Posthearing Brief of the
Federal Trade Commission
on Injury In Investigation TA-201-62: Certain Cameras

On March 29, 1990 the Keystone Camera Company of Clifton, New Jersey ("Keystone") petitioned the U.S. International Trade Commission ("ITC") to institute an investigation under Section 201 (the "escape clause") of the Trade Act of 1974 ("the Act"), 19 U.S.C. §§ 2251 et seq., as amended, to determine whether certain cameras are being imported into the United States in such increased quantities as to be a substantial cause of serious injury or the threat thereof to the domestic industry producing a like or directly competitive product. 55 Fed. Reg. 14488 (April 18, 1990).

If the ITC determines that the product in question is being imported into the United States in such increased quantities as to be a substantial cause of serious injury or the threat thereof to the domestic industry, it must recommend a remedy and report both its findings and recommendations to the President. 19 U.S.C. § 2252(c)(f). The President, in determining what import relief, if any, to grant, is directed by the statute to take into account "other factors related to the national economic interest of the United States, including, but not limited to . . . the effect of the implementation of actions under this section on consumers and on competition in domestic markets for articles . . . ." 19 U.S.C. § 2253(a)(F).

Section 334 of the Tariff Act of 1930, as amended, provides that the Federal Trade Commission ("FTC") "shall cooperate fully with the [International Trade] commission for the purposes of aiding and assisting in its work." 19 U.S.C. § 1334. The FTC enforces various statutes aimed at promoting competition in United States' commerce to the benefit of United States' consumers. 15 U.S.C. §§ 41-59. Consistent with Section 334 and the FTC's

experience in promoting competition and protecting United States consumers, the Federal Trade Commission is filing this posthearing brief.

Earlier Submission

In its brief to the ITC in <u>Carbon and Certain Alloy Steel Products</u>,[1] the FTC staff presented a framework for evaluating various potential causes of injury to a domestic industry. This framework relies on a basic supply and demand model to assess the extent to which changes in output of a domestic industry are caused by changes in (1) the demand for its output, (2) the supply of the domestic producers or (3) the supply of imports that compete with the domestic industry. The model assumes that imports and domestic production are perfect substitutes in demand. The model permits measurement of the separate quantitative effects of the three factors noted above affecting the output of the domestic industry. It is believed such quantification can help determine the potential causes of injury and their magnitudes, and to help fashion an appropriate remedy.

The Present Investigation

Cameras, the subject product of this investigation, are not a commodity item, such as carbon steel or copper. Rather, they are trademarked products with significant differences and features, even among the different models made by a single firm. We believe that it may be useful to consider the camera market as one consisting of heterogenous products, where consumers perceive differences among the outputs of different firms, rather than as a market for a homogeneous product where the outputs of different firms are considered perfect substitutes in demand.

Therefore, our staff has revised the model contained in our previous submission hopefully to account for the heterogeneous nature of the product at issue here. This modification assumes that there are four rather than three

[1] Investigation TA-201-51 (1984).

potential sources of change in the output of a domestic industry: (1) a change in demand for its output, (2) a change in demand for imports, (3) a change in the supply of the domestic producers, or (4) a change in the supply of imports.

This modification can be important because a conceivable source of change in domestic output is a change in consumer preferences for the output of foreign producers. Such a change in preferences could be the result of a failure of the domestic industry to make the changes and improvements to its products necessary to keep them competitive with foreign producers. A change in consumer preferences for imported products relative to domestically produced products can cause a change in domestic output and an increase in the quantity of imports, even if the conditions affecting import supply do not change. This modification can be helpful in the ITC's assessment of injury to the domestic industry.

The Appendix describes the staff's model as so modified. Estimates rely on data on domestic production, imports, domestic prices and import prices usually collected by the ITC staff as well as estimates of demand and supply elasticities to decompose the change in domestic output into changes in domestic demand, import demand, domestic supply and import supply.

Respectfully submitted,

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3

Appendix

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This Appendix describes how information on prices, quantities and elasticities can be used to make inferences about the causes of changes in the output of a domestic industry faced with import competition, when consumers perceive a significant difference between the output of domestic producers and that of foreign producers.[1]

A linear model of supply and demand for differentiated domestic imported goods can be written as:

$$D_d = a_1 + b_1 P_d + c_1 P_m, \qquad c_1, b_2, f_1, f_2 > 0,$$

$$D_m = a_2 + b_2 P_d + c_2 P_m, \qquad b_1, c_2 < 0,$$

$$S_d = d_1 + f_1 P_d, \qquad |b_1| > c_1, |c_2| > b_2,$$

$$S_m = d_2 + f_2 P_m,$$

$$Q_d = D_d - S_d,$$

$$Q_m = D_m - S_m,$$

where D_d is the demand in the United States for the U.S. produced product, D_m is the demand for imported products, S_d is the domestic supply of the product, S_m is import supply, P_d is the price of the domestic product, P_m is the price of the imported product, Q_d is the quantity of domestic output and Q_m is the quantity of imports. The b's, c's and f's are behavioral parameters that are assumed to remain

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[1] The analysis presented here is based upon Kelly, "The Analysis of Causality in Escape Clause Cases," 37 _The Journal of Industrial Economics_ 187, December, 1988.

1

constant over the period of investigation, while the a's and the d's are the shift parameters of the model, which we expect will change over the time as the exogenous variables that determine them, such as technology, input prices and consumer tastes, change.

There are four possible sources of changes in the output of the domestic industry in this model: a change in domestic demand, a change in import demand, a change in domestic supply or a change in import supply.

