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Introduction

The multilateral trade negotiations of 1960-62 came in direct response to the formation of the European Economic Community (EC). These negotiations became known as the Dillon Round and though they lasted only a short time, their impact on agricultural trade has been tremendous since that time. This is especially true for the soybean and soybean derivatives (soybean meal and oil) trade between the United States and the EC.

When the Dillon Round ended in March of 1962, the EC was still in the developmental stages and was undecided as to its common agricultural policy (CAP). Because of this, EC officials negotiated tariff bindings only on those commodities which were deemed unimportant and nonthreatening, such as oilseeds, manioc and sheepmeat. The classification of soybeans and soybean products as unimportant commodities by EC officials led them to agree to a zero tariff binding under the General Agreement of Tariffs and Trade (GATT). For several years, soybeans and soybean products remained relatively unimportant in terms of trade with the EC, but as the CAP developed, the underlying economic incentives it provided made soybeans and soybean derivatives more viable.

The CAP was designed for three purposes: (1) to keep prices high enough to encourage production; (2) to provide a fair standard of living to farmers; and (3) to simultaneously ensure reasonable prices to consumers. Achieving and maintaining these goals has been difficult and costly.

High prices were maintained through the construction of the variable levy, which, in short, causes imported commodities to be higher priced than domestically produced commodities. In order for these prices to remain high, the surpluses that accrue must be disposed of. This was achieved by offering consumption aid to domestic consumers and export refunds to exporters to make their prices competitive in world markets without inducing losses at the farm level. This system of import protection, consumption aid and export refunds allowed the CAP to achieve its goals but only at a significant cost.

As the grain lobby in the EC strengthened, grain prices increased in the EC. This led to two problems. First, the excess production had to be disposed of, usually by providing export refunds in order to export the excess grain. Second, as the price of domestic grains increased, EC livestock producers were compensated for their increased factor costs. This usually was done by the use of domestic consumption aid or export refunds to lower EC meat product prices to world levels. Thus as the price of grain in the EC went so did the price of meat. Meat producers, realizing this fact, also realized if they could cut costs further, they could increase their profits because they would still receive the same price for their livestock. In searching for a cheaper substitute for CAP corn and barley they found soybean meal.

Due to the zero tariff binding on soybeans and soybean products, imports of soybean meal increased. As soybean meal demand increased, soybean crushing became profitable. However, agrological conditions in Europe are not conducive to soybean production, and, even in those areas where it is, returns to competing row crops are higher than to soybeans because of the CAP. Thus, a large crushing industry was established in Europe even though soybeans must be imported.

When soybeans are crushed, they produce two products: soybean meal and soybean oil. The soybean meal competes with any type of livestock feed, but the soybean oil produced also competes directly with other commodities protected by the CAP; i.e., sunflower oil, olive oil, rapeseed oil and other oils, and is a main factor in margarine production which competes with butter. Both vegetable oils and butter are protected under the CAP and any product that causes a decline in the consumption of these products is a menace to frugality in CAP expenditures.

A vegetable oils tax has been proposed many times that would not only reduce expenditures in the olive oil sector, i.e. increase demand for olive oil, but also the dairy sector by increasing the cost of margarine. On three occasions, 1964, 1968, and 1976, this proposal has been defeated due to strong lobbies by the crushing and margarine industries. However, this may be subject to change after the accession of Spain and Portugal to the EC in 1986.

Much like the present 10 EC countries (EC-10), Spain and Portugal have vast and labor-intensive olive oil sectors that require large expenditures to support declining demand and insure employment. Once the expenditures on olive oil in the EC-10 and Spain and Portugal are coupled, the present cost of the olive oil regime of the CAP is expected to double. This increase is threatening to the EC for two reasons. First, Spain and Portugal are expected to benefit far more in the short run than the EC in terms of budgeting costs from the accession. Spain and Portugal will contribute about $1.65 billion to the CAP, but will receive about $1.68 billion in aid from the EC-10. Second, since the CAP has accounted for over 65 percent of the total EC budget over the last decade, it is the first area considered when expenditure cuts are discussed.

