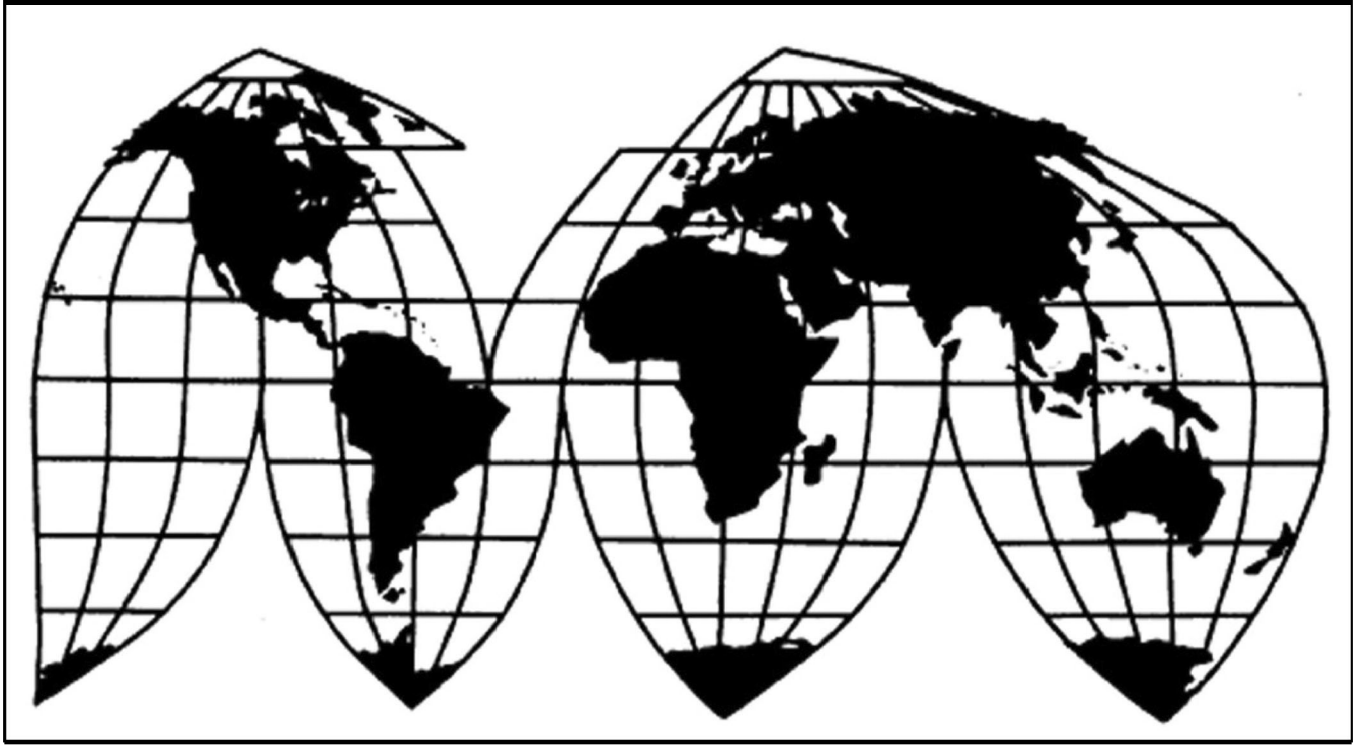
Thermal Paper from Germany, Japan, Korea, and Spain

Investigation Nos. 731-TA-1546-1549 (Preliminary)

Publication 5141 **December 2020**

U.S. International Trade Commission



Washington, DC 20436

U.S. International Trade Commission

COMMISSIONERS

Jason E. Kearns, Chair
Randolph J. Stayin, Vice Chair
David S. Johanson
Rhonda K. Schmidtlein
Amy A. Karpel

Catherine DeFilippo
Director of Operations

Staff assigned

Ahdia Bavari, Investigator
Robert Ireland, Industry Analyst
Carlos Payan, Economist
Zahra Bekkal, Accountant
Charles Yost, Accountant
Conor Hargrove, Statistician
Courtney McNamara, Attorney
Mary Beth Jones, Supervisory Investigator

Address all communications to
Secretary to the Commission
United States International Trade Commission
Washington, DC 20436

U.S. International Trade Commission

Washington, DC 20436
www.usitc.gov

Thermal Paper from Germany, Japan, Korea, and Spain

Investigation Nos. 731-TA-1546-1549 (Preliminary)

Publication 5141

December 2020

CONTENTS

Page

CONTENTS

Page

CONTENTS

Page

CONTENTS

Page

CONTENTS

Page

Appendixes

Note.—Information that would reveal confidential operations of individual concerns may not be published. Such information is identified by brackets in confidential reports and is deleted and replaced with asterisks (***) in public reports.

UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigation Nos. 731-TA-1546-1549 (Preliminary)

Thermal Paper from Germany, Japan, Korea, and Spain

DETERMINATION

On the basis of the record[1] developed in the subject investigations, the United States International Trade Commission ("Commission") determines, pursuant to the Tariff Act of 1930 ("the Act"), that there is a reasonable indication that industries in the United States are materially injured by reason of imports of thermal paper from Germany, Japan, Korea, and Spain, provided for in subheadings 4811.80.80 and 4811.80.90 of the Harmonized Tariff Schedule of the United States, that are alleged to be sold in the United States at less than fair value ("LTFV").[2]

COMMENCEMENT OF FINAL PHASE INVESTIGATION

Pursuant to section 207.18 of the Commission's rules, the Commission also gives notice of the commencement of the final phase of its investigations. The Commission will issue a final phase notice of scheduling, which will be published in the *Federal Register* as provided in section 207.21 of the Commission's rules, upon notice from the U.S. Department of Commerce ("Commerce") of affirmative preliminary determinations in the investigations under § 733(b) of the Act, or, if the preliminary determinations are negative, upon notice of affirmative final determinations in those investigations under § 735(a) of the Act. Parties that filed entries of appearance in the preliminary phase of the investigations need not enter a separate appearance for the final phase of the investigations. Industrial users, and, if the merchandise under investigation is sold at the retail level, representative consumer organizations have the right to appear as parties in Commission antidumping investigations. The Secretary will prepare a public service list containing the names and addresses of all persons, or their representatives, who are parties to the investigations.

---

[1] The record is defined in § 207.2(f) of the Commission's Rules of Practice and Procedure (19 CFR 207.2(f)).

[2] 85 FR 65073 (October 14, 2020).

BACKGROUND

On October 7, 2020, Appvion Operations, Inc. (Appleton, Wisconsin) and Domtar Corporation (Fort Mill, South Carolina) filed petitions with the Commission and Commerce, alleging that an industry in the United States is materially injured or threatened with material injury by reason of LTFV imports of thermal paper from Germany, Japan, Korea, and Spain. Accordingly, effective October 7, 2020, the Commission instituted antidumping duty investigation nos. 731-TA-1546-1549 (Preliminary).

Notice of the institution of the Commission's investigations and of a public conference to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the *Federal Register* of October 14, 2020 (85 FR 65073). In light of the restrictions on access to the Commission building due to the COVID–19 pandemic, the Commission conducted its conference through written testimony and video conference. All persons who requested the opportunity were permitted to participate.

Views of the Commission

Based on the record in the preliminary phase of these investigations, we determine that there is a reasonable indication that industries in the United States are materially injured by reason of imports of thermal paper from Germany, Japan, Korea, and Spain that are allegedly sold in the United States at less than fair value.

I. The Legal Standard for Preliminary Determinations

The legal standard for preliminary antidumping and countervailing duty determinations requires the Commission to determine, based upon the information available at the time of the preliminary determinations, whether there is a reasonable indication that a domestic industry is materially injured or threatened with material injury, or that the establishment of an industry is materially retarded, by reason of the allegedly unfairly traded imports.[1] In applying this standard, the Commission weighs the evidence before it and determines whether "(1) the record as a whole contains clear and convincing evidence that there is no material injury or threat of such injury; and (2) no likelihood exists that contrary evidence will arise in a final investigation."[2]

[1] 19 U.S.C. §§ 1671b(a), 1673b(a) (2000); *see also American Lamb Co. v. United States*, 785 F.2d 994, 1001-04 (Fed. Cir. 1986); *Aristech Chem. Corp. v. United States, 2*0 CIT 353, 354-55 (1996). No party argues that the establishment of an industry in the United States is materially retarded by the allegedly unfairly traded imports.

[2] *American Lamb Co*., 785 F.2d at 1001; *see also Texas Crushed Stone Co. v. United States*, 35 F.3d 1535, 1543 (Fed. Cir. 1994).

II. Background

Appvion Operations, Inc. ("Appvion") and Domtar Corporation ("Domtar"), which are domestic producers of thermal paper, filed the petitions in these investigations on October 7, 2020. Petitioners appeared at the conference and submitted a postconference brief.[3]

Several respondents participated in these investigations. These include: Papierfabrik August Koehler SE ("Koehler"), a producer of subject merchandise in Germany; Mitsubishi HiTec Paper Europe GmbH and Mitsubishi Imaging, Inc. (collectively, "Mitsubishi"), producers of subject merchandise in Germany and Japan, respectively; Nippon Paper Industries Co., Ltd. ("Nippon"), a producer of subject merchandise in Japan; Torraspapel S.A. ("Torraspapel"), a producer of subject merchandise in Spain; and Sun Traders LLC ("Sun Traders"), an importer of subject merchandise from Korea. Koehler, Mitsubishi, Nippon, and Torraspapel appeared at the conference and submitted postconference briefs. Sun Traders also submitted responses to staff questions.

Data Coverage. The period of investigation (POI) is January 2017 through June 2020. Except as noted, U.S. industry data are based on questionnaire responses of six firms that accounted for the majority of U.S. production of thermal paper during 2019.[4] U.S. import data are based on questionnaire responses received from 15 companies, representing *** percent

[3] In light of the restrictions on access to the Commission building due to the COVID-19 pandemic, the Commission conducted its conference in these investigations through submissions of written testimony on October 26, 2020 and a videoconference held on October 28, as set forth in procedures provided to the parties on October 8.

[4] Confidential Report ("CR") and Public Report ("PR") at I-4.

of U.S. imports from Germany,[5] *** percent of U.S. imports from Japan,[6] and *** percent of U.S. imports from Korea[7] reported for 2019 under HTS subheading 4811.90.90. This is a "basket" category that includes out-of-scope merchandise. U.S. import data regarding subject imports from Spain are based on questionnaire response received from one company, which is believed to account for *** subject imports from Spain in 2019.[8] The Commission received responses to its questionnaires from two producers and one reseller of subject merchandise in Germany, believed to account for *** percent of production of subject merchandise in Germany.[9] It received responses to its questionnaires from three producers of subject merchandise in Japan, believed to account for *** production of subject merchandise in Japan.[10] The Commission received a response to its questionnaires from one producer of subject merchandise in Korea, accounting for *** percent of reported production of subject merchandise in Korea.[11] It also received a response to its questionnaires from one producer of subject merchandise in Spain, believed to account for *** production of subject merchandise in Spain.[12]

[5] CR/PR at IV-1.

[6] Although estimated coverage for subject imports from Japan is based on the ratio of reported imports to total imports in the basket HTS category, actual coverage may be significantly higher. Usable U.S. importer questionnaire responses account for *** reported exports, based on the responses of subject Japanese producers. Based on *** imports of merchandise under HTS statistical reporting number 4811.90.9030 from Japan, a category which includes out-of-scope merchandise. The firm imported *** short tons of merchandise under this category ***. ***. CR/PR at IV-1 n.2.

[7] CR/PR at IV-1.

[8] *See* CR/PR at IV-1 n.3 (explaining that counsel for Torraspapel S.A. ***); *see also* Torraspapel's Postconference Brief, pp. 2-3 and Exhibit 2.

[9] CR/PR at VII-3 – VII-4.

[10] CR/PR at VII-10.

[11] CR/PR at VII-16.

[12] CR/PR at VII-22.

III. Domestic Like Product

In determining whether there is a reasonable indication that an industry in the United States is materially injured or threatened with material injury by reason of imports of the subject merchandise, the Commission first defines the "domestic like product" and the "industry."[13] Section 771(4)(A) of the Tariff Act of 1930, as amended ("the Tariff Act"), defines the relevant domestic industry as the "producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product."[14] In turn, the Tariff Act defines "domestic like product" as "a product which is like, or in the absence of like, most similar in characteristics and uses with, the article subject to an investigation."[15]

By statute, the Commission's "domestic like product" analysis begins with the "article subject to an investigation," *i.e.*, the subject merchandise as determined by Commerce.[16] Therefore, Commerce's determination as to the scope of the imported merchandise that is subsidized and/or sold at less than fair value is "necessarily the starting point of the Commission's like product analysis."[17] The Commission then defines the domestic like product

[13] 19 U.S.C. § 1677(4)(A).

[14] 19 U.S.C. § 1677(4)(A).

[15] 19 U.S.C. § 1677(10).

[16] 19 U.S.C. § 1677(10). The Commission must accept Commerce's determination as to the scope of the imported merchandise that is subsidized and/or sold at less than fair value. *See*, *e.g.*, *USEC, Inc. v. United States*, 34 Fed. App'x 725, 730 (Fed. Cir. 2002) ("The ITC may not modify the class or kind of imported merchandise examined by Commerce."); *Algoma Steel Corp. v. United States,* 688 F. Supp. 639, 644 (Ct. Int'l Trade 1988), *aff'd*, 865 F.3d 240 (Fed. Cir.), *cert. denied*, 492 U.S. 919 (1989).

[17] *Cleo Inc. v. United States*, 501 F.3d 1291, 1298 (Fed. Cir. 2007); *see also Hitachi Metals, Ltd. v. United States*, Case No. 19-1289, slip op. at 8-9 (Fed. Circ. Feb. 7, 2020) (the statute requires the Commission to start with Commerce's subject merchandise in reaching its own like product determination).

in light of the imported articles Commerce has identified.[18] The decision regarding the appropriate domestic like product(s) in an investigation is a factual determination, and the Commission has applied the statutory standard of "like" or "most similar in characteristics and uses" on a case-by-case basis.[19] No single factor is dispositive, and the Commission may consider other factors it deems relevant based on the facts of a particular investigation.[20] The Commission looks for clear dividing lines among possible like products and disregards minor

[18] *Cleo*, 501 F.3d at 1298 n.1 ("Commerce's {scope} finding does not control the Commission's {like product} determination."); *Hosiden Corp. v. Advanced Display Mfrs.,* 85 F.3d 1561, 1568 (Fed. Cir. 1996) (the Commission may find a single like product corresponding to several different classes or kinds defined by Commerce); *Torrington Co. v. United States*, 747 F. Supp. 744, 748-52 (Ct. Int'l Trade 1990), *aff'd*, 938 F.2d 1278 (Fed. Cir. 1991) (affirming the Commission's determination defining six like products in investigations where Commerce found five classes or kinds).

[19] *See*, *e.g.*, *Cleo Inc. v. United States*, 501 F.3d 1291, 1299 (Fed. Cir. 2007); *NEC Corp. v. Dep't of Commerce*, 36 F. Supp. 2d 380, 383 (Ct. Int'l Trade 1998); *Nippon Steel Corp. v. United States*, 19 CIT 450, 455 (1995); *Torrington Co.*, 747 F. Supp. at 749 n.3, ("every like product determination 'must be made on the particular record at issue' and the 'unique facts of each case'"). The Commission generally considers a number of factors including the following: (1) physical characteristics and uses; (2) interchangeability; (3) channels of distribution; (4) customer and producer perceptions of the products; (5) common manufacturing facilities, production processes, and production employees; and, where appropriate, (6) price. *See Nippon*, 19 CIT at 455 n.4; *Timken Co. v. United States*, 913 F. Supp. 580, 584 (Ct. Int'l Trade 1996).

In a semi-finished products analysis, the Commission examines the following: (1) the significance and extent of the processes used to transform the upstream into the downstream articles; (2) whether the upstream article is dedicated to the production of the downstream article or has independent uses; (3) differences in the physical characteristics and functions of the upstream and downstream articles; (4) whether there are perceived to be separate markets for the upstream and downstream articles; and (5) differences in the costs or value of the vertically differentiated articles. *See*, *e.g.*, *Glycine from India*, *Japan*, *and Korea*, Inv. Nos. 731-TA-1111-1113 (Preliminary), USITC Pub. No. 3921 at 7 (May 2007); *Artists' Canvas from China*, Inv. No. 731-TA-1091 (Final), USITC Pub. No. 3853 at 6 (May 2006); *Live Swine from Canada*, Inv. No. 731-TA-1076 (Final), USITC Pub. 3766 at 8 n.40 (Apr. 2005); *Certain Frozen Fish Fillets from Vietnam*, Inv. No. 731-TA-1012 (Preliminary), USITC Pub. No. 3533 at 7 (Aug. 2002).

[20] *See*, *e.g.*, S. Rep. No. 96-249 at 90-91 (1979).

variations.[21] The Commission may, where appropriate, include domestic articles in the domestic like product in addition to those described in the scope.[22]

In its notice of initiation, Commerce defined the imported merchandise within the scope of these investigations as follows:

> The scope of these investigations covers thermal paper in the form of ''jumbo rolls'' and certain ''converted rolls.'' The scope covers jumbo rolls and converted rolls of thermal paper with or without a base coat (typically made of clay, latex, and/or plastic pigments, and/or like materials) on one or both sides; with thermal active coating(s) (typically made of sensitizer, dye, and coreactant, and/or like materials) on one or both sides; with or without a top coat (typically made of pigments, polyvinyl alcohol, and/or like materials), and without an adhesive backing. Jumbo rolls are defined as rolls with an actual width of 4.5 inches or more, an actual weight of 65 pounds or more, and an actual diameter of 20 inches or more (jumbo rolls). All jumbo rolls are included in the scope regardless of the basis weight of the paper. Also included in the scope are ''converted rolls'' with an actual width of less than 4.5 inches, and with an actual basis weight of 70 grams per square meter (gsm) or less.
>
> The scope of these investigations covers thermal paper that is converted into rolls with an actual width of less than 4.5 inches and with an actual basis weight of 70 gsm or less in third countries from jumbo rolls produced in the subject countries.[23]

---

[21] *See*, *e.g.*, *Nippon*, 19 CIT at 455; *Torrington*, 747 F. Supp. at 748-49*; see also* S. Rep. No. 96-249 at 90-91 (Congress has indicated that the like product standard should not be interpreted in "such a narrow fashion as to permit minor differences in physical characteristics or uses to lead to the conclusion that the product and article are not 'like' each other, nor should the definition of 'like product' be interpreted in such a fashion as to prevent consideration of an industry adversely affected by the imports under consideration.").

[22] *See*, *e.g.*, *Pure Magnesium from China and Israel*, Inv. Nos. 701-TA-403 and 731-TA-895-96 (Final), USITC Pub. 3467 at 8 n.34 (Nov. 2001); *Torrington,* 747 F. Supp. at 748-49 (holding that the Commission is not legally required to limit the domestic like product to the product advocated by the petitioner, co-extensive with the scope).

[23] *Thermal Paper From Germany, Japan, the Republic of Korea, and Spain: Initiation of Less-Than-Fair-Value Investigations*, 85 Fed. Reg. 69580, 69584 (Nov. 3, 2020) ("*Commerce Initiation Notice*").

Thermal paper is a type of paper that is coated with chemicals that react to form images when exposed to heat, allowing it to be used in special printers that create an image without ribbons or other consumables (other than the paper itself). When imaging, the thermal paper containing the dye is passed between the thermal print head and the platen roll in the printer. The thermal head consists of tiny heating elements, and as the paper passes under the head, certain heater elements activate, where the heat is in contact with the paper, causing the dye to produce an image. Thermal paper comes in a variety of basis weights measured in grams per square meter ("gsm") and in a variety of calipers (thicknesses).[24]

There are four primary stages in the production of thermal paper: 1) the production of pulp; 2) the production of base paper; 3) coating, which is the process that gives the paper its essential thermal properties; and 4) converting, which entails slitting the jumbo rolls to the desired width and length and otherwise converting the jumbo rolls into final form, depending on end-use customer needs.[25] The third step yields a "jumbo" roll, while the fourth step yields a converted roll.[26] The scope includes all jumbo rolls regardless of basis weight but only converted (cut) rolls of a basis weight of 70 gsm or less.[27] As explained further below, the converted rolls within the scope are considered to be lightweight thermal paper.

A. Arguments of the Parties

[24] CR/PR at I-7.

[25] CR/PR at I-8.

[26] CR/PR at I-7.

[27] In contrast, the scope excludes converted (cut) jumbo rolls of a basis weight greater than 70 gsm. *See* Petitions, Vol. I at 12.

Petitioners' Arguments. Petitioners argue that the Commission should define a single domestic like product coextensive with the scope, consisting of jumbo rolls of thermal paper, regardless of weight, and converted rolls of thermal paper with a basis weight of less than 70 gsm. They argue that there is no clear dividing line between lightweight thermal paper and heavyweight thermal paper jumbo rolls with respect to the factors that the Commission considers in its traditional domestic like product analysis. Petitioners argue that heavyweight and lightweight jumbo rolls share the same physical characteristics, as they are both paper that is coated with chemicals to produce images with the application of heat, and they have the same end uses, as each is used in commercial transactions. In terms of interchangeability, petitioners contend that heavyweight and lightweight jumbo rolls are part of a continuum of products with some degree of overlap, although the different weights of products may be particularly suited for certain end-use applications. Petitioners also claim that heavyweight and lightweight jumbo rolls are perceived as parts of the same product category and that all jumbo rolls are produced in similar manufacturing facilities, using the same production processes and production employees. Finally, petitioners contend that thermal paper has different price points, but that there is no clear dividing line between particular types of jumbo rolls.[28]

Petitioners next argue that the Commission should find lightweight converted rolls for point-of-sale ("POS") applications in the same domestic like product as lightweight and heavyweight jumbo rolls, based on the Commission's semi-finished product analysis. They assert that jumbo rolls and converted lightweight rolls have the same physical characteristics

[28] Petitioners Postconference Br. at 9-11.

and functions and that the only difference between a jumbo roll of POS paper and a converted roll of POS paper is that the latter has been cut and finished. Petitioners further argue that only a small amount of additional processing, which involves minimal cost, is needed to convert lightweight thermal paper jumbo rolls. Finally, petitioners contend that, although not all jumbo rolls are dedicated to the making of converted lightweight rolls, more than half of all jumbo rolls are lightweight thermal paper rolls that are dedicated to the production of converted POS rolls.[29]

Petitioners contest respondents' arguments that, if the domestic like product is defined to include converted lightweight thermal paper rolls, it should be defined more broadly to include converted heavyweight thermal paper rolls as well. As a preliminary matter, petitioners argue that the Commission does not typically define the domestic like product to include a "downstream product that does not encompass a corresponding subject product."[30] They further contend that lightweight and heavyweight thermal paper converted rolls are not typically used for the same end uses, are not produced on the same machinery and equipment, are not interchangeable, and are not sold through the same channels of distribution.[31] Petitioners explain that they did not define the scope to include converted heavyweight thermal paper rolls because they do not believe that U.S. converters of heavyweight thermal paper are injured by unfairly traded imports, official import data do not show that there has been a significant amount of imports of converted heavyweight thermal paper products, and, unlike with lightweight thermal paper, petitioners are not concerned about heavyweight

[29] Petitioners Postconference Br. at 12-14.
[30] Petitioners Postconference Br. at 15-16.
[31] Petitioners Postconference Br. at 16-18.

thermal paper being converted to circumvent any orders, given the complicated and expensive conversion process.[32]

Respondents' Arguments.

Koehler. Koehler argues that, if the domestic like product is defined to include both heavyweight and lightweight jumbo rolls of thermal paper as well as converted lightweight rolls, it logically should also include heavyweight converted rolls. In Koehler's view, petitioners' arguments regarding the lack of a clear dividing line between lightweight and heavyweight jumbo rolls applies equally to show the lack of a clear dividing line between lightweight and heavyweight converted rolls.[33]

Mitsubishi. While not directly addressing the definition of the domestic like product, Mitsubishi contests certain of petitioners' assertions concerning this definition, specifically, that "all jumbo rolls represent a continuum." It asserts that lightweight and heavyweight thermal paper are distinct products, with production of the latter involving a more complex and specialized process.[34]

B. Whether Lightweight and Heavyweight Thermal Paper Should Be Separate Domestic Like Products

As discussed above, the scope in these investigations covers jumbo rolls of thermal paper in all weights and converted rolls of thermal paper with a basis weight of 70 gsm or less. For the purposes of this analysis, we refer to thermal paper with a basis weight of 70 gsm or

[32] Petitioners Postconference Br., Responses to Staff Questions at 13-14.
[33] Koehler Postconference Br. at 4-6 & Responses to Staff Questions at 1-3.
[34] Mitsubishi Postconference Br. at 2.

less as "LWTP" and thermal paper with a basis weight greater than 70 gsm as "HWTP."[35] Although petitioners begin their domestic like product analysis by considering whether jumbo rolls of HWTP and LWTP are a single domestic like product, for purposes of these preliminary determinations, we believe it is appropriate to begin our domestic like product analysis with consideration of whether the LWTP products (which include LWTP jumbo rolls and converted rolls) and HWTP products within the scope should be considered a single domestic like product or whether there is a clear dividing line between different in-scope products. We focus this consideration on the distinction included in the scope definition at petitioners' initiative,[36] that is, the weight of the thermal paper and, in particular, whether there is a distinction between products that are 70 gsm or less (LWTP) and products that are greater than 70 gsm (HWTP).[37] Petitioners limit their analysis regarding the domestic like product factors only to jumbo rolls,[38] but given that this approach does not consider in-scope converted rolls, we find such an approach is insufficient to evaluate whether clear dividing lines exist between articles within the scope.

[35] *See also* Transcript of October 28, 2020 Staff Conference ("Tr.") at 11 (Orava) (defining lightweight thermal paper as having a basis weight of 70 gsm or less).

[36] *See* Petitions, Vol. I, at 7-8; Supplement to Petition at Supplement at Exhibit I-2. As indicated above, Commerce accepted petitioners' proposal to use a different basis weight cutoff for converted rolls than for jumbo rolls.

[37] We further believe that analyzing whether LWTP and HWTP within the scope should be included in the same domestic like product is an appropriate starting point because the upstream products (*i.e.*, lightweight and heavyweight jumbo rolls) and downstream products (*i.e.*, lightweight converted rolls only) within the scope are not coterminous.

[38] Petitioners Postconference Br. at 9-12.

As explained below, for purposes of our preliminary determinations we define the LWTP and HWTP products within the scope to be separate domestic like products. We provide our analysis below based on the traditional domestic like product factors.

Physical Characteristics and Uses. As described above, all thermal paper shares certain characteristics in that, regardless of weight, it is paper coated with chemicals that react to form images when exposed to heat. The primary end use for LWTP is in POS applications, such as ATM or retail receipts, and the record in the preliminary phase of these investigations indicates that the basis weight for POS applications tends to range from 44 to 75 gsm.[39] Petitioners acknowledge that HWTP is used in applications that require "greater strength, rigidity, and durability than POS receipts."[40] HWTP is used to make thermal labels, with basis weights typically ranging from 70 to 85 gsm,[41] and is also used to produce a variety of tickets and tags, with basis weights typically ranging from 80 to 220 gsm.[42] Thus, there is some overlap between the heaviest basis weights for in-scope jumbo rolls used for POS applications and the lightest basis weights used for in-scope jumbo rolls for labeling applications.

Manufacturing Facilities, Production Processes, and Employees. As described above, there are four primary stages in the production of thermal paper: pulp production, base paper production, coating, and converting.[43] The three U.S. jumbo roll producers are Domtar,

[39] *See* CR/PR at I-7; Petitioners Postconference Br. at 7; *see also* Tr. at 54-56, 64 (Hefner, Hodson).

[40] Petitioners Postconference Br. at 17; *see also* Tr. at 30, 54-56, 64 (Hefner, Hodson); CR/PR at D-4, D-7, D-8.

[41] CR/PR at I-7; Petitioners Postconference Br. at 7 & Exhibit 36 (Hefner Declaration) at paras. 6-7.

[42] CR/PR at I-7 – I-8; Petitioners Postconference Br. at 7 & Exhibit 36 (Hefner Declaration) at paras. 8-10.

[43] CR/PR at I-8.

Appvion, and Kanzaki. Domtar is the only integrated U.S. producer that produces pulp and base paper and coats the paper; Appvion and Kanzaki purchase the base paper that they coat to make thermal paper in jumbo rolls.[44] The record in the preliminary phase of these investigations suggests that there is some overlap in terms of the manufacturing facilities, production processes, and employees of producers of LWTP and HWTP jumbo rolls. Witnesses testified these producers produce a wide range of jumbo rolls in various basis weights using the same production processes and production employees.[45]

None of the jumbo roll producers perform conversion operations; rather, they sell jumbo rolls to independent converters.[46] Consequently, LWTP within the scope, because it includes converted rolls, goes through additional production operations performed by distinct entities than does HWTP within the scope, which encompasses only jumbo rolls.