This model can be solved for expressions of P_d, P_m, Q_d and Q_m as functions of the parameters:

$$P_d = \frac{(d_1 - a_1)(c_2 - f_2) - c_1(d_2 - a_2)}{(b_1 - f_1)(c_2 - f_2) - b_2c_1},$$

$$P_m = \frac{(b_1 - f_1)(d_2 - a_2) - b_2(d_1 - a_1)}{(b_1 - f_1)(c_2 - f_2) - b_2c_1},$$

$$Q_d = d_1 + \frac{f_1(d_1 - a_1)(c_2 - f_2) - f_1c_1(d_2 - a_2)}{(b_1 - f_1)(c_2 - f_2) - b_2c_1},$$

$$Q_m = d_2 + \frac{f_2(b_1 - f_1)(d_2 - a_2) - f_2b_2(d_1 - a_1)}{(b_1 - f_1)(c_2 - f_2) - b_2c_1}.$$

The changes in the observed prices and quantities can be written in matrix form as

$$\Delta o = D\Delta s$$

where $\Delta o = [\Delta Q_d, \Delta Q_m, \Delta P_d, \Delta P_m]'$ is the 4x1 vector of changes in the observed variables, $\Delta s = [\Delta a_1, \Delta a_2, \Delta d_1, \Delta d_2]'$ is the 4x1 vector of changes in the shift parameters and D is the 4x4 matrix of the derivatives of the observed variables with respect to the shift parameters:

2

$$D = \frac{1}{\text{den}} \begin{bmatrix} -f_1(c_2 \cdot f_2) & f_1 c_1 & (c_2 \cdot f_2)b_1 \cdot b_2 c_1 & -f_1 c_1 \\ f_2 b_2 & -f_2(b_1 \cdot f_1) & -f_2 b_2 & c_2(b_1 \cdot f_1) \cdot b_2 c_1 \\ f_2 \cdot c_2 & c_1 & c_2 \cdot f_2 & -c_1 \\ b_2 & f_1 \cdot b_1 & -b_2 & b_1 \cdot f_1 \end{bmatrix}$$

where den $= (b_1 \cdot f_1)(c_2 \cdot f_2) - b_2 c_1$.

This system of equations can then be solved for the change in domestic production, decomposed into the change as the result of each shift parameter:

$$\Delta Q_d = \frac{-f_1(c_2 - f_2)(\Delta Q_d - b_1 \Delta P_d - c_1 \Delta P_m)}{(b_1 - f_1)(c_2 - f_2) - b_2 c_1} \quad (\Delta \text{ in } a_1)$$

$$+ \frac{f_1 c_1 (\Delta Q_m - b_2 \Delta P_d - c_2 \Delta P_m)}{(b_1 - f_1)(c_2 - f_2) - b_2 c_1} \quad (\Delta \text{ in } a_2)$$

$$+ \frac{[(c_2 - f_2)b_1 - b_2 c_1][\Delta Q_d - f_1 \Delta P_d]}{(b_1 - f_1)(c_2 - f_2) - b_2 c_1} \quad (\Delta \text{ in } d_1)$$

$$- \frac{f_1 c_1 (\Delta Q_m - f_2 \Delta P_m)}{(b_1 - f_1)(c_2 - f_2) - b_2 c_1} . \quad (\Delta \text{ in } d_2)$$

This can be rewritten using elasticities as:

$$\frac{\Delta Q_d}{Q_d} = \frac{-\eta_d(\epsilon_m - \eta_m)(\%\Delta Q_d - \epsilon_d \%\Delta P_d - \epsilon_{dm} \%\Delta P_m)}{(\epsilon_d - \eta_d)(\epsilon_m - \eta_m) - \epsilon_{dm}\epsilon_{md}} \quad (\Delta \text{ in } a_1)$$

$$+ \frac{\eta_d \epsilon_{dm}(\%\Delta Q_m - \epsilon_{md}\%\Delta P_d - \epsilon_m \%\Delta P_m)}{(\epsilon_d - \eta_d)(\epsilon_m - \eta_m) - \epsilon_{dm}\epsilon_{md}} \quad (\Delta \text{ in } a_2)$$

$$+ \frac{[(\epsilon_m - \eta_m)\epsilon_d - \epsilon_{dm}\epsilon_{md}](\%\Delta Q_d - \eta_d \%\Delta P_d)}{(\epsilon_d - \eta_d)(\epsilon_m - \eta_m) - \epsilon_{dm}\epsilon_{md}} \quad (\Delta \text{ in } d_1)$$

$$- \frac{\eta_d \epsilon_{dm}(\%\Delta Q_m - \eta_m \%\Delta P_m)}{(\epsilon_d - \eta_d)(\epsilon_m - \eta_m) - \epsilon_{dm}\epsilon_{md}} . \quad (\Delta \text{ in } d_2)$$

where ϵ_d is the elasticity of demand for the domestic product, ϵ_m is the elasticity of demand for the imported product, ϵ_{dm} is, the cross

3

price elasticity of demand for the domestic product with respect to a change in price of the imported product, ϵ_{md} is the cross price elasticity of demand for the imported product with respect to a change in the price of the domestic product, η_d is the elasticity of domestic supply and η_m is the elasticity of import supply.[2]

The above formula decomposes the total change in domestic production over a period of time into the changes brought about by changes in the underlying supply and demand equations. These changes are seen to depend upon the changes in domestic production, imports, and the prices of domestic and imported prices, and upon the demand and supply elasticities. All of this information is routinely collected by the ITC staff in an escape clause investigation. The formula therefore provides the ITC with a tool which may help it determine the causes of injury to the domestic industry.

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[2] These elasticities are those measured at the initial equilibrium. The elasticity of a linear supply or demand function does not remain constant, but changes as the price changes.

Certificate of Service

July 2, 1990

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