The Treaty of Rome does not allow for deficit spending. Only through quick financial maneuvers was the EC able to avert a deficit in 1984 and 1985. The possibility of a deficit in 1986 has been exacerbated by the recent drop in the dollar, the realigning of European currencies and the accession of Spain and Portugal. Thus, estimates for 1986 are that the EC will need an extra $2.6 billion to stay within the guidelines of the Treaty of Rome. To help combat this problem, EC officials have once again considered a vegetable oils tax to serve a dual purpose. The tax, if imposed, would first raise revenue from substitute oils for olive oil and, second, make olive oil more competitive with these cheaper substitutes, hopefully lowering expenditures on olive oil.

The problem to consider is the impact that a vegetable oils tax in the EC will have on the U.S. soybean and soybean crushing market and thus exports of these products. From 1975 to 1982, almost 40 percent of all U.S. soybean exports and over half the exports of soybean products were to the EC. This makes the EC the largest export market for these U.S. products, so a distortion in the EC market will have an impact on these U.S. markets.

The Economic Model

The conditions required to maximize profits for the soybean crusher are summarized below. Meal and oil demands can be represented at the firm level as

$$P_1 = MR_1 = D_1, \tag{1}$$

$$P_2 = MR_2 = D_2, \tag{2}$$

where

P_1 = the price of soybean meal;

MR_1 = the marginal revenue of soybean meal;

D_1 = the demand for soybean meal;

P_2 = the price of soybean oil;

MR_2 = the marginal revenue of soybean oil;

D_2 = the demand for soybean oil.

Since the marginal cost of crushing soybeans cannot be allocated, the following vertical summation must be performed in order to maximize profit and obtain the optimum output level. The vertical summation is

$$0.8P_1 + 0.2P_2 = P_3, \tag{3}$$

and the first order conditions for profit maximization are then

$$P_3 = MC_3, \tag{3a}$$

where

$0.8P_1$ = the yield of meal assumed per metric ton of soybeans crushed multiplied by the price of soybean meal per metric ton,

$0.2P_2$ = the yield of oil assumed per metric ton of soybeans crushed multiplied by the price of soybean oil per metric ton,

$P_3 = 0.8P + 0.2P$, total price of soybean crushing services per metric ton of soybeans crushed,

$Q_3 = Q + Q$ or the quantity of soybeans crushed, products produced or services provided,

$Q_1 = 0.8\ Q_3$ or the quantity of meal produced,

$Q_2 = 0.2\ Q_3$ or the quantity of oil produced.

$MC_3 = a + b\ Q$ or the marginal cost function of producing Q_3, $a, b > 0$.

By substituting D_1 and D_2 into Equation (3) and vertically summing, we can obtain a demand for crushing services.[1] The point at which this demand for soybean products intersects the marginal cost (3a) of crushing gives the amount of products produced. Once this equilibrium is discovered in the crushing service market we are automatically assured of an equilibrium in the meal and oil markets.

The Soybean Crushing Service and Soybean Markets

The soybean crushing market for the industry can be modeled using the same methods as above with some slight alterations. In order to depict the crushing industry it is necessary to sum all of the individual firm's demand and supply curves.

Unlike before, the industry demand curves for meal and oil are downward sloping. In order to do the proper vertical summation the demand for meal and oil must be written as price dependent and can be expressed as

$$P_1 = a_1 - b_1Q_1, \tag{4}$$

$$P_2 = a_2 - b_2Q_2, \tag{5}$$

where $a_1, a_2, b_1, b_2 > 0$.

Following the vertical summation of Equations (4) and (5), the demand for products in the industry is

$$Q_3 = a_3 - b_3P_3. \tag{6}$$

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[1] The term "crushing services" will be used here to mean the combination of meal and oil produced in the crushing process.

The industry supply is determined by horizontally summing the firms' individual marginal cost curves. Since there are no individual marginal cost curves for meal and oil, there are no individual supply curves for these products. Rather, the supply curve for the industry is the summation of the marginal cost curves for crushing services; i.e., it is a supply curve for both meal and oil.

This curve can also be derived from the market supply of soybeans equation. The crushing service equation is obtained by summing the soybean supply equation,

$$P_4 = h_4 + j_4Q_4 \ , \qquad (7)$$

and the cost of crushing (margin) equation,

$$P_{4m} = k_{4m} + L_{4m}Q_{4m} \ , \qquad (8)$$

which yields

$$P_3 = N_3 + R_3Q_3 \ . \qquad (9)$$

Equating (6) and (9) gives the equilibrium levels of price and quantity in the crushing market. Due to the technical relationship of meal and oil, once we obtain the quantity of products produced, ie soybeans crushed, we know that 80 percent of the products produced are meal and 20 percent are oil. Therefore, $0.8Q_3$ can be be substituted into Equation (4) to obtain the price for meal (P_1) and $0.2Q_3$ can be substituted into Equation (5) to obtain the price for oil (P_2). Since Equation (6) is a vertical summation of (4) and (5), then the price of crushing services (P_3) is an aggregation of P_1 and P_2.

