A Chronicle of Canadian Hog Stabilization Programs and U.S. Countervailing Duties on Hogs and Pork

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CONTENTS

Abstract v

Canadian Stabilization Programs for Hogs 1

The Countervailing Duty Case: Hogs and Pork from Canada 10

Phase 1: Hogs and Pork from Canada, 1984-87 13

Phase 2: Fresh, Chilled, or Frozen Pork from Canada, 1989 18

Phase 3: The Appeals, 1989-91 23

Conclusion 27

Appendix 29

References 33

TABLES

1. Provincial shares, expenditure caps, and estimated net benefits for Canadian hogs, 1988 6

2. An illustration of the calculations made to determine a tripartite stabilization payment. 8

3. National tripartite stabilization program for hogs, pay-ins and payouts, 1986-Q1 to 1990-Q4 9

4. Hypothetical support level and payouts from national tripartite stabilization if in effect, 1973-Q2 to 1985-Q4 11

ABSTRACT

Canadian hog producers are eligible for a federal/provincial hog stabilization program which, under certain conditions, makes deficiency payments to producers enrolled in the program. Currently, producers pay premiums of approximately one-third of the cost of the program, whereas federal and provincial authorities share the remaining two-thirds of the cost. There are no direct subsidies to pork processors. In 1984, U.S. hog producers alleged that the Canadian stabilization program was an unfair production subsidy resulting in larger Canadian hog and pork exports that caused serious economic hardship for U.S. hog producers. The consequent trade actions against Canadian exports have entailed a countervailing duty on hog exports applied continuously since 1985, whereas a countervailing duty on pork exports has been applied sporadically over the same time period. This paper provides a summary of the Canadian hog stabilization program and an overview of the economic and legal arguments made in the U.S. countervailing duty case involving Canadian hog and pork exports.

A CHRONICLE OF CANADIAN HOG STABILIZATION PROGRAMS AND U.S. COUNTERVAILING DUTIES ON HOGS AND PORK

This paper provides background information on Canadian stabilization programs, with particular emphasis on programs for hog producers, and on the history of the U.S. countervailing duty case against Canadian hog and pork exports. Collecting this information in an integrated fashion provides a factual basis for economic analyses of the ongoing trade dispute between Canada and the United States. Some issues related to this dispute are analyzed in a companion paper (Moschini and Meilke 1992).

Canadian Stabilization Programs for Hogs

Like most developed market economies, Canada has a long history of sharing with producers the risk of income instability by providing stabilization payments to farmers. These support and stabilization programs evolved from measures initiated during World War II and carried into the 1950s and 1960s as part of an attempt to improve the social safety nets provided to all Canadian citizens (Meilke and Warley 1990). From an economic point of view, stabilization payments can be justified because they correct for market failures caused by nonexistent or incomplete risk markets. However, the fact that agriculture is an important economic sector in Canada and contains a well-organized and politically powerful constituency also helps to explain the enduring nature of these programs.

Agriculture in Canada is a shared responsibility of both the federal and provincial governments. However, before the early 1970s, only the federal government was actively involved in providing direct financial support to agricultural producers. Unlike the United States, Canada's stabilization programs are focused on a wide range of agricultural commodities. In particular, the desire for and

the design of stabilization programs for the red meat sector have been high on the agricultural policy agenda since at least the beginning of the 1970s.

A useful starting point for this discussion is the passage of the Agricultural Stabilization Act (ASA) in 1958, which along with the Crop Insurance Act of 1959 and the federal guarantee of initial prices paid by the Canadian Wheat Board were the major instruments used to stabilize the nondairy sectors of Canadian agriculture until the mid-1970s. The stated objectives of the ASA were to provide price stabilization for agricultural producers and to ensure the viability of family farm units. The ASA provided a low-slung safety net focused directly on price instability by guaranteeing an annual floor price to producers of nine "named" commodities equal to 80 percent of the average nominal market price over the previous 10 years. The named commodities were cattle, hogs, sheep, butter and cheese, eggs, and wheat, oats, and barley produced outside the Canadian Wheat Board's designated area. Provision was also made under the act to stabilize the prices of other commodity prices, at the discretion of the minister of agriculture, and as a result about 35 commodities received support between 1958 and 1974 (Martin 1976).

Amendments to the ASA in 1975 and passage of the Western Grains Stabilization Act (WGSA) in 1976 represented a significant increase in the federal government's commitment to stabilization in the agricultural sector. It also marked a turning away from price stabilization towards a form of income stabilization, although for commodities covered by the ASA it remained commodity-specific.[1] The changes in the ASA were animated by three main concerns. First, during the inflationary period of the early 1970s, it became apparent that floor prices based on a 10-year average of nominal market prices were unlikely to generate any deficiency payments. Second, although livestock prices were increasing during this period, feed prices increased even more rapidly during the

[1]Payments under the WGSA are based on gross returns minus cash costs for a market basket of crops grown in Western Canada.

"commodity boom" years (1972 to 1975) so livestock producers found themselves in a cost-price squeeze. Third, as a result of the perceived inadequacies of the federal ASA, some provincial governments introduced their own price support and stabilization schemes.

The changes introduced in the 1975 ASA amendments were meant to address some of these issues by:

- Adding corn, soybeans, industrial milk, and cream to the list of named commodities while dropping eggs, wheat, butter, and cheese;
- Changing the method for calculating the floor price from 80 percent of the 10-year average market price to a minimum of 90 percent of the five-year average market price;
- Giving the Agricultural Stabilization Board the responsibility to recommend a method of adjusting the floor price to reflect changes in production costs (although not stated in the act, it was widely understood that only cash costs of production would be included in the adjustment factor);
- Allowing for joint federal-provincial programs to provide support levels higher than the minimum guaranteed prices in the ASA if it would not give one group of producers "a financial advantage in the production and marketing of the commodity not enjoyed by other producers of the commodity in Canada" or would not give "an incentive to the producers of the commodity . . . to overproduce the commodity" (Parliament of Canada 1975); and
- Allowing for eligibility limits on the quantity or value of a commodity eligible for support.

