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The sight of a ship loading grain at a Gulf coast port never fails to impress me. The grain originating on thousands of family farms, stored in mid-Western silos, floated down the Mississippi in lumbering barges, and finally disgorged from giant dockside elevators into the ship's hold is testimony to the vitality of American agriculture. It represents not only the sweat and toil of the farmers, but the efforts, expertise, and investments of thousands of people associated with agriculture—farm chemical suppliers, machinery dealers, elevator operators, shippers, brokers, grain traders, and many others.

The United States dominates world trade in many agricultural commodities. About 220 million metric tons of grain will move in world trade this year, of

like to export more value-added products. The reason is simple: Value added products are worth more. Furthermore, when basic farm commodities are converted into higher value products, jobs are created, income is generated, taxes are paid, and economic activity increases. A flour mill, a bakery, a brewery, or a meat processor all transform commodities and add value, and, by virtue of their operations, add to national economic activity. GNP grows.

The one-third share of export earnings now attributable to value-added products is not very different from the late 1960s, but is higher than in the 1970s when grain and soybean exports surged and the bulk commodity share grew. In recent years, there has been strong growth in some value-added exports like meat, while other value-added exports such as flour and frozen

orange juice have been flat or have declined.

CHOICES Magazine asks, "Should there be an emphasis on value-added agricultural products in U.S.

agricultural export subsidy programs?" The notion underlying the question is that subsidies exist, and we should find the best way to use the subsidy dollars.

Subsidies are Distorting

Before addressing the question posed by CHOICES, one further question needs to be asked. Should subsidies be used at all? Subsidies transfer wealth, distort resource allocation, and affect economic activity. Export subsidies enhance demand, raise prices, and lead to greater production than otherwise would occur. This bids resources away from other uses, leading to higher production costs for non-subsidized goods, lower output, and higher prices.

Still, most of the world's major agricultural producing nations subsidize agriculture one way or another. For example, European agricultural subsidies have transformed the European Community from the world's foremost agricultural importer in the 1960's to a major agricultural exporter in the 1980's. The EC now leads the world in exports of beef, pork, butter, cheese, and nonfat dry milk, and is second only to Cuba in sugar exports. Subsidies have heightened trade tensions among trading nations, damaged agriculture in developing countries, and led to international trade disputes over specific commodities.

Trade Should Be Liberalized

There is widespread agreement on the need for international agricultural reform. The ministers attending the initial meeting of the GATT Uruguay Round in September 1986 declared that the current trade negotiations, "shall aim to achieve greater liberalization of trade in agriculture." Subsequently, at the May 1987 Paris meeting of OECD ministers, there was talk of "serious imbalances" in agricultural markets. The communique issued in Paris noted:

The cost of agricultural policies is considerable, for government budgets, for consumers and for the economy as a whole. Moreover, excessive support policies entail an increasing distortion of competition on world markets; run counter to the principle of comparative advantage which is at the root of international trade; and severely damage the situation of many developing countries.

In July 1987, the United States outlined a proposal for agricultural trade reform. The proposal simply is that the trading nations of the world should phase out by the year 2000, all direct and indirect subsidies that distort agricultural trade. Additionally, all import barriers should be eliminated, and food and health regulations should be harmonized to prevent them from being used as non-tariff barriers.

The Argument For Emphasizing Value-Added Exports

In the meantime, given that subsidies exist, should we emphasize export subsidies for value-added rather than bulk commodities? Should we subsidize the export of flour instead of wheat, of malt rather than barley, of cigarettes rather than tobacco, of soyoil rather than soybeans, or of beef rather than corn? Strong arguments have been made in each of these cases. For instance, the argument for flour has used data based on input-output multipliers derived by USDA's Economic Research Service. The following table illustrates the argument.

Wheat price		Tax revenue generated per metric ton	
\$/bu	\$/MT	Shipped as wheat	Shipped as flour
		\$/Metric ton	
2.50	92	21	71
3.00	110	25	85
3.50	129	30	99
4.00	147	33	113

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by Ewen M. Wilson



Ewen M. Wilson

which 97 million will originate in the United States. This country will account for 21 million of the 30 million metric ton global soybean trade, and 6 million of the 24 million bales of cotton that are traded internationally.

Value-Added Exports Add to GNP

Bulk agricultural commodities have accounted for about two-thirds of total export earnings in recent years, while value-added products—things like flour, meat, wine, cigarettes, oils, and dairy products—have accounted for about one-third of export earnings. We would

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The table shows that the export of one metric ton of wheat worth \$110 (\$3.00 per bushel) yields tax revenues of \$25 as a result of the economic activity generated by producing and exporting the wheat. However, the export of one metric ton of flour, processed from wheat valued at \$110 per metric ton, yields tax revenues of \$85 by virtue of the additional economic activity involved in transforming the wheat into flour.

Ergo, say the proponents of this argument, if the United States is prepared to pay a \$25 per ton subsidy to export wheat, it makes equal sense to pay up to \$85 a ton to export flour; that is, 3.4 times as much. In early 1988, wheat subsidies were in the order of \$40 per ton, implying that a flour subsidy of up to \$136 per ton would be justified.