Channels of Distribution. Petitioners argue that LWTP and HWTP are sold through the same channels of distribution, namely through converters.[47] They acknowledge, however, that converters usually specialize in converting LWTP or HWTP, with limited overlap.[48] Thus, while LWTP and HWTP jumbo rolls are both sold primarily to converters, they are generally sold to different converters. In addition, the record shows that LWTP and HWTP jumbo rolls within the

[44] CR/PR at IV-1, VI-1.

[45] Petitioners' Postconference Br. at 11; Tr. at 54-56 (Hefner and Hodson). Notwithstanding this, Appvion sold assets to Domtar that it specifically identified as being used for the coating of POS paper. Petitioners' Postconference Br. at 5. Petitioners characterize this as an agreement to buy "Appvion's *lightweight thermal* assets." Petitioners Postconference Br. at 40 (emphasis added).

[46] CR/PR at VI-1.

[47] Petitioners Postconference Br. at 10-11.

[48] Petitioners Postconference Br. at 17.

scope are sold overwhelmingly to converters, with a small amount being sold to distributors.[49] LWTP within the scope in the form of converted rolls, however, is sold to end users, a channel of distribution to which no producers of jumbo rolls sell directly, as well as to distributors.[50]

Interchangeability. The record in the preliminary phase of these investigations indicates that LWTP and HWTP are generally not interchangeable. Witness testimony and questionnaire responses show that converted LWTP rolls used to produce POS receipts are not generally interchangeable with HWTP products.[51] While the reported upper range of weight used for POS paper (75 gsm) overlaps with the lower range of weight used in HWTP in certain applications,[52] we are not persuaded that this makes HWTP and LWTP generally interchangeable.

Producer and Customer Perceptions. Although petitioners contend that LWTP and HWTP jumbo rolls are generally considered to be part of the same product category,[53] the record, including witness testimony and questionnaire responses, indicates that producers and customers perceive LWTP and HWTP to be distinct products.[54] In addition, other record evidence shows that in "***."[55]

[49] Jumbo roll producers *** reported selling jumbo rolls ***, while *** reported selling jumbo rolls ***. *See* Producer Questionnaire Responses of ***.

[50] *See* Producer Questionnaire Responses of *** at II-14.

[51] *See* Petitioners Postconference Br. at 17-18; Tr. at 75-78 (Weiss and Hefner); CR/PR at D-4 – D-11. In addition, other record evidence indicates that ***. Petitioners Postconference Br. at Exhibit 37, para. 2.

[52] *See* CR/RP at I-7 (indicating that POS paper is sometimes made from thermal paper with basis weights ranging up to 75 gsm); Tr. at 31-32, 126 (Hefner).

[53] Petitioners Postconference Br. at 11.

[54] *See* Tr. at 56 (Hodson), 70 (Orava), 75-76 (Weiss), 76-77 (Hefner); CR/PR at D-4 – D-11.

[55] Petitioners Postconference Br. at Exhibit 37, para. 2.

Price. According to petitioners, thermal paper has different price points, and prices for jumbo rolls tend to increase as basis weight and caliper increase.[56] The available pricing data confirm this, with domestically produced jumbo rolls with greater basis weights typically sold at considerably higher prices than domestically produced jumbo rolls of LWTP.[57]

Conclusion. The above discussion demonstrates that petitioners' proposed analysis for a single domestic like product, coextensive with the scope of these investigations, fails to compare all in-scope LWTP with in-scope HWTP. We recognize that there is some overlap between LWTP and HWTP; however, on balance we find that the record in the preliminary phase of these investigations supports finding that there is a clear dividing line between LWTP and HWTP products within the scope. While LWTP and HWTP share certain similar physical characteristics in that both are paper products that are coated with chemicals that react to the application of heat to create images, they generally have different thicknesses and end-uses and are not interchangeable, with LWTP used for POS paper and HWTP primarily used in labels and other applications where greater strength, rigidity, and durability are required. In addition, there is commonality in three of four stages of the production process to produce thermal paper. However, some in-scope LWTP goes through a conversion process that in-scope HWTP does not, and such conversion is done by an entity distinct from the jumbo roll producer. In addition, although there is some overlap in the channels of distribution, there are also some distinctions, with no sales of in-scope HWTP being sold to end users and some in-scope LWTP (converted rolls) being sold to end users. Further, as discussed above, there appear to be

[56] Petitioners Postconference Br. at 11.

[57] *Compare* CR/PR at Tables V-3-4 (prices for LWTP jumbo roll products) *with* CR/PR at Tables V-5-6 (prices for higher basis weight jumbo roll products including those with weights exceeding 70 gsm).

distinctions even within common channels of distribution, with petitioners acknowledging that converters usually specialize in converting LWTP or HWTP. In addition, the record also suggests that the two are perceived by producers and customers to be distinct products that are largely used in distinct applications. HWTP is also generally priced higher than LWTP. Accordingly, the record in the preliminary phase of these investigations supports finding that on balance there is a clear dividing line between in-scope thermal paper products based on the 70 gsm distinction included in the scope definition. For purposes of these preliminary determinations, we therefore find that lightweight and heavyweight thermal paper constitute separate domestic like products.

We next consider whether lightweight jumbo rolls and lightweight converted rolls should be included within the same domestic like product for purposes of these preliminary determinations.

C. Whether Lightweight Jumbo Rolls and Lightweight Converted Rolls Should Be Included Within the Same Domestic Like Product

Having defined LWTP and HWTP to be separate domestic like products, we next analyze whether the LWTP domestic like product should include both the jumbo and converted rolls within the scope. We apply the semi-finished products like product analysis and find that LWTP jumbo rolls and LWTP converted rolls are not distinct domestic like products.[58]

[58] Although we define HWTP to be a separate domestic like product, we do not analyze whether converted HWTP should be included within the HWTP domestic like product for purposes of these preliminary determinations. Based on the information in the petitions, the Commission did not issue questionnaires to converters of HWTP paper, and therefore the record contains only limited data concerning HWTP conversion. While "{t}he Commission generally does not expand or broaden the definition of the domestic like product to include downstream articles when the scope does not encompass a corresponding subject product," the Commission has previously applied the traditional six (Continued…)

Dedication for Use. It is undisputed that LWTP jumbo rolls are dedicated to the production of downstream converted rolls of LWTP.[59] All responding U.S. producers reported that there are no uses for jumbo rolls other than the production of converted rolls.[60]

Separate Markets. As discussed above, jumbo roll producers do not engage in converting operations, which are essential to transform the product into a usable form for end users. Accordingly, there is generally one market for the upstream product, LWTP jumbo rolls, which is ultimately sold to converters, and there is a distinct market for the downstream products, LWTP converted rolls, which converters prepare for sale to end users.

Differences in Physical Characteristics and Functions of the Upstream and Downstream Articles. The principal difference between LWTP jumbo rolls and LWTP converted rolls is size. LWTP jumbo rolls typically are over 50 inches wide and are slit down to smaller sizes, such as 3.5 inches.[61] There is no dispute that the essential characteristics of thermal paper that enable it to form an image when exposed to heat are imparted by the coating process and are not

---

factor test in analyzing whether to define the domestic like product to include an out-of-scope downstream product that was on the same level of processing as an in-scope downstream product. *Compare Aluminum Foil from China*, Inv. Nos. 701-TA-570 and 731-TA-1346 (Final), USITC Pub. 4771 (Apr. 2018) *with Certain Wax and Wax/Resin Thermal Transfer Ribbons from France and Japan*, Inv. Nos. 731-TA-1039-1040 (Final) (Remand), USITC Pub. 3854 (Apr. 2006). In the present case, HWTP jumbo rolls and converted rolls are different levels of processing.

By the same token, our analysis below of the semi-finished products factors would be considerably different were the upstream and downstream products being compared not coterminous.

[59] We recognize that the in-scope downstream product is defined as having a width less than 4.5 inches, and it is unclear on the record in the preliminary phase of these investigations whether there are downstream products that are greater than 4.5 inches.

[60] *See* Questionnaire Responses of *** at II-20.

[61] Tr. at 56 (Hodson), 58-59 (Melton), 70 (Orava), 76 (Hefner).

affected by the conversion process. Two U.S. producers of jumbo rolls and *** reported that the only distinction between jumbo rolls and converted LWTP is the size.[62]

Differences in Value. The data converters provided in their questionnaire responses indicate that the average value added by converters of LWTP, calculated as the ratio of conversion costs (which are direct labor and other factory costs) to total cost of goods sold (COGS), ranged from *** percent to *** percent on an annual basis from 2017 to 2019.[63]

Extent of Processes Used to Transform Downstream Product into Upstream Product. The process to convert LWTP jumbo rolls for end use involves feeding jumbo rolls into a slitter/rewinder machine, where they are cut to the proper size and then rewound into the finished product. The product is then packaged for sale to distributors or end users.[64] Two U.S. producers of jumbo rolls and *** reported that the process to turn jumbo rolls into split rolls of LWTP is not particularly labor or capital-intensive.[65]

Conclusion. Based on the record in the preliminary phase of these investigations, we find that application of the semi-finished products like product analysis supports including LWTP jumbo rolls and LWTP converted rolls in the same domestic like product. All LWTP jumbo rolls are converted into smaller rolls because end users can only use converted rolls for their intended applications. While the conversion process can add moderate value to the product, the process does not change the essential chemical characteristics of thermal paper. It is the coating process that imparts to thermal paper its ability to display images when heated by a

[62] *See* Questionnaire Responses of *** at II-20.
[63] CR/PR at VI-23 n.12.
[64] CR/PR at I-8; Tr. at 58-59 (Melton), 81 (Howard), 96 (Melton).
[65] *See* Questionnaire Responses of *** at II-20.

thermal printer. The conversion process for LWTP simply resizes the product to an appropriate size for end use. Consequently, for purposes of these preliminary determinations, we find that LWTP jumbo rolls and LWTP converted rolls are part of the same domestic like product.

Consequently, we define two domestic like products. One includes the LWTP jumbo and converted rolls within the scope; the second includes the HWTP jumbo rolls within the scope.[66] We emphasize that our findings are based on the current record and are for the purposes of these preliminary determinations. In any final phase of these investigations, we will examine further how to define the domestic like product or products. While we intend to collect separate data for both domestically produced and imported jumbo rolls of HWTP and LWTP as well as converted LWTP rolls, we will consider any additional requests for data collection made by the parties in their comments on the draft final phase questionnaires and encourage parties to include a justification for any additional data collection requests. Parties should explain the basis for their position as to how the Commission should define the domestic like product(s) in its final determinations, bearing in mind our view in this opinion that petitioner has not presented, in the preliminary phase of these proceedings, a reasonable basis for a single domestic like product definition coextensive with the scope.

[66] In defining the domestic like product for HWTP jumbo rolls we do not include converted rolls - which are outside the scope. For purposes of these preliminary determinations we do not find a sufficient basis to expand the scope to include such converted rolls. *See* Koehler Postconference Br. at 4-6 (arguing that if the domestic like product is defined to include both heavyweight and lightweight jumbo rolls of thermal paper as well as converted lightweight rolls, it logically should also include heavyweight converted rolls). We invite parties to provide comments on the draft final phase questionnaires concerning the possible inclusion of converted HWTP rolls and to include a justification for any additional data collection requests.

IV. Domestic Industry

The domestic industry is defined as the domestic "producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product."[67] In defining the domestic industry, the Commission's general practice has been to include in the industry producers of all domestic production of the like product, whether toll-produced, captively consumed, or sold in the domestic merchant market.

These investigations raise several domestic industry issues. The first concerns what processing activities are sufficient to constitute domestic production. The second concerns whether appropriate circumstances exist to exclude any domestic producers from the pertinent domestic industry pursuant to the related parties provision. Finally, the domestic industry definitions that we adopt have implications as to the data available to assess the effect of subject imports on those industries.

A. Arguments of the Parties

Petitioners' Arguments. Petitioners argue that the Commission should define the domestic industry to include all domestic producers of jumbo rolls and converters of LWTP rolls. Petitioners argue that, although *** is subject to exclusion as a related party, appropriate circumstances do not exist to exclude it from the domestic industry.[68] In addition, although petitioners contend that the domestic industry should be defined to include converters of

[67] 19 U.S.C. § 1677(4)(A).
[68] Petitioners Postconference Br. at 20-21, Responses to Staff Questions at 18.

LWTP,[69] they also argue that the Commission should not include the data of the largest converter *** because its reported data do not include ***.[70]

Koehler. Koehler argues that the Commission should consider Kanzaki's operations in Brazil and those of a related producer in Malaysia in its evaluation as to whether Kanzaki should be excluded from the domestic industry as a related party. Koehler contends that Kanzaki's support for the petition appears to be driven by its parent company's "global objectives."[71]

Torraspapel. Torraspapel contests petitioners' assertion that the domestic industry should only include LWTP converters, and it argues that in any final phase of these investigations, the Commission should include HWTP converters. Given limitations of the preliminary phase of these investigations, Torraspapel argues that the Commission should look solely at domestic jumbo roll producers to assess the condition of the domestic industry.[72]

[69] Petitioners Postconference Br., Responses to Staff Questions at 18-19. The basis for petitioners' argument that the domestic industry should include converters of LWTP is the Commission's finding that converters were engaged in sufficient production-related activities to be included in the domestic industry in the prior investigations of certain lightweight thermal paper from China and Germany. *Id.* (citing *Certain Lightweight Thermal Paper from China, Germany, and Korea*, Inv. Nos. 701-TA-451 and 731-TA-1126-1128 (Preliminary), USITC Pub. 3964 (Nov. 2007), at 13; *Certain Lightweight Thermal Paper from China and Germany*, Inv. Nos. 701-TA-451 and 731-TA-1126-1127 (Final), USITC Pub. 4043 (Nov. 2008), at 6-8).

[70] Petitioners Postconference Br. at 18-21, Responses to Staff Questions at 18-21. The data ***. CR/PR at III-3 n.7.

[71] Koehler Postconference Br. at 17-19. Koehler claims that, if orders are placed on subject imports, Kanzaki's related company in Brazil is likely to fill any void created as subject imports exit the market. Koehler also claims that Kanzaki made a "material omission" by not reporting that its parent company owns a third-party converter located in Malaysia and that, if an anti-circumvention action goes forward, this will have implications with respect to Kanzaki's status as a related party. Accordingly, Koehler requests that the Commission consider the converter in Brazil to be an exporter of subject merchandise in its analysis of whether Kanzaki should be excluded as a related party. *Id*.

[72] Torraspapel Postconference Br. at 2.

B. Sufficient Production-Related Activities

In deciding whether a firm qualifies as a domestic producer of the domestic like product, the Commission generally analyzes the overall nature of a firm's U.S. production-related activities, although production-related activity at minimum levels could be insufficient to constitute domestic production.[73] We analyze below whether U.S. converters of LWTP engage in sufficient production-related activities to be considered producers of the LWTP domestic like product.[74]

Capital Investment. Responding converters reported aggregate annual capital investments ranging from $*** to $*** from 2017 to 2019.[75] Jumbo roll producers reported aggregate annual capital investments ranging from $*** to $*** from 2017 to 2019.[76] Although *** accounted for the greatest share of these investments for most of that time, it reported that ***.[77]

Technical Expertise. The record is mixed in terms of the technical expertise required to convert jumbo rolls of LWTP. ***, characterized the conversion process to be ***, and it

[73] The Commission generally considers six factors: (1) source and extent of the firm's capital investment; (2) technical expertise involved in U.S. production activities; (3) value added to the product in the United States; (4) employment levels; (5) quantity and type of parts sourced in the United States; and (6) any other costs and activities in the United States directly leading to production of the like product. No single factor is determinative and the Commission may consider any other factors it deems relevant in light of the specific facts of any investigation. *Crystalline Silica Photovoltaic Cells and Modules from China*, Inv. Nos. 701-TA-481 and 731-TA-1190 (Final), USITC Pub. 4360 at 12-13 (Nov. 2012).

[74] In light of our like product findings, we evaluate this consideration only for LWTP converters.

[75] CR/PR at Table VI-13.

[76] CR/PR at Table VI-13. As detailed below in section IV.D., the available information is overly broad, as it includes producers of all jumbo rolls (both LWTP and HWTP).

[77] *** Producers Questionnaire Response at II-12.

reported that ***.[78] ***, on the other hand, characterized the conversion process as ***, stating that ***.[79] *** characterized the process as ***, indicating that ***.[80]

Value Added. As discussed above, the data from responding converters indicate that the average value that they added, calculated as the ratio of conversion costs (which are direct labor and other factory costs) to total COGS, ranged on an annual basis from *** percent to *** percent from 2017 to 2019.[81]

Employment Levels. The number of production-related workers ("PRWs") for converters ranged on an annual basis from *** to *** employees from 2017 to 2019.[82] Jumbo roll producers ranged on an annual basis from *** to *** employees from 2017 to 2019.[83]

Sourcing of Imports. The record indicates that each of the U.S. converters sourced jumbo rolls from both domestic and subject sources during the period of investigation. The converters purchased more rolls from subject sources, but their domestic purchases were appreciable.[84]

Conclusion. The record in the preliminary phase of these investigations is mixed in terms of whether U.S. converters engage in sufficient production-related activities to be included within the domestic industry. U.S. converters made considerable capital investments

[78] *** Producers Questionnaire Response at II-12.
[79] *** Producers Questionnaire Response at II-12.
[80] *** Producers Questionnaire Response at II-12.
[81] CR/PR at IV-23 n.12.
[82] CR/PR at Table III-18. Increases in converters' employment from 2017 to 2019 were primarily attributable ***. CR/PR at III-22.
[83] CR/PR at Table III-16. Again, as detailed below in section IV.D., the available information is overly broad, as it includes producers of all jumbo rolls (both LWTP and HWTP).
[84] CR/PR at Table III-15.

and employ a sizable number of workers. Although the value added appears to be modest and there is some disagreement in terms of the complexity of the conversion process and the technical expertise required, conversion is an essential step in the production process prior to the product being sold to the end user. In addition, U.S. converters sourced jumbo rolls from both domestic and subject sources, though more were sourced from subject imports. On balance, for purposes of the preliminary phase of these investigations, and in the absence of contrary argument, we find that U.S. converters engage in sufficient production-related activities to be included in the domestic industry.

C. Related Parties

We must determine whether any producer of the domestic like product should be excluded from the domestic industry pursuant to Section 771(4)(B) of the Tariff Act. This provision allows the Commission, if appropriate circumstances exist, to exclude from the domestic industry producers that are related to an exporter or importer of subject merchandise or which are themselves importers.[85] Exclusion of such a producer is within the Commission's discretion based upon the facts presented in each investigation.[86]

---

[85] *See Torrington Co. v. United States*, 790 F. Supp. 1161, 1168 (Ct. Int'l Trade 1992), *aff'd without opinion*, 991 F.2d 809 (Fed. Cir. 1993); *Sandvik AB v. United States*, 721 F. Supp. 1322, 1331-32 (Ct. Int'l Trade 1989), *aff'd mem.,* 904 F.2d 46 (Fed. Cir. 1990); *Empire Plow Co. v. United States*, 675 F. Supp. 1348, 1352 (Ct. Int'l Trade 1987).

[86] The primary factors the Commission has examined in deciding whether appropriate circumstances exist to exclude a related party include the following:

(1) the percentage of domestic production attributable to the importing producer;

(2) the reason the U.S. producer has decided to import the product subject to investigation (whether the firm benefits from the LTFV sales or subsidies or whether the firm must import in order to enable it to continue production and compete in the U.S. market);

(3) whether inclusion or exclusion of the related party will skew the data for the rest of the industry;

(Continued…)

One domestic producer is subject to possible exclusion from the domestic industry under the related party provision in the preliminary phase of these investigations.[87] *** is related to an exporter of subject merchandise.[88] Specifically, *** is *** owned by ***, which in turn has a ***, a producer of thermal paper in *** that also appears to have exported subject merchandise to the United States during the POI.[89] We analyze whether appropriate circumstances exist to exclude *** below.[90]

*** was the *** domestic producer in 2019, accounting for *** percent of domestic production of jumbo rolls of thermal paper.[91] It *** the petitions.[92] During the period of

(4) the ratio of import shipments to U.S. production for the imported product; and

(5) whether the primary interest of the importing producer lies in domestic production or importation. *Changzhou Trina Solar Energy Co. v. United States Int'l Trade Comm'n*, 100 F. Supp.3d 1314, 1326-31 (Ct. Int'l. Trade 2015); *see also Torrington Co.*, 790 F. Supp. at 1168.

[87] The Commission has also concluded that a domestic producer that does not itself import subject merchandise, or does not share a corporate affiliation with an importer, may nonetheless be deemed a related party if it controls large volumes of imports. Here, certain U.S. converters purchased jumbo rolls from subject sources during the period of investigation. CR/PR at III-20, n. 10 & Table III-15. The Commission has found control may exist where, for example, the domestic producer was responsible for a predominant proportion of an importer's purchases and the importer's purchases were substantial. *See, e.g.*, *Certain Seamless Carbon and Alloy Steel Standard, Line, and Pressure Pipe from Argentina, Brazil, Germany, and Italy*, Inv. Nos. 701-TA-362 and 731-TA-707-710 (Review), USITC Pub. 3429 at 8-9 (June 2001). In any final phase of these investigations, we will further examine these converters' status as related parties.

[88] CR/PR at Table III-2; *** Producers Questionnaire Response at I-6.

[89] CR/PR at Table III-2. Although ***. CR/PR at VII-3 n.9. We assume *arguendo* that *** exported subject merchandise for purposes of this analysis. *** is also affiliated with ***, an exporter of subject merchandise, because ***. CR/PR at Table VII-7. Absent additional information, this minority ownership would not appear to reflect that *** exercises the requisite common control over both *** and *** to give rise to a related parties relationship. *See* 19 U.S.C. § 1677(4)(B)(ii)(III).

[90] The related parties provision concerns importation of subject merchandise and relationships between domestic producers and importers and exporters of subject merchandise. 19 U.S.C. § 1677(4)(B). We therefore do not consider there is any legal basis for the Commission to take into account *** and those of a related producer in *** in its evaluation as to whether *** should be excluded from the domestic industry as a related party.

[91] CR/PR at Table III-1.

[92] CR/PR at Table III-1.

investigation, *** appears to have exported ***.[93] In 2019, *** domestic production was *** short tons, and its U.S. shipments for that year were *** short tons, valued at $***.[94]

The record in these investigations indicates that exports to the United States by *** affiliate were minimal, and there is no indication that its affiliation with an exporter of subject merchandise has benefitted its domestic production operations or caused it to behave differently than other domestic producers. We consequently find that appropriate circumstances do not exist to exclude *** from the pertinent domestic industry as a related party.

In sum, for purposes of the preliminary determinations, we define one domestic industry consisting of all U.S. producers and converters of jumbo rolls of LWTP and one domestic industry consisting of all U.S. producers of jumbo rolls of HWTP.

D. Data Issues

Based on the information in the petitions, the Commission generally did not collect trade and financial data separately for HWTP and LWTP jumbo rolls. Therefore, the record generally does not contain disaggregated data for LWTP jumbo rolls and HWTP jumbo rolls, nor does it contain data sets for either the domestic industry or the subject imports that accurately correspond to the like domestic product definitions we have adopted. Consequently, pursuant

[93] CR/PR at VII-3 n.9. The record does not indicate that any affiliate of *** imported subject merchandise. Further, the record does not indicate whether the subject merchandise *** exported from Germany was LWTP or HWTP. While, as a technical matter, *** would be a related party only with respect to the industry corresponding to its affiliate's exports, we analyze the available data for all thermal paper production given that this is the information available in the preliminary phase. The record does not contain breakouts for domestic production of jumbo rolls of LWTP and HWTP, as explained further below.

[94] *** Questionnaire Response at II-8.

to the statute,[95] in making our preliminary determinations we use the information available in the record most closely corresponding to the two domestic like products. For the LWTP like product, this includes available information from producers of all jumbo rolls (both LWTP and HWTP) and converters and importers of in-scope products. For the HWTP like product, this includes available information from producers and importers of jumbo rolls (both LWTP and HWTP). We recognize each data set is overly broad, and therefore, the probative value of the available data is somewhat limited. However, each data set reflects the narrowest group of products including the pertinent domestic like products for which the Commission has available data at this time.[96] As discussed above, in any final phase of these investigations, we intend to seek separate information concerning LWTP jumbo rolls, LWTP converted rolls, and HWTP jumbo rolls, and we will consider other data requests in comments on draft questionnaires.

We also recognize that the available data from LWTP converters are not complete. In particular, ***, the largest converter that provided a questionnaire response, reported data from operations it acquired during the POI for only periods subsequent to their date of acquisition. Accordingly, annual comparisons for LWTP converters do not measure comparable operations.

[95] The statute provides that if "necessary information is not available on the record . . . the Commission shall . . . use the facts otherwise available in reaching the applicable determination under this subtitle." 19 U.S.C. § 1677e.

[96] *Cf.* 19 U.S.C. § 1677(4)(D) (directing the Commission to rely on data for the narrowest range of products where information is unavailable).

V. Negligible Imports

Pursuant to Section 771(24) of the Tariff Act, imports from a subject country of merchandise corresponding to a domestic like product that account for less than 3 percent of all such merchandise imported into the United States during the most recent 12 months for which data are available preceding the filing of the petition generally shall be deemed negligible.[97]

Under the statute, the Commission makes a negligibility determination with respect to the definition of the domestic like product(s), which in this instance is HWTP jumbo rolls and LWTP jumbo and converted rolls.[98] As explained above, however, the questionnaires generally did not seek separate data for HWTP and LWTP and available official import statistics concern a basket category including out-of-scope products. Consequently, the monthly import data available for the most recent 12-month period preceding the filing of the petitions in these investigations (October 2019 through September 2020) are based on questionnaire data concerning all subject merchandise. Because of the lack of alternative data, we find that these data are the best available information for both domestic like products. These data indicate that subject imports from Germany accounted for *** percent of total imports, subject imports from Japan accounted for *** percent of total imports, subject imports from Korea accounted for *** percent of total imports, and subject imports from Spain accounted for *** percent of total imports.[99] Because the information available indicates that imports from each source are

[97] 19 U.S.C. §§ 1671b(a), 1673b(a), 1677(24)(A)(i), 1677(24)(B); *see also* 15 C.F.R. § 2013.1 (developing countries for purposes of 19 U.S.C. § 1677(36)). A discussion of the exceptions to this general rule is not necessary here in light of the data limitations discussed below.

[98] 19 U.S.C. § 1677(24)(A)(i).

[99] CR/PR at Table IV-5.

above the statutory threshold, we find that imports from each subject country are not negligible for purposes of the preliminary determinations.[100]

VI. Cumulation

For purposes of evaluating the volume and effects for a determination of reasonable indication of material injury by reason of subject imports, section 771(7)(G)(i) of the Tariff Act requires the Commission to cumulate subject imports from all countries as to which petitions were filed and/or investigations self-initiated by Commerce on the same day, if such imports compete with each other and with the domestic like product in the U.S. market. In assessing whether subject imports compete with each other and with the domestic like product, the Commission generally has considered four factors:

(1) the degree of fungibility between subject imports from different countries and between subject imports and the domestic like product, including consideration of specific customer requirements and other quality related questions;

(2) the presence of sales or offers to sell in the same geographic markets of subject imports from different countries and the domestic like product;

(3) the existence of common or similar channels of distribution for subject imports from different countries and the domestic like product; and

(4) whether the subject imports are simultaneously present in the market.[101]

While no single factor is necessarily determinative, and the list of factors is not exclusive, these factors are intended to provide the Commission with a framework for

[100] In any final determinations, we will collect subject import data for the 12-month period prior to the filing of the petitions corresponding to the possible domestic like products under consideration.

[101] *See Certain Cast-Iron Pipe Fittings from Brazil, the Republic of Korea, and Taiwan*, Inv. Nos. 731-TA-278-80 (Final), USITC Pub. 1845 (May 1986), *aff'd*, *Fundicao Tupy, S.A. v. United States*, 678 F. Supp. 898 (Ct. Int'l Trade), *aff'd*, 859 F.2d 915 (Fed. Cir. 1988).

determining whether the subject imports compete with each other and with the domestic like product.[102] Only a "reasonable overlap" of competition is required.[103]

A. Arguments of the Parties

Petitioners' Arguments. Petitioners argue that the Commission should cumulate subject imports. They argue that the petitions were filed on the same day and there is a reasonable overlap of competition among and between the domestic like product and imports from each subject country. Specifically, petitioners argue that the domestic like product and subject imports are fungible, sold in the same geographic regions, simultaneously present in the U.S. market, and sold through the same channels of distribution.[104]

Respondents' Arguments. Nippon argues that the Commission should not cumulate subject imports from Japan with imports from other subject sources. Specifically, it argues that the vast majority of its sales are in the west and southwest regions of the United States. It also argues that the channels of distribution through which it sells its products differ from the channels through which the domestic like product and imports from other subject sources are sold because Nippon has no warehouses and maintains no inventories in the United States.[105]

B. Analysis

---

[102] *See*, *e.g.*, *Wieland Werke, AG v. United States*, 718 F. Supp. 50 (Ct. Int'l Trade 1989).