While the ASA amendments were supported by most farm groups, the new legislation was not without its critics. Martin (1976), writing shortly after the passage of the act, criticized it for its vagueness with respect to the procedure to be used in indexing floor prices and for the discretion allowed the minister of agriculture in setting the percentage of the base price to be supported. In addition, Martin argued that, given the annual nature of the program, many producers would be driven out of business during low-price periods prior to receiving their deficiency payments sometime the following year. Addressing the issue of the effect of the newly amended ASA on Canada's production and export of hogs, Martin argued that as a result of the shortcomings of the act ". . . there is little probability of eliciting a supply response with existing programs. Hence there is little reason to expect that the amended Act will contribute to expanded exports" (Martin 1976, 20).

While one objective of the ASA amendments was to forestall the entry of provincial governments into providing income support to agricultural producers, it was largely ineffective in meeting this goal. This was particularly true in British Columbia and Quebec, where provincial governments implemented income support programs that were considerably richer than those in other provinces or those provided under the federal ASA. Red meat producers in provinces other than British Columbia and Quebec then put pressure on their provincial governments to implement similar programs. As a result, between the mid-1970s and the mid-1980s a plethora of provincial programs was implemented to aid the red meat sector (Intercambio 1988). While a detailed description of these programs is beyond the scope of this paper, many provincial programs shared the following characteristics: they were voluntary, required producer contributions, were expensive, and were often short-lived. In response to the expansion of provincial programs, the federal government threatened to deduct from its payments, under the ASA, amounts equal to the sums received by producers from parallel but richer provincial programs. However, in practice this was only implemented a few times.

Beginning in the fall of 1977, federal and provincial authorities initiated discussions on "tripartite stabilization" programs. The term *tripartite* is used because these programs were to be financed by both producers and the two levels (federal and provincial) of government. Legislation to allow the formation of tripartite agreements was passed in January 1985 as an amendment to the ASA. Before discussing the tripartite stabilization program for hogs, it is useful to recount the expenditure history under the ASA prior to the introduction of the tripartite plans. Skogstad (1987) reports that between April 1958 and March 31, 1979, the cost of all nondairy programs under the ASA was slightly more than $1 billion. Between 1975 and 1985, payments were made to hog producers in 1979, 1980, 1983, 1984, and 1985.

Tripartite agreements for hogs were effective January 1, 1986, for Alberta, Saskatchewan, Manitoba, and Ontario. An amended agreement was signed on February 8, 1989, adding British

Columbia, Quebec, New Brunswick, Prince Edward Island, and Nova Scotia. In addition to providing floor prices to hog producers, these tripartite agreements involve a number of other innovative features.[2] Financing for the tripartite agreement is shared equally by producers and the federal and provincial governments. However, the share of premiums paid by the federal government may not exceed, in any given year, 3 percent of the average aggregate market value of hogs sold during that year and the two previous years, and the sum of federal and provincial contributions should not exceed 6 percent of the same aggregate. As a result, the basis for calculating the floor price can be changed to ensure the financial sustainability of the scheme. Finally, each province has agreed to abide by an expenditure cap negotiated under the tripartite agreement and, as a result, most provinces have removed their provincial hog stabilization programs. For provinces whose share of Canadian hog production (in value terms) exceeds 5 percent, the cap is 8 percent of the average aggregate market value of hogs in the most recent three-year period. For provinces with smaller shares of national production, the expenditure cap is larger. Provinces whose shares are between 2 percent and 5 percent of the national market have an expenditure cap of 12 percent, while those whose share is less than 2 percent have an expenditure cap of 16 percent. In order to monitor expenditure cap compliance, a Committee of Experts was established to measure the net benefits to hog producers from all programs affecting the hog sector unless Canada and the provinces agree to exclude them. The Committee of Experts' first report, issued in March 1990, contained net benefit estimates for 1988 (Agricultural Stabilization Board 1990). The expenditure caps and estimated net benefits for individual provinces are shown in Table 1. Based on 1988 data, four provinces exceeded their expenditure caps: Prince Edward Island, Nova Scotia, New Brunswick, and Saskatchewan. However, none of the departures was large and the provinces have until the 1991 calculations are

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[2] Data on the size of federal and provincial stabilization payments for 1979-Q1 to 1989-Q4, along with a discussion of how the data were compiled, is contained in the Appendix.

Table 1. Provincial shares, expenditure caps, and estimated net benefits for Canadian hogs, 1988

Province	Share of National Production[a]	Expenditure Cap	Total Estimated Net Benefits
	(percent)		
Prince Edward Island	1.23	16.0	17.75
Nova Scotia	1.57	16.0	16.23
New Brunswick	0.98	16.0	16.73
Quebec	30.68	8.0	6.96
Ontario	32.05	8.0	4.44
Manitoba	11.91	8.0	2.04
Saskatchewan	5.60	8.0	9.64
Alberta	13.53	8.0	4.82
British Columbia	2.45	12.0	9.76
Canada	100.00	8.4	5.87

SOURCE: Agricultural Stabilization Board 1990.
[a]Based on average adjusted cash receipts, 1986-88.
Note: Only Newfoundland has not joined the hog tripartite plan.

completed to be in compliance with their ceiling. With the winding down of provincial stabilization programs, compliance with expenditure caps should not be difficult for any province. The only caveat to this statement is that the methodology the Committee of Experts is using to calculate net benefits is an evolving process and there is considerable pressure to include more indirect programs, such as grain programs, in the calculations. While some of these programs benefit hog producers, others injure hog producers so they are incorporated as negative benefits (Meilke 1987; Alston et al. 1991).

It is interesting to note that the concept of benefit ceilings incorporated in the tripartite agreements represents a consensus among the concerned parties of how to "level the playing field," even though the benefit ceilings for small hog-producing provinces are twice as large as those for major hog-producing provinces. This approach was selected after rejecting an earlier suggestion that Canada institute a General Agreement on Tariffs and Trade (GATT) -like procedure whereby provinces who felt they were being injured by another province's subsidies would take the dispute to an impartial panel. In fact, this concept is not entirely dead. In 1990, Manitoba threatened to send a bill to other provinces who they perceived as injuring Manitoban pork producers because of their provincial subsidies. Manitoba's argument is that larger subsidies in other provinces get incorporated into the U.S. countervailing duty on hogs and pork, so they lower market prices in Manitoba where stabilization programs are less generous.