Since the demand for soybeans is ultimately determined by the demand for soybean meal and oil, we can derive the demand for soybeans from the demand for these products. Once this demand schedule is obtained, it can be coupled with the supply schedule for soybeans yielding the market equilibrium for soybeans.

The demand for soybeans is derived from the demand curve developed in Equation (6). The difference in this equation and the demand for soybeans is the marketing margin. Thus, the derived demand for soybeans is the demand for soybean crushing services,

$$P_3 = a_3 - b_3Q_3 , \tag{6}$$

less the marketing margin,

$$P_{3m} = d_{3m} - e_{3m}Q_{3m} , \tag{10}$$

which yields

$$P_4 = f_4 - g_4Q_4 , \tag{11}$$

where

Q_{3m} = quantity of crushing service at a certain margin,

P_{3m} = price differential between crushing services and soybeans per metric ton,

Q_4 = quantity of soybeans,

P_4 = price of soybeans.

The supply of soybeans is a summation of all the marginal cost curves of farmers producing soybeans and can be written in quantity dependent form as

$$Q_4 = h_4 + j_4P_4 \tag{12}$$

where

$h_4, j_4 > 0.$

By equating Equations (11) and (12) we will now have the equilibrium price and quantity of soybeans.

The Empirical Model

Through the use of price transmission elasticities the analysis can be completed without constructing a large scale world trade model. The alternative to the large scale world model is a linear-in-logs equilibrium displacement model of the type used by Floyd, Gardner and Alston, among others. This approach is based on a knowledge of elasticities to determine new market equilibria. The requirements of this type of model are estimated supply elasticities, demand elasticities, market share estimates of exogenous demand or supply shifters and price transmission elasticities between markets and countries.

The EC analysis will consist of two models--one for soybean crushing services and one for soybeans. These two are connected through a market margin price transmission elasticity. The U.S. model will consist also of two models--one for services and one for soybeans--and is connected to the EC model through an international price transmission elasticity. The U.S. soybean and crushing markets are connected in the same manner as those of the EC.

EC Models

Soybean Crushing Services

$$dQ_{s3e} = \varepsilon_{s3e}(dP_{3e} - \alpha) \quad (13)$$

$$dQ_{d3e} = \eta_{d3e} dP_{3e} \quad (14)$$

$$dX_{3e} = \eta_{xs3e} dP_{3w} \quad (15)$$

$$dQ_{3e} = K_{c3e} dQ_{d3e} - K_{m3e} dX_{3e} \quad (16)$$

$$dP_{3w} = \lambda_3 dP_{3e} \quad (17)$$

where

dQ_{s3e} = percent change in quantity supplied of crushing services in EC,

dQ_{d3e} = percent change in quantity demanded of crushing services in EC,

dX_{3e} = percent change in quantity supplied of crushing services by rest of world of crushing services for which EC can consume,

dP_{3w} = percent change in price of crushing services for world,

dP_{3e} = percent change in price of crushing services in EC,

ε_{s3e} = elasticity of supply of crushing services in EC,

α = percent shift up in marginal cost of crushing due to the vegetable oils tax in EC,

η_{d3e} = demand elasticity for crushing services in EC,

η_{xs3e} = excess supply elasticity of crushing services EC faces,

K_{c3e} = percent of EC consumption of crushing services produced in the EC,

K_{m3e} = percent of EC consumption of crushing services imported by EC,

λ_3 = price transmission elasticity for crushing services from EC to rest of the world.

Solving for dP_{3e} yields

$$dP_{3e} = \frac{\alpha\varepsilon_{s3e}}{\varepsilon_{s3e} - k_{c3e}\eta_{d3e} + K_{m3e}\eta_{xs3e}\lambda_3} .$$

Once this value is determined the system may be solved.