[103] The Statement of Administrative Action (SAA) to the Uruguay Round Agreements Act (URAA), expressly states that "the new section will not affect current Commission practice under which the statutory requirement is satisfied if there is a reasonable overlap of competition." H.R. Rep. No. 103-316, Vol. I at 848 (1994) (*citing Fundicao Tupy*, 678 F. Supp. at 902); *see Goss Graphic Sys., Inc. v. United States*, 33 F. Supp. 2d 1082, 1087 (Ct. Int'l Trade 1998) ("cumulation does not require two products to be highly fungible"); *Wieland Werke, AG*, 718 F. Supp. at 52 ("Completely overlapping markets are not required.").

[104] Petitioners Postconference Br. at 21-25.

[105] Nippon Postconference Br. at 6-7.

As a threshold matter, because the questionnaires generally did not seek separate breakouts for HWTP and LWTP, the record contains only limited data to permit product-specific analyses. Consequently, while the discussion below provides product-specific analyses for LWTP and HWTP when possible, much of the discussion concerns in-scope thermal paper generally. As we explain below, based on information available, we consider subject imports from Germany, Japan, Korea, and Spain on a cumulated basis for each of the domestic like products, because the statutory criteria for cumulation appear to be satisfied.

As an initial matter, petitioners filed the antidumping duty petitions with respect to all four countries on the same day, October 7, 2020.[106] The available record evidence further indicates that there is also a reasonable overlap of competition between subject imports from Germany, Japan, Korea, and Spain, and between subject imports from each source and the domestic like product, as indicated below.

Fungibility. Most U.S. producers reported that subject imports from each subject country are always interchangeable with each other as well as with domestically produced thermal paper.[107] Responses from importers were more mixed; however, most importers reported that thermal paper from each subject source is at least sometimes interchangeable with thermal paper from each other subject source as well as domestically produced thermal paper.[108]

[106] None of the statutory exceptions to cumulation applies.
[107] CR/PR at Table II-6.
[108] CR/PR at Table II-6.

The available information also shows fungibility with respect to the types of products being sold in the U.S. market from the different sources. During the POI, there were domestic shipments and imports from each subject country of each of the two LWTP pricing products and one pricing product whose basis weight range largely encompasses HWTP.[109] In 2019, there were appreciable U.S. shipments of domestic LWTP and HWTP and appreciable U.S. shipments of imports of LWTP and HWTP from each subject country.[110] In addition, U.S. shipments of the domestically produced thermal paper and imports from each subject source consisted mostly of jumbo rolls.[111]

Channels of Distribution. As previously discussed, jumbo rolls of heavyweight and lightweight thermal paper were predominantly distributed to converters and split rolls of lightweight thermal paper were distributed to distributors and end users.[112] The majority of imports from each subject source were sold to converters.[113] There consequently are overlapping channels of distribution for both HWTP and LWTP with respect to subject imports and the domestic like products.

Geographic Overlap. The record also shows that imports from each subject source and domestically produced thermal paper were sold in overlapping geographic areas. Thermal

[109] CR/PR at Tables V-3 – V-5. We observe that the correct definition for pricing product 3 is the one used on page V-4 of the report; the product 2 definition was inadvertently pasted into Table V-5.

[110] CR/PR at Table IV-6.

[111] CR/PR at Tables III-10, III-11, IV-3, IV-4. ***. CR/PR at Table IV-4.

[112] CR/PR at Table II-1. As discussed above, jumbo roll producers *** reported selling jumbo rolls ***, while *** reported selling jumbo rolls ***. *See* Producer Questionnaire Responses of *** at II-9.

[113] CR/PR at Table II-1. Subject imports from Germany, Japan, and Korea were also sold to a lesser degree to distributors, and subject imports from Japan and Korea were also sold end users, with those shipments accounting for the smallest share for each source. *Id.*

paper from all sources was sold in all areas of the U.S. market during the POI, with the exception of thermal paper from Spain, which was not sold in the "other" region.[114]

Simultaneous Presence in Market. Domestic producers sold both HWTP and LWTP products throughout the period of investigation.[115] The domestic producers' and importers' shipment data for different pricing products, which varied by basis weight, provide insight into the market presence of the different sources of thermal paper. The domestic producers had shipments in each of the pricing products throughout the POI. There were imports from each subject country of one LWTP pricing product during each quarter of the POI.[116] Further, there were imports from three subject countries of one pricing product whose basis weight range largely encompass HWTP during each full year of the period of investigation and interim 2020, and imports from the remaining subject country, Japan, during 2017, 2019, and interim 2020.[117] In addition, as discussed above, there were U.S. shipments of domestic HWTP and appreciable U.S. shipments of imports of HWTP from each subject country in 2019.[118]

Conclusion. The relevant antidumping duty petitions were filed on the same day, and the information available indicates a reasonable overlap of competition between and among subject imports and the domestic product for both the HWTP and LWTP domestic like products.

---

[114] CR/PR at Table II-2. The available data do not corroborate Nippon's assertion that the geographic distribution of subject imports from Japan is distinct from that of imports from the other subject countries. Moreover, they indicate that in 2019, only a minority of subject imports from Japan entered the United States from ports of entry in the West or South. CR/PR at Table IV-8.

[115] CR/PR at Tables V-3 – V-6.

[116] CR/PR at Table V-3. For the second LWTP pricing product, there were imports from Japan during 2017, 2019, and January-June (interim) 2020 and imports from the other three subject countries during all full years and interim 2020. CR/PR at Table V-4.

[117] CR/PR at Table V-5.

[118] CR/PR at Table IV-6.

We consequently analyze subject imports from Germany, Japan, Korea, and Spain on a cumulated basis for analyzing material injury by reason of subject imports.

VII. Reasonable Indication of Material Injury by Reason of Subject Imports

A. Legal Standard

In the preliminary phase of antidumping and countervailing duty investigations, the Commission determines whether there is a reasonable indication that an industry in the United States is materially injured or threatened with material injury by reason of the imports under investigation.[119] In making this determination, the Commission must consider the volume of subject imports, their effect on prices for the domestic like product, and their impact on domestic producers of the domestic like product, but only in the context of U.S. production operations.[120] The statute defines "material injury" as "harm which is not inconsequential, immaterial, or unimportant."[121] In assessing whether there is a reasonable indication that the domestic industry is materially injured by reason of subject imports, we consider all relevant economic factors that bear on the state of the industry in the United States.[122] No single factor is dispositive, and all relevant factors are considered "within the context of the business cycle and conditions of competition that are distinctive to the affected industry."[123]

Although the statute requires the Commission to determine whether there is a reasonable indication that the domestic industry is "materially injured or threatened with

[119] 19 U.S.C. §§ 1671b(a), 1673b(a).

[120] 19 U.S.C. § 1677(7)(B). The Commission "may consider such other economic factors as are relevant to the determination" but shall "identify each {such} factor ... and explain in full its relevance to the determination." 19 U.S.C. § 1677(7)(B).

[121] 19 U.S.C. § 1677(7)(A).

[122] 19 U.S.C. § 1677(7)(C)(iii).

[123] 19 U.S.C. § 1677(7)(C)(iii).

material injury by reason of" unfairly traded imports,[124] it does not define the phrase "by reason of," indicating that this aspect of the injury analysis is left to the Commission's reasonable exercise of its discretion.[125] In identifying a causal link, if any, between subject imports and material injury to the domestic industry, the Commission examines the facts of record that relate to the significance of the volume and price effects of the subject imports and any impact of those imports on the condition of the domestic industry. This evaluation under the "by reason of" standard must ensure that subject imports are more than a minimal or tangential cause of injury and that there is a sufficient causal, not merely a temporal, nexus between subject imports and material injury.[126]

In many investigations, there are other economic factors at work, some or all of which may also be having adverse effects on the domestic industry. Such economic factors might include nonsubject imports; changes in technology, demand, or consumer tastes; competition among domestic producers; or management decisions by domestic producers. The legislative history explains that the Commission must examine factors other than subject imports to

[124] 19 U.S.C. §§ 1671b(a), 1673b(a).

[125] *Angus Chemical Co. v. United States*, 140 F.3d 1478, 1484-85 (Fed. Cir. 1998) ("{T}he statute does not 'compel the commissioners' to employ {a particular methodology}."), *aff'g,* 944 F. Supp. 943, 951 (Ct. Int'l Trade 1996).

[126] The Federal Circuit, in addressing the causation standard of the statute, observed that "{a}s long as its effects are not merely incidental, tangential, or trivial, the foreign product sold at less than fair value meets the causation requirement." *Nippon Steel Corp. v. USITC*, 345 F.3d 1379, 1384 (Fed. Cir. 2003). This was further ratified in *Mittal Steel Point Lisas Ltd. v. United States*, 542 F.3d 867, 873 (Fed. Cir. 2008), where the Federal Circuit, quoting *Gerald Metals, Inc. v. United States*, 132 F.3d 716, 722 (Fed. Cir. 1997), stated that "this court requires evidence in the record 'to show that the harm occurred "by reason of" the LTFV imports, not by reason of a minimal or tangential contribution to material harm caused by LTFV goods.'" *See also Nippon Steel Corp. v. United States*, 458 F.3d 1345, 1357 (Fed. Cir. 2006); *Taiwan Semiconductor Industry Ass'n v. United States Int'l Trade Comm'n*, 266 F.3d 1339, 1345 (Fed. Cir. 2001).

ensure that it is not attributing injury from other factors to the subject imports, thereby inflating an otherwise tangential cause of injury into one that satisfies the statutory material injury threshold.[127] In performing its examination, however, the Commission need not isolate the injury caused by other factors from injury caused by unfairly traded imports.[128] Nor does the "by reason of" standard require that unfairly traded imports be the "principal" cause of injury or contemplate that injury from unfairly traded imports be weighed against other factors, such as nonsubject imports, which may be contributing to overall injury to an industry.[129] It is

[127] SAA at 851-52 ("{T}he Commission must examine other factors to ensure that it is not attributing injury from other sources to the subject imports."); S. Rep. 96-249 at 75 (1979) (the Commission "will consider information which indicates that harm is caused by factors other than less-than-fair-value imports."); H.R. Rep. 96-317 at 47 (1979) ("in examining the overall injury being experienced by a domestic industry, the ITC will take into account evidence presented to it which demonstrates that the harm attributed by the petitioner to the subsidized or dumped imports is attributable to such other factors;" those factors include "the volume and prices of nonsubsidized imports or imports sold at fair value, contraction in demand or changes in patterns of consumption, trade restrictive practices of and competition between the foreign and domestic producers, developments in technology and the export performance and productivity of the domestic industry"); *accord Mittal Steel*, 542 F.3d at 877.

[128] SAA at 851-52 ("{T}he Commission need not isolate the injury caused by other factors from injury caused by unfair imports."); *Taiwan Semiconductor Industry Ass'n,* 266 F.3d at 1345 ("{T}he Commission need not isolate the injury caused by other factors from injury caused by unfair imports ... . Rather, the Commission must examine other factors to ensure that it is not attributing injury from other sources to the subject imports." (emphasis in original)); *Asociacion de Productores de Salmon y Trucha de Chile AG v. United States*, 180 F. Supp. 2d 1360, 1375 (Ct. Int'l Trade 2002) ("{t}he Commission is not required to isolate the effects of subject imports from other factors contributing to injury" or make "bright-line distinctions" between the effects of subject imports and other causes.); *see also Softwood Lumber from Canada*, Inv. Nos. 701-TA-414 and 731-TA-928 (Remand), USITC Pub. 3658 at 100-01 (Dec. 2003) (Commission recognized that "{i}f an alleged other factor is found not to have or threaten to have injurious effects to the domestic industry, *i.e.*, it is not an 'other causal factor,' then there is nothing to further examine regarding attribution to injury"), *citing Gerald Metals,* 132 F.3d at 722 (the statute "does not suggest that an importer of LTFV goods can escape countervailing duties by finding some tangential or minor cause unrelated to the LTFV goods that contributed to the harmful effects on domestic market prices.").

[129] S. Rep. 96-249 at 74-75; H.R. Rep. 96-317 at 47.

clear that the existence of injury caused by other factors does not compel a negative determination.[130]

Assessment of whether material injury to the domestic industry is "by reason of" subject imports "does not require the Commission to address the causation issue in any particular way" as long as "the injury to the domestic industry can reasonably be attributed to the subject imports."[131] The Commission ensures that it has "evidence in the record" to "show that the harm occurred 'by reason of' the LTFV imports," and that it is "not attributing injury from other sources to the subject imports." [132] The Federal Circuit has examined and affirmed various Commission methodologies and has disavowed "rigid adherence to a specific formula."[133]

The question of whether the material injury threshold for subject imports is satisfied notwithstanding any injury from other factors is factual, subject to review under the substantial

[130] *See Nippon Steel Corp*., 345 F.3d at 1381 ("an affirmative material-injury determination under the statute requires no more than a substantial-factor showing. That is, the 'dumping' need not be the sole or principal cause of injury.").

[131] *Mittal Steel*, 542 F.3d at 876 &78; *see also id.* at 873 ("While the Commission may not enter an affirmative determination unless it finds that a domestic industry is materially injured 'by reason of' subject imports, the Commission is not required to follow a single methodology for making that determination ... {and has} broad discretion with respect to its choice of methodology."), *citing United States Steel Group v. United States*, 96 F.3d 1352, 1362 (Fed. Cir. 1996) and S. Rep. 96-249 at 75. In its decision in *Swiff-Train v. United States*, 793 F.3d 1355 (Fed. Cir. 2015), the Federal Circuit affirmed the Commission's causation analysis as comporting with the Court's guidance in *Mittal*.

[132] *Mittal Steel*, 542 F.3d at 873 (quoting from *Gerald Metals*, 132 F.3d at 722), 877-79. We note that one relevant "other factor" may involve the presence of significant volumes of price-competitive nonsubject imports in the U.S. market, particularly when a commodity product is at issue. In appropriate cases, the Commission collects information regarding nonsubject imports and producers in nonsubject countries in order to conduct its analysis.

[133] *Nucor Corp. v. United States*, 414 F.3d 1331, 1336, 1341 (Fed. Cir. 2005); *see also Mittal Steel*, 542 F.3d at 879 ("*Bratsk* did not read into the antidumping statute a Procrustean formula for determining whether a domestic injury was 'by reason' of subject imports.").

evidence standard.[134] Congress has delegated this factual finding to the Commission because of the agency's institutional expertise in resolving injury issues.[135]

B. Conditions of Competition and the Business Cycle[136]

The following conditions of competition inform our analysis of whether there is a reasonable indication of material injury by reason of subject imports.

1. Demand Conditions

U.S. demand for thermal paper depends on U.S. demand for downstream products, such as POS receipts, ATM receipts, entertainment and transportation tickets, labels, and medical paper.[137] Demand for thermal paper is linked to the overall trends in the U.S. economy, and some market participants reported that the end of the year holiday season drives fluctuations in demand.[138] The parties generally agree that the COVID-19 pandemic has affected demand for certain types of thermal paper, with demand for POS receipts and tickets declining and demand for shipping labels used in e-commerce increasing.[139] Three out of six U.S. producers and six out of 16 importers reported that demand for thermal paper increased ruing the POI,

[134] We provide in our discussion below a full analysis of other factors alleged to have caused any material injury experienced by the domestic industry.

[135] *Mittal Steel*, 542 F.3d at 873; *Nippon Steel Corp*., 458 F.3d at 1350, *citing U.S. Steel Group*, 96 F.3d at 1357; S. Rep. 96-249 at 75 ("The determination of the ITC with respect to causation is ... complex and difficult, and is a matter for the judgment of the ITC.").

[136] As discussed above, the record in these investigations contains limited separate data concerning HWTP and LWTP corresponding to our definitions of the domestic like products. While we have discussed the separate domestic like products to the extent practicable, much of our discussion regarding conditions of competition pertains to thermal paper generally. In any final phase of these investigations, we intend to collect additional information that may pertain to the specific conditions of competition facing separate industries based on potential domestic like product definitions.

[137] CR/PR at II-8.

[138] CR/PR at II-7 – II-8.

[139] CR/PR at II-7; Tr. at 90 (Hefner); Koehler Postconference Br. at 10; Mitsubishi Postconference Br. at 4; Torraspapel Postconference Br. 4-5.

and one U.S. producer and five importers reported that demand fluctuated.[140] The available information indicates that apparent U.S. consumption of LWTP increased from *** short tons in 2017 to *** short tons in 2018 and decreased to *** short tons in 2019, a level above that of 2017.[141] The available information indicates that apparent U.S. consumption of HWTP increased from *** short tons in 2017 to *** short tons in 2018 and decreased to *** short tons in 2019, a level above that of 2017.[142]

2. Supply Conditions

There are three U.S. producers of thermal paper jumbo rolls: Domtar, Appvion, and Kanzaki. Domtar became a producer of thermal paper in April 2020, when it purchased Appvion's POS assets. Domtar is the only integrated U.S. producer that also produces pulp and base paper.[143] Appvion and Kanzaki are coaters that purchase base paper to coat it with the chemicals to make thermal paper.[144] Appvion filed for bankruptcy on October 1, 2017, citing the need to restructure the debt on its balance sheet. It emerged from bankruptcy on June 13, 2018, after its sale to Franklin Advisors, Inc.[145] The LWTP industry also includes the three independent converters, Iconex, Integrity, and Liberty.[146]

The available information indicates that domestic producers accounted for the largest share of both the LWTP and HWTP markets. The share of the U.S. LWTP market held by

[140] CR/PR at Table II-4.

[141] CR/PR at Table C-1. Apparent U.S. consumption of LWTP was *** short tons in interim 2019 and lower at *** short tons in interim 2020. *Id.*

[142] CR/PR at Table C-2. Apparent U.S. consumption of HWTP was *** short tons in interim 2019 and lower at *** short tons in interim 2020. *Id.*

[143] CR/PR at VI-1.

[144] CR/PR at VI-1.

[145] CR/PR at VI-1 n.8.

[146] CR/PR at VI-1.

domestic producers rose from *** percent in 2017 to *** percent in 2018, and declined to *** percent in 2019.[147] Further, the available information indicates that the share of the U.S. HWTP market held by domestic producers rose from *** percent in 2017 to *** percent in 2018, and declined to *** percent in 2019.[148]

Cumulated subject imports accounted for the next largest shares of the U.S. thermal paper markets. The available information indicates that the share of the U.S. LWTP market held by cumulated subject imports declined from *** percent in 2017 to *** percent in 2018, and increased to *** percent in 2019.[149] Further, the available information indicates that the share of the U.S. HWTP market held by cumulated subject imports declined from *** percent in 2017 to *** percent in 2018, and increased to *** percent in 2019.[150]

Nonsubject imports supplied very small shares of the U.S. thermal paper markets throughout the POI. The available information indicates that the share of the U.S. LWTP market held by nonsubject imports was *** percent in 2017 and *** percent in 2018 and 2019.[151]

[147] CR/PR at Table C-1. The available information indicates that the share of the U.S. LWTP market held by domestic producers was *** percent in interim 2019 and *** percent in interim 2020. *Id.*

[148] CR/PR at Table C-2. The available information indicates that the share of the U.S. HWTP market held by domestic producers was *** percent in both interim 2019 and interim 2020. *Id.*

[149] CR/PR at Table C-1. The available information indicates that the share of the U.S. LWTP market held by cumulated subject imports was *** percent in interim 2019 and *** percent in interim 2020. *Id.*

[150] CR/PR at Table C-2. The available information indicates that the share of the U.S. HWTP market held by cumulated subject imports was *** percent in both interim 2019 and interim 2020. *Id.*

[151] CR/PR at Table C-1. The available information indicates that the share of the U.S. LWTP market held by nonsubject imports was *** percent in both interim 2019 and interim 2020. *Id.*

Further, the available information indicates that the share of the U.S. HWTP market held by nonsubject imports was *** percent in 2017, *** percent in 2018, and *** percent in 2019.[152]

3. Substitutability and Other Conditions

We find that the record in the preliminary phase of these investigations indicates that there is a high degree of substitutability between cumulated subject imports and domestic products, within particular product types.[153] As discussed above, most U.S. producers reported that subject imports from each subject country are always interchangeable with each other as well as with domestically produced thermal paper, and half of responding importers reported that the domestic product is always or frequently interchangeable with product from each of the subject countries.[154]

We also find price to be an important factor in purchasing decisions. Price was the factor purchasers responding to the lost sales/lost revenue survey identified second-most frequently as among their top three purchasing factors; quality was the factor that purchasers most frequently identified.[155] When asked about the significance of non-price factors in purchasing decisions, most U.S. producers indicated that they were never important.[156] Responses from importers were more mixed, but most importers reported non-price factors to be always, frequently, or sometimes important.[157]

---

[152] CR/PR at Table C-2. The available information indicates that the share of the U.S. HWTP market held by cumulated subject imports was *** percent in interim 2019 and *** percent in interim 2020. *Id.*

[153] CR/PR at II-9.

[154] CR/PR at Table II-6.

[155] CR/PR at Table II-5.

[156] CR/PR at Table II-7.

[157] CR/PR at Table II-7.

The main raw materials used to produce thermal paper are the base pulp or paper and chemicals used in the coating process.[158] Raw materials, as a share of cost of goods sold ("COGS"), ranged between *** percent on an annual basis from 2017 to 2019.[159] During this period, wood pulp prices increased due to an increase in demand for virgin pulp in China and the price of leuco dye, a chemical used in the coating process, increased dramatically due to plant closures in China, creating a supply shortage.[160] One of three U.S. producers and two of three U.S. independent converters reported experiencing supply constraints during the POI, reporting that the leuco dye shortage in late 2017 and 2018 caused major supply disruptions.[161] Ten of fifteen responding importers also reported supply constraints.[162]

C. Reasonable Indication of Material Injury by Reason of Subject Imports of LWTP

1. Volume of Subject Imports

Section 771(7)(C)(i) of the Tariff Act provides that the "Commission shall consider whether the volume of imports of the merchandise, or any increase in that volume, either in absolute terms or relative to production or consumption in the United States, is significant."[163]

As discussed above, because the record does not contain data limited to LWTP, we use as the facts available the data in the record concerning imports of all subject merchandise (jumbo rolls of LWTP and HWTP and converted rolls of LWTP). These facts available indicate

[158] CR/PR at V-1.

[159] CR/PR at V-1.

[160] CR/PR at V-1.

[161] CR/PR at II-7. *** reported ***. *** reported similar difficulties and reported ***. *** stated it was ***. *Id.*

[162] CR/PR at II-7. Five importers *** reported supply constraints due to the leuco dye shortage. Koehler stated that ***. Importers *** suffered from a shortage of *** reducing imports to the U.S. market. One importer, ***, mentioned COVID-19 as a supply constraint. *Id.*

[163] 19 U.S.C. § 1677(7)(C)(i).

that the volume of cumulated LWTP subject imports increased from *** short tons in 2017 to *** short tons in 2018 and *** short tons in 2019.[164] As discussed above, the available information indicates that the share of the U.S. LWTP market held by cumulated subject imports declined from *** percent in 2017 to *** percent in 2018, and increased to *** percent in 2019, a level above that of 2017.[165]

Based on the facts available, we cannot conclude that volume of cumulated subject LWTP imports was not significant in absolute terms and relative to apparent U.S. consumption.

2. Price Effects of the Subject Imports

Section 771(7)(C)(ii) of the Tariff Act provides that, in evaluating the price effects of subject imports, the Commission shall consider whether –

> (I) there has been significant price underselling by the imported merchandise as compared with the price of domestic like products of the United States, and
>
> (II) the effect of imports of such merchandise otherwise depresses prices to a significant degree or prevents price increases, which otherwise would have occurred, to a significant degree.[166]

As discussed above in section VII.B., we find that the record in the preliminary phase of these investigations indicates that there is a high degree of substitutability between subject imports and domestic products of the same product type, and that price is an important purchasing factor.

---

[164] CR/PR at Table IV-2. The available information indicates that the volume of cumulated subject LWTP imports was *** short tons in interim 2019 and lower at *** short tons in interim 2020. *Id.*

[165] CR/PR at Table C-1. The available information indicates that the share of the U.S. LWTP market held by cumulated subject imports was *** percent in interim 2019 and *** percent in interim 2020. *Id.*

[166] 19 U.S.C. § 1677(7)(C)(ii).

The Commission collected quarterly f.o.b. pricing data on sales of four thermal paper products shipped to unrelated U.S. customers during the period of investigation.[167] Three U.S. producers and ten importers provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters. The reported pricing data accounted for approximately *** percent of the value of U.S. producers' U.S. shipments of jumbo rolls, *** percent of the value of U.S. commercial shipments of subject imports from Germany, *** percent of the value of U.S. commercial shipments of subject imports from Japan, *** percent of the value of U.S. commercial shipments of subject imports from Korea, and *** percent of the value of U.S. commercial shipments of subject imports from Spain in 2019.[168] Two of the four pricing products are jumbo rolls of LWTP, inasmuch as the maximum basis weight of one product is 49.9 gsm and the maximum basis weight of the other is 60 gsm.[169]

For these two pricing products, cumulated subject imports undersold the domestic like product in *** out of *** (or *** percent of) quarterly comparisons, at margins ranging between *** and *** percent, involving *** square feet of cumulated subject imports.[170] Cumulated subject imports oversold the domestic like product in the remaining *** (or ***

[167] CR/PR at V-4.

[168] CR/PR at V-4 – V-5.

[169] CR/PR at V-4. These two pricing products are **Product 1**-- Thermal paper in jumbo rolls, with a target caliper of less than 2.2 mils (less than 55.9 microns), with a target basis weight of less than 49.9 gsm, not top-coated, white/non-colored paper, black image color, not printed on the non-thermal coated side, standard sensitivity and **Product 2**-- Thermal paper in jumbo rolls, with a target caliper of 2.2 to 2.5 mils (55.9 to 63.5 microns), with a target basis weight of at least 49.9 gsm and up to 60 gsm, not top-coated, white/non-colored paper, black image color, not printed on the non-thermal coated side, standard sensitivity. *Id.*

[170] CR/PR at Table V-8.

percent of) quarterly comparisons at margins ranging between *** and *** percent, involving *** square feet of cumulated subject imports.[171] We have also considered purchasers' responses to the lost sales/lost revenue survey, which we acknowledge do not specifically identify the products in question as LWTP or HWTP. Fifteen out of nineteen purchasers reported purchasing subject imports instead of domestic products. Twelve out of fourteen responding purchasers reported that subject imports were priced lower than domestic products, and seven out of fifteen responding purchasers reported that price was a primary reason for purchasing subject imports rather than domestic product. These purchasers confirmed purchasing *** short tons of subject imports rather than the domestic product primarily because of the imports' lower prices.[172] Petitioners also provided some correspondence ***.[173] Accordingly, the available information indicates that cumulated subject imports of LWTP are frequently priced lower than domestic products.

We have also considered price trends for the two LWTP pricing products. U.S. prices for pricing product 1 increased from $*** per million square feet (MSF) in the first quarter of 2017 to a period peak of $*** per MSF in the fourth quarter of 2018, before declining to $*** per MSF in the second quarter of 2020.[174] U.S. prices for pricing product 2 increased from $*** per MSF in the first quarter of 2017 to a period peak of $*** per MSF in the first quarter of 2019, and then declined irregularly to $*** per MSF in the second quarter of 2020.[175] Prices for

[171] CR/PR at Table V-8.

[172] CR/PR at Table V-11.

[173] Petitioners Postconference Br. at Exhibits 26, ***, ***, ***, ***, ***, ***, (***) and 27, ***, ***, ***, (***). Although it is not entirely clear, the emails appear ***. *Id.*

[174] CR/PR at Table V-3.

[175] CR/PR at Table V-4.

subject imports also typically declined during the latter portion of the POI from period peaks reached in the second half of 2018 or the first half of 2019.[176]

The current record does not permit us to make a finding as to whether price declines for domestically produced products during the latter part of the POI were caused by subject import competition. On the one hand, some of the emails that petitioners placed on the record *** and five purchasers reported that domestic producers had lowered prices to compete with lower-priced subject imports.[177] On the other hand, while prices were declining in 2019 and interim 2020, the facts available indicate that raw materials costs and apparent consumption were also declining.[178] We intend to explore these issues further in any final phase of the investigations.