Deficiency payments under the tripartite stabilization program are based on the guaranteed margin approach. Stabilization payments are made on a quarterly basis calculated in the following manner. First, a "support price" is calculated equal to the estimated national cash cost of production in the quarter plus 95 percent of the difference between these cash costs and the national average market price of hogs in the same quarter for the preceding five years. For example, using the data in Table 2, a hypothetical stabilization payment for the third quarter of 1985 can be calculated. The cash cost of production ($51.72) plus 95 percent of the average five-year margin (0.95 x $26.85) equals the floor price of $77.23 per hundredweight. Stabilization payments are triggered in any quarter that the average market price falls below the floor price and equals the difference between the two, or in this case $9.92 per hundredweight ($77.23 – $67.31). Premiums paid by producers are adjusted quarterly in an attempt to keep the scheme financially sound while taking into account the limits on contributions by federal and provincial governments. Table 3 contains data on the history of the plan, since its inception, in terms of producer premiums and payouts. Currently, premiums in the

Table 2. An illustration of the calculations made to determine a tripartite stabilization payment

Year and Quarter	Market Price	Cash Costs of Production	Margin	Average Five-Year Margin
	---(dollars per hundredweight)---			
1980-Q3	65.68	43.69	21.99	
1981-Q3	78.82	54.16	24.66	26.65
1982-Q3	94.73	49.35	45.38	
1983-Q3	68.79	48.65	20.14	
1984-Q3	78.45	56.35	22.10	
1985-Q3	67.31	51.72	15.59	

SOURCE: Agricultural Stabilization Board N.D.

hog plan are being set to equal 9 percent of the value of eligible hog production based on a three-year moving average. The producer's share of the premium is one-third of the total. Agriculture Canada officials feel that this premium is slightly higher than an actuarially sound rate based on the past history of hog price variability. Approximately 95 percent of Canada's eligible hog production and 90 percent of total hog production is enrolled in the tripartite scheme.

The estimated cash costs used in calculating the floor price under the tripartite stabilization agreements are based on a 130-sow farrow-to-finish operation. The national cost of production for the tripartite plan is calculated from budgets based on input prices and quantities required to raise hogs, in the participating provinces, on efficient commercial family farm operations. The cash costs included in the calculations are feed, repairs and maintenance on buildings and equipment, utility costs, property taxes, insurance, breeding herd replacement, veterinary and health services, hired

Table 3. National tripartite stabilization program for hogs, pay-ins and payouts, 1986-Q1 to 1990-Q4

Year and Quarter	Premium	Payment
	(dollars per hog)	
1986-Q1	NA	0.00
1986-Q2	NA	0.00
1986-Q3	2.90	0.00
1986-Q4	2.90	0.00
1987-Q1	3.70	0.00
1987-Q2	3.30	0.00
1987-Q3	3.30	0.00
1987-Q4	3.30	0.00
1988-Q1	3.00	3.14
1988-Q2	2.60	0.00
1988-Q3	2.90	23.53
1988-Q4	2.60	37.08
1989-Q1	2.60	38.24
1989-Q2	3.10	36.27
1989-Q3	3.50	33.14
1989-Q4	3.85	16.37
1990-Q1	3.30	9.67
1990-Q2	3.30	0.00
1990-Q3	3.50	0.00
1990-Q4	3.70	1.12

SOURCE: Agricultural Stabilization Board 1989b.

labor, and the interest on operating capital (Tan 1988). The national weighted average market price used to calculate stabilization payments is the index 100 price of hogs in representative markets weighted by the number of federally and provincially inspected hogs with a grade index of 80 or above. This excludes sows and boars from the plan.

Table 4 illustrates what the payment history under tripartite stabilization would have been had it been in effect from 1973-Q2 to 1985-Q4. Since the National Tripartite Stabilization Program will be the major source of financial benefits for hog producers, with the exception of the Quebec Farm Income Stabilization Scheme, from 1990 on, it is the most relevant program when considering the countervailing duty case between Canada and the United States.

The Countervailing Duty Case: Hogs and Pork from Canada

Countervailing duty cases are of interest because they deal with questions economists have been trained to answer and because they are conducted largely by lawyers within a legalistic framework.[3] In addition, using a countervailing duty to protect domestic producers from "unfair" import competition may not be a first-best remedy from a social welfare perspective. The advantage of a production subsidy relative to a countervailing duty to protect the domestic industry depends on the market power of the importing country and the "nearness" of the countervailing duty to the optimal tariff.

Countervailing duty cases in both Canada and the United States are governed by national trade laws that have been amended to incorporate the GATT Subsidies Code (GATT 1986). According to this code, a country may impose a countervailing duty if government assistance available to foreign producers or exporters of a product materially injures the domestic producers of the same or a "like

[3]This section is based on earlier work by Meilke and van Duren (1990) and the legal briefs noted in the references; in particular, USITC 1989a, 1989b, 1989c, and 1989d.

Table 4. Hypothetical support level and payouts from national tripartite stabilization if in effect, 1973-Q2 to 1985-Q4

Year and Quarter	National Price (dollars/ckg)	National Cash Cost (dollars/ckg)	Support Level (dollars/ckg)	Number Marketed (head)	Payout per Head (dollars/head)
1973-Q2	103.11	50.80	-	2,374,707	-
1973-Q3	135.64	57.77	-	2,100,746	-
1973-Q4	126.39	73.07	-	2,271,277	-
1974-Q1	107.06	72.35	129.73	2,547,372	17.07
1974-Q2	89.03	76.67	126.36	2,440,691	27.71
1974-Q3	111.85	78.62	152.61	2,251,110	30.23
1974-Q4	120.08	84.13	132.89	2,226,964	9.56
1975-Q1	119.13	87.18	132.47	2,180,953	9.94
1975-Q2	132.02	84.59	115.31	2,098,671	-
1975-Q3	174.23	80.96	133.73	1,792,566	-
1975-Q4	163.65	84.47	125.92	1,864,655	-
1976-Q1	151.05	82.00	123.31	1,882,864	-
1976-Q2	145.83	81.48	116.97	1,912,782	-
1976-Q3	141.42	82.30	147.02	1,811,372	4.14
1976-Q4	115.72	85.26	137.97	2,116,531	16.64
1977-Q1	119.64	79.99	126.62	2,142,751	5.22
1977-Q2	129.65	80.53	122.44	1,976,850	-
1977-Q3	140.99	86.52	149.10	1,999,640	6.01
1977-Q4	137.01	78.96	125.72	2,088,996	-
1978-Q1	148.98	74.18	119.02	2,197,088	-
1978-Q2	147.55	76.99	119.84	2,323,044	-
1978-Q3	149.57	82.77	143.18	2,284,924	-
1978-Q4	165.41	82.40	130.84	2,465,756	-
1979-Q1	161.93	84.06	131.62	2,771,893	-
1979-Q2	143.31	87.48	133.81	2,727,067	-
1979-Q3	135.08	93.33	151.84	2,770,028	12.82
1979-Q4	125.30	100.31	154.77	3,096,534	22.63
1980-Q1	116.12	101.10	156.83	3,383,580	31.61
1980-Q2	106.64	100.46	155.04	3,411,045	37.27
1980-Q3	144.31	101.28	161.17	3,283,921	12.75
1980-Q4	156.53	110.15	162.57	3,309,085	4.65
1981-Q1	142.01	119.83	172.34	3,444,935	23.61
1981-Q2	144.88	124.75	171.50	3,341,673	20.42
1981-Q3	173.63	124.62	175.01	3,100,681	1.05
1981-Q4	153.61	121.66	167.85	3,303,480	11.04