<u>Soybean Market</u>

$$dQ_{s4e} = \varepsilon_{s4e}dP_{4e} \quad (18)$$

$$dQ_{d4e} = \eta_{d4e}(dP_{4e} + \rho) \quad (19)$$

$$dX_{s4e} = \eta_{xs4e}(dP_{4w}) \quad (20)$$

$$dQ_{s4e} = K_{c4e}dQ_{d4e} - K_{m4e}dX_{s4e} \quad (21)$$

$$dP_{4w} = \lambda_4 dP_{4e} \quad (22)$$

where

dQ_{s4e} = percent change in quantity supplied of soybeans in EC,

dQ_{d4e} = percent change in quantity demanded of soybeans in EC,

dX_{s4e} = percent change in quantity supplied of soybeans by rest of world of soybeans for which EC can consume,

dP_{4w} = percent change in price of soybeans in world,

dP_{4e} = percent change in price of soybeans in EC,

ε_{s4} = elasticity of supply of soybeans in EC,

η_{d4e} = demand elasticity for soybeans in EC,

η_{xs4e} = excess supply elasticity for soybeans faced by EC,

K_{c4e} = percent of EC consumption of soybeans produced in EC,

K_{m4e} = percent of EC consumption of soybeans imported by EC,

λ_4 = price transmission elasticity for soybeans from EC to rest of the world,

2&d = percent shift down in EC demand curve for soybeans due to EC vegetable oils tax.

Solving for dP_{4e} yields

$$dP_{4e} = \frac{K_{c4e}\eta_{d4e} 2\&d¢}{\varepsilon_{4e} - K_{c4e}\eta_{d4e} + K_{m4e}\eta_{xs4e}\lambda}$$

and this again solves the system.

United States Models

Soybean Crushing Services

$$dQ_{s3u} = \varepsilon_{s3u}dP_{3u} \quad (23)$$

$$dQ_{d3u} = \eta_{d3u}dP_{3u} \quad (24)$$

$$dX_{3u} = \eta_{xd3u}(dP_{3w}-\mu) \tag{25}$$

$$dP_{3u} = \lambda_3 dP_{3w} \tag{26}$$

where

dQ_{s3u} = percent change in supply of crushing services in U.S.,

dQ_{d3u} = percent change in demand for crushing services in U.S.,

dX_{3u} = percent change in exports of crushing services from U.S.,

dP_{3u} = percent change in price of crushing services in U.S.,

dP_{3w} = percent change in world price of crushing services,

ε_{s3u} = elasticity of supply of crushing services in U.S.,

μ = percent shift up in the excess demand curve faced by the United States due to the EC vegetable oils tax,

η_{d3u} = elasticity of demand of crushing services in U.S.,

η_{xd3u} = excess demand elasticity for U.S. exports of crushing services,

λ_3 = price transmission elasticity from P_{3w} to P_{3u}.

By noting the percentage change in P_{3w} caused by the EC vegetable oils tax or $dP_{3w} = \lambda_3 dP_{3e}$ from the EC model, we can solve the U.S. crushing service model.

Soybean Market

$$dQ_{s4u} = \varepsilon_{s4u} dP_{4u} \tag{27}$$

$$dQ_{d4u} = \eta_{d4u} dP_{4u} \tag{28}$$

$$dX_{4u} = \eta_{xd4u}(dP_{4w} + \psi) \tag{29}$$

$$dP_{4u} = \lambda_4 P_{4w} \tag{30}$$

where

dQ_{s4u} = percent change in supply of soybeans in U.S.,

dQ_{d4u} = percent change in demand for soybeans in U.S.,

dX_{4u} = percent change in exports of soybeans from U.S.,

dP_{4u} = percent change in price of soybeans in U.S.,

dP_{4w} = percent change in world price of soybeans,

ε_{s4u} = elasticity of supply of soybeans in U.S.,

ψ = percentage shift down in the excess demand function for soybeans faced by the United States due to the EC vegetable oils tax,

η_{d4u} = elasticity of demand of soybeans in U.S.,

η_{xd4u} = excess demand elasticity for U.S. exports of soybeans,

λ_4 = price transmission elasticity from P_{4w} to P_{4u}.

By noting the percentage change in P_{4w} caused by the EC vegetable oils tax or $dP_{4w} = \lambda_4 dP_{4e}$ from the EC model, we can solve the U.S. soybean model.

Once these four models are solved, we can determine the impact an EC vegetable oils tax will have on both the U.S. and EC soybean markets.