We have also considered whether cumulated subject imports of LWTP prevented price increases that otherwise would have occurred. The available information indicates that the domestic jumbo roll producers and converters' ratio of COGS to net sales was *** percent in 2017, *** percent in 2018, and *** percent in 2019, a figure lower than that of 2017.[179] In light of the available data, including the lack of product-specific information for the domestic

[176] CR/PR at Tables V-3-4.

[177] Petitioners Postconference Br. at Exhibits 26, 27; CR/PR at V-21. Specifically, five of nineteen purchasers reported that U.S. producers had reduced prices to compete with lower-priced subject imports, with price reductions ranging from *** percent. CR/PR at V-21. The record does not indicate whether either the emails or the lost revenue reports pertain to LWTP or HWTP. *Id.*

[178] Available data indicate that unit raw materials costs for both producers of jumbo rolls and converters peaked in 2018 and declined thereafter. CR/PR at Tables VI-2, VI-3.

[179] CR/PR at Table C-1. The ratio of COGS to net sales for jumbo roll producers and converters was *** percent in interim 2019 and lower at *** percent in interim 2020. *Id.*

industry's COGS, we do not make a finding that subject imports prevented price increases for the domestically produced LWTP that otherwise would have occurred to a significant degree.

In sum, the record in the preliminary phase of these investigations indicates that cumulated subject imports of LWTP are frequently priced lower than domestically produced LWTP products. In light of this, and the other available data in the record, including those pertaining to lost sales, we cannot find that the subject imports did not have significant price effects.

3. Impact of the Subject Imports[180]

Section 771(7)(C)(iii) of the Tariff Act provides that the Commission, in examining the impact of the subject imports on the domestic industry, "shall evaluate all relevant economic factors which have a bearing on the state of the industry." These factors include output, sales, inventories, capacity utilization, market share, employment, wages, productivity, gross profits, net profits, operating profits, cash flow, return on investment, return on capital, ability to raise capital, ability to service debt, research and development, and factors affecting domestic prices. No single factor is dispositive and all relevant factors are considered "within the context of the business cycle and conditions of competition that are distinctive to the affected industry."[181]

[180] In its notice initiating the antidumping duty investigation on thermal paper from Germany, Japan, Korea, and Spain, Commerce reported estimated dumping margins ranging 9.20 to 58.90 percent for thermal paper from Germany, 129.86 to 140.25 percent for thermal paper from Japan, 56.60 to 58.24 percent for thermal paper from Korea, and 32.68 to 41.45 percent for thermal paper from Spain. *Commerce Initiation Notice*, 85 Fed. Reg. at 69584.

[181] 19 U.S.C. § 1677(7)(C)(iii). This provision was amended by the Trade Preferences Extension Act of 2015, Pub. L. 114-27.

As explained above, the available information regarding the domestic LWTP industry consists of data from jumbo roll producers of LWTP and HWTP and converters of LWTP. These data show that jumbo roll producers' capacity showed little variation from 2017 to 2019: this capacity was *** short tons in 2017, *** short tons in 2018, and *** short tons in 2019.[182] Domestic jumbo roll producers' production increased from *** short tons in 2017 to *** short tons in 2018, and declined to *** short tons in 2019, a level below that of 2017.[183] Domestic jumbo roll producers' capacity utilization followed a similar trend: it was *** percent in 2017, *** percent in 2018, and *** percent in 2019.[184] Jumbo roll producers' inventories declined each year from 2017 to 2019: they were *** short tons in 2017, *** short tons in 2018, and *** short tons in 2019.[185] LWTP converters' capacity was *** short tons in 2017, *** short tons in 2018, and *** short tons in 2019.[186] LWTP converters' production was *** short tons in 2017, *** short tons in 2018, and *** short tons in 2019.[187] Converters' capacity utilization was *** percent in 2017, *** percent in 2018, and *** percent in 2019.[188] LWTP converters' inventories

[182] CR/PR at Table C-1. Domestic jumbo roll producers' capacity was *** short tons in interim 2019 and *** short tons in interim 2020. *Id.*

[183] CR/PR at Table C-1. Domestic jumbo roll producers' production was *** short tons in interim 2019 and lower at *** short tons in interim 2020. *Id.*

[184] CR/PR at Table C-1. Jumbo roll producers' capacity utilization was *** percent in interim 2019 and *** percent in interim 2020. *Id.*

[185] CR/PR at Table C-1. Jumbo roll producers' inventories were *** short tons in interim 2019 and higher at *** short tons in interim 2020. *Id*.

[186] CR/PR at Table C-1. As discussed above in section IV.C. because of the manner in which *** reported data, annual comparisons of the data reported by converters are not meaningful.

LWTP converters' capacity was *** short tons in interim 2019 and *** short tons in interim 2020. *Id.*

[187] CR/PR at Table C-1. LWTP converters' production was *** short tons in interim 2019 and *** short tons in interim 2020. *Id.*

[188] CR/PR at Table C-1. LWTP converters' capacity utilization was *** percent in interim 2019 and *** percent in interim 2020. *Id.*

were *** short tons in 2017, *** short tons in 2018, and *** short tons in 2019.[189] The available information indicates that domestic producers' quantity of U.S. shipments was *** short tons in 2017, *** short tons in 2018, and *** short tons in 2019.[190] The share of the U.S. LWTP market held by domestic producers increased from *** percent in 2017 to *** percent in 2018, and then declined to *** percent in 2019, a level lower than that of 2017.[191]

The number of PRWs for domestic jumbo roll producers and converters was *** in 2017, *** in 2018, and *** in 2019.[192] Wages paid were $*** in 2017, $*** in 2018, and $*** in 2019.[193] Jumbo roll producers' productivity increased from *** units per hour in 2017 to *** units per hour in 2018, and declined to *** units per hour in 2019, a figure higher than that of 2017.[194] Unit labor costs for jumbo roll producers declined from $*** in 2017 to $*** in 2018, and increased to $*** in 2019, a figure higher than that of 2017.[195] LWTP converters' productivity was *** units per hour in 2017, *** units per hour in 2018, and *** units per hour in 2019.[196] Unit labor costs for converters was $*** in 2017, $*** in 2018, and $*** in 2019.[197]

[189] CR/PR at Table C-1. LWTP converters inventories were *** short tons in interim 2019 and *** short tons in interim 2020. *Id*.

[190] CR/PR at Table C-1. Domestic producers' U.S. shipments were *** short tons in interim 2019 and *** short tons in interim 2020. *Id.*

[191] CR/PR at Table C-1. The share of the U.S. LWTP market held by domestic producers was *** percent in interim 2019 and *** percent in interim 2020. *Id.*

[192] CR/PR at Table C-1. The number of PRWs was *** in interim 2019 and *** in interim 2020. *Id.*

[193] CR/PR at Table C-1. Wages paid were $*** in interim 2019 and $*** in interim 2020.

[194] CR/PR at Table C-1. Jumbo roll producers' productivity was *** units per hour in interim 2019 and higher at *** units per hour in interim 2020. *Id.*

[195] CR/PR at Table C-1. Unit costs were $*** in interim 2019 and $*** in interim 2020. *Id.*

[196] CR/PR at Table C-1. Converters' productivity was *** units per hour in interim 2019 and *** units per hour in interim 2020. *Id.*

[197] CR/PR at Table C-1. Unit costs were $*** in interim 2019 and $*** in interim 2020. *Id.*

Total net sales revenues for jumbo roll producers and LWTP converters were $*** in 2017, $*** in 2018, and $*** in 2019.[198] Total COGS were $*** in 2017, $*** in 2018, and $*** in 2019.[199] The ratio of COGS to net sales was *** percent in 2017, *** percent in 2018, and *** percent in 2019.[200] Jumbo roll producers and LWTP converters' gross profits were $*** in 2017, $*** in 2018, and $*** in 2019.[201] Their operating income was $*** in 2017, $*** in 2018, and $*** in 2019.[202] Their ratio of operating income to net sales was *** percent in 2017, *** percent in 2018, and *** percent in 2019.[203] Net income was $*** in 2017, $*** in 2018, and $*** in 2019.[204] Capital expenditures were $*** in 2017, $*** in 2018, and $*** in 2019.[205] Research and development ("R&D") expenses were $*** in 2017, $*** in 2018, and $*** in 2019.[206]

The record in the preliminary phase of these investigations indicates substantial volumes of cumulated subject imports that were good substitutes for the domestic like product entered the U.S. market during the POI. The available data indicate that these subject imports were frequently priced lower than domestic LWTP and there is information in the record

[198] CR/PR at Table C-1. Total net sales values were $*** in interim 2019 and $*** in interim 2020. *Id.*

[199] CR/PR at Table C-1. Total COGS were $*** in interim 2019 and $*** in interim 2020. *Id.*

[200] CR/PR at Table C-1. The ratio was *** percent in interim 2019 and *** percent in interim 2020. *Id.*

[201] CR/PR at Table C-1. Gross profits were $*** in interim 2019 and $*** in interim 2020. *Id.*

[202] CR/PR at Table C-1. Operating income was $*** in interim 2019 and $*** in interim 2020. *Id.*

[203] CR/PR at Table C-1. This ratio was *** percent in interim 2019 and *** percent in interim 2020. *Id.*

[204] CR/PR at Table C-1. Net income was $*** in interim 2019 and $*** in interim 2020. *Id.*

[205] CR/PR at Table C-1. Capital expenditures were $*** in interim 2019 and $*** in interim 2020. *Id.*

[206] CR/PR at Table C-1. R&D expenses were $*** in interim 2019 and $*** in interim 2020. *Id.*

indicating confirmed lost sales. In light of this, as well as the lack of product-specific data in the record, the record does not support a finding that the subject imports did not cause the domestic industry's output and revenues to be appreciably lower than they would have been otherwise. Accordingly, we cannot find the subject imports did not have a significant adverse impact on the domestic LWTP industry.

We have also considered the role of factors other than subject imports. As discussed above, the available information indicates that nonsubject imports played a very small role in the U.S. LWTP market.[207] In any final phase of these investigations, we intend to further explore allegations of supply constraints in the market and any resulting impact on price movements and subject import volumes.

D. Reasonable Indication of Material Injury by Reason of Subject Imports of HWTP[208]

1. Volume of Subject Imports

As discussed above, because the record does not contain data limited to HWTP, we use as the facts available the data in the record concerning cumulated subject imports of jumbo rolls of LWTP and HWTP. These imports increased from *** short tons in 2017 to *** short tons in 2018 and *** short tons in 2019.[209] As discussed above, the available information

[207] We also observe that record evidence indicates that domestic producers experienced supply constraints, related at least in part to the leuco dye shortage. We will further explore any such supply constraints in any final phase of these investigations.

[208] The legal standards pertaining to our analyses of volume, price effects, and impact are the same as those stated in section VII.C. above. The magnitude of the alleged dumping margins was addressed in section VII.C.3. above.

[209] CR/PR at Table IV-3. The available information indicates that the volume of cumulated subject imports of jumbo rolls was *** short tons in interim 2019 and lower at *** short tons in interim 2020. *Id.*

indicates that the share of the U.S. HWTP market held by cumulated subject imports declined from *** percent in 2017 to *** percent in 2018, and increased to *** percent in 2019, a figure greater than that of 2017.[210]

Based on the facts available, we cannot conclude that volume of cumulated subject HWTP imports was not significant in absolute terms and relative to apparent U.S. consumption.

2. Price Effects of the Subject Imports

As discussed above, we find that the record in the preliminary phase of these investigations indicates that there is a high degree of substitutability between subject imports and domestic products of the same product type, and that price is an important purchasing factor. Two of the four pricing products on which the Commission collected quarterly f.o.b. pricing data are jumbo rolls that have a basis weight range that largely encompasses HWTP.[211] These data represent the facts available regarding prices for HWTP products.

For these two products, cumulated subject imports undersold the domestic like product in *** out of *** (or *** percent of) quarterly comparisons, at margins ranging between *** and *** percent, involving *** MSF of cumulated subject imports.[212] Cumulated subject imports oversold the domestic like product in the remaining *** (or *** percent of) quarterly

[210] CR/PR at Table C-2. The available information indicates that the share of the U.S. HWTP market held by cumulated subject imports was *** percent in both interim 2019 and interim 2020. *Id.*

[211] CR/PR at V-4. These two pricing products are **Product 3**-- Thermal paper in jumbo rolls, with a target caliper of 2.9 to 3.4 mils (76.0 to 84.0 microns), with a target basis weight of at least 67.5 g/m2 and up to 80 g/m2, not top-coated, white/non-colored paper, black image color, not printed on the non-thermal coated side, standard sensitivity, and **Product 4**-- Thermal paper in jumbo rolls, with a target caliper of 2.9 to 3.4 mils (76.0 to 84.0 microns), with a target basis weight of at least 67.5 g/m2 and up to 80 g/m2, top-coated, white/non-colored paper, black image color, not printed on the non-thermal coated side, standard sensitivity. *Id.*

[212] CR/PR at Table V-8.

comparisons at margins ranging between *** and *** percent, involving *** MSF of cumulated subject imports.[213]

We have also considered purchasers' responses to the lost sales/lost revenue survey, which constitute the facts available although, as discussed in section VII.C.2. above, the record does not indicate whether responses concern LWTP or HWTP. The record indicates that twelve out of fourteen responding purchasers reported that subject imports were priced lower than domestic products, seven out of fifteen responding purchasers reported that price was a primary reason for purchasing subject imports rather than domestic product, and that these purchasers confirmed purchasing *** short tons of subject imports rather than the domestic product primarily because of the imports' lower prices.[214] Accordingly, the available information indicates that cumulated subject imports of HWTP are frequently priced lower than domestic products.

We have also considered price trends for the two pricing products that represent the available information regarding HWTP pricing. U.S. prices for pricing product 3 increased from $*** per MSF in the first quarter of 2017 to a period peak of $*** per MSF in the first quarter of 2019, and then declined to $*** per MSF in the second quarter of 2020.[215] U.S. prices for pricing product 4 increased from $*** per MSF in the first quarter of 2017 to a period peak of $*** per MSF in the first quarter of 2019, before declining to $*** per MSF in the second

[213] CR/PR at Table V-8.

[214] CR/PR at Table V-11. There were also reports of lower prices for subject imports in the petitioners' correspondence discussed in section VII.C.2. above.

[215] CR/PR at Table V-5.

quarter of 2020.[216] Prices for subject imports also typically declined during the latter portion of the POI from period peaks reached in the second half of 2018 or the first half of 2019.[217]

The current record does not permit us to make a finding as to whether price declines for domestically produced products during the latter part of the POI were caused by subject import competition. On the one hand, the domestic industry's prices for both products declined in the latter portion of the POI and the price of one product declined overall, and five purchasers reported that domestic producers had lowered prices to compete with lower-priced subject imports.[218] Additionally, petitioners placed some emails on the record that ***.[219] On the other hand, while prices were declining in 2019 and interim 2020, the facts available indicate that raw materials costs and apparent consumption were also declining.[220] We intend to explore these issues further in any final phase of the investigations.

We have also considered whether cumulated subject imports prevented price increases that otherwise would have occurred. The available information indicates that domestic jumbo roll producers' ratio of COGS to net sales was generally stable between 2017 and 2019: it was *** percent in 2017, *** percent in 2018, and *** percent in 2019.[221] In light of the available

[216] CR/PR at Table V-6.

[217] CR/PR at Tables V-5 – V-6. Subject import pricing observations for Product 4 were sporadic for most of the subject countries.

[218] CR/PR at V-21. Specifically, five of nineteen purchasers reported that U.S. producers had reduced prices to compete with lower-priced subject imports, with price reductions ranging from *** percent. CR/PR at V-21.

[219] *See* Petitioners Postconference Br. at Exhibits 26, 27. The record does not indicate whether either the emails or the lost revenue reports pertain to LWTP or HWTP. *Id.*

[220] Available data indicate that unit raw materials costs for producers of jumbo rolls peaked in 2018 and declined thereafter. CR/PR at Table VI-2.

[221] CR/PR at Table C-2. Domestic coaters' ratio of COGS to net sales was *** percent in interim 2019 and *** percent in interim 2020. *Id.*

data, including the lack of product-specific information on the domestic industry's COGS, we do not make a finding that subject imports prevented price increases for the domestically produced HWTP that otherwise would have occurred to a significant degree.

In sum, the available information on the record in the preliminary phase of these investigations indicates that cumulated subject imports are frequently priced lower than domestically produced HWTP products. In light of this, and the other available data in the record, including those pertaining to lost sales, we do not find that the subject imports did not have significant price effects.

3. Impact of the Subject Imports

As explained above, the available information regarding the domestic HWTP industry consists of data from producers of jumbo rolls of HWTP and LWTP. These producers' capacity was generally stable between 2017 and 2019: it was *** short tons in 2017, *** short tons in 2018, and *** short tons in 2019.[222] Their production increased from *** short tons in 2017 to *** short tons in 2018, and declined to *** short tons in 2019, a level below that of 2017.[223] Their capacity utilization, U.S. shipments, and share of apparent U.S. consumption displayed similar trends. Capacity utilization was *** percent in 2017, *** percent in 2018, and *** percent in 2019.[224] Their U.S. shipments were *** short tons in 2017, *** short tons in 2018,

[222] CR/PR at Table C-2. These producers' capacity was *** short tons in interim 2019 and *** short tons in interim 2020. *Id.*

[223] CR/PR at Table C-2. Production was *** short tons in interim 2019 and lower at *** short tons in interim 2020. *Id.*

[224] CR/PR at Table C-2. Capacity utilization was *** percent in interim 2019 and lower at *** percent in interim 2020. *Id.*

and *** short tons in 2019.[225] Their share of apparent U.S. consumption was *** percent in 2017, *** percent in 2018, and *** percent in 2019.[226] Jumbo roll producers' inventories declined each year from 2017 to 2019: they were *** short tons in 2017, *** short tons in 2018, and *** short tons in 2019.[227]

Jumbo roll producers' PRWs declined from *** in 2017 to *** in 2018 and *** in 2019.[228] Wages paid declined from $*** in 2017 to $*** in 2018 and $*** in 2019.[229] Productivity increased from *** units per hour in 2017 to *** units per hour in 2018, and declined to *** units per hour in 2019, a figure above that of 2017.[230] Unit labor costs declined from $*** in 2017 to $*** in 2018, and increased to $*** in 2019, a level below that of 2017.[231]

Jumbo roll producers' net sales revenues increased from $*** in 2017 to $*** in 2018, and declined to $*** in 2019, a level above that of 2017.[232] Total COGS increased from $*** in 2017 to $*** in 2018, and declined to $*** in 2019, a level above that of 2017.[233] As previously

[225] CR/PR at Table C-2. U.S. shipments were *** short tons in interim 2019 and lower at *** short tons in interim 2020. *Id.*

[226] CR/PR at Table C-2. Their share of apparent U.S. consumption was *** percent in both interim 2019 and interim 2020. *Id.*

[227] CR/PR at Table C-2. Inventories were *** short tons in interim 2019 and higher at *** short tons in interim 2020. *Id*.

[228] CR/PR at Table C-2. The number of PRWs was *** in interim 2019 and higher at *** in interim 2020. *Id.*

[229] CR/PR at Table C-2. Wages paid were $*** in interim 2019 and lower at $*** in interim 2020.

[230] CR/PR at Table C-2. Productivity was *** units per hour in interim 2019 and higher at *** units per hour in interim 2020. *Id.*

[231] CR/PR at Table C-2. Unit costs were $*** in interim 2019 and higher at $*** in interim 2020. *Id.*

[232] CR/PR at Table C-2. Total net sales values were $*** in interim 2019 and lower at $*** in interim 2020. *Id.*

[233] CR/PR at Table C-2. Total COGS were $*** million in interim 2019 and lower at $*** million in interim 2020. *Id.*

stated, the ratio of COGS to net sales was generally stable: it was *** percent in 2017, *** percent in 2018, and *** percent in 2019.[234] Gross profits increased from $*** in 2017 to $*** in 2018, and declined to $*** in 2019, a level above that of 2017.[235] Operating income increased from $*** in 2017 to $*** in 2018 and declined to $*** in 2019, a level above that of 2017.[236] The ratio of operating income to net sales increased from *** percent in 2017 to *** percent in 2018, and declined to *** percent in 2019, a level above that of 2017.[237] Net income increased from $*** in 2017 to $*** in 2018 and $*** in 2019.[238] Capital expenditures were $*** in 2017, $*** in 2018, and $*** in interim 2019.[239] R&D expenses were $*** in 2017, $*** in 2018, and $*** in 2019.[240]

The record in the preliminary phase of these investigations indicates that substantial volumes of cumulated subject imports that were good substitutes for the domestic like product entered the U.S. market during the POI. The available data indicate that these subject imports were frequently priced lower than domestic HWTP, and there is information in the record indicating confirmed lost sales. In light of this, as well as the lack of product-specific data in the record, the record does not support a finding that the subject imports did not cause the

[234] CR/PR at Table C-2. This ratio was *** percent in interim 2019 and lower at *** percent in interim 2020. *Id.*

[235] CR/PR at Table C-2. Gross profits were $*** in interim 2019 and higher at $*** in interim 2020. *Id.*

[236] CR/PR at Table C-2. Operating income was $*** in interim 2019 and higher at $*** in interim 2020. *Id.*

[237] CR/PR at Table C-2. This ratio was *** percent in interim 2019 and higher at *** percent in interim 2020. *Id.*

[238] CR/PR at Table C-2. Net income was $*** in interim 2019 and higher at $*** in interim 2020. *Id.*

[239] CR/PR at Table C-2. Capital expenditures were $*** in interim 2019 and $*** in interim 2020. *Id.*

[240] CR/PR at Table C-2. R&D expenses were $*** in interim 2019 and $*** in interim 2020. *Id.*

domestic industry's output and revenues to be appreciably lower than they would have been otherwise. Accordingly, we cannot find the subject imports did not have a significant adverse impact on the domestic industry.

We have also considered the role of factors other than subject imports. As discussed above, the available information indicates that nonsubject imports played a very small role in the U.S. HWTP market. In any final phase of these investigations, we intend to further explore allegations of supply constraints in the market and any resulting impact on price movements and subject import volumes.

VIII. Conclusion

Because the record as a whole does not contain clear and convincing evidence that there is no material injury by reason of cumulated subject imports for either the LWTP or HWTP domestic industries, we have made affirmative determinations. Accordingly, we determine that there is a reasonable indication that the LWTP and HWTP industries in the United States are materially injured by reason of subject imports of thermal paper from Germany, Japan, Korea, and Spain that are allegedly sold in the United States at less than fair value.

Part I: Introduction

Background

These investigations result from petitions filed with the U.S. Department of Commerce ("Commerce") and the U.S. International Trade Commission ("USITC" or "Commission") by Appvion Operations, Inc. (Appleton, Wisconsin), and Domtar Corporation (Fort Mill, South Carolina) on October 7, 2020, alleging that an industry in the United States is materially injured and threatened with material injury by reason of less-than-fair-value ("LTFV") imports of thermal paper[1] from Germany, Japan, Korea, and Spain. The following tabulation provides information relating to the background of these investigations.[2] [3]

Effective date	Action
October 7, 2020	Petitions filed with Commerce and the Commission; institution of Commission investigations (85 FR 65073, October 14, 2020)
October 27, 2020	Commerce's notice of initiation (85 FR 69580, November 3, 2020)
October 28, 2020	Commission's conference
November 20, 2020	Scheduled date for the Commission's vote
November 23, 2020	Scheduled date for the Commission's determinations
December 1, 2020	Scheduled date for the Commission's views

Statutory criteria

Section 771(7)(B) of the Tariff Act of 1930 (the "Act") (19 U.S.C. § 1677(7)(B)) provides that in making its determinations of injury to an industry in the United States, the Commission--

> *shall consider (I) the volume of imports of the subject merchandise, (II) the effect of imports of that merchandise on prices in the United States for domestic like products, and (III) the impact of imports of such merchandise on domestic producers of domestic like products, but only in the context of production operations within the United States; and. . .*

[1] See the section entitled "The subject merchandise" in Part I of this report for a complete description of the merchandise subject in this proceeding.

[2] Pertinent *Federal Register* notices are referenced in appendix A, and may be found at the Commission's website (www.usitc.gov).

[3] A list of witnesses appearing at the conference is presented in appendix B of this report.

may consider such other economic factors as are relevant to the determination regarding whether there is material injury by reason of imports.

Section 771(7)(C) of the Act (19 U.S.C. § 1677(7)(C)) further provides that--[4]

In evaluating the volume of imports of merchandise, the Commission shall consider whether the volume of imports of the merchandise, or any increase in that volume, either in absolute terms or relative to production or consumption in the United States is significant.. . .In evaluating the effect of imports of such merchandise on prices, the Commission shall consider whether. . .(I) there has been significant price underselling by the imported merchandise as compared with the price of domestic like products of the United States, and (II) the effect of imports of such merchandise otherwise depresses prices to a significant degree or prevents price increases, which otherwise would have occurred, to a significant degree.. . . In examining the impact required to be considered under subparagraph (B)(i)(III), the Commission shall evaluate (within the context of the business cycle and conditions of competition that are distinctive to the affected industry) all relevant economic factors which have a bearing on the state of the industry in the United States, including, but not limited to. . . (I) actual and potential decline in output, sales, market share, gross profits, operating profits, net profits, ability to service debt, productivity, return on investments, return on assets, and utilization of capacity, (II) factors affecting domestic prices, (III) actual and potential negative effects on cash flow, inventories, employment, wages, growth, ability to raise capital, and investment, (IV) actual and potential negative effects on the existing development and production efforts of the domestic industry, including efforts to develop a derivative or more advanced version of the domestic like product, and (V) in {an antidumping investigation}, the magnitude of the margin of dumping.

In addition, Section 771(7)(J) of the Act (19 U.S.C. § 1677(7)(J)) provides that—[5]

(J) EFFECT OF PROFITABILITY.—The Commission may not determine that there is no material injury or threat of material injury to an industry in the United States merely because that industry is profitable or because the performance of that industry has recently improved.

[4] Amended by PL 114-27 (as signed, June 29, 2015), Trade Preferences Extension Act of 2015.
[5] Amended by PL 114-27 (as signed, June 29, 2015), Trade Preferences Extension Act of 2015.

Organization of report

Part I of this report presents information on the subject merchandise, alleged subsidy/dumping margins, and domestic like product. Part II of this report presents information on conditions of competition and other relevant economic factors. Part III presents information on the condition of the U.S. industry, including data on capacity, production, shipments, inventories, and employment. Parts IV and V present the volume of subject imports and pricing of domestic and imported products, respectively. Part VI presents information on the financial experience of U.S. producers. Part VII presents the statutory requirements and information obtained for use in the Commission's consideration of the question of threat of material injury as well as information regarding nonsubject countries.

Market summary

Thermal paper generally is used to produce point-of-sale receipts, labels, tickets, and tags. The leading U.S. producers of thermal paper are Appvion Operations Inc., Domtar Corporation, and Kanzaki Specialty Papers, Inc., while leading producers of thermal paper outside the United States include Papierfabrik August Koehler SE of Germany, Oji Imaging Media, Nippon Paper Industries, and Mitsubishi Paper Mills Limited of Japan, Hansol Paper Co., Ltd. of Korea, and Torraspapel SA of Spain. Among the leading U.S. importers are *** (Germany), *** (Japan), *** (Korea), and *** (Spain). Leading importers of thermal paper from nonsubject countries include ***.[6] U.S. purchasers of thermal paper are firms that purchase thermal paper and transform paper rolls into intermediate products such as paper receipts and/or labels; leading purchasers include ***.

Apparent U.S. consumption of thermal paper totaled approximately *** short tons ($***) in 2019. Currently, three firms are known to produce thermal paper in the United States. U.S. producers' U.S. shipments of thermal paper totaled *** short tons ($***) in 2019, and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from subject sources totaled *** short tons ($***) in 2019 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from nonsubject sources totaled ***

[6] Additional information on nonsubject countries can be found in Part VII.

short tons ($***) in 2019 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value.

Summary data and data sources

A summary of data collected in these investigations is presented in appendix C, table C-1. Except as noted, U.S. industry data are based on questionnaire responses of six firms that accounted for the majority of U.S. production of thermal paper during 2019. U.S. import data are based on the questionnaire responses of sixteen firms which are believed to account for the majority of subject imports in 2019.