Table 4. Continued

Year and Quarter	National Price (dollars/ckg)	National Cash Cost (dollars/ckg)	Support Level (dollars/ckg)	Number Marketed (head)	Payout per Head (dollars/head)
1982-Q1	152.55	110.91	154.52	3,425,811	1.54
1982-Q2	190.47	109.17	147.52	3,280,994	-
1982-Q3	208.82	111.85	160.31	3,063,098	-
1982-Q4	183.35	108.26	154.73	3,420,107	-
1983-Q1	181.28	101.05	145.03	3,399,278	-
1983-Q2	155.97	102.98	147.44	3,297,476	-
1983-Q3	151.59	109.13	165.67	3,362,796	10.93
1983-Q4	137.13	116.88	166.58	3,513,404	22.92
1984-Q1	146.31	121.54	166.56	3,731,245	15.80
1984-Q2	159.88	122.24	163.37	3,593,040	2.72
1984-Q3	172.67	125.74	177.65	3,499,644	3.89
1984-Q4	156.24	124.81	162.59	3,774,680	4.98
1985-Q1	156.32	116.56	151.49	3,914,900	-
1985-Q2	138.64	115.26	152.93	3,756,922	11.19
1985-Q3	148.34	114.68	167.61	3,636,173	15.02
1985-Q4	155.56	110.83	149.80	3,664,213	-

SOURCE: Huang 1990.

product." The GATT Subsidies Code, which is based on economic logic, suggests that countervailing duty investigations should be guided by answers to the following questions.

1. Standing: Are the complainants representative of the domestic industry that produces the allegedly subsidized product?

2. Subsidy: Are there government programs in the exporting country to provide countervailable subsidies to the domestic industry?

3. Causality: Do the subsidies identified in Step 2 cause an increase in production and exports?

4. Injury: Do the increased exports identified in Step 3 "materially injure" the importers' domestic industry?

If the answer to all of these questions is yes, then the importing nation has a GATT-legal right to impose a countervailing duty up to the amount of the estimated subsidy. Although the process is not

written in economic jargon, most economists would likely agree with the four steps for determining the effects of production or export subsidies on trade and prices. However, as the case of hogs and pork from Canada illustrates, it is not always easy to translate these abstract criteria into noncontroversial decisions with respect to countervailing duties.

In the remainder of this section, the issues raised in the countervailing duty cases involving hogs and pork from Canada are reviewed under headings corresponding to decisions made in the various cases. Phase 1 covers the initial U.S. decision to impose a countervailing duty on Canadian hog shipments, but not pork, finalized in July 1985, and the remand decision in 1987. Phase 2 covers the U.S. decision to extend the countervailing duty on Canadian hogs to fresh, chilled, or frozen pork. This decision was finalized in September 1989. As a result of successful appeals by Canada to a GATT panel and two separate panels constituted under Chapter 19 of the Canada-U.S. Trade Agreement (Phase 3), the countervailing duty on pork was removed in June 1991.

Phase 1: Hogs and Pork from Canada, 1984-87

On November 2, 1984, the U.S. National Pork Producers' Council along with a number of U.S. packers filed a petition with the U.S. Department of Commerce to impose countervailing duties on hogs and pork imported from Canada. Before detailing the areas of disagreement, it is helpful to note four facts on which both the United States and Canada agree. First, the dispute involves domestic production subsidies, largely of the type discussed above. Export subsidies are not an issue in this case. Second, both hogs and pork are priced in competitive North American markets; and third, with the exception of technical regulations involving Canada's importing of hogs, no significant trade barriers inhibit trade between Canada and the United States in either hogs or pork. Fourth, of the production subsidies identified by U.S. authorities, almost all were paid to hog producers, not pork producers.

In conducting its subsidy determination, the U.S. International Trade Administration (USITA) applies a "specificity test" to determine which programs available to foreign producers are countervailable (van Duren 1989). If a program applies to a specific enterprise or industry, it is countervailable; if it is available to all producers in the agricultural sector, it is judged generally available and noncountervailable. In measuring subsidy levels, the USITA follows an accounting approach similar to that used by the USDA and the OECD in calculating producer subsidy equivalents (OECD 1988, Webb et al. 1990). In this approach, no attempt is made to judge the effects of the subsidies on production. Subsidies are equivalent to government expenditures, or foregone revenues in the case of rebates or exemptions.

The USITA identified 24 federal and provincial programs that they judged to be providing countervailable subsidies to Canadian hog or pork producers. These subsidies totaled Canadian $0.0439 per pound of liveweight. Of these, the federal ASA accounted for 43 percent (1.789¢/lb) and the Quebec Farm Income Stabilization Program accounted for 39 percent of the total subsidy. Hence, two of the 24 programs accounted for 80 percent of the total calculated subsidy.

Canada argued that payments under the ASA were generally available and should not be included in the subsidy calculation. The United States countered that the distinction in the act between "named" and "unnamed" commodities, as well as the fact that support levels varied to some extent across commodities at the discretion of the minister of agriculture, showed that ASA was not a generally available program. As a result of the preliminary subsidy investigation, the United States imposed preliminary duties on U.S. imports of Canadian hogs and pork.