Empirical Results

The empirical results were derived using the parameter estimates given in Table I and various tax and price transmission elasticity levels. The tax levels were varied from 75 European Currency Units (ecu's or $96) to 200 ecu's ($256) by increments of 25 ecu's. The alternative price transmission elasticity levels were 0.2, 0.5, and 0.8.[2]

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[2] An exact tax rate has not been decided; however, the range of 75 to 200 ECU's should encompass the set of reasonable possibilities. Due to market rigidities and transportation costs, actual price transmission elasticities are expected to be less than 1.0.

Table II-V give the impact of the EC oils tax on the four markets studied. In the EC crushing services market, both quantities supplied and demanded decline. The net effect, however, causes a rise in domestic and world prices and an increase in quantities imported. The largest impact on the world market occurs with the combination of a high tax and a high price transmission elasticity. The price transmission elasticity essentially reflects the importance of changes in EC price levels on the world market. At high levels the price transmission elasticity translates higher EC prices brought on by the tax into higher world prices which call forth greater world production and greater world exports to the EC.

In the EC soybean market, Table III, changes are small, but there is a slight shift toward fewer imports. Domestic crushing demand falls, and since domestic and world prices and domestic production remain largely unchanged, the net impact is a reduction in bean imports.

As with the EC, the U.S. crushing services market shows a greater response to the tax than the soybean market, Table IV. The U.S. and EC models are linked by the transmission of prices through the world markets. The EC oils tax causes a rise in the world price. That world price increase is transmitted to the U.S. and results in an increase in the U.S. domestic crushing services price as well. The higher domestic price induces an increase in production and a decrease in domestic quantity demanded. The net effect is an increase in crushing services exports.

The impact of the EC oils tax on the U.S. soybean market is given in Table V. Results of these simulations imply that the impact will be small. For all reasonable estimates of the magnitude of the tax and price transmission elasticities, U.S. and world bean prices are not significantly affected, though there is a slight decline in both. U.S. production and exports fall, but the magnitude of the decrease is small in both cases.

Table I. Parameter Estimates[a]

United States	EC
$\varepsilon_{s3u} = 0.22$	$\varepsilon_{s3e} = 0.22$
$\eta_{d3u} = -0.29$	$\eta_{d3e} = -0.29$
$K_{x3u} = 0.11$	$K_{m3e} = 0.44$
$K_{c3u} = 0.89$	$K_{c3e} = 0.56$
$\varepsilon_{s4u} = 0.84$	$\varepsilon_{s4e} = 0.84$
$\eta_{d4u} = -0.25$	$\eta_{d4e} = -0.25$
$K_{x4u} = 0.45$	$K_{m4e} = 0.99$
$K_{c4u} = 0.55$	$K_{c4e} = 0.01$

a. All excess demand and supply elasticities vary as the price transmission elasticity varies. All parameter shifters vary as the tax varies. Elasticities were taken from Davis, Hammig, and Rosson; Houck; Vandenborre; and Houck, Ryan, and Subotnik.

Table II. Percentage Change in EC Crushing Service Market Under Alternative Tax and Price Transmission Elasticity Levels

λ	Tax	World Price	Price	Supply	Demand	Imports
0.2	75	0.76	3.81	-0.69	-1.11	0.18
	100	1.09	5.45	-0.99	-1.58	0.26
	125	1.41	7.09	-1.29	-2.05	0.34
	150	1.63	8.18	-1.49	-2.37	0.38
	175	1.96	9.81	-1.79	-2.84	0.46
	200	2.29	11.45	-2.09	-3.22	0.54
0.5	75	1.50	3.00	-0.87	-0.87	0.89
	100	2.14	4.28	-1.25	-1.24	1.27
	125	2.78	5.57	-1.63	-1.61	1.65
	150	3.21	6.43	-1.88	-1.86	1.91
	175	3.85	7.72	-2.26	-2.24	2.29
	200	4.50	9.00	-2.63	-2.61	2.67
0.8	75	1.72	2.15	-1.06	-0.62	1.63
	100	2.45	3.06	-1.52	-0.89	2.33
	125	3.19	3.99	-1.98	-1.15	3.03
	150	3.68	4.60	-2.28	-1.33	3.49
	175	4.42	5.52	-2.74	-1.60	4.19
	200	5.15	6.44	-3.20	-1.87	4.89