Previous and related investigations

Certain lightweight ("LW") thermal paper has been the subject of prior antidumping and countervailing duty investigations in the United States. The prior investigations resulted from petitions filed by Appleton Papers, Inc. (now Appvion, Inc.), on September 19, 2007, alleging that an industry in the United States is materially injured and threatened with material injury by reason of subsidized imports of certain LW thermal paper from China and less-than-fair-value ("LTFV") imports of certain LW thermal paper from China and Germany. The Commission determined on November 17, 2008 that a domestic industry was threatened with material injury by reason of subsidized and LTFV imports of certain LW thermal paper from China and LTFV imports of certain LW thermal paper from Germany.[7] Commerce published the countervailing duty order on subject imports of certain LW thermal paper from China on November 24, 2008.[8] Commerce published the antidumping duty orders on certain LW thermal paper from China and Germany on November 24, 2008.[9]

Subsequently, Papierfabrik August Koehler AG ("Koehler Germany" or "Koehler") and Koehler America, Inc. ("Koehler America"), respectively an exporter and importer of certain LW thermal paper from Germany, appealed the Commission's determination with respect to certain LW thermal paper from Germany to the Court of International Trade ("CIT"). The CIT affirmed the Commission's determination.[10] On appeal, the United States Court of Appeals for the Federal Circuit vacated the judgment of the CIT, holding that the Commission improperly failed to consider certain materials Koehler introduced, consisting of a worksheet prepared in

[7] *Certain Lightweight Thermal Paper from China and Germany*, *Inv. Nos. 701-TA-451 and 731-TA-1126-1127 (Final)*, USITC Publication 4043, November 2008.

[8] 73 FR 70958, November 24, 2008.

[9] 73 FR 70959, November 24, 2008.

[10] *Papierfabrik August Koehler AG v. United States*, 675 F. Supp.2d 1172 (Ct. Int'l Trade 2009).

the Commerce dumping investigation containing intermediate dumping margin calculations concerning certain types of certain LW thermal paper, including certain LW thermal paper having basis weight of 48 grams per square meter.[11] On July 1, 2011, the Commission instituted remand proceedings.[12] On remand, the Commission again determined that a domestic industry was threatened with material injury by reason of LTFV imports from Germany.[13]

On October 1, 2013, the Commission instituted five-year reviews concerning LW? thermal paper from China and Germany.[14] On January 23, 2014, it determined to conduct a full review for each order under review.[15] On January 16, 2015, the Commission determined that revocation of the antidumping duty and countervailing duty orders on lightweight thermal paper from China would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time, and that revocation of the antidumping duty order on lightweight thermal paper from Germany would not be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.[16]

Nature and extent of alleged sales at LTFV

Alleged sales at LTFV

On November 3, 2020, Commerce published a notice in the *Federal Register* of the initiation of its antidumping duty investigations on thermal paper from Germany, Japan, Korea, and Spain.[17] Commerce has initiated antidumping duty investigations based on estimated dumping margins of 9.20 to 58.90 percent for thermal paper from Germany,[18] 129.86 to 140.25 percent for thermal paper from Japan,[19] 56.60 to 58.24 percent for thermal paper from Korea,[20] and 32.68 to 41.45 percent for thermal paper from Spain.[21]

---

[11] *Papierfabrik August Koehler AG v. United States*, App. No. 2010–1147 (Fed. Cir. January 11, 2011).

[12] *Certain Lightweight Thermal Paper From Germany; Remand Proceedings*, 76 FR 42137, July 18, 2011.

[13] *Certain Lightweight Thermal Paper from China and Germany, Investigation Nos. 701-TA-451 and 731-TA-1126-1127 (Remand),* USITC Publication 4334, September 2011.

[14] 78 FR 60313, October 1, 2013.

[15] 79 FR 6218, February 3, 2014.

[16] 80 FR 3252, January 22, 2015. *See also Lightweight Thermal Paper from China and Germany, Investigation Nos. 701-TA-451 and 731-TA-1126-1127 (Review),* USITC Publication 4511, January 2015.

[17] 85 FR 69580, November 3, 2020.

[18] Thermal Paper from Germany: Antidumping Duty Investigation Initiation Checklist, p. 8.

[19] Thermal Paper from Japan: Antidumping Duty Investigation Initiation Checklist, p. 7.

[20] Thermal Paper from Korea: Antidumping Duty Investigation Initiation Checklist, p. 8.

[21] Thermal Paper from Spain: Antidumping Duty Investigation Initiation Checklist, pp. 7-8.

The subject merchandise

Commerce's scope

In the current proceeding, Commerce has defined the scope as follows:[22]

> *The scope of these investigations covers thermal paper in the form of ''jumbo rolls'' and certain ''converted rolls.'' The scope covers jumbo rolls and converted rolls of thermal paper with or without a base coat (typically made of clay, latex, and/or plastic pigments, and/or like materials) on one or both sides; with thermal active coating(s) (typically made of sensitizer, dye, and coreactant, and/or like materials) on one or both sides; with or without a top coat (typically made of pigments, polyvinyl alcohol, and/or like materials), and without an adhesive backing. Jumbo rolls are defined as rolls with an actual width of 4.5 inches or more, an actual weight of 65 pounds or more, and an actual diameter of 20 inches or more (jumbo rolls). All jumbo rolls are included in the scope regardless of the basis weight of the paper. Also included in the scope are ''converted rolls'' with an actual width of less than 4.5 inches, and with an actual basis weight of 70 grams per square meter (gsm) or less.*
>
> *The scope of these investigations covers thermal paper that is converted into rolls with an actual width of less than 4.5 inches and with an actual basis weight of 70 gsm or less in third countries from jumbo rolls produced in the subject countries.*

Tariff treatment

Based upon the scope set forth by the Department of Commerce, information available to the Commission indicates that the merchandise subject to these investigations is provided for in subheadings 4811.90.80 and 4811.90.90 (statistical reporting numbers 4811.90.8030 and 4811.90.9030) of the Harmonized Tariff Schedule of the United States ("HTS"). The 2020 general rate of duty is free for both subheadings. Decisions on the tariff classification and treatment of imported goods are within the authority of U.S. Customs and Border Protection.

[22] 85 FR 69580, November 3, 2020.

The product

Description and applications

Thermal paper is a paper coated with chemicals that react to form images when exposed to heat. Thermal paper can be used in special printers to create an image without ribbons or other consumables (other than the paper itself). When imaging, the thermal paper containing the dye is passed between the thermal print head and the platen roll in the printer. The thermal head consists of tiny heating elements lying side-by-side across the width of the paper. As the paper passes under the head, the computer instructs certain heater elements to heat up. Where the heat is in contact with the paper, the dye is activated to produce an image. Heater elements heat up and cool down each time the paper advances forward, creating a colored or black microdot on the paper. The arrangement of elements and paper movement create flexible graphic images on the thermal paper.

Thermal paper comes in a variety of basis weights measured in grams per square meter ("g/m^2" or "gsm") and in a variety of calipers (thicknesses). It may or may not be top-coated.[23]

Thermal paper is used to make point-of-sale ("POS") products, such as ATM receipts, coupons, credit card receipts, gas pump receipts, kiosk receipts/output, parking receipts, POS receipts, portable printer receipts, prescription receipts, and retail receipts. Thermal paper used in POS applications tends to be in basis weight ranges of 44 to 75 gsm.

Thermal paper is also used to produce thermal labels. Thermal label paper is generally sold to laminators who apply a self-adhesive material to the back side of the thermal paper to create a sandwich of face stock, liner, and adhesive. Laminators are sometimes referred to as pressure-sensitive adhesive (or "PSA") coaters. Thermal labels are used in a variety of end uses such as address labels, distribution labels, product labels, pharmaceuticals, warehouse labels, and deli and bakery labels. Thermal label paper is typically sold in basis ranges of 70 to 85 gsm.

Thermal paper is also used to produce a broad variety of tickets and tags. For example, tickets for lotteries, casino coinless slot machines, sports betting, parking violations, movie theaters, amusement parks, and ski lifts use thermal paper. Thermal paper is used to make airline tickets/boarding passes, baggage tags, and retail hang tags. It is also used in various medical/healthcare applications, including pharmacy labels, test tube labels, medical

[23] A top-coat, when applied, is typically made of pigments, polyvinyl alcohol, and/or like materials and is intended to provide environmental protection, an improved surface for press printing, and/or wear protection for the thermal print head.

charts/records, and prescriptions. Thermal paper used in ticket and tag applications is typically sold in basis ranges of 80 to 220 gsm.

Manufacturing processes

There are four primary stages in the production of thermal paper. The first stage is the production of pulp. The second is the production of base paper, either by the thermal paper manufacturer or by another paper manufacturer.[15] When the thermal paper producer also makes the pulp and/or base paper, it is referred to as an "integrated" producer. When the thermal paper producer uses base paper made by another company, it is referred to as a "coater."

The second stage is coating. The base paper is coated by applying different coating layers to the functional (imaging) sides of the sheet. Raw materials include wet and dry coating components and reels of uncoated paper. Coatings are typically blended in-house from solid and liquid raw materials purchased from outside vendors. Some solid materials require in-house particle size reduction (milling) prior to blending. Once blended, the coatings are delivered to individual coating units on an off-machine coater ("OMC"). The OMC is a continuous process with a revolving turret unwind station that automatically splices one reel to the next at constant speed. Coating is applied to the sheet and dried, in series, such that each subsequent layer is applied on top of the prior coating layer. The sheet is dried in flotation ovens after each coating application. The sheet is then calendered (smoothed) by passing it through a highly pressurized nip to control thickness and smoothness. Water or steam is sometimes applied to the back side of the sheet to minimize curl, and the sheet is dried once more before winding onto the reel of the OMC. The reels coming off the thermal coater are then cut to the sizes ordered by customers on a slitter/rewinder, to produce "jumbo" rolls.[24] Jumbo rolls are then wrapped and sent directly to a customer or to a distribution center prior to final shipment.

The final stage is converting and packaging. Converting entails converting the jumbo rolls into its final form, depending on end-use customer needs. Converters slit the jumbo rolls to the desired width and length and package them for sale to end users.

[24] "Jumbo" is the term used by manufacturers of thermal paper for the large rolls that are eventually converted (slit) into smaller rolls used in the printing equipment or converted into thermal labels or tickets. Jumbo rolls have average dimensions of 900 mm to 2100 mm wide and 1000 mm to 500 mm in diameter and can weigh as much as 3.5 tons, but this can vary depending on the needs of the converter. Smaller rolls cut from the jumbo rolls are known as "converted," "finished," or "slit" rolls.

Domestic like product issues

Petitioners argue that the Commission should define a single domestic like product that is coextensive with the scope.[25] Petitioners argue that all thermal paper as defined by the scope comprise a continuum of products that have similar physical characteristics and end uses, are interchangeable, are sold in the same channels of distribution, share similar customer and producer perceptions, and share common production processes and employees.[26] [27]

Petitioners further contend that converted POS rolls and jumbo rolls are also part of the same domestic like product, arguing that jumbo rolls and converted POS rolls have the same basic physical characteristics and end uses, that there is not a large amount of additional processing needed to produce converted POS rolls from jumbo rolls, the costs of conversion are relatively small, a substantial percentage of jumbo roll production is used to make converted POS rolls, and that market participants perceive there to be a single overall market for these products.[28]

Respondent Papierfabrik August Koehler contends that, if the Commission defines a single domestic like product that includes converted lightweight thermal paper, the domestic like product definition should be expanded to include converted heavyweight thermal paper and that the domestic industry should include converters of heavyweight thermal paper.[29] Koehler argues that, via the Commission's six-factor analysis, Petitioners agree that thermal paper of all calipers and basis weights constitutes a single like product.[30] Koehler further contends that the conversion process between out-of-scope converted heavyweight thermal paper and in-scope converted thermal paper involves the same fundamental processes of cutting and re-winding.[31]

U.S. producers' and U.S. importers' discussions of the comparability of in-scope and out-of-scope converted thermal paper can be found in Appendix D.

---

[25] Petitioners' post-conference brief, pp. 7-8.

[26] Petitioners' post-conference brief, pp. 9-14.

[27] Petitioners further state that at the staff conference, respondents did not contest the inclusion of heavyweight and lightweight jumbo rolls within the domestic like product. Petitioners' post-conference brief, p. 12.

[28] Petitioners' post-conference brief, p. 14.

[29] Petitioners disagree with and argue that that the Commission should reject Koehler's argument that the Commission should expand the domestic like product and associated domestic industry. Petitioners' post-conference brief, p. 15.

[30] Koehler's post-conference brief, Ex. 2, p. 2. *See also* Petition, Vol. I, p. 16.

[31] Koehler's post-conference brief, Ex. 2, p. 5.

Part II: Conditions of competition in the U.S. market

U.S. market characteristics

Thermal paper is a paper coated with special chemicals that when heated creates images. Thermal paper is used in thermal printers to form an image without ink, ribbons, or other consumables. The main uses for thermal paper are receipt paper (also known as Point of Sale-POS), shipping labels, labels found in grocery stores, tickets, and medical reporting charts.[1] Thermal paper is produced in different weights that serve different end-uses. Light-weight thermal paper is used mainly for POS while heavier weight paper is mainly used for labels, tickets, and tags. Thermal paper rolls are produced as jumbo rolls by U.S. producers which are then slit by converters into smaller rolls.[2] Most imports of thermal paper are jumbo rolls. In general, demand for thermal paper follows overall consumption in the economy. However, demand for some types of thermal paper reflects demand in specific parts of the market such as e-commerce and labels.[3]

Apparent U.S. consumption of thermal paper fluctuated during 2017-19, increasing by *** percent from 2017 to 2018 and decreasing by *** percent from 2018 to 2019. Overall, apparent U.S. consumption in 2019 was *** percent higher than in 2017. Apparent U.S. consumption was *** percent lower in January-June 2020 than in January-June 2019.

Channels of distribution

U.S. jumbo producers of thermal paper sold mainly to converters as did importers from each of the subject countries, as shown in table II-1. However, U.S. producers' sales to distributors and end users increased during 2017-19. Importers' U.S. shipments to converters from subject countries increased, from *** percent of U.S. shipments in 2017 to *** percent in 2019.

[1] Conference transcript, pp. 15-16, 19 (Hodson); pp. 30-31 (Hefner).

[2] Jumbo rolls are defined as rolls with an actual width of 4.5 inches or more, an actual weight of 65 pounds or more, and an actual diameter of 20 inches or more.

[3] Conference transcript, p. 91 (Hefner); p. 92 (Hodson).

Table II-1
Thermal paper: U.S. jumbo producers' and jumbo importers' U.S. shipments, by sources and channels of distribution, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Share of U.S. shipments (percent)				
U.S. producers' U.S. shipments of thermal paper:					
Distributors	***	***	***	***	***
to Converters	***	***	***	***	***
to End users	***	***	***	***	***
U.S. importers' U.S. shipments of thermal paper from Germany:					
Distributors	***	***	***	***	***
to Converters	***	***	***	***	***
to End users	***	***	***	***	***
U.S. importers' U.S. shipments of thermal paper from Japan:					
Distributors	***	***	***	***	***
to Converters	***	***	***	***	***
to End users	***	***	***	***	***
U.S. importers' U.S. shipments of thermal paper from Korea:					
Distributors	***	***	***	***	***
to Converters	***	***	***	***	***
to End users	***	***	***	***	***
U.S. importers' U.S. shipments of thermal paper from Spain:					
Distributors	***	***	***	***	***
to Converters	***	***	***	***	***
to End users	***	***	***	***	***
U.S. importers' U.S. shipments of thermal paper from subject countries:					
Distributors	***	***	***	***	***
to Converters	***	***	***	***	***
to End users	***	***	***	***	***
U.S. importers' U.S. shipments of thermal paper from all other countries:					
Distributors	***	***	***	***	***
to Converters	***	***	***	***	***
to End users	***	***	***	***	***
U.S. importers' U.S. shipments of thermal paper from all countries:					
Distributors	***	***	***	***	***
to Converters	***	***	***	***	***
to End users	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Geographic distribution

Both U.S. producers and importers from each of the subject countries reported selling thermal paper to all regions in the contiguous United States (table II-2). For U.S. producers, *** percent of sales were within 100 miles of their production facility, *** percent were between 101 and 500 miles, *** percent were between 501 and 1,000 miles, and *** percent were over 1,000 miles. Importers sold *** percent within 100 miles of their U.S. point of shipment, *** percent between 101 and 500 miles, *** percent between 501 and 1,000 miles, and *** percent over 1,000 miles.

Table II-2
Thermal paper: Geographic market areas in the United States served by U.S. producers and importers

Region	U.S. producers	Subject U.S. importers				
		Germany	Japan	Korea	Spain	Subject
Northeast	6	4	2	3	2	10
Midwest	6	4	2	3	2	10
Southeast	6	4	3	3	2	11
Central Southwest	6	4	2	2	2	9
Mountains	6	4	2	2	2	9
Pacific Coast	6	2	3	2	2	8
Other[1]	4	3	1	2	---	4
All regions (except Other)	6	2	1	2	2	6
Reporting firms	6	5	4	4	2	13

Note: All other U.S. markets, including AK, HI, PR, and VI.

Source: Compiled from data submitted in response to Commission questionnaires.

Supply and demand considerations

U.S. supply

Table II-3 provides a summary of the supply factors regarding thermal paper from U.S. producers and from subject countries. U.S. jumbo producers' capacity utilization was lower than foreign producers both in 2017 and 2019. Typically, the ratio of inventories to total shipments were low. The exception were U.S. independent producers, holding *** percent of inventories in 2019. Korea and Germany exported a considerable amount of their production while U.S. producers and those in Japan mainly served their domestic markets. Most responding firms, all but two U.S. and one German producer, reported that they can shift production to alternate products.

Table II-3
Thermal paper: Supply factors that affect the ability to increase shipments to the U.S. market

Item	Capacity (short tons)		Capacity utilization (percent)		Inventories as a ratio to total shipments (percent)		Home market shipments	Exports to non-U.S. markets	No. of firms able to shift to alternate products
	2017	2019	2017	2019	2017	2019	2019 (percent)		
U.S jumbo producers	***	***	***	***	***	***	***	***	
U.S. independent converters	***	***	***	***	***	***	***	***	4 of 6
Germany	***	***	***	***	***	***	***	***	2 of 3
Japan	***	***	***	***	***	***	***	***	3 of 3
Korea	***	***	***	***	***	***	***	***	1 of 1
Spain	***	***	***	***	***	***	***	***	1 of 1
All subject foreign producers	***	***	***	***	***	***	***	***	7 of 8

Note: Responding U.S. producers accounted for virtually all of U.S. production of jumbo rolls of thermal paper in 2019. Responding foreign producer/exporter firms accounted for more than 75 percent of U.S. imports of thermal paper from Germany during 2019, 75 percent from Korea, and 75 percent from Spain. For Japan, responding foreign producer/exporter firms accounted for more than 75 percent based on questionnaire data but *** percent based on imports under the HTS. For additional data on the number of responding firms and their share of U.S. production and of U.S. imports from each subject country, please refer to Part I, "Summary Data and Data Sources."

Source: Compiled from data submitted in response to Commission questionnaires.

Domestic production

Based on available information, U.S. producers of thermal paper have the ability to respond to changes in demand with a moderate-to-large change in the quantity of shipments of U.S.-produced thermal paper to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the availability of unused capacity, and ability to shift production to or from alternate products. Factors mitigating responsiveness of supply include limited availability of inventories.

U.S. jumbo producers' capacity and capacity utilization decreased during 2017-19. U.S. independent converters capacity increased, however, capacity utilization decreased during the same period as production increased at a slower pace. Exports from U.S. jumbo producers, as a share of total shipments, decreased throughout 2017-19 and were generally small. Reported export markets were ***. Other products that jumbo producer *** reportedly can produce on the same equipment as thermal paper are ***. Independent converters reportedly can produce *** on the same equipment as thermal

paper. The factor affecting U.S. jumbo producer *** ability to shift production is ***. For independent converters, factors affecting the ability to shift production include ***.

Subject imports from Germany

Based on available information, producers of thermal paper from Germany have the ability to respond to changes in demand with moderate changes in the quantity of shipments of thermal paper to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the ability to shift shipments from alternate markets and ability to shift production to or from alternate products. Factors mitigating responsiveness of supply include limited availability of unused capacity and inventories.

German producers' capacity increased while production decreased during 2017-19 and capacity utilization decreased. Major export markets include ***. Other products that responding foreign producers reportedly can produce on the same equipment as thermal paper are ***. The primary factor affecting foreign producers' ability to shift production is ***.

Subject imports from Japan

Based on available information, producers of thermal paper from Japan have the ability to respond to changes in demand with small changes in the quantity of shipments of thermal paper to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the ability to shift shipments from inventories and the ability to shift production to or from alternate products. Factors mitigating responsiveness of supply include limited availability of unused capacity and limited ability to shift shipments from alternate markets.

Japanese producers' capacity, production, and capacity utilization increased during 2017-19. Major export markets include ***. Other products that responding foreign producers reportedly can produce on the same equipment as thermal paper are ***. Factors affecting foreign producers' ability to shift production include ***.

Subject imports from Korea

Based on available information, the producer of thermal paper from Korea has the ability to respond to changes in demand with a moderate change in the quantity of shipments of thermal paper to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the ability to shift shipments from alternate markets and ability to shift production to or from alternate products. Factors mitigating responsiveness of supply include limited availability of unused capacity and inventories.

The Korean producer's capacity increased along with capacity utilization during the 2017-19 period. Major export markets include ***. The Korean producer reported EU imposed antidumping duties on lightweight thermal paper as a barrier to trade. Other products that the responding Korean producer reportedly can produce on the same equipment as thermal paper are ***. Factors affecting its ability to shift production include ***.

Subject imports from Spain

Based on available information, the producer of thermal paper from Spain has the ability to respond to changes in demand with a moderate-to-large change in the quantity of shipments of thermal paper to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the availability of unused capacity, ability to shift shipments from alternate markets, and ability to shift production to or from alternate products. The factor mitigating responsiveness of supply is limited availability of inventories.

The Spanish producer's capacity increased while production increased at a slower pace leading to an overall decrease in capacity utilization during 2017-19. Major export markets include ***. Another product that the responding foreign producer reportedly can produce on the same equipment as thermal paper is ***. The primary factor affecting its ability to shift production is ***.

Imports from nonsubject sources

Nonsubject imports of jumbo rolls accounted for 0.3 percent of total U.S. imports of jumbo rolls in 2019. Nonsubject imports of converted rolls played a larger role, accounting for

81.0 percent of total U.S. imports of converted rolls in 2019. The largest sources of nonsubject imports during 2017-19 were Thailand for jumbo rolls and Mexico for converted rolls.[4]

Supply constraints

One of three U.S. producers and two of three U.S. independent converters reported supply constraints. Those who reported supply constraints stated that the leuco dye shortage in late 2017 and 2018 caused major supply disruptions. *** reported ***. *** reported similar difficulties and reported ***. *** stated it was ***.

Ten of fifteen responding importers reported supply constraints. Five importers *** mentioned there were supply constraints due to the leuco dye shortage. Koehler stated that ***. Importers *** suffered from a shortage of *** reducing imports to the U.S. market. One importer, ***, mentioned COVID-19 as a supply constraint.

U.S. demand

Based on available information, the overall demand for thermal paper is likely to experience small changes in response to changes in price. The main contributing factors are the limited range of substitute product and the small cost share of the end-use products like receipts, boarding passes, or deli labels.

Demand for thermal paper is linked to the overall demand trends in the economy. Specifically for POS thermal paper, the underlying growth in the economy plays an important role and has mitigated some of the negative impact digital receipts has on demand.[5] Due to the characteristics of the COVID-19 pandemic on the services sector, there has been a decrease in demand for certain types of thermal paper. However, there has been an increase in demand for shipping labels used in e-commerce.[6]

[4] *** imported the largest share of converted rolls, however, the company did not provide information on the source of its imported product.

[5] Conference transcript, p. 52 (Melton).

[6] Conference transcript, p. 90 (Hefner).

End uses and cost share

U.S. demand for thermal paper depends on the demand for U.S.-produced downstream products. Reported end uses include POS receipts, ATM receipts, entertainment and transportation tickets, and medical recording paper. Reported cost shares ranged from 85 to 75 percent for POS receipts, 85 to 60 percent for tickets, and 65 to 45 percent for thermal labels. However, even though thermal paper accounts for a large share of the cost of the POS paper, tickets, or labels, the cost of these intermediate products in their final use (*e.g.* receipts, boarding passes, or deli labels) is small relative to the total cost of the transaction in which they are used. Then, as long as certain thermal paper is seen as the most cost-effective type of receipt, ticket, or label, its cost share in the intermediate product will not matter.

Business cycles

All six U.S. producers and seven of fifteen importers indicated that the market was subject to business cycles or conditions of competition. Specifically, four of six U.S. producers and four of fifteen importers reported that the thermal paper market is subject to business cycles with the end of the year holiday season driving the fluctuations. Three of six U.S. producers and four of fifteen importers reported that there are distinct conditions of competition citing import competition, raw material supply and demand shifts, and the leuco dye shortage.

Four of six U.S. producers and six of nine importers reported that there had been changes to these cycles or conditions since January 1, 2017. Producer and importer *** cited COVID-19 as a negative shock resulting in a decrease in thermal paper demand. Three importers stated the sale of Appvion POS business to Domtar. Additionally, Koehler cited Appvion's bankruptcy as an event that altered the thermal paper market.[7]

Demand trends

Three U.S. producers and six of sixteen importers reported an increase in U.S. demand for thermal paper since January 1, 2017 (table II-4). U.S. producers *** and importer *** cited an increase in demand for thermal paper while reporting demand decreased due to COVID-19. Koehler reported ***.

[7] Conference transcript, pp. 192-193 (DeBusk); Koehler post-conference brief, p. 7.

Table II-4
thermal paper: Firms' responses regarding U.S. demand and demand outside the United States

Item	Number of firms reporting			
	Increase	No change	Decrease	Fluctuate
Demand inside the United States:				
U.S. producers	3	---	2	1
Importers	6	2	3	5
Demand outside the United States:				
U.S. producers	3	---	---	1
Importers	5	---	1	2

Source: Compiled from data submitted in response to Commission questionnaires.

Substitute products

Substitutes for thermal paper are limited. All six U.S. producers and twelve of 15 importers reported that there were no substitutes. Reported substitutes included mainly electronic receipts. *** reported bond paper as a substitute for POS but stated that the "printers are different technology."

Substitutability issues

The degree of substitution between domestic and imported thermal paper depends upon such factors as relative prices, quality (e.g., grade standards, defect rates, etc.), and conditions of sale (e.g., price discounts/rebates, lead times between order and delivery dates, reliability of supply, product services, etc.). Based on available data, staff believes that there is a high degree of substitutability between domestically produced thermal paper and thermal paper imported from subject sources.

Lead times

Thermal paper is primarily sold from inventory. U.S. producers reported that 19.4 percent of their commercial shipments were produced-to-order, with lead times averaging 14.2 days. The remaining 80.6 percent of their commercial shipments came from inventories, with lead times averaging 3.8 days. Importers reported that 37.6 percent of their commercial shipments were produced-to-order, with lead times averaging 65.4 days. The remaining 62.3 percent of their commercial shipments came from U.S. inventories, with lead times averaging 12.3 days.

Factors affecting purchasing decisions

Purchasers responding to lost sales and lost revenue allegations[8] were asked to identify the main purchasing factors their firm considered in their purchasing decisions for thermal paper. The major purchasing factors identified by firms include quality (17), price (13), availability (11), and lead time (5). Other factors include financial stability of supplier (2), diversification of suppliers (1), and BPA/BPS free product (1).

Table II-5
Thermal paper: Ranking of factors used in purchasing decisions as reported by U.S. purchasers, by factor

Item	1st	2nd	3rd	Total
	Number of firms (number)			
Quality	13	5	1	17
Price / Cost	3	6	5	13
Availability / Supply	3	5	5	11
Lead time / Delivery	---	1	4	5
All other factors	---	2	3	NA

Source: Compiled from data submitted in response to Commission questionnaires.

Comparison of U.S.-produced and imported thermal paper

In order to determine whether U.S.-produced thermal paper can generally be used in the same applications as imports from Germany, Japan, Korea, and Spain, U.S. producers and importers were asked whether the products can always, frequently, sometimes, or never be used interchangeably. As shown in table II-6, all responding U.S. producers reported that domestically produced thermal paper and thermal paper imported from subject countries are "always" interchangeable. Importers' responses were mixed, with some reporting Japanese and Korean thermal paper was "always" interchangeable with domestic product while others reporting that German, Korean, and Spanish thermal paper was "sometimes" interchangeable. Importer *** reported "frequently" interchangeable and stated that "***." Importer ***, which reported "sometimes," stated that ***. Similarly, Importers *** reported "sometimes" but stated that in general

[8] This information is compiled from responses by purchasers identified by Petitioners to the lost sales and lost revenue allegations. See Part V for additional information.

lightweight and heavyweight thermal paper is largely interchangeable. Importer *** was the only firm that reported thermal paper is “never” interchangeable. It stated that ***.