The USITA's preliminary standing decision was that hog and pork producers were members of the same industry, but the U.S. International Trade Commission (USITC) overturned this preliminary decision at the beginning of the formal hearings, arguing that hogs and pork are separate industries. This decision was based largely on the fact that there was little interlocking ownership between hog

and pork producers and that in the USITC's view economic integration could not be established solely on the basis of the high correlation between hog and pork prices. This decision was consistent with Canada's arguments. Nonetheless, most of the economic analysis presented by expert witnesses at the formal hearings, and prepared by the USITC staff economists, was based on the assumption that the relevant industry grouping was a single industry composed of hogs and pork.

The economic analysis presented by the U.S. and Canadian expert witnesses revolved around competing demand flexibility assumptions. Canada argued that the demand flexibility for pork at the farm level in the U.S. market was approximately −1.0, while the United States argued it was −2.0. In both cases, trade in hogs and pork was aggregated and price impacts were determined by setting Canadian exports of hogs and pork to zero. If a demand flexibility of −1.0 was chosen, the injury attributed to imports of Canadian hogs and pork appeared to be below the de minimis level. Econometric analysis that was presented indicated that Canada's hog stabilization programs had only a limited effect on hog production. This analysis was later published by Martin and Goddard (1987). At this time, no attempt was made to separate the different effects of hog and pork exports on U.S. market prices or to measure injury to hog producers separately from pork producers.

The USITC also analyzed the effects of Canadian hog and pork exports on the U.S. market. The USITC estimated injury to U.S. hog producers by:

- Calculating the ratio of Canadian hog marketings to total North American hog marketings;
- Determining the change in this ratio from year to year; and
- Using the change in this ratio to determine the impact of Canadian production subsidies on U.S. hog prices.

Using the range of demand flexibilities (−1.0 to −2.0) provided by expert witnesses, the USITC argued that annual changes in Canada's share of North American hog marketings of −0.4 percent, 1.3 percent, and 0.4 percent resulted in U.S. hog price changes of 0.4 percent to 0.8 percent, −1.3 percent to −2.6 percent, and −0.4 percent to −0.8 percent in 1983, 1984, and 1985, respectively.

Hence, in the USITC's staff analysis, any change in Canada's share of North American hog marketings was attributed to Canada's domestic production subsidies, even though relative declines in production and price effects were calculated from a range of assumed pork demand flexibilities.

The decision that hogs and pork were two separate industries meant that the USITC commissioners had to make injury rulings on both commodities. They found that U.S. hog producers were being materially injured as a result of Canadian hog imports, but while the U.S. pork industry was experiencing material injury, it was not as a result of pork imports from Canada. The primary reason for the later finding was the low share (2.8 percent) of U.S. pork consumption accounted for by Canadian pork. The issue of product shifting, the possibility of Canada's exporting pork instead of hogs, if a duty were applied only to hogs, was discussed by the commissioners. It was dismissed as too speculative so it was not permitted as evidence of a threat of material injury under U.S. trade law.

Following this decision, the U.S. Court of International Trade (USCIT), acting on an appeal by Canada, remanded the final determination in hogs and pork from Canada to reevaluate the evidence concerning the price flexibilities and elasticities relied on by the USITC. The court argued that these elasticities and flexibilities were based on a quantity variable defined as pork disappearance, which was consistent with the USITA's preliminary determination that hogs and pork were members of the same industry, but were ruled inappropriate after it was determined that hogs and pork were separate industries. The court directed the USITC to either obtain new data for its price flexibility estimates or to identify and explain what data in the existing record supported the redetermination.

The USITC advised the commissioners that bias in the flexibilities used in its earlier analysis, resulting from aggregating hogs and pork, was trivially small (Murray 1987a). There was no serious discussion of how to measure appropriately the injury to U.S. hog producers from domestic production subsidies on Canadian hogs when treating hogs and pork as separate industries.

Canada argued that the economic analysis provided by the USITC was seriously flawed and had failed to grasp the essence of the remand decision. First, it was inappropriate tc treat exports as an exogenous variable in the analysis since they were an endogenous variable influenced by exogenous production subsidies. Second, if imports were to be treated as exogenous variables, then the appropriate method of analysis involved a reduced form equation for the U.S. swine price that included imports of pork and swine as separate variables (Meilke 1987). In this equation, swine imports would be expected to have a different impact on U.S. hog prices than would pork imports. Finally, it was suggested that it would be more appropriate to estimate the input demand for swine of any origin by the U.S. processing industry. From this function, the elasticity of swine demand with respect to swine price could be determined while holding the price of pork constant. In one sense, then, the swine and pork industries would be treated separately as desired by the USCIT. Further, it was argued that this function would be far more price elastic than estimates based on the consumer demand function for pork. Most importantly, however, Canada argued that a proper economic analysis must trace the causal effect from the domestic production subsidy through to the increase in Canadian exports of hogs and pork to the United States, if any, and then to the price impact in the U.S. market. Econometric analysis indicated that the supply-inducing effects of Canadian stabilization programs was very small and hence the price-depressing effect of these subsidies in the U.S. market was well below any reasonable de minimis level (Martin and Goddard 1987).

Following the presentation of this new evidence, the USITC commissioners again found that the U.S. hog industry was being materially injured as a result of Canadian hog exports and that the U.S. packing industry was not being materially injured or threatened by Canadian pork exports. As a result, the countervailing duty on Canadian hogs remained in place and no duty was applied to Canadian pork exports.

Phase 2: Fresh, Chilled, or Frozen Pork from Canada, 1989

U.S. hog producers were disappointed by the USITC's decision to apply a countervailing duty to Canadian hog imports but not to pork. Consequently, the following provision (Section 771B) was added to the U.S. Tariff Act of 1930 when the Omnibus Trade Bill was passed in 1988.

In the case of an agricultural product processed from a raw agricultural product in which

(1) the demand for the prior stage product is substantially dependent on the demand for the latter stage product, and

(2) the processing operation adds only limited value to the raw commodity, subsidies found to be provided to either producers or processors of the product shall be deemed to be provided with respect to the manufacture, production, or exportation of the processed product.

Section 771B provides that in the case of certain processed agricultural products the Department of Commerce need not apply the "upstream subsidy" methodology prescribed in Section 771A. In particular, under Section 771B it is not incumbent upon the Department of Commerce to ensure the competitive benefit requirement of Section 771A is met before attributing input subsidies to further processed products. The statute goes on to provide guidance on how to evaluate subsidies to agricultural products.