Table III. Percentage Change in EC Soybean Market Under Alternative Tax and Price Transmission Elasticity Levels

λ	Tax	World Price	Price	Supply	Demand	Imports
0.2	75	-0.001	-0.005	-0.005	-0.63	-0.002
	100	-0.001	-0.006	-0.005	-0.75	-0.002
	125	-0.002	-0.007	-0.006	-0.86	-0.002
	150	-0.002	-0.009	-0.008	-1.12	-0.003
	175	-0.002	-0.010	-0.009	-1.23	-0.003
	200	-0.002	-0.011	-0.009	-1.35	-0.004
0.5	75	-0.002	-0.003	-0.002	-0.86	-0.006
	100	-0.002	-0.004	-0.003	-1.07	-0.007
	125	-0.002	-0.005	-0.004	-1.29	-0.009
	150	-0.003	-0.006	-0.005	-1.61	-0.011
	175	-0.003	-0.006	-0.006	-1.82	-0.013
	200	-0.004	-0.007	-0.006	-2.03	-0.014
0.8	75	-0.001	-0.002	-0.001	-1.09	-0.009
	100	-0.002	-0.002	-0.002	-1.41	-0.012
	125	-0.002	-0.003	-0.002	-1.73	-0.014
	150	-0.003	-0.004	-0.003	-2.12	-0.018
	175	-0.003	-0.004	-0.004	-2.43	-0.021
	200	-0.004	-0.005	-0.004	-2.74	-0.024

Table IV. Percentage Change in U.S. Crushing Service Market Under Alternative Tax and Price Transmission Elasticity Levels

λ	Tax	World Price	Price	Supply	Demand	Exports
0.2	75	0.76	0.15	0.03	-0.04	1.79
	100	1.09	0.22	0.05	-0.06	2.57
	125	1.41	0.28	0.06	-0.08	3.35
	150	1.63	0.33	0.07	-0.09	3.86
	175	1.96	0.39	0.08	-0.11	4.63
	200	2.29	0.46	0.10	-0.13	5.40
0.5	75	1.50	0.75	0.16	-0.22	2.21
	100	2.14	1.07	0.23	-0.31	3.15
	125	2.78	1.39	0.30	-0.40	4.11
	150	3.21	1.61	0.35	-0.46	4.75
	175	3.85	1.93	0.42	-0.55	5.69
	200	4.50	2.25	0.49	-0.65	6.63
0.8	75	1.71	1.37	0.30	-0.39	1.01
	100	2.45	1.96	0.43	-0.57	1.44
	125	3.19	2.55	0.56	-0.74	1.88
	150	3.68	2.94	0.65	-0.85	2.17
	175	4.42	3.54	0.77	-1.03	2.59
	200	5.15	4.12	0.91	-1.19	3.04

Table V. Percentage Change in U.S. Soybean Market Under Alternative Tax and Price Transmission Elasticity Levels

λ	Tax	World Price	Price	Supply	Demand	Exports
0.2	75	-0.001	-0.0002	-0.0002	0.00005	-0.0016
	100	-0.001	-0.0003	-0.0002	0.00006	-0.0019
	125	-0.001	-0.0003	-0.0003	0.00007	-0.0023
	150	-0.002	-0.0004	-0.0003	0.00009	-0.0029
	175	-0.002	-0.0004	-0.0003	0.00010	-0.0033
	200	-0.002	-0.0005	-0.0004	0.00011	-0.0036
0.5	75	-0.001	-0.0007	-0.0006	0.00018	-0.0019
	100	-0.002	-0.0009	-0.0008	0.00023	-0.0017
	125	-0.002	-0.0012	-0.0009	0.00028	-0.0024
	150	-0.003	-0.0014	-0.0012	0.00036	-0.0030
	175	-0.003	-0.0016	-0.0014	0.00041	-0.0037
	200	-0.004	-0.0018	-0.0015	0.00046	-0.0044
0.8	75	-0.001	-0.0012	-0.0010	0.00030	-0.0011
	100	-0.002	-0.0015	-0.0013	0.00038	-0.0006
	125	-0.002	-0.0019	-0.0016	0.00048	-0.0014
	150	-0.003	-0.0023	-0.0019	0.00058	-0.0009
	175	-0.003	-0.0027	-0.0023	0.00068	-0.0017
	200	-0.004	-0.0030	-0.0025	0.00076	-0.0027

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