Table II-6
Thermal paper: Interchangeability between thermal paper produced in the United States and in other countries, by country pair

Country pair	U.S. producers				U.S. importers			
	A	F	S	N	A	F	S	N
United States vs. Germany	5	---	1	---	3	3	4	---
United States vs. Japan	5	---	1	---	4	2	4	1
United States vs. Korea	5	---	1	---	5	4	2	---
United States vs. Spain	5	---	1	---	2	2	4	---
Germany vs. Japan	4	---	1	---	3	4	2	1
Germany vs. Korea	4	---	1	---	3	3	2	---
Germany vs. Spain	4	---	1	---	3	3	2	---
Japan vs. Korea	4	---	1	---	3	4	2	1
Japan vs. Spain	4	---	1	---	3	4	2	1
Korea vs. Spain	4	---	1	---	3	3	2	---
United States vs. Other	1	1	2	---	3	1	3	---
Germany vs. Other	1	1	2	---	2	1	2	---
Japan vs. Other	1	1	2	---	2	1	2	1
Korea vs. Other	1	1	2	---	2	1	2	---
Spain vs. Other	1	1	2	---	2	1	2	---

Note: A=Always, F=Frequently, S=Sometimes, N=Never.

Source: Compiled from data submitted in response to Commission questionnaires.

In addition, U.S. producers and importers were asked to assess how often differences other than price were significant in sales of thermal paper from the United States, subject, or nonsubject countries. As seen in table II-7, all responding U.S. producers reported that there are “never” significant differences other than price between domestically produced thermal paper and thermal paper imported from subject countries. U.S. importers mostly reported that there are “sometimes” significant differences other than price. Factors reported include quality, the product range and availability, and technical support on product ranges.

Table II-7
Thermal paper: Significance of differences other than price between thermal paper produced in the United States and in other countries, by country pair

Country pair	U.S. producers				U.S. importers			
	A	F	S	N	A	F	S	N
United States vs. Germany	---	---	---	5	3	2	3	1
United States vs. Japan	---	---	2	4	4	---	5	1
United States vs. Korea	---	1	---	5	3	2	4	1
United States vs. Spain	---	---	1	5	3	---	4	1
Germany vs. Japan	---	---	---	4	2	2	2	1
Germany vs. Korea	---	---	---	4	1	---	3	1
Germany vs. Spain	---	---	---	4	3	---	3	1
Japan vs. Korea	---	---	1	4	2	---	4	1
Japan vs. Spain	---	---	1	4	2	---	4	1
Korea vs. Spain	---	---	---	4	3	---	3	1
United States vs. Other	---	---	3	1	2	1	6	---
Germany vs. Other	---	---	3	1	1	1	3	---
Japan vs. Other	---	---	3	1	2	1	3	---
Korea vs. Other	---	---	3	1	1	1	3	---
Spain vs. Other	---	---	3	1	1	1	3	---

Note: A = Always, F = Frequently, S = Sometimes, N = Never.

Source: Compiled from data submitted in response to Commission questionnaires.

Part III: U.S. producers' production, shipments, and employment

The Commission analyzes a number of factors in making injury determinations (see 19 U.S.C. §§ 1677(7)(B) and 1677(7)(C)). Information on the dumping margins was presented in *Part I* of this report and information on the volume and pricing of imports of the subject merchandise is presented in *Part IV* and *Part V*. Information on the other factors specified is presented in this section and/or *Part VI* and (except as noted) is based on the questionnaire responses of six firms that accounted for majority of U.S. production of thermal paper during 2019.

U.S. producers

The Commission issued a U.S. producer questionnaire to 17 firms based on information contained in the petition. Six firms provided usable data on their operations: three firms that coat base paper and produce jumbo rolls of thermal paper ("jumbo roll producers") and three slit jumbo rolls into smaller rolls of desired width and length and packaged for sale suitable for use for imaging in thermal printers ("independent converters").[1] Staff believes that these responses represent the majority of U.S. production of in-scope thermal paper.[2] [3]

Table III-1 lists U.S. producers of thermal paper, their production locations, positions on the petition, and shares of total production.

[1] Company representatives from Domtar, Kanzaki, and Appvion stated that jumbo roll producers do not perform conversion operations, but sell to independent converters. Conference tr., pp. 105-107 (Melton, Hefner, and Hodson).

[2] Staff obtained questionnaire responses from both petitioning companies as well as Kanzaki Specialty Papers. These three firms are believed to account for *** jumbo roll production in the United States. Petition at Exh. I-1B. Staff also obtained questionnaire responses from independent converters Iconex, ***, as well as KTR Printing (herein referred to as "Integrity") and Liberty Paper ("Liberty"). In addition to the firms mentioned above, Staff sent a U.S. producer questionnaire to additional potential independent converters, including ***. The firm did not provide a response, however it is believed that ***. Petition, Exhibit I-4. Staff also received a response to the U.S. producers' questionnaire from ***, however the firm's ***.

[3] Data regarding jumbo roll producers' and independent converters' capacity, production, shipments, employment, and inventories are presented separately as well as combined.

Table III-1
Thermal paper: U.S. producers of thermal paper, firm type, their positions on the petition, production locations, and shares of reported production, 2019

Firm	Firm type	Position on petition	Production location(s)	Share of jumbo thermal production (percent)	Share of converter production (percent)
Appvion	Jumbo roll producer	Petitioner	Appleton, WI West Carrollton, OH	***	***
Domtar		Petitioner	West Carrollton, OH Bennettsville, SC Nekoosa, WI	***	***
Kanzaki		***	Ware MA	***	***
Iconex	Independent converter	***	Morristown, TN Jefferson City, TN Ashland, VA Kansas City, KS Reno, NV	***	***
KTR Printing ("Integrity")		***	Clare, MI	***	***
Liberty		***	Phoenix, AZ Morristown, TN	***	***
Total				***	***

Note: U.S. producer Domtar did not begin production of thermal paper until its acquisition of Appvion's point of sale paper business in April of 2020. See discussion on page III-3; see also Conference tr., pp. 23-24 (Melton).

Source: Compiled from data submitted in response to Commission questionnaires.

Table III-2 presents information on U.S. producers' ownership and related and/or affiliated firms. *** related to foreign producers of the subject merchandise and *** related to U.S. importers of the subject merchandise.[4] In addition, as discussed in greater detail below, *** U.S. producers purchased the subject merchandise from U.S. importers.

[4] U.S. producer ***. Additional information on these companies' ownership structure and operations can be found in Part VII.

Table III-2
Thermal paper: U.S. producers' ownership, related and/or affiliated firms

Item / Firm	Firm Name	Affiliated/Ownership
Ownership:		
***	***	***
***	***	***
***	***	***
***	***	***
Related importers/exporters:		
***	***	***
Related producers:		
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table III-3 presents U.S. producers' reported changes in operations since January 1, 2017. One firm reported a plant opening, one firm reported relocation, four firms reported acquisitions, two firms reported consolidation, four firms reported prolonged shutdowns or curtailments, and two firms reported revised labor agreements. In late 2017, Iconex announced that the firm had completed the acquisition of RiteMade Paper Converters, Inc. and PM Company in two separate transactions.[5] In April of 2019, Iconex announced its acquisition of the long-run label and receipt paper businesses of Cenveo, which were located in Jefferson City, TN, Joplin, MO, and Vernon, CA.[6] [7] In April of 2020, U.S. producer Domtar completed the purchase of Appvion's point of sale ("POS") paper business. This purchase included the equipment at Appvion's West Carrollton, OH facility.[8]

[5] Iconex, "Iconex Completes Acquisitions of RiteMade and PM Company," https://www.iconex.com/press-releases/iconex-completes-acquisitions-of-ritemade-and-pm-company/ (retrieved November 5, 2020).

[6] Iconex, "Iconex Acquires Long-run Label Assets of Cenveo," https://www.iconex.com/press-releases/iconex-acquires-cenveo-label-business/ (retrieved November 5, 2020).

[7] ***.

[8] PaperAge, "Domtar Completes the Purchase of Appvion Point of Sale Paper Business," https://www.paperage.com/2020news/04_28_2020domtar_completes_appvion_deal.html (retrieved November 5, 2020).

Table III-3
Thermal paper: U.S. producers' reported changes in operations, since January 1, 2017

Item / Firm	Reported changed in operations
Plant openings:	
***	***
Relocations:	
***	***
Expansions:	
***	***
Acquisitions:	
***	***
***	***
***	***
***	***
Consolidations:	
***	***
***	***

Table continued on next page.

Table III-3—Continued.
Thermal paper: U.S. producers' reported changes in operations, since January 1, 2017

Item / Firm	Reported changed in operations
Prolonged shutdowns or curtailments:	
***	***
***	***
***	***
***	***
Revised labor agreements:	
***	***
***	***

Source: Compiled from data submitted in response to Commission questionnaires.

U.S. producers of jumbo rolls and converted rolls were requested to provide data on factors related to their production-related activities; their responses are presented below in tables III-4 and III-5.

Table III-4
Thermal paper: U.S. independent converters' production, capacity, and capacity utilization, 2017-19, January-June 2019, and January-June 2020

Item	Rating of complexity (1=least complex, 5=most complex)				
	1	2	3	4	5
	Count of firms				
Iconex	***	***	***	***	***
Integrity	***	***	***	***	***
Liberty	***	***	***	***	***
All independent converters	***	***	***	***	***
	Narrative response				
Iconex	***				
Integrity	***				
Liberty	***				

Source: Compiled from data submitted in response to Commission questionnaires.

Table III-5
Thermal paper: Comparison of U.S. jumbo producers and U.S. independent converters' sufficient production related activities factors since January 1, 2017

Factor	U.S. jumbo producers	U.S. independent converters
Capital investments	***	***
Technical expertise	*** million to *** million per year	*** million to *** million per year
Value added	between *** to *** percent, accounting for *** million to *** million per year	between *** to *** percent, accounting for *** million to *** million per year
Employment	*** to *** employees	*** to *** employees
Quantity, type and source of parts	*** in raw materials	*** in raw materials over the period. In 2019, *** percent of these raw materials were sourced using subject imports of jumbo rolls, *** percent sourced using domestic jumbo rolls, and the remainder accounted for by nonsubject imports or other material inputs
Costs and activities	***	

Source: Compiled from data submitted in response to Commission questionnaires.

U.S. production, capacity, and capacity utilization

Table III-6 and figure III-1 present U.S. jumbo roll producers' production, capacity, and capacity utilization. U.S. jumbo roll producers' capacity decreased during 2017-19 by *** percent, and was lower in January-June 2020 than in January-June 2019. U.S. jumbo roll producers' production similarly decreased during 2017-19 by *** percent, and was lower in January-June 2020 than in January-June 2019. U.S. jumbo roll producer ***. As a result of decreasing capacity and production, capacity utilization decreased, from *** percent utilization in 2017 to *** percent utilization in 2019, ending *** percentage points lower in 2019 than in 2017.

Table III-6
Thermal paper: U.S. jumbo roll producers' production, capacity, and capacity utilization, 2017-19, January-June 2019, and January-June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Capacity (short tons)				
Appvion	***	***	***	***	***
Domtar	***	***	***	***	***
Kanzaki	***	***	***	***	***
All firms	***	***	***	***	***
	Production (short tons)				
Appvion	***	***	***	***	***
Domtar	***	***	***	***	***
Kanzaki	***	***	***	***	***
All firms	***	***	***	***	***
	Capacity utilization (percent)				
Appvion	***	***	***	***	***
Domtar	***	***	***	***	***
Kanzaki	***	***	***	***	***
All firms	***	***	***	***	***
	Share of production (percent)				
Appvion	***	***	***	***	***
Domtar	***	***	***	***	***
Kanzaki	***	***	***	***	***
All firms	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Figure III-1
Thermal paper: U.S. jumbo roll producers' production, capacity, and capacity utilization, 2017-19, January-June 2019, and January-June 2020

* * * * * * *

Source: Compiled from data submitted in response to Commission questionnaires.

Table III-7 and figure III-2 present U.S. independent converters' production, capacity, and capacity utilization. U.S. independent converters' capacity increased during 2017-19 by *** percent, and was higher in January-June 2020 than in January-June 2019. U.S. independent converters' production fluctuated during 2017-19, increasing by *** percent between 2017 and 2018, then decreasing by *** percent between 2018 and 2019, ending *** percent higher in 2019 than in 2017. U.S. independent converters' production was lower in January-June 2020 than in January-June 2019. ***.[9] Capacity utilization similarly fluctuated during 2017-19, increasing from *** percent in 2017 to *** percent in 2018, then decreasing to *** percent in 2019, ending *** percentage points lower in 2019 than in 2017.

[9] As noted above, data reported in ***.

Table III-7
Thermal paper: U.S. independent converters' production, capacity, and capacity utilization, 2017-19, January-June 2019, and January-June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Capacity (short tons)				
Iconex	***	***	***	***	***
Integrity	***	***	***	***	***
Liberty	***	***	***	***	***
All firms	***	***	***	***	***
	Production (short tons)				
Iconex	***	***	***	***	***
Integrity	***	***	***	***	***
Liberty	***	***	***	***	***
All firms	***	***	***	***	***
	Capacity utilization (percent)				
Iconex	***	***	***	***	***
Integrity	***	***	***	***	***
Liberty	***	***	***	***	***
All firms	***	***	***	***	***
	Share of production (percent)				
Iconex	***	***	***	***	***
Integrity	***	***	***	***	***
Liberty	***	***	***	***	***
All firms	***	***	***	***	***
	Production (short tons)				
Production.-- Using domestic jumbo rolls	***	***	***	***	***
Using imported subject jumbo rolls	***	***	***	***	***
Using imported nonsubject jumbo rolls	***	***	***	***	***
Using imported jumbo rolls	***	***	***	***	***
Using all sources of jumbo rolls	***	***	***	***	***
	Share of production (percent)				
Production.-- Using domestic jumbo rolls	***	***	***	***	***
Using imported subject jumbo rolls	***	***	***	***	***
Using imported nonsubject jumbo rolls	***	***	***	***	***
Using imported jumbo rolls	***	***	***	***	***
Using all sources of jumbo rolls	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Figure III-2
Thermal paper: U.S. independent converters' production, capacity, and capacity utilization, 2017-19, January-June 2019, and January-June 2020

* * * * * * *

Source: Compiled from data submitted in response to Commission questionnaires.

Alternative products

Tables III-8 and III-9 present U.S. jumbo roll producers' and U.S. independent converters' overall capacity and production on the same machinery as in-scope production. During 2017-19, jumbo roll production consistently accounted for the majority (around *** percent) of U.S. jumbo roll producers' overall production. U.S. jumbo roll producer *** reported *** out-of-scope production during 2017-19. The firm reported producing *** on the same machinery as thermal paper. ***'s out-of-scope production was *** in January-June 2020 than in January-June 2019.

During 2017-19 in-scope converted thermal paper consistently accounted for the majority of U.S. independent converters' overall production. The share of overall production held by in-scope thermal paper decreased during 2017-19, though was higher in January-June 2019 than in January-June 2020. *** and *** reported production of out-of-scope thermal paper on the same machinery used to produce in-scope thermal paper. ***'s production of out-of-scope thermal paper fluctuated during 2017-19, increasing between 2017 and 2018, then decreasing between 2018 and 2019, ending *** percent lower in 2019 than in 2017. ***'s production of out-of-scope thermal paper increased from *** short tons in 2017 to *** short tons in 2019. U.S. independent converters *** and *** reported production of out-of-scope merchandise (not including out-of-scope thermal paper). ***'s production of out-of-scope merchandise fluctuated during 2017-19, increasing between 2017 and 2018, then decreasing between 2018 and 2019, ending *** percent lower in 2019 than in 2017. *** reported ***.

Table III-8
Thermal paper: U.S. jumbo roll producers' overall plant capacity and production on the same equipment as subject production, 2017-19, January-June 2019, and January-June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (short tons)				
Overall jumbo capacity	***	***	***	***	***
Production:					
Jumbo thermal paper	***	***	***	***	***
Out-of-scope production	***	***	***	***	***
Total production on same machinery	***	***	***	***	***
	Ratios and shares (percent)				
Overall jumbo capacity utilization	***	***	***	***	***
Share of production:					
Jumbo thermal paper	***	***	***	***	***
Out-of-scope production	***	***	***	***	***
Total production on same machinery	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table III-9
Thermal paper: U.S. independent converters' overall plant capacity and production on the same equipment as subject production, 2017-19, January-June 2019, and January-June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (short tons)				
Overall conversion capacity	***	***	***	***	***
Production:					
In-scope converted thermal paper	***	***	***	***	***
Out-of-scope converted thermal paper	***	***	***	***	***
Other products	***	***	***	***	***
Total out-of-scope products	***	***	***	***	***
Total production on same machinery	***	***	***	***	***
	Ratios and shares (percent)				
Overall conversion capacity utilization	***	***	***	***	***
Share of production:					
In-scope converted thermal paper	***	***	***	***	***
Out-of-scope converted thermal paper	***	***	***	***	***
Other products	***	***	***	***	***
Total out-of-scope products	***	***	***	***	***
Total production on same machinery	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

U.S. producers' U.S. shipments and exports

Table III-10 presents U.S. jumbo roll producers' U.S. shipments, export shipments, and total shipments. U.S. shipments accounted for the majority of total shipments in each year during 2017-19.

The quantity of U.S. jumbo roll producers' total shipments decreased overall during 2017-19 by *** percent. This decrease can primarily be attributed to ***. In addition, ***. The value of U.S. jumbo roll producers' total shipments increased during 2017-19 by *** percent, and the quantity and value of U.S. jumbo roll producers' U.S. shipments were lower in January-June 2020 than in January-June 2019.

The quantity of U.S. jumbo roll producers' U.S. shipments decreased overall during 2017-19 by *** percent. The value of U.S. jumbo roll producers' U.S. shipments increased during 2017-19 by *** percent. The quantity and value of U.S. jumbo roll producers' U.S. shipments was lower in January-June 2020 than in January-June 2019.

The quantity and value of U.S. jumbo roll producers' export shipments decreased each year during 2017-19, by *** percent and *** percent, respectively. U.S. jumbo roll producers' export shipments were lower in January-June 2020 than in January-June 2019.

The unit value of export shipments was lower than the unit value of U.S. shipments, but both increased each year during 2017-19, by *** percent and *** percent, respectively. The unit value of U.S. jumbo roll producers' U.S. shipments was lower in January-June 2020 than in January-June 2019, while the unit value of U.S. jumbo roll producers' export shipments was higher in January-June 2020 than in January-June 2019.

Table III-10
Thermal paper: U.S. jumbo roll producers' U.S. shipments, exports shipments, and total shipments, 2017-19, January-June 2019, and January-June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (short tons)				
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***
	Value (1,000 dollars)				
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***
	Unit value (dollars per short ton)				
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***
	Share of quantity (percent)				
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***
	Share of value (percent)				
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table III-11 presents U.S. independent converters' U.S. shipments, export shipments, and total shipments. U.S. independent converters reported *** export shipments during 2017-19. The quantity and value of U.S. independent converters' total shipments increased overall during 2017-19, by *** percent and *** percent, respectively, and were highest in 2018, though the unit value of U.S. independent converters' total shipments was highest in 2019. The quantity, value, and resulting unit value of U.S. independent converters' total shipments was lower in January-June 2020 than in January-June 2019.

Table III-11
Thermal paper: U.S. independent converters' U.S. shipments, exports shipments, and total shipments, 2017-19, January-June 2019, and January-June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (short tons)				
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***
	Value (1,000 dollars)				
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***
	Unit value (dollars per short ton)				
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***
	Share of quantity (percent)				
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***
	Share of value (percent)				
U.S. shipments	***	***	***	***	***
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table III-12 presents U.S. producers' U.S. shipments for use in apparent consumption.

Table III-12
Thermal paper: U.S. producers' U.S. shipments for use in apparent consumption, 2017-19, January-June 2019, and January-June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (short tons)				
U.S. producers' U.S. shipments	***	***	***	***	***
	Value (1,000 dollars)				
U.S. producers' U.S. shipments.--Fully domestic value	***	***	***	***	***
Value added to imports	***	***	***	***	***
Total	***	***	***	***	***

Note.--The quantity for U.S. producers' U.S. shipments reflects the quantity of thermal paper sold in the United States by U.S. jumbo producers. The value for U.S. producers' U.S. shipments reflects the value of thermal paper sold in the United States by U.S. jumbo roll producers plus the additional value added to U.S. produced and imported jumbo rolls of thermal paper by U.S. independent converters based on U.S. conversion operations. This methodology avoids reclassifying and/or double counting merchandise already reported once by U.S. jumbo roll producers or by U.S. importers in measuring consumption and market share.

Source: Compiled from data submitted in response to Commission questionnaires.

U.S. producers' inventories

Tables III-13 and III-14 present U.S. jumbo roll producers' and U.S. independent converters' end-of-period inventories and the ratio of these inventories to U.S. producers' production, U.S. shipments, and total shipments**.** U.S. jumbo roll producers' end-of-period inventories decreased each year during 2017-19, ending *** percent lower in 2019 than in 2017, but were higher in January-June 2020 than in January-June 2019. The ratio of the responding U.S. jumbo roll producers' end-of-period inventories to their production ranged from *** percent to *** percent during 2017-19 and was *** percent in January-June 2020, compared with *** percent in January-June 2019. The ratio of the responding U.S. jumbo roll producers' end-of-period inventories to their U.S. shipments ranged from *** percent to *** percent during 2017-19 and was *** percent in January-June 2020, compared with *** percent in January-June 2019.

U.S. independent converters' end-of-period inventories decreased overall during 2017-19 by *** percent, but were highest in 2018, and were lower in January-June 2020 than in January-June 2019. The ratio of the responding U.S. independent converters' end-of-period inventories to their production ranged from *** percent to *** percent during 2017-19 and was *** percent in January-June 2020, compared with *** percent in January-June 2019. The ratio of the responding U.S. independent converters' end-of-period inventories to their U.S. shipments ranged from *** percent to *** percent during 2017-19 and was *** percent in January-June 2020, compared with *** percent in January-June 2019.

Table III-13
Thermal paper: U.S. jumbo roll producers' inventories, 2017-19, January-June 2019, and January-June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (short tons)				
U.S. jumbo producers' end-of-period inventories	***	***	***	***	***
	Ratio (percent)				
Ratio of inventories to.--					
U.S. production	***	***	***	***	***
U.S. shipments	***	***	***	***	***
Total shipments	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table III-14
Thermal paper: U.S. independent converters' inventories, 2017-19, January-June 2019, and January-June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (short tons)				
U.S. independent converters' end-of-period inventories	***	***	***	***	***
	Ratio (percent)				
Ratio of inventories to.--					
U.S. production	***	***	***	***	***
U.S. shipments	***	***	***	***	***
Total shipments	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

U.S. producers' imports and purchases

*** reported purchases of thermal paper; their data are presented in table III-15.[10] *** share of production ***. As a share of value, *** accounted for *** of ***.[11] *** reported purchasing thermal paper from both subject sources and domestic sources. These purchases generally increased overall during 2017-19, but were lower in January-June 2020 than in January-June 2019. *** similarly reported purchasing thermal paper from both subject sources and domestic sources. The firm's purchases from domestic sources decreased by *** percent during 2017-19, and were lower in January-June 2020 than in January-June 2019. ***'s purchases from subject sources increased each year during 2017-19, and were slightly lower in January-June 2020 than in January-June 2019. *** also reported purchasing thermal paper from both subject sources and domestic sources. The firm's purchases from domestic sources decreased by *** percent during 2017-19, and were lower in January-June 2020 than in January-June 2019. ***'s purchases from subject sources increased each year during 2017-19, and were higher in January-June 2020 than in January-June 2019.

[10] ***.

[11] See table VI-9 for additional information.

Table III-15
Thermal paper: U.S. independent converters' purchases of jumbo rolls, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (short tons)				
*** U.S. independent converter production	***	***	***	***	***
Purchases from domestic sources	***	***	***	***	***
Purchases from subject importers	***	***	***	***	***
	Narrative				
	***				

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (short tons)				
*** U.S. independent converter production	***	***	***	***	***
Purchases from domestic sources	***	***	***	***	***
Purchases from subject importers	***	***	***	***	***

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (short tons)				
*** U.S. independent converter production	***	***	***	***	***
Purchases from domestic sources	***	***	***	***	***
Purchases from subject importers	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

U.S. employment, wages, and productivity

U.S. jumbo roll producers' employment-related data is presented below in table III-16. U.S. jumbo roll producers' PRWs decreased each year during 2017-19, with the largest decrease occurring between 2017 and 2018. U.S. jumbo roll producers' PRWs were higher in January-June 2020 than in January-June 2019. Total hours worked decreased each year during 2017-19, and were lower in January-June 2020 than in January-June 2019. U.S. jumbo roll producers' productivity increased overall during 2017-19, and was higher in January-June 2020 than in January-June 2019. Unit labor costs fluctuated during 2017-19, decreasing from $*** per short ton to $*** per short ton between 2017 and 2018, then increasing to $*** between 2018 and 2019, ending lower in 2019 than in 2017. Unit labor costs were $*** per short ton in January-June 2020, compared with $*** in January-June 2019.

Table III-16
Thermal paper: U.S. jumbo roll producers' employment-related data, 2017-19, January-June 2019, and January-June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
Production and related workers (PRWs) (number)	***	***	***	***	***
Total hours worked (1,000 hours)	***	***	***	***	***
Hours worked per PRW (hours)	***	***	***	***	***
Wages paid ($1,000)	***	***	***	***	***
Hourly wages (dollars per hour)	***	***	***	***	***
Productivity (pounds per hour)	***	***	***	***	***
Unit labor costs (dollars per short ton)	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

U.S. independent converters' employment-related data is presented below in table III-17. During 2017-19 U.S. independent converters' PRWs ***, and were higher in January-June 2020 than in January-June 2019. The ***. Total hours worked increased overall during 2017-19, but peaked in 2018, and were higher in January-June 2020 than in January-June 2019. ***, U.S. independent converters' productivity increased each year during 2017-19, but was lower in January-June 2020 than in January-June 2019. Unit labor costs fluctuated during 2017-19, decreasing from $*** per short ton to $*** per short ton between 2017 and 2018, then increasing to $*** between 2018 and 2019. Unit labor costs were $*** per short ton in January-June 2020, compared with $*** in January-June 2019.

Table III-17
Thermal paper: U.S. independent converters' employment-related data, 2017-19, January-June 2019, and January-June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
Production and related workers (PRWs) (number)	***	***	***	***	***
Total hours worked (1,000 hours)	***	***	***	***	***
Hours worked per PRW (hours)	***	***	***	***	***
Wages paid ($1,000)	***	***	***	***	***
Hourly wages (dollars per hour)	***	***	***	***	***
Productivity (pounds per hour)	***	***	***	***	***
Unit labor costs (dollars per short ton)	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table III-18 shows combined U.S. producers' employment-related data. As a whole, U.S. jumbo roll producers and U.S. independent converters experienced an increase in production and related workers ("PRW"), and an overall increase in wages paid and hourly wages during 2017-19. Total hours worked and hours worked per PRW decreased during 2017-19.

Table III-18
Thermal paper: Combined U.S. jumbo roll producers' and independent converters' employment-related data, 2017-19, January-June 2019, and January-June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
Production and related workers (PRWs) (number)	***	***	***	***	***
Total hours worked (1,000 hours)	***	***	***	***	***
Hours worked per PRW (hours)	***	***	***	***	***
Wages paid ($1,000)	***	***	***	***	***
Hourly wages (dollars per hour)	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Part IV: U.S. imports, apparent U.S. consumption, and market shares

U.S. importers

The Commission issued importer questionnaires to 35 firms believed to be importers of subject thermal paper, as well as to all U.S. producers of thermal paper.[1] Usable questionnaire responses were received from 16 companies, representing *** percent of U.S. imports from Germany, *** percent of U.S. imports from Japan,[2] *** percent of U.S. imports from Korea, and *** U.S. imports from Spain in 2019 under HTS subheading 4811.90.90, a "basket" category.[3] Table IV-1 lists all responding U.S. importers of thermal paper from Germany, Japan, Korea, and Spain, and other sources, their locations, and their shares of U.S. imports, in 2019.

[1] The Commission issued questionnaires to those firms identified in the petition, along with firms that, based on a review of data provided by U.S. Customs and Border Protection ("Customs"), may have accounted for more than one percent of total imports under HTS subheading 4811.90.90 in 2019.

[2] When compared to exports reported in Part VII of this report, usable U.S. importer questionnaire responses account for *** reported exports, based on the responses of Japanese foreign producers. Based on ***. The firm imported *** short tons of merchandise under HTS statistical reporting number 4811.90.9030 ***. ***.

[3] Counsel for Torraspapel S.A. ***. See Torraspapel's post-conference brief, pp. 2-3 and Exhibit 2.