(E) Industry producing processed agricultural products

(i) In general. - Subject to clause (v), in an investigation involving a processed agricultural product produced from any raw agricultural product may be considered part of the industry producing the processed product if --

(I) the processed agricultural product is produced from the raw agricultural product through a single continuous line of production; and

(II) there is a substantial coincidence of economic interest between the producers or growers of the raw agricultural product and the processors of the processed agricultural product based upon relevant economic factors, which may, in the discretion of the Commission, include price, added market value, or the economic interrelationships (regardless of whether such coincidence of economic interest is based upon any legal relationship).

(ii) Processing. - For purposes of this subparagraph, the processed agricultural product shall be considered to be processed from a raw agricultural product through a single continuous line of production if -

(I) the raw agricultural product is substantially or completely devoted to the production of the processed agricultural product; and

(II) the processed agricultural product is produced substantially or completely from the raw product.

(iii) Relevant economic factors. - For purposes of clause (i)(II), in addition to such other factors it considers relevant to the question of coincidence of economic interest, the Commission shall -

(I) if price is taken into account, consider the degree of correlation between the price of the raw agricultural product and the price of the processed agricultural product; and

(II) if added market value is taken into account, consider whether the value of the raw agricultural product constitutes a significant percentage of the value of the processed agricultural product.

(iv) Raw agricultural product. - For purposes of this subparagraph, the term 'raw agricultural product' means any farm or fishery product.

(v) Termination of this subparagraph. - This subparagraph shall cease to have effect if the United States Trade Representative notifies the administering authority and the Commission that the application of this subparagraph is inconsistent with the international obligations of the United States.

. . .

(F) Threat of material injury

(i) In general. - In determining whether an industry in the United States is threatened with material injury by reason of imports (or sales for importation) of the merchandise, the Commission shall consider, among other relevant economic factors -

. . .

(IX) in any investigation under this title which involves imports of both a raw agricultural product (within the meaning of paragraph (4)(E)(iv)) and any product processed from such raw agricultural product, the likelihood that there will be increased imports, by reason of product shifting, if there is an affirmative determination by the Commission under section 705(b)(1) or 735(b)(1) with respect to either the raw agricultural product or the processed agricultural product (but not both).

. . .

(9) Interested party. - The term "interested party" means -

(G) in any investigation under this title involving an industry engaged in producing a processed agricultural product, as defined in paragraph (4)(E), a coalition or trade association which is representative of either -

(i) processors,
(ii) processors and producers, or
(iii) processors and growers,

. . .

1677-2. Calculation of subsidies on certain processed agricultural products.

> In the case of an agricultural product processed from a raw agricultural product in which (1) the demand for the prior stage product is substantially dependent on the demand for the latter stage product, and (2) the processing operation adds only limited value to the raw commodity, subsidies found to be provided to either producers or processors of the product shall be deemed to be provided with respect to the manufacture, production, or exportation of the processed product.

On January 5, 1989, the U.S. National Pork Producers' Council again filed a petition with the Department of Commerce to institute a countervailing duty investigation on fresh, chilled, or frozen pork imported from Canada. Hog imports were excluded from this investigation since they were now presumed to be fairly traded as a result of the countervailing duty being applied to hogs, and processed pork products were excluded from the case.

The USITA identified 17 federal and provincial programs that they determined were providing countervailable subsidies totalling Canadian $0.036 per pound. Ninety percent of the total estimated subsidy was accounted for by the federal Tripartite Stabilization Program ($0.0125) and the Quebec Farm Income Stabilization Insurance program ($0.0196), and 99 percent of the total subsidy was paid to hog producers.

When Canada's ASA was amended to allow the formation of tripartite stabilization programs, it was hoped that the changes would result in the program's being generally available and hence noncountervailable. However, the USITA found the payments to Canadian hog producers under the Tripartite Stabilization Program countervailable for the following reasons:

> Tripartite agreements only exist for nine agricultural commodities; tripartite agreements do not exist for all commodities requested by producers; different levels of stabilization exist among commodities covered by tripartite agreements, and even amongst swine producers, benefits are not available on equal terms, due to the fact that Quebec is allowed to maintain its provincial stabilization program while other provincial stabilization programs must be phased out (USITC 1989a, B-18).

The essence of the U.S. argument as paraphrased from their legal briefs follows.

1. As hog prices decline in the normal course of the hog cycle, U.S. hog production declines and U.S. packer costs are increased, since U.S. packers are less able to defray fixed costs through economies of scale.

2. At the same time Canadian producers, as a result of domestic production subsidies, maintain production and because of economies of scale Canadian packers gain a competitive price advantage from subsidies paid to Canadian hog producers.

3. Since Canadian packers are producing more pork than they would under competitive market conditions, this additional pork competes with U.S. pork and causes lower prices in both the U.S. hog and pork markets, regardless of whether Canadian packers derive a competitive price advantage.

In summary, the U.S. argument is that "subsidized Canadian hog producers and packers have thus shifted their share of the costs of the hog cycle to non-subsidized U.S. producers and packers" (USITC 1989b, 6).

The economic analysis provided by the United States followed the same pattern established in the earlier case. Using an assumed demand flexibility for hogs of −2.0, the U.S. price impact was assessed by setting Canada's exports of fresh, chilled, or frozen pork, and pork plus the pork equivalent of live hog exports, to zero. In responding to the Canadian argument that the relevant demand/supply function was the input demand/supply function for hogs and pork, the United States argued that the U.S. packer does not have a supply curve because changes in pork prices have no effect on the packer's ability to increase or decrease pork production.

A large portion of the U.S. legal brief was addressed to the question of whether hogs and pork met the provisions of Section 771B of the Tariff Act that would allow them to be treated as a single industry. Without recounting all of the arguments, the U.S. position was that (a) pork is produced from hogs in a single continuous line of production, and (b) there is a substantial coincidence of economic interest between hog and pork producers, based on relevant economic factors. The United States argued that the two crucial economic factors, as outlined in U.S. legislation, were low value-

added in the processing activity and a high price correlation between the raw and processed product prices (USITC 1989b).

Canada's position was that if U.S. pork producers were experiencing economic difficulties it was the result of the normal hog cycle and not the result of Canadian hog production subsidies or Canadian pork exports. Further, they argued that there was no coincidence of economic interest between packers and growers. In particular, Canada stated that a high correlation between hog and pork prices was not sufficient to establish that there was a coincidence of economic interest among hog and pork producers. Canada argued that the hog producers' profitability was determined by the margin between their input costs (largely feed costs) and the price of hogs, while the profitability of pork producers was determined by the margin between pork and hog prices. Hence, when hog prices were high, hog producers benefitted and pork producers were harmed; that is, there was no coincidence of economic interest.

