance: Key Issues for Congressional Oversight. Report GAO-09-977SP.
- United States Agency for International Development, Office of Inspector General. 2001. Audit of USAID's Cargo Preference Reimbursements Under Section 901d of the Merchant Marine Act of 1936. Audit Report No. 9-000-01-003-P.
- United States Agency for International Development. 2007. ADS Chapter 314: Eligibility of Delivery Services. Accessed at <http://www.usaid.gov/policy/ads/300/314.pdf>.
- United States Agency for International Development. 2006. International Food Assistance Report 2006. Accessed at http://www.fas.usda.gov/excredits/FoodAid/fy06_usifar.pdf.