Table IV-1
Thermal paper: U.S. importers by source, 2019

Firm	Headquarters	Share of imports by source (percent)						
		Germany	Japan	Korea	Spain	Subject sources	Nonsubject sources	All import sources
Condat	Le Plessis Robinson, France,	***	***	***	***	***	***	***
Exquis	Rosemead, CA	***	***	***	***	***	***	***
General Office	San Juan, PR	***	***	***	***	***	***	***
Gorilla Paper	Elk Grove Village, IL	***	***	***	***	***	***	***
Hansol America	Fort Lee, NJ	***	***	***	***	***	***	***
Japan Pulp	Monterey Park, CA	***	***	***	***	***	***	***
Matra Americas	Lake Success, NY	***	***	***	***	***	***	***
Mitsubishi	Rye, NY	***	***	***	***	***	***	***
Nakagawa	Newark, CA	***	***	***	***	***	***	***
National POS	Cypress, TX	***	***	***	***	***	***	***
Paper Products	Portland, OR	***	***	***	***	***	***	***
Koehler	Oberkirch, Germany	***	***	***	***	***	***	***
Sanster	Rosemead, CA	***	***	***	***	***	***	***
Shinsei Pulp	Torrance, CA	***	***	***	***	***	***	***
Sun Traders	Mobile, AL	***	***	***	***	***	***	***
Torraspapel	Getafe (Madrid), Spain,	***	***	***	***	***	***	***
All firms		***	***	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

U.S. imports

Table IV-2 and figure IV-1 present data for U.S. imports of all thermal paper from Germany, Japan, Korea, Spain, and all other sources.[4] Tables IV-3 and IV-4 present data for U.S. imports of jumbo rolls and converted rolls, respectively, from Germany, Japan, Korea, Spain, and all other sources. The vast majority of U.S. imports of thermal paper during 2017-19 from all sources were of jumbo rolls. There were *** imported during 2017-19 from *** Korea. By quantity and value, U.S. imports of converted rolls increased during 2017-19, by *** percent and *** percent, respectively, but were *** of all U.S. imports of all thermal paper throughout the period. U.S. imports of jumbo rolls generally influenced overall trends, including increases in quantity, value, and modest increases in unit values relative to increases in total value. Nonsubject imports, which accounted for a larger share of converted rolls, generally exhibited similar trends, though at higher AUVs than U.S. imports of thermal paper from subject sources.

Overall, U.S. imports of thermal paper from subject sources accounted for *** of total U.S. imports of thermal paper in during 2017-19. Subject imports' share of total U.S. imports fluctuated during 2017-19, ending *** percentage points lower in 2019 than in 2017. By quantity, U.S. imports of thermal paper from Germany accounted for most, if not the largest share of total imports during 2017-19 (*** percent in 2017, *** percent in 2018, and *** percent in 2019). It accounted for *** percent of imports in January-June 2020, compared with *** percent in January-June 2019. U.S. imports of thermal paper from Japan accounted for between *** percent and *** percent of total U.S. imports of thermal paper during 2017-19, and accounted for *** percent of total imports in January-June 2020, compared with *** percent in January-June 2019. U.S. imports of thermal paper from Korea accounted for between *** percent and *** percent of total U.S. imports of thermal paper during 2017-19, and accounted for *** percent of total imports in January-June 2020, compared with *** percent in January-June 2019. By quantity, U.S. imports of thermal paper from Spain accounted for a ***, *** percent in 2017, *** percent in 2018, and *** percent in 2019. Subject imports from Spain accounted for *** percent of total imports in January-June 2020, compared with *** percent in January-June 2019.

During 2017-19, the quantity of U.S. imports of thermal paper from Germany fluctuated year to year but increased overall, increasing by *** percent from 2017 to 2018, then

[4] Unless otherwise noted, the discussion on pages IV-3 and IV-4 refer to table IV-2.

decreasing by *** percent from 2018 to 2019, ending *** percent higher in 2019 than in 2017. The quantity of U.S. imports of thermal paper from Germany were higher in January-June 2020 than in January-June 2019. U.S. imports of thermal paper from Japan fluctuated year to year, ending slightly lower in 2019 than in 2017, and were lower in January-June 2020 than in January-June 2019. The quantity of U.S. imports of thermal paper from Korea increased by *** percent during 2017-19, but was lower in January-June 2020 than in January-June 2019. The quantity of U.S. imports of thermal paper from Spain increased by an even greater percentage during 2017-19 (*** percent), but was lower in January-June 2020 than in January-June 2019. Overall, the quantity of subject imports increased by *** percent during 2017-19, with the change driven in part by the increase in U.S. imports of thermal paper from Korea between 2018 and 2019. The quantity of U.S. imports of thermal paper from nonsubject sources increased by *** percent during 2017-19, and was higher in January-June 2020 than in January-June 2019.

By value, U.S. imports of thermal paper from Germany fluctuated year to year but increased overall during 2017-19 by *** percent. The value of U.S. imports of thermal paper from Japan increased by *** percent during 2017-19, but was lower in January-June 2020 than in January-June 2019. The value of U.S. imports of thermal paper from Korea increased by *** percent during 2017-19, but was lower in January-June 2020 than in January-June 2019. By value, U.S. imports of thermal paper from Spain increased by *** percent during 2017-19, but were lower in January-June 2020 than in January-June 2019. Overall, the value of U.S. imports of thermal paper from subject sources increased by *** percent from 2017 to 2019 and was lower in January-June 2020 than in January-June 2019. The value of U.S. imports of thermal paper from nonsubject sources increased by *** percent during 2017-19, but was lower in January-June 2020 than in January-June 2019.

The unit value of U.S. imports from Germany increased during 2017-19 by *** percent; from $*** per short ton in 2017 to $*** per short ton in 2019. It was $*** per short ton in January-June 2020, compared with $*** per short ton in January-June 2019. The unit value of U.S. imports from Japan increased during 2017-19 by *** percent; from $*** per short ton in 2017 to $*** per short ton in 2019. It was $*** per short ton in January-June 2020, compared with $*** per short ton in January-June 2019. The unit value of U.S. imports from Korea increased overall during 2017-19 by *** percent; from $*** per short ton in 2017 to $*** per short ton in 2019. It was $*** per short ton in January-June 2020, compared with $*** per short ton in January-June 2019. The unit value of U.S. imports from Spain increased overall during 2017-19 by *** percent; from $*** per short ton in 2017 to $*** per short ton in 2019. It was $*** per short ton in January-June

2020, compared with $*** per short ton in January-June 2019. Overall, the unit value of U.S. imports from subject sources increased overall during 2017-19 by *** percent; from $*** per short ton in 2017 to $*** per short ton in 2019. It was $*** per short ton in January-June 2020, compared with $*** per short ton in January-June 2019. The unit value of U.S. imports from nonsubject sources generally were higher than the unit value of U.S. imports from subject sources, and increased overall during 2017-19 by *** percent; from $*** per short ton in 2017 to $*** per short ton in 2019. It was $*** per short ton in January-June 2020, compared with $*** per short ton in January-June 2019.

Table IV-2
Thermal paper: U.S. imports by source, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (short tons)				
U.S. imports from.--					
Germany	***	***	***	***	***
Japan	***	***	***	***	***
Korea	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Value (1,000 dollars)				
U.S. imports from.--					
Germany	***	***	***	***	***
Japan	***	***	***	***	***
Korea	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Unit value (dollars per short ton)				
U.S. imports from.--					
Germany	***	***	***	***	***
Japan	***	***	***	***	***
Korea	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

Table continued on next page.

Table IV-2--Continued
Thermal paper: U.S. imports by source, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Share of quantity (percent)				
U.S. imports from.--					
Germany	***	***	***	***	***
Japan	***	***	***	***	***
Korea	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Share of value (percent)				
U.S. imports from.--					
Germany	***	***	***	***	***
Japan	***	***	***	***	***
Korea	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Ratio to U.S. production				
U.S. imports from.--					
Germany	***	***	***	***	***
Japan	***	***	***	***	***
Korea	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Figure IV-1
Thermal paper: U.S. import quantities and average unit values, 2017-19, January to June 2019, and January to June 2020

* * * * * * *

Source: Compiled from data submitted in response to Commission questionnaires.

Table IV-3
Thermal paper: U.S. imports of jumbo rolls by source, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (short tons)				
U.S. imports from.--					
Germany	***	***	***	***	***
Japan	***	***	***	***	***
Korea	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Value (1,000 dollars)				
U.S. imports from.--					
Germany	***	***	***	***	***
Japan	***	***	***	***	***
Korea	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Unit value (dollars per short ton)				
U.S. imports from.--					
Germany	***	***	***	***	***
Japan	***	***	***	***	***
Korea	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

Table continued on next page.

Table IV-3--Continued
Thermal paper: U.S. imports of jumbo rolls by source, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Share of quantity (percent)				
U.S. imports from.--					
Germany	***	***	***	***	***
Japan	***	***	***	***	***
Korea	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Share of value (percent)				
U.S. imports from.--					
Germany	***	***	***	***	***
Japan	***	***	***	***	***
Korea	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Share jumbo rolls within all thermal paper within source (percent)				
U.S. imports from.--					
Germany	***	***	***	***	***
Japan	***	***	***	***	***
Korea	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table IV-4
Thermal paper: U.S. imports of converted rolls by source, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (short tons)				
U.S. imports from.--					
Germany	***	***	***	***	***
Japan	***	***	***	***	***
Korea	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Value (1,000 dollars)				
U.S. imports from.--					
Germany	***	***	***	***	***
Japan	***	***	***	***	***
Korea	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Unit value (dollars per short ton)				
U.S. imports from.--					
Germany	***	***	***	***	***
Japan	***	***	***	***	***
Korea	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

Table continued on next page.

Table IV-4--Continued
Thermal paper: U.S. imports of converted rolls by source, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Share of quantity (percent)				
U.S. imports from.-- Germany	***	***	***	***	***
Japan	***	***	***	***	***
Korea	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Share of value (percent)				
U.S. imports from.-- Germany	***	***	***	***	***
Japan	***	***	***	***	***
Korea	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Negligibility

The statute requires that an investigation be terminated without an injury determination if imports of the subject merchandise are found to be negligible.[5] Negligible imports are generally defined in the Act, as amended, as imports from a country of merchandise corresponding to a domestic like product where such imports account for less than 3 percent of the volume of all such merchandise imported into the United States in the most recent 12-month period for which data are available that precedes the filing of the petition or the initiation of the investigation. However, if there are imports of such merchandise from a number of countries subject to investigations initiated on the same day that individually account for less than 3 percent of the total volume of the subject merchandise, and if the imports from those countries collectively account for more than 7 percent of the volume of all such merchandise imported into the United States during the applicable 12-month period, then imports from such countries are deemed not to be negligible.[6] By quantity, imports from

[5] Sections 703(a)(1), 705(b)(1), 733(a)(1), and 735(b)(1) of the Act (19 U.S.C. §§ 1671b(a)(1), 1671d(b)(1), 1673b(a)(1), and 1673d(b)(1)).

[6] Section 771 (24) of the Act (19 U.S.C § 1677(24)).

Germany, Japan, Korea, and Spain accounted for *** percent, *** percent, *** percent and *** percent of total imports of thermal paper, respectively, during October 2019 to September 2020. Table IV-5 presents the shares of total U.S. imports, by quantity, attributable to Germany, Japan, Korea, Spain, and nonsubject sources during the most recent 12-month period.

Table IV-5
Thermal paper: U.S. imports in the twelve-month period preceding the filing of the petition, September 2019 through October 2020

Item	October 2019 through September 2020	
	Quantity (short tons)	Share quantity (percent)
U.S. imports from.--		
Germany	***	***
Japan	***	***
Korea	***	***
Spain	***	***
Subject sources	***	***
Nonsubject sources	***	***
All import sources	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Cumulation considerations

In assessing whether imports should be cumulated, the Commission determines whether U.S. imports from the subject countries compete with each other and with the domestic like product and has generally considered four factors: (1) fungibility, (2) presence of sales or offers to sell in the same geographical markets, (3) common or similar channels of distribution, and (4) simultaneous presence in the market. Information regarding channels of distribution, market areas, and interchangeability appear in Part II. Additional information concerning fungibility, geographical markets, and simultaneous presence in the market is presented below.

Fungibility

Tables IV-6 and IV-7 and figure IV-2 present data on U.S. jumbo roll producers', U.S. independent converters', and U.S. importers U.S. shipments by basis weight.[7] *** U.S. jumbo roll producers' U.S. shipments had a basis weight of ***, while *** of U.S. importers' and U.S. independent converters' U.S. shipments had a basis weight of ***.

[7] The share reported in table IV-7 shows the percent of U.S. independent converters' U.S. shipments by basis weight as a share of U.S. jumbo roll producers' and U.S. importers U.S. shipments by basis weight.

Table IV-6
Thermal paper: U.S. jumbo roll producers' and U.S. importers' U.S. shipments by basis weight, 2019

U.S. shipments	Thermal paper by basis weight (g/m2)				
	Less than 49.9	49.9 to 60	60 to 70	Over 70	All products by weight
	Quantity (short tons)				
U.S. jumbo producers	***	***	***	***	***
U.S. shipments of imports from:-- Germany	***	***	***	***	***
Japan	***	***	***	***	***
Korea	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
U.S jumbo producers & U.S importers	***	***	***	***	***
	Share across (percent)				
U.S. jumbo producers	***	***	***	***	***
U.S. shipments of imports from:-- Germany	***	***	***	***	***
Japan	***	***	***	***	***
Korea	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
U.S jumbo producers & U.S importers	***	***	***	***	***
	Share down (percent)				
U.S. jumbo producers	***	***	***	***	***
U.S. shipments of imports from:-- Germany	***	***	***	***	***
Japan	***	***	***	***	***
Korea	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
U.S jumbo producers & U.S importers	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table IV-7
Thermal paper: U.S. independent converters' U.S. shipments by basis weight, 2019

U.S. shipments	Thermal paper by basis weight (g/m2)			
	Less than 49.9	49.9 to 60	60 to 70	All in scope basis weights
	Quantity (short tons)			
U.S. independent converter	***	***	***	***
	Share across (percent)			
U.S. independent converter	***	***	***	***
	Share combined jumbo producer and importer quantities (percent)			
U.S. independent converter	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Figure IV-2
Thermal paper: U.S. jumbo producers', U.S. independent converters', and U.S. importers' U.S. shipments by basis weight, 2019

* * * * * * *

Source: Compiled from data submitted in response to Commission questionnaires.

Geographical markets

Table IV-8 presents data on U.S. imports of thermal paper by border of entry in 2019. According to official U.S. import statistics, Eastern points of entry were common points of entry for imports of subject sources. The majority of U.S. imports from Germany and Japan entered the United States in 2019 through Eastern ports of entry, while the largest share of U.S. imports from Korea entered the United States in 2019 through Western ports of entry, and the majority of U.S. imports from Spain entered the United States in 2019 through Southern points of entry.[8]

[8] The top three ports of entry for U.S. imports of thermal paper from Germany classified under HTS statistical reporting numbers 4811.90.8030 and 4811.90.9030 in 2019 were Charleston, South Carolina, Houston-Galveston, Texas, and Norfolk, Virginia. The top three ports of entry for U.S. imports of thermal paper from Japan classified under HTS statistical reporting numbers 4811.90.8030 and 4811.90.9030 in 2019 were Savannah, Georgia, Los Angeles, California, and San Francisco, California. The top three ports of entry for U.S. imports of thermal paper from Korea classified under HTS statistical reporting numbers 4811.90.8030 and 4811.90.9030 in 2019 were Houston-Galveston, Texas, Los Angeles, California, and Nogales, Arizona. The top two ports of entry for U.S. imports of thermal paper from Spain classified under HTS statistical reporting numbers 4811.90.8030 and 4811.90.9030 in 2019 were New York, New York and Los Angeles, California.

Table IV-8
Thermal paper: U.S. imports by border of entry, 2019

Item	Border of entry				
	East	North	South	West	Total
	Quantity (short tons)				
U.S. imports from.--					
Germany	40,454	8	21,379	3,155	64,997
Japan	26,898	63	0	11,552	38,514
Korea	13,707	9,785	20,621	26,183	70,296
Spain	3,334	49	6,661	38	10,081
Subject sources	84,394	9,905	48,661	40,928	183,888
Nonsubject sources	5,293	4,329	5,735	3,089	18,446
All import sources	89,686	14,234	54,397	44,018	202,334
	Share across (percent)				
U.S. imports from.--					
Germany	62.2	0.0	32.9	4.9	100.0
Japan	69.8	0.2	0.0	30.0	100.0
Korea	19.5	13.9	29.3	37.2	100.0
Spain	33.1	0.5	66.1	0.4	100.0
Subject sources	45.9	5.4	26.5	22.3	100.0
Nonsubject sources	28.7	23.5	31.1	16.7	100.0
All import sources	44.3	7.0	26.9	21.8	100.0
	Share down (percent)				
U.S. imports from.--					
Germany	45.1	0.1	39.3	7.2	32.1
Japan	30.0	0.4	0.0	26.2	19.0
Korea	15.3	68.7	37.9	59.5	34.7
Spain	3.7	0.3	12.2	0.1	5.0
Subject sources	94.1	69.6	89.5	93.0	90.9
Nonsubject sources	5.9	30.4	10.5	7.0	9.1
All import sources	100.0	100.0	100.0	100.0	100.0

Source: Official U.S. import statistics using HTS statistical reporting numbers 4811.90.8030 and 4811.90.9030 for all sources except Spain and HTS subheading 4811.90 for Spain, accessed October 27th, 2020.

Presence in the market

Table IV-9 and figures IV-3 and IV-4 present U.S. imports of thermal paper from individual and aggregated subject sources and nonsubject sources, by month, from January 2017 through August 2020. U.S. imports from all subject and nonsubject sources were present during each of the 44 months.

Table IV-9
Thermal paper: U.S. imports by month, January 2017 through August 2020

U.S. imports	Germany	Japan	Korea	Spain	Subject sources	Nonsubject sources	All import sources
			Quantity (short tons)				
2017.--							
January	6,644	4,694	3,698	153	15,189	1,846	17,035
February	4,338	3,758	3,931	237	12,264	890	13,154
March	6,910	5,132	2,253	218	14,512	1,454	15,966
April	5,127	1,251	3,866	171	10,415	2,283	12,698
May	6,115	5,843	4,970	180	17,108	1,110	18,217
June	5,191	3,174	6,673	239	15,277	1,331	16,608
July	5,472	4,235	5,064	163	14,934	1,052	15,986
August	4,068	3,435	4,857	253	12,613	1,527	14,140
September	4,089	4,949	3,455	241	12,734	971	13,705
October	5,349	2,647	3,876	135	12,007	1,335	13,342
November	4,318	1,198	3,856	298	9,669	3,037	12,706
December	6,423	1,713	4,048	196	12,379	1,917	14,297
2018.--							
January	5,348	3,301	4,569	131	13,349	1,579	14,929
February	7,039	3,426	4,895	314	15,674	1,025	16,699
March	4,416	3,322	5,532	143	13,414	1,496	14,909
April	6,168	3,987	5,439	89	15,684	1,347	17,031
May	7,459	3,159	4,535	59	15,212	2,310	17,522
June	6,275	2,699	5,216	47	14,237	1,754	15,991
July	6,836	3,655	5,336	143	15,970	2,019	17,989
August	5,456	3,285	5,124	24	13,889	1,630	15,519
September	5,915	2,478	3,827	36	12,255	2,150	14,405
October	7,193	2,958	6,095	162	16,409	1,592	18,001
November	4,392	2,665	6,481	36	13,575	1,302	14,877
December	5,871	3,307	5,508	24	14,709	1,207	15,917
2019.--							
January	7,663	3,859	6,429	44	17,995	1,461	19,456
February	5,694	3,564	5,889	1,821	16,968	900	17,867
March	7,083	3,103	6,263	1,940	18,389	1,400	19,789
April	6,042	3,371	4,295	589	14,298	1,337	15,634
May	5,637	3,256	5,631	1,630	16,154	1,388	17,542
June	2,578	3,113	5,660	1,517	12,868	1,235	14,103
July	3,429	3,129	4,841	817	12,215	1,570	13,785
August	4,945	4,011	5,549	242	14,747	1,835	16,582
September	3,785	2,315	5,329	214	11,642	1,888	13,530
October	6,527	3,900	7,375	808	18,610	1,404	20,014
November	6,096	2,600	6,773	423	15,891	1,969	17,860
December	5,517	2,293	6,263	39	14,112	2,060	16,172

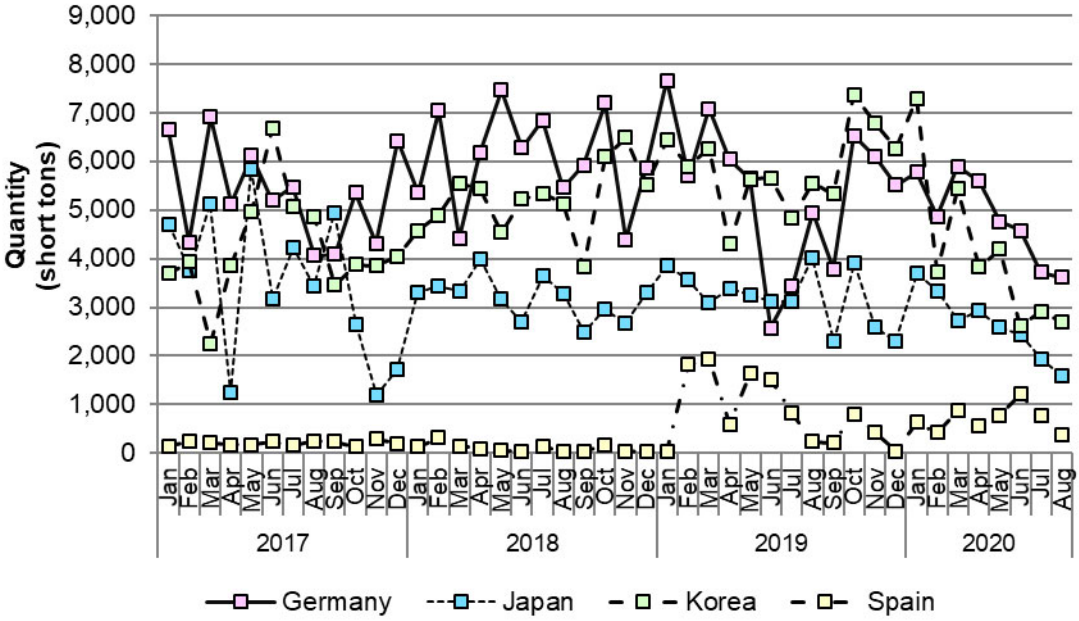
Table continued on next page.

Table IV-9—Continued
Thermal paper: U.S. imports by month, January 2017 through August 2020

U.S. imports	Germany	Japan	Korea	Spain	Subject sources	Nonsubject sources	All import sources
			Quantity (short tons)				
2020.--							
January	5,768	3,692	7,294	638	17,393	1,888	19,281
February	4,870	3,330	3,731	419	12,350	1,682	14,033
March	5,892	2,725	5,436	872	14,925	1,524	16,449
April	5,594	2,938	3,831	563	12,925	1,764	14,688
May	4,763	2,586	4,196	777	12,321	1,373	13,694
June	4,571	2,429	2,608	1,217	10,825	1,177	12,002
July	3,723	1,927	2,913	769	9,332	1,826	11,159
August	3,617	1,586	2,687	373	8,263	1,419	9,682

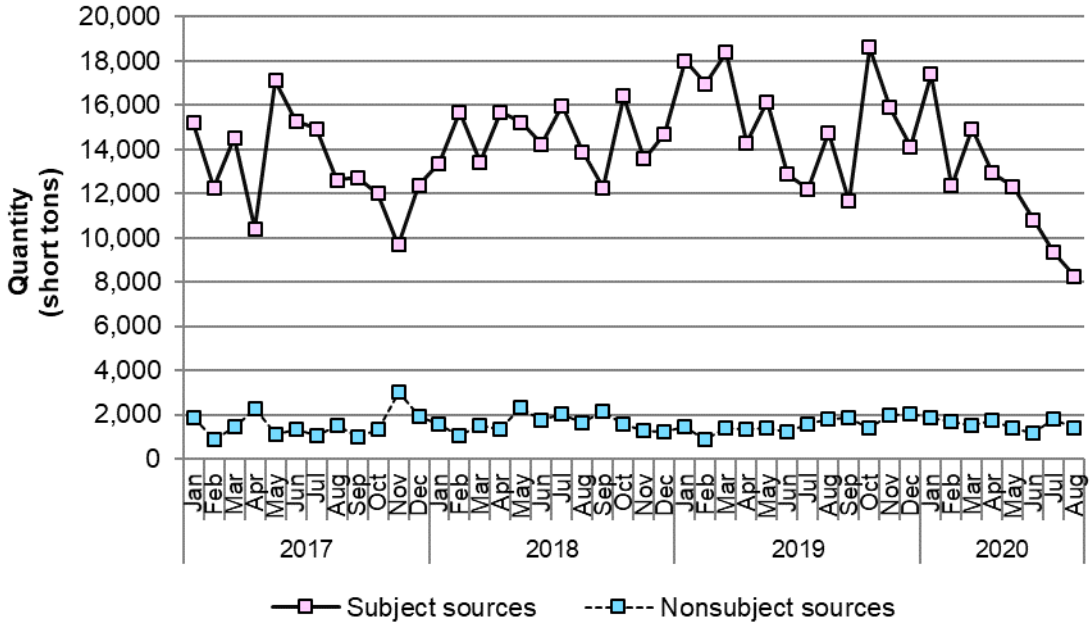
Source: Official U.S. import statistics using HTS statistical reporting numbers 4811.90.8030 and 4811.90.9030 for all sources except Spain and HTS subheading 4811.90 for Spain, accessed October 27th, 2020.

Figure IV-3
Thermal paper: U.S. imports from individual subject sources by month, January 2017 through August 2020



Source: Official U.S. import statistics using HTS statistical reporting numbers 4811.90.8030 and 4811.90.9030 for all sources except Spain and HTS subheading 4811.90 for Spain, accessed October 27th, 2020.

Figure IV-4
Thermal paper: U.S. imports from aggregated subject and nonsubject sources by month, January 2017 through August 2020



Source: Official U.S. import statistics using HTS statistical reporting numbers 4811.90.8030 and 4811.90.9030 for all sources except Spain and HTS subheading 4811.90 for Spain, accessed October 27th, 2020.

Apparent U.S. consumption

Table IV-10 and figure IV-5 present data on apparent U.S. consumption and U.S. market shares for thermal paper. Apparent U.S. consumption, by quantity, fluctuated during 2017-19, increasing by *** percent between 2017 and 2018, then decreasing by *** percent between 2018 and 2019, ending *** percent higher in 2019 than in 2017. The quantity of apparent U.S. consumption was lower in January-June 2020 than in January-June 2019. The value of apparent U.S. consumption similarly fluctuated during 2017-19, increasing by *** percent between 2017 and 2018, then decreasing by *** percent between 2018 and 2019, ending *** percent higher in 2019 than in 2017. While the quantity and value of all imports similarly increased between 2017 and 2018, and decreased between 2018 and 2019 (but increased overall), the magnitude of the fluctuations in the quantity and value of apparent U.S. consumption is in part a reflection of U.S. producers' U.S. shipments, which similarly fluctuated during 2017-19.

Table IV-10
Thermal paper: Apparent U.S. consumption, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (short tons)				
U.S. producers' U.S. shipments	***	***	***	***	***
U.S. importers' U.S. shipments from.--					
Germany	***	***	***	***	***
Japan	***	***	***	***	***
Korea	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Apparent U.S. consumption	***	***	***	***	***
	Value (1,000 dollars)				
U.S. producers' U.S. shipments.--					
Fully domestic value	***	***	***	***	***
Value added to imports	***	***	***	***	***
Total	***	***	***	***	***
U.S. importers' U.S. shipments from.--					
Germany	***	***	***	***	***
Japan	***	***	***	***	***
Korea	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Apparent U.S. consumption	***	***	***	***	***

Note.--The quantity for U.S. producers' U.S. shipments reflects the quantity of thermal paper sold in the United States by U.S. jumbo producers. The value for U.S. producers' U.S. shipments reflects the value of thermal paper sold in the United States by U.S. jumbo producers plus the additional value added to U.S. produced and imported jumbo rolls of thermal paper by U.S. independent converters based on U.S. conversion operations. In measuring consumption and market share this methodology avoids reclassifying and/or double counting merchandise already reported once by U.S. jumbo producers or by U.S. importers.

Source: Compiled from data submitted in response to Commission questionnaires.

Figure IV-5
Thermal paper: Apparent U.S. consumption, 2017-19, January to June 2019, and January to June 2020

* * * * * * *

Source: Compiled from data submitted in response to Commission questionnaires.