Canada also argued that a proper economic analysis of the potential injury to U.S. pork producers resulting from Canada's hog production subsidies would have to account for the economic structure of the North American hog/pork markets and include the following calculations:

1. The effect of Canada's hog production subsidies on Canadian hog production;
2. The increase, if any, in Canadian exports of fresh, chilled, and frozen pork to the U.S. market as a result of increased hog production; and
3. The price impacts of this marginal increase in Canada's exports of fresh, chilled, and frozen pork on U.S. pork prices and the economic well-being of U.S. pork packers.

Implicit in this process is the assumption that U.S. pork producers suffer no competitive disadvantage as long as their selling (pork) prices are unaffected by Canadian swine production subsidies. In addition, Canada stressed that the price flexibilities of demand used by the United States were far too low, considering that the product under investigation (fresh, chilled, and frozen pork) comprises only a fraction of the demand for pork products, and a lower bound for the relevant

demand flexibility was −1.0. Canada also presented econometric evidence that Canadian production subsidies for swine had only a small impact on Canadian hog production.

The USITC provided no public quantitative economic analysis of the effects of Canadian pork exports on the U.S. market. It appears that they did provide the USITC commissioners with some quantitative analysis based on the CADIC model developed to analyze injury in anti-dumping cases (Boltuck 1988). The starting point of the CADIC model is a dumping margin, and the model assumes that imported and domestic commodities are differentiated products. Neither of these assumptions appears appropriate in a case involving domestic production subsidies and nearly, if not perfectly, homogeneous products.

Following the evidence presentation, the USITC Commissioners found that the U.S. pork packing industry was not suffering material injury as a result of Canadian exports of fresh, chilled, and frozen pork but that it was threatened with injury. In the view of Commissioners Eckes, Rohr, and Newquist, "the overall picture of this industry over much of the period of investigation is of an industry operating at a reasonable level, given expected fluctuations in the hog cycle. It is also an industry whose most recent trends are downward, particularly in terms of profitability. . . ." (USITC 1989a, 16). "Because the hog cycle is currently still at a peak, perhaps just beginning its downward trend, we find that although there is no present injury the threat of injury is real and imminent" (USITC 1989a, 16, 24). As a result, the preliminary duty applied to imports of Canadian pork was finalized.

Phase 3: The Appeals, 1989-91

As a result of the USITC's decision on fresh, chilled, and frozen pork from Canada, Canadian authorities filed three appeals—one under the GATT and two separate appeals (panel 6 and panel 11) under the Canada-U.S. Free Trade Agreement. Many of the arguments in these appeals are similar to those reported above, so this discussion is brief.

The GATT Council agreed at its meeting of December 4, 1989, to examine Canada's contention that the United States had violated its obligations under Article VI:3 of the General Agreement by imposing a countervailing duty on imports of Canadian fresh, chilled, and frozen pork products in excess of the amount of the subsidy granted to processors of these products. "In relying on Section 771B of the Tariff Act of 1930 to determine the amount of subsidy granted, the United States deemed that 100% of the subsidies provided to swine producers were passed through to pork processors without establishing factually that any portion of the subsidies, much less 100%, is passed through" (Government of Canada 1990, 1).

The essence of the Canadian argument was that the United States must conduct an upstream subsidies determination to calculate the fraction, if any, of the subsidies granted to Canadian swine producers to apply to fresh, chilled, and frozen pork products. The United States countered by arguing that the determination in the case of fresh, chilled, and frozen pork was consistent with U.S. trade law. Further, they argued that the criteria used in determining that 100 percent of subsidies provided to Canadian swine growers were passed through to Canadian pork producers was entirely appropriate for fungible agricultural commodities because, in the absence of these conditions, commodity producers could avoid countervailing duties by any minor change in the form of the product.

The GATT panel finding (1990) was in Canada's favor. The panel found that "the subsidies granted to swine producers could be considered to be bestowed on the production of pork only if they had led to a decrease in the level of prices for Canadian swine paid by Canadian pork producers below the level they have to pay for swine from other commercially available sources of supply" (GATT 1990, 36). Further, the GATT panel found that the two economic criteria established in Section 771B of U.S. trade law were insufficient to attribute the full subsidy on hogs to pork

producers. The panel argued that other economic factors would have to be examined to justify this conclusion, and they provided examples of several other factors that could and should be investigated.

One of the appeals (panel 6) under the Canada-U.S. Trade Agreement dealt with the issue of subsidies. In this appeal,Canada repeated its arguments that some of the programs the United States has deemed countervailable, in particular tripartite stabilization, are in fact generally available—or do not apply to pork producers.

The most important decision made by panel 6 concerns their acceptance of the arguments of the U.S. Department of Commerce that tripartite stabilization programs are countervailable. While the panel acknowledged that many Canadian agricultural products are covered by stabilization programs (WGSA, National Farm Products Marketing Act, ASA), they felt that because there are different programs focused on different commodities it is sufficient to suggest that tripartite stabilization benefits are targeted towards red meat producers and hence not generally available.

On March 8, the binational panel remanded the decision on the Quebec Farm Income Insurance Program back to the Department of Commerce. The Department of Commerce, in responding to this order, removed the Quebec Farm Income Stabilization Program from its subsidy calculations but did not state that it now accepts the argument that the program is generally available. Hence, the status of the Quebec Farm Income Insurance Program is uncertain.

In the other appeal under the U.S.-Canada Free Trade Agreement (panel 11), Canada argues that the USITC's decision that the U.S. pork industry is threatened with injury as a result of Canada's exports of fresh, chilled, and frozen pork is not supported by substantial evidence on the record. In particular, they point to an error made by the USITC in which Canada's production of pork between 1986 and 1988 was shown to have increased by 30.7 percent instead of the actual increase of 8.3 percent, which was less than the increase in U.S. pork production over the same period. The error made in calculating Canada's production figures was acknowledged by the USITC, but they argue that

this was only one of many factors considered by the commissioners in determining the threat of injury.