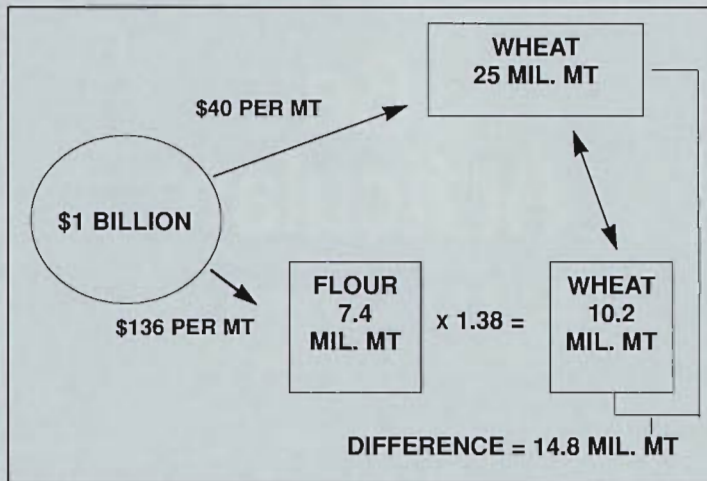
The Counter Arguments

The counter arguments fall under two broad headings. First, subsidization of value-added products may not serve desired policy objectives. Second, the input-output argument may not be technically sound.

U.S. Policy

What are the objectives of U.S. policy? Do we seek to maximize export volume in order to impose costs on foreign subsidizers and thereby exert pressure for reform? If so, subsidizing exports of flour could actually result in lower total combined export tonnage of wheat and flour. Suppose the United States authorizes \$1 billion to subsidize wheat and/or flour exports, and suppose the export subsidy is \$40 per ton of wheat or \$136 per ton of flour. Figure 1 illustrates the options.

Figure 1. Wheat Versus Flour Export Subsidy



One could export 25 million tons of wheat (\$1 bil. divided by \$40 per ton) or 7.4 million tons of flour (\$1 bil. divided by \$136 per ton). It takes 1.38 tons of wheat to produce a ton of flour, so the 7.4 million tons of flour is equivalent to 10.2 million tons of wheat. Therefore, if we choose to spend the entire subsidy on flour, net exports of wheat will be 14.8 million tons smaller.

If the objective is to use the \$1 billion to move the entire 25 million tons of wheat into the export market, then, the maximum flour export subsidy is \$55 per metric ton. (25 mmt wheat = 18.1 mmt flour x \$55 = \$1 billion.) When the flour

export subsidy exceeds \$55 per ton, total wheat export tonnage is reduced.

Nevertheless, there may be instances when flour export subsidies serve the policy objective of maximizing leverage in our trade negotiations. In the context of a "trade war," the selective use of export subsidies for flour is much like hit and run guerrilla tactics, as opposed to the broad based frontal attack of wheat export subsidies.

What if the policy objective is to protect domestic industry capacity? If the processing industry experiences periods during the year of less-than-full capacity utilization, then it can be argued that subsidizing exports of the value-added product maintains employment that would otherwise decline seasonally. If, however, the processing industry is suffering a long-term decline in capacity, then subsidizing exports is futile and merely prolongs the inevitable economic adjustment.

Technical Flaws in Input-Output Arguments

Does the subsidization of high-value products really have the tax multiplier effect indicated in the table?

The multiplier arguments advanced by proponents of subsidizing value-added exports is the economic equivalent of a perpetual motion machine. If it makes sense for flour, one could ask facetiously why not subsidize exports of bread or frozen pizza where the multiplier is even higher? Based on ERS data, exports of one ton of bread prepared from wheat valued at \$110 per ton would generate over \$1,000 tax revenues! Clearly, this is absurd. It would be enormously expensive to ship a bulky and perishable product like bread. Besides, other countries have a strong incentive to preserve the economic benefits derived from their own further processing. This is why many countries protect their domestic food processing industries, making it difficult to gain additional market share by use of export subsidies.

The U.S. is very efficient in handling bulk commodities. Elevators, grain augers, and capital intensive facilities enable movement of massive volumes of grain at low cost. Processed products simply cannot be handled in the same way, though tremendous strides have been made in automated handling and containerized shipping of many food products. Even with these developments, it generally makes economic sense for the final stages of food processing to occur close to the centers of population where consumption takes place. This is true in the context both of domestic and foreign markets.

The multiplier argument itself is flawed. Input-output multipliers are fixed coefficients which represent the linkages between different sectors of the economy and account for changes in final demand. Since the coefficients are fixed, they fail to recognize economic responses brought about by tax-subsidy policies. A subsidy, by definition, taxes society at large for the benefit of a sub-sector of society. To the extent that this results in reallocation of resources to less optimal use, the overall economic impact is negative. Input-output multipliers ignore this, and fail to recognize that a subsidy to a particular industry comes at a cost to society as a whole.

Subsidies Lead to Dependence

Finally, there is no economic justification for applying export subsidies to the agricultural processing sector if such subsidies cause the industry to expand, and if the added capacity cannot be sustained in the absence of subsidies. Such expansion diverts resources from other more productive uses, leads to market distortions, and creates long-term dependence on government benefits. This is precisely what has happened in the U.S. agricultural producing sector and is something that should be avoided in the processing sector, especially at a time when we are working for multilateral reform in the GATT. □