In October 1990, after reconsidering the evidence, the USITC commissioners reconfirmed that they felt the U.S. pork industry was threatened with material injury by pork imports from Canada. This decision was again appealed to panel 11 by Canada. On January 22, 1991, after reviewing the evidence, panel 11 stated that "the majority Commissioners' findings of a threat of imminent material injury are not supported by substantial evidence" (U.S.-Canada Free Trade Agreement 1991, 37) and remanded the decision back to the USITC. Given these findings, the USITC commissioners reversed their threat of material injury decision but argued that the binational panel had exceeded its authority in issuing the remand decision (USITC 1991).

U.S. hog producers were understandably unhappy with this decision and applied political pressure on U.S. Trade Representative Carla Hills to request an Extraordinary Challenge Committee. Ms. Hills complied with this request and on April 15, 1991, the Extraordinary Challenge Committee was formed. This committee of three judges was faced with deciding whether panel 11 "seriously departed from a fundamental rule of procedure, or the panel manifestly exceeded its powers, authority or jurisdiction . . ." (External Affairs 1987, 276). The Extraordinary Challenge Committee's decision, which is binding on Canada and the United States, can vacate the original panel decision, remand it to the original panel, or affirm the original panel decision. In June 1991, the Extraordinary Challenge Committee found in Canada's favor and affirmed the original panel decision. The countervailing duty applied to Canadian pork exports was eliminated and the approximately $20 million dollars collected in duty revenue between September 1989 and June 1991 by the United States was refunded to Canada. In July 1991, the United States also allowed the GATT panel report to be adopted, thus leaving in an unclear position the status of section 771B of U.S. trade law.

Conclusion

Perhaps the most striking feature of this review is that countervailing duty cases, which address economic issues, are conducted without an agreed-upon analytical framework. While cases of this type will always involve differing interpretations of facts and figures, it seems odd that agreement could not be reached on the basic economic model to use in analyzing the dispute. If a basic economic framework were agreed to by both parties, then the grounds for debate would be sharply limited. However, in the absence of this agreement, it is not surprising that the decisions reached by the USITC, and other dispute settlement bodies, are subject to wide controversy.

APPENDIX

Table A shows the level, relative size, and time path of Canada's provincial, federal, and total hog subsidies. Producer premiums, where applicable, have been subtracted from payments to calculate net subsidies, thus explaining the negative numbers in the table.

The data on federal stabilization payments were obtained from the annual reports of the Agricultural Stabilization Board. Payments under the Agricultural Stabilization Act were available to all Canadian hog producers, while data on the number of hogs enrolled in the voluntary National Tripartite Stabilization Program were obtained from Agriculture Canada.

Data on payments, premiums, and the number of hogs enrolled in provincial hog stabilization programs were obtained from the computerized databank of Agriculture Canada. An attempt was made to have the provincial figures checked by either provincial governments or provincial pork marketing boards. In several cases, this resulted in updates and corrections being made to the data provided by Agriculture Canada. However, for some provinces it was not possible to obtain independent confirmation of the provincial data. A particularly difficult time period, with respect to data, was 1983(2) to 1985(3). During this time frame, federal payments were in some cases totally, and in other cases partially, withheld from producers enrolled in provincial hog stabilization plans. The federal data have been adjusted to reflect this phenomena, but in several cases the adjustments were based on fragmentary or incomplete information. Nonetheless, the figures in Table A provide a reasonably accurate representation of net provincial and federal stabilization payments for the period 1979-Q1 to 1989-Q4.

Table A. Average hog price and subsidies in Canada, 1979-1989

Year and Quarter	Hog Price	Provincial Net Subsidy	Federal Net Subsidy	Total Subsidy
	----------(dollars per	100 kg)----------		
1979-Q1	162.4	-0.3	0.0	-0.3
1979-Q2	143.3	-0.1	5.4	5.3
1979-Q3	135.2	0.1	5.4	5.6
1979-Q4	129.0	0.7	5.4	6.1
1980-Q1	116.9	2.1	5.4	7.5
1980-Q2	106.2	4.9	11.4	16.3
1980-Q3	143.6	3.0	11.4	14.4
1980-Q4	157.0	4.1	11.4	15.5
1981-Q1	142.1	5.1	11.3	16.4
1981-Q2	143.7	7.3	0.0	7.3
1981-Q3	174.2	0.3	0.0	0.3
1981-Q4	155.0	3.5	0.0	3.5
1982-Q1	152.1	3.5	0.0	3.5
1982-Q2	190.1	0.4	0.0	0.4
1982-Q3	209.0	-0.9	0.0	-0.9
1982-Q4	184.6	-0.2	0.0	-0.2
1983-Q1	181.4	-1.5	0.0	-1.5
1983-Q2	155.4	0.5	5.3	5.8
1983-Q3	151.0	1.1	5.3	6.3
1983-Q4	136.1	5.4	5.3	10.7
1984-Q1	145.9	11.5	5.3	16.8
1984-Q2	158.4	10.7	0.0	10.7
1984-Q3	172.0	7.8	0.0	7.8
1984-Q4	154.7	8.3	0.0	8.3
1985-Q1	155.4	4.7	0.0	4.7
1985-Q2	136.9	8.5	2.1	10.6
1985-Q3	147.7	7.6	4.8	12.4
1985-Q4	154.6	4.2	0.0	4.2
1986-Q1	152.4	4.2	0.0	4.2
1986-Q2	156.4	3.3	0.0	3.3
1986-Q3	209.9	2.1	-1.7	0.4
1986-Q4	191.3	2.3	-1.7	0.6

Table A. Continued

Year and Quarter	Hog Price	Provincial Net Subsidy	Federal Net Subsidy	Total Subsidy
	(dollars per 100 kg)			
1987-Q1	158.1	-1.8	-2.1	-3.9
1987-Q2	183.6	-2.4	-2.0	-4.4
1987-Q3	199.6	-2.6	-2.0	-4.6
1987-Q4	153.9	-1.4	-2.0	-3.4
1988-Q1	138.6	0.9	0.1	1.0
1988-Q2	146.4	0.6	-1.6	-1.0
1988-Q3	134.5	0.9	13.2	14.1
1988-Q4	119.2	2.2	24.0	26.1
1989-Q1	120.2	11.4	41.0	52.4
1989-Q2	128.9	10.4	38.2	48.5
1989-Q3	145.3	10.2	34.3	44.6
1989-Q4	142.1	10.6	14.5	25.1
Average	154.0	3.5	5.6	9.1

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