U.S. market shares

U.S. market share data are presented in table IV-11. U.S. producers' market share, by quantity, decreased from *** percent in 2017 to *** percent in 2019. It was *** percent in January-June 2020, compared with *** percent in January-June 2019. The market share of U.S. imports from Germany decreased from *** percent in 2017 to *** percent in 2019, and was *** percent in January-June 2020, compared with *** percent in January-June 2019. Conversely, the market share of U.S. imports from Japan increased from *** percent to *** percent during 2017-19, and was *** percent in January-June 2020, compared with *** percent in January-June 2019. The market share of U.S. imports from Korea increased from *** percent to *** percent during 2017-19, and was *** percent in January-June 2020, compared with *** percent in January-June 2019. The market share of U.S. imports from Spain increased from *** percent to *** percent. Overall, the market share of subject imports increased from *** percent in 2017 to *** percent in 2019 and was *** percent in January-June 2020, compared with *** percent in January-June 2019. The market share of nonsubject imports, by quantity, remained relatively low, increasing by *** percentage points during 2017-19, and remained the same between January-June 2019 and January-June 2020.

Table IV-11
Thermal paper: U.S. consumption and market shares, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (short tons)				
Apparent U.S. consumption	***	***	***	***	***
	Share of quantity (percent)				
U.S. producers' U.S. shipments	***	***	***	***	***
U.S. importers' U.S. shipments from.--					
Germany	***	***	***	***	***
Japan	***	***	***	***	***
Korea	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Value (1,000 dollars)				
Apparent U.S. consumption	***	***	***	***	***
	Share of value (percent)				
U.S. producers' U.S. shipments.--					
Fully domestic value	***	***	***	***	***
Value added to imports	***	***	***	***	***
Total	***	***	***	***	***
U.S. importers' U.S. shipments from.--					
Germany	***	***	***	***	***
Japan	***	***	***	***	***
Korea	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

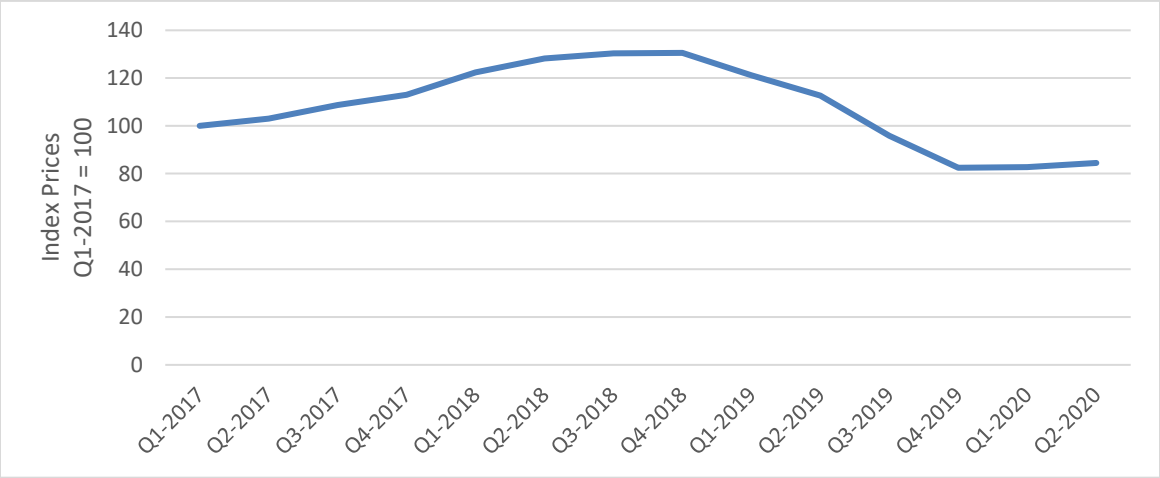
Part V: Pricing data

Factors affecting prices

Raw material costs

Raw materials used to produce jumbo rolls of thermal paper are virgin pulp/paper and chemicals used in the coating process. U.S. producers reported that they did not use any recycled paper as it creates a lower quality thermal paper.[1] Raw materials, as a share of cost of goods sold ("COGS"), ranged between *** percent during 2017-19. During 2017-19, there were two major raw material price shocks: wood pulp prices increased due to an increase in demand for virgin pulp in China and the price of leuco dye increased dramatically due to plant closures in China, creating a supply shortage. As shown by figure V-1, the price of wood pulp increased by 30.5 percent at its peak in the last quarter of 2018. However, prices have decreased since then and were 15.5 percent lower in the second quarter of 2020 than the first quarter of 2017. The shortage of leuco dye, which began at the end of 2017 and ended in late 2018, caused large increases in the price of leuco dye. According to Koehler, the price increase of leuco dye was between 500-600 percent.[2] Petitioner *** showed leuco dye prices went from approximately *** per pound to *** per pound, or a *** percent increase.[3]

Figure V-1
Raw Materials: Prices of wood pulp, quarterly, January 2017-June 2020



Source: Federal Reserve Economic Data, accessed November 4, 2020.

[1] Conference transcript, p. 109 (Hefner).
[2] Conference transcript, p. 192 (DeBusk).
[3] Petitioner's post-conference brief, Exhibit 30.

Transportation costs to the U.S. market

Transportation costs for thermal paper shipped from subject countries to the United States averaged 5.7 percent for Germany, 10.9 percent for Japan, 0.3 percent for Korea, and 8.5 percent for Spain during 2019. These estimates were derived from official import data and represent the transportation and other charges on imports.[4]

U.S. inland transportation costs

Most responding U.S. producers (5 of 6) and importers (14 of 15) reported that they typically arrange transportation to their customers. Most U.S. producers reported that their U.S. inland transportation costs ranged from 2.5 to 9.0 percent while approximately half of importers reported costs of 0.0 to 4.9 percent.[5]

Pricing practices

Pricing methods

U.S. producers and importers reported a variety of pricing methods. The majority of U.S. producers and importers reported using transaction-by-transaction negotiations (table V-1).

Table V-1
Thermal paper: U.S. producers' and importers' reported price setting methods, by number of responding firms

Method	U.S. producers	Importers
Transaction-by-transaction	5	10
Contract	3	2
Set price list	2	3
Other	1	5
Responding firms	6	15

Note: The sum of responses down may not add up to the total number of responding firms as each firm was instructed to check all applicable price setting methods employed.
Source: Compiled from data submitted in response to Commission questionnaires.

[4] The estimated transportation costs were obtained by subtracting the customs value from the c.i.f. value of the imports for 2019 and then dividing by the customs value based on the HTS subheading 4811.90.8030 & 4811.90.9030.

[5] Importers *** provided *** percent as the cost of inland transportation. Based on conversations with importer ***, staff understands inland transportation for *** imports is paid by the exporter and is not known to the importer, but it is not zero. See staff email from ***, November 2, 2020. *** stated that there was "***" to their inland transportation cost as they deliver ***. See staff email from ***, October 30, 2020. As such staff included *** based on *** response.

U.S. producers and importers reported selling most of their thermal paper under short-term contracts, followed by spot sales (table V-2). Importers sell *** of their thermal paper under long-term contracts compared to U.S. producers, which sell *** percent of their thermal paper under long-term contracts.

Table V-2
Thermal paper: U.S. producers' and importers' shares of U.S. commercial shipments by type of sale, 2019

Type of sale	U.S. producers	Importers
Long-term contracts	***	***
Annual contracts	***	***
Short-term contracts	***	***
Spot sales	***	***
Total	100	100

Note: Because of rounding, figures may not add to the totals shown.

Source: Compiled from data submitted in response to Commission questionnaires.

U.S. producer *** reported that sales terms depend on the customer as some prefer transaction-by-transaction, short-term contracts, or incentive rebates. In general, short-term contracts range between 30 and 180 days while long-term contracts last *** days. Importers' short-term contracts range between *** days. Most U.S. producers and importers reported there were price renegotiations during the term of the contract. Some U.S. producers and all importers stated contracts contained provisions that index prices to raw materials. Producers *** reported that sometimes its contract prices are linked to the RISI index.

Sales terms and discounts

All U.S. producers and most (12 of 14) importers quoted prices on a delivered basis. Four of six responding U.S. producers offer quantity/volume discounts and five of fifteen responding importers report providing quantity discounts. Several importers (6 of 15) reported other type of discounts, and five of the six reported payment terms/early payment discounts.

Price data

The Commission requested U.S. producers and importers to provide quarterly data for the total quantity and f.o.b. value of the following thermal paper products shipped to unrelated U.S. customers during 2017-2019.

Product 1.-- Thermal paper in jumbo rolls, with a target caliper of less than 2.2 mils (less than 55.9 microns), with a target basis weight of less than 49.9 g/m^2, not top-coated, white/non-colored paper, black image color, not printed on the non-thermal coated side, standard sensitivity.

Product 2.-- Thermal paper in jumbo rolls, with a target caliper of 2.2 to 2.5 mils (55.9 to 63.5 microns), with a target basis weight of at least 49.9 g/m^2 and up to 60 g/m^2, not top-coated, white/non-colored paper, black image color, not printed on the non-thermal coated side, standard sensitivity.

Product 3.-- Thermal paper in jumbo rolls, with a target caliper of 2.9 to 3.4 mils (76.0 to 84.0 microns), with a target basis weight of at least 67.5 g/m^2 and up to 80 g/m^2, not top-coated, white/non-colored paper, black image color, not printed on the non-thermal coated side, standard sensitivity.

Product 4.-- Thermal paper in jumbo rolls, with a target caliper of 2.9 to 3.4 mils (76.0 to 84.0 microns), with a target basis weight of at least 67.5 g/m^2 and up to 80 g/m^2, top-coated, white/non-colored paper, black image color, not printed on the non-thermal coated side, standard sensitivity.

Three U.S. producers and ten importers provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.[6] [7] [8] Pricing data reported by these firms accounted for approximately *** percent of the value of

[6] Per-unit pricing data are calculated from total quantity and total value data provided by U.S. producers and importers. The precision and variation of these figures may be affected by rounding, limited quantities, and producer or importer estimates.

[7] Of the ten importers that provided price data, *** provided price data on a delivered basis for products 1-2 and 1-3, respectively, and *** provided price data for product 1 on a CIF basis. Staff requested that these importers revise the data to report f.o.b. prices. ***.

[8] Staff received a U.S. producer questionnaire from *** on November 5th and was unable to verify their pricing data. As such, staff did not include their pricing data in this report.

U.S. producers' commercial shipments of jumbo rolls thermal paper, *** percent of the value of U.S. commercial shipments of subject imports from Germany, *** percent of the value of U.S. commercial shipments of subject imports from Japan, *** percent of the value of U.S. commercial shipments of subject imports from Korea, and *** percent of the value of U.S. commercial shipments of subject imports from Spain in 2019.[9]

Price data for products 1-4 are presented in tables V-3 to V-6 and figures V-2 to V-5.

[9] Pricing coverage is based on U.S. commercial shipments reported in questionnaires.

Table V-3
Thermal paper: Weighted-average f.o.b. prices and quantities of domestic and imported product 1 and margins of underselling/(overselling), by quarter, January 2017-June 2020

Period	United States		Germany			Japan		
	Price ($ per MSF)	Quantity (MSF)	Price ($ per MSF)	Quantity (MSF)	Margin (percent)	Price ($ per MSF)	Quantity (MSF)	Margin (percent)
2017: Jan.-Mar.	***	***	***	***	***	***	***	***
Apr.-June	***	***	***	***	***	***	***	***
July-Sept.	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***
2018: Jan.-Mar.	***	***	***	***	***	***	***	***
Apr.-June	***	***	***	***	***	***	***	***
July-Sept.	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***
2019: Jan.-Mar.	***	***	***	***	***	***	***	***
Apr.-June	***	***	***	***	***	***	***	***
July-Sept.	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***
2020: Jan.-Mar.	***	***	***	***	***	***	***	***
Apr.-June	***	***	***	***	***	***	***	***

Period	Korea			Spain		
	Price ($ per MSF)	Quantity (MSF)	Margin (percent)	Price ($ per MSF)	Quantity (MSF)	Margin (percent)
2017: Jan.-Mar.	***	***	***	***	***	***
Apr.-June	***	***	***	***	***	***
July-Sept.	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***
2018: Jan.-Mar.	***	***	***	***	***	***
Apr.-June	***	***	***	***	***	***
July-Sept.	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***
2019: Jan.-Mar.	***	***	***	***	***	***
Apr.-June	***	***	***	***	***	***
July-Sept.	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***
2020: Jan.-Mar.	***	***	***	***	***	***
Apr.-June	***	***	***	***	***	***

Note: Product 1: Thermal paper in jumbo rolls, with a target caliper of less than 2.2 mils (less than 55.9 microns), with a target basis weight of less than 49.9 g/m2, not top-coated, white/non-colored paper, black image color, not printed on the non-thermal coated side, standard sensitivity.

Source: Compiled from data submitted in response to Commission questionnaires.

Table V-4
Thermal paper: Weighted-average f.o.b. prices and quantities of domestic and imported product 2 and margins of underselling/(overselling), by quarter, January 2017-June 2020

Period	United States		Germany			Japan		
	Price ($ per MSF)	Quantity (MSF)	Price ($ per MSF)	Quantity (MSF)	Margin (percent)	Price ($ per MSF)	Quantity (MSF)	Margin (percent)
2017: Jan.-Mar.	***	***	***	***	***	***	***	***
Apr.-June	***	***	***	***	***	***	***	***
July-Sept.	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***
2018: Jan.-Mar.	***	***	***	***	***	***	***	***
Apr.-June	***	***	***	***	***	***	***	***
July-Sept.	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***
2019: Jan.-Mar.	***	***	***	***	***	***	***	***
Apr.-June	***	***	***	***	***	***	***	***
July-Sept.	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***
2020: Jan.-Mar.	***	***	***	***	***	***	***	***
Apr.-June	11.62	357,278	***	***	***	***	***	***

Period	Korea			Spain		
	Price ($ per MSF)	Quantity (MSF)	Margin (percent)	Price ($ per MSF)	Quantity (MSF)	Margin (percent)
2017: Jan.-Mar.	***	***	***	***	***	***
Apr.-June	***	***	***	***	***	***
July-Sept.	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***
2018: Jan.-Mar.	***	***	***	***	***	***
Apr.-June	***	***	***	***	***	***
July-Sept.	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***
2019: Jan.-Mar.	***	***	***	***	***	***
Apr.-June	***	***	***	***	***	***
July-Sept.	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***
2020: Jan.-Mar.	***	***	***	***	***	***
Apr.-June	***	***	***	***	***	***

Note: Product 2: Thermal paper in jumbo rolls, with a target caliper of 2.2 to 2.5 mils (55.9 to 63.5 microns), with a target basis weight of at least 49.9 g/m2 and up to 60 g/m2, not top-coated, white/non-colored paper, black image color, not printed on the non-thermal coated side, standard sensitivity.

Source: Compiled from data submitted in response to Commission questionnaires.

Table V-5
Thermal paper: Weighted-average f.o.b. prices and quantities of domestic and imported product 3 and margins of underselling/(overselling), by quarter, January 2017-June 2020

Period	United States		Germany			Japan		
	Price ($ per MSF)	Quantity (MSF)	Price ($ per MSF)	Quantity (MSF)	Margin (percent)	Price ($ per MSF)	Quantity (MSF)	Margin (percent)
2017: Jan.-Mar.	***	***	***	***	***	***	***	***
Apr.-June	***	***	***	***	***	***	***	***
July-Sept.	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***
2018: Jan.-Mar.	***	***	***	***	***	***	***	***
Apr.-June	***	***	***	***	***	***	***	***
July-Sept.	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***
2019: Jan.-Mar.	***	***	***	***	***	***	***	***
Apr.-June	***	***	***	***	***	***	***	***
July-Sept.	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***
2020: Jan.-Mar.	***	***	***	***	***	***	***	***
Apr.-June	***	***	***	***	***	***	***	***

Period	Korea			Spain		
	Price ($ per MSF)	Quantity (MSF)	Margin (percent)	Price ($ per MSF)	Quantity (MSF)	Margin (percent)
2017: Jan.-Mar.	***	***	***	***	***	***
Apr.-June	***	***	***	***	***	***
July-Sept.	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***
2018: Jan.-Mar.	***	***	***	***	***	***
Apr.-June	***	***	***	***	***	***
July-Sept.	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***
2019: Jan.-Mar.	***	***	***	***	***	***
Apr.-June	***	***	***	***	***	***
July-Sept.	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***
2020: Jan.-Mar.	***	***	***	***	***	***
Apr.-June	***	***	***	***	***	***

Note: Product 3: Thermal paper in jumbo rolls, with a target caliper of 2.2 to 2.5 mils (55.9 to 63.5 microns), with a target basis weight of at least 49.9 g/m2 and up to 60 g/m2, not top-coated, white/non-colored paper, black image color, not printed on the non-thermal coated side, standard sensitivity.

Source: Compiled from data submitted in response to Commission questionnaires.

Table V-6
Thermal paper: Weighted-average f.o.b. prices and quantities of domestic and imported product 4 and margins of underselling/(overselling), by quarter, January 2017-June 2020

Period	United States		Germany			Japan		
	Price ($ per MSF)	Quantity (MSF)	Price ($ per MSF)	Quantity (MSF)	Margin (percent)	Price ($ per MSF)	Quantity (MSF)	Margin (percent)
2017: Jan.-Mar.	***	***	***	***	***	***	***	***
Apr.-June	***	***	***	***	***	***	***	***
July-Sept.	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***
2018: Jan.-Mar.	***	***	***	***	***	***	***	***
Apr.-June	***	***	***	***	***	***	***	***
July-Sept.	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***
2019: Jan.-Mar.	***	***	***	***	***	***	***	***
Apr.-June	***	***	***	***	***	***	***	***
July-Sept.	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***
2020: Jan.-Mar.	***	***	***	***	***	***	***	***
Apr.-June	***	***	***	***	***	***	***	***

Period	Korea			Spain		
	Price ($ per MSF)	Quantity (MSF)	Margin (percent)	Price ($ per MSF)	Quantity (MSF)	Margin (percent)
2017: Jan.-Mar.	***	***	***	***	***	***
Apr.-June	***	***	***	***	***	***
July-Sept.	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***
2018: Jan.-Mar.	***	***	***	***	***	***
Apr.-June	***	***	***	***	***	***
July-Sept.	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***
2019: Jan.-Mar.	***	***	***	***	***	***
Apr.-June	***	***	***	***	***	***
July-Sept.	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***
2020: Jan.-Mar.	***	***	***	***	***	***
Apr.-June	***	***	***	***	***	***

Note: Product 4: Thermal paper in jumbo rolls, with a target caliper of 2.9 to 3.4 mils (76.0 to 84.0 microns), with a target basis weight of at least 67.5 g/m^2 and up to 80 g/m^2, top-coated, white/non-colored paper, black image color, not printed on the non-thermal coated side, standard sensitivity.

Source: Compiled from data submitted in response to Commission questionnaires.

Figure V-2
Thermal paper: Weighted-average prices and quantities of domestic and imported product 1, by quarter, January 2017 to June 2020

* * * * * * *

* * * * * * *

Product 1: Thermal paper in jumbo rolls, with a target caliper of less than 2.2 mils (less than 55.9 microns), with a target basis weight of less than 49.9 g/m^2, not top-coated, white/non-colored paper, black image color, not printed on the non-thermal coated side, standard sensitivity.

Source: Compiled from data submitted in response to Commission questionnaires.

Figure V-3
Thermal paper: Weighted-average prices and quantities of domestic and imported product 2, by quarter, January 2017 to June 2020

* * * * * * *

* * * * * * *

Product 2: Thermal paper in jumbo rolls, with a target caliper of 2.2 to 2.5 mils (55.9 to 63.5 microns), with a target basis weight of at least 49.9 g/m2 and up to 60 g/m2, not top-coated, white/non-colored paper, black image color, not printed on the non-thermal coated side, standard sensitivity.

Source: Compiled from data submitted in response to Commission questionnaires.

Figure V-4
Thermal paper: Weighted-average prices and quantities of domestic and imported product 3, by quarter, January 2017 to June 2020

* * * * * * *

* * * * * * *

Product 3: Thermal paper in jumbo rolls, with a target caliper of 2.2 to 2.5 mils (55.9 to 63.5 microns), with a target basis weight of at least 49.9 g/m2 and up to 60 g/m2, not top-coated, white/non-colored paper, black image color, not printed on the non-thermal coated side, standard sensitivity.

Source: Compiled from data submitted in response to Commission questionnaires.

Figure V-5
Thermal paper: Weighted-average prices and quantities of domestic and imported product 4, by quarter, January 2017 to June 2020

* * * * * * *

* * * * * * *

Product 4: Thermal paper in jumbo rolls, with a target caliper of 2.9 to 3.4 mils (76.0 to 84.0 microns), with a target basis weight of at least 67.5 g/m^2 and up to 80 g/m^2, top-coated, white/non-colored paper, black image color, not printed on the non-thermal coated side, standard sensitivity.

Source: Compiled from data submitted in response to Commission questionnaires.

Price trends

In general, prices increased during January 2017 to June 2020. Table V-7 summarizes the price trends by country and by product. As shown in the table, domestic price increases ranged from *** to *** percent during January 2017 to June 2020 while import price increases ranged from *** to *** percent. Only prices for product 4 from *** decreased by *** during January 2017 to June 2020. As shown in figures V-6 and V-7, both U.S. producers and importers' prices steadily increased at the end of 2017 and began to decrease at the beginning of 2019, reflecting the global leuco dye shortage and subsequent increase in leuco dye prices.

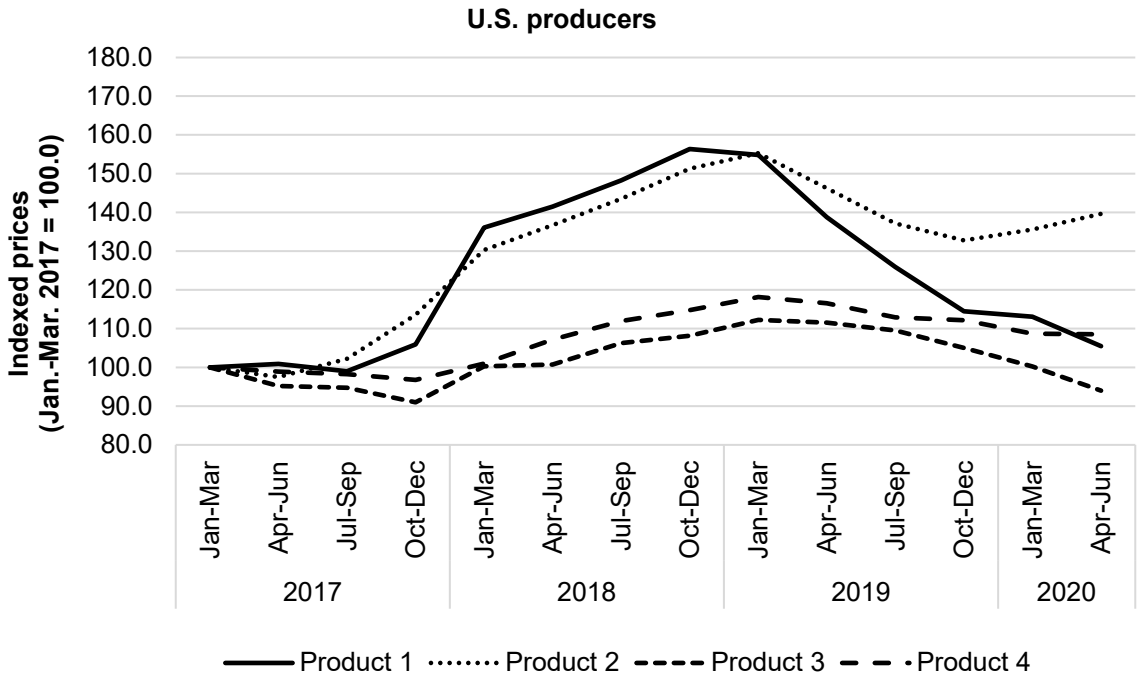
Table V-7
Thermal paper: Number of quarters containing observations low price, high price, and change in price over period, by product and source, January 2017 through June 2020

Item	Number of quarters	Low price ($ per MSF)	High price ($ per MSF)	Change in price (percent)
Product 1				
United States	***	***	***	***
Germany	***	***	***	***
Japan	***	***	***	***
Korea	***	***	***	***
Spain	***	***	***	***
Product 2				
United States	***	***	***	***
Germany	***	***	***	***
Japan	***	***	***	***
Korea	***	***	***	***
Spain	***	***	***	***
Product 3				
United States	***	***	***	***
Germany	***	***	***	***
Japan	***	***	***	***
Korea	***	***	***	***
Spain	***	***	***	***
Product 4				
United States	***	***	***	***
Germany	***	***	***	***
Japan	***	***	***	***
Korea	***	***	***	***
Spain	***	***	***	***

Note: Percentage change from the first quarter in which data were available to the last quarter in which price data were available.

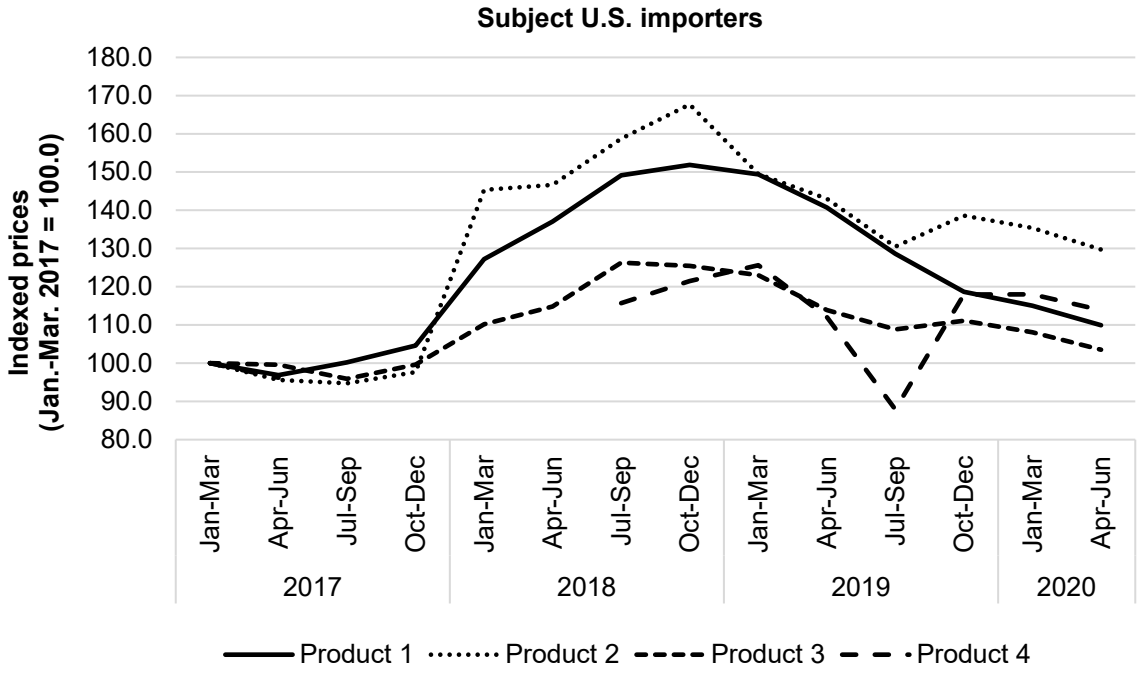
Source: Compiled from data submitted in response to Commission questionnaires.

Figure V-6
Thermal paper: Indexed U.S. producer prices, January 2017 to June 2020



Source: Compiled from data submitted in response to Commission questionnaires.

Figure V-7
Thermal paper: Indexed subject U.S. importer prices, January 2017 to June 2020



Source: Compiled from data submitted in response to Commission questionnaires.

Price comparisons

As shown in table V-8, prices for product imported from subject countries were below those for U.S.-produced product in 92 of 159 instances (*** MSF); margins of underselling ranged from 0.3 to 34.6 percent. In the remaining 67 instances (*** MSF), prices for product from subject countries were between 0.1 and 50.7 percent above prices for the domestic product. Specifically, there were *** instances of underselling for product imported from Germany with margins ranging from *** and *** instances of overselling with margins ranging from ***. The price of imports of thermal paper from Japan were below domestically produced product in *** instances with margins between *** while prices of Japanese thermal paper were higher in *** instances with margins between ***. Prices of thermal paper imported from Korea were below U.S.-produced product in *** instances with margins ranging from *** while prices were above U.S. product in *** instances with margins ranging from ***. There were *** instances of underselling for product imported from Spain with margins ranging from *** and *** instances of overselling with margins ranging from ***.

Table V-8
Thermal paper: Instances of underselling/overselling and the range and average of margins, by country, January 2017 to June 2020

	Underselling				
				Margin range (percent)	
Source	Number of quarters	Quantity (MSF)	Average margin (percent)	Min	Max
Product 1	***	***	***	***	***
Product 2	***	***	***	***	***
Product 3	***	***	***	***	***
Product 4	***	***	***	***	***
Total, underselling	92	45,890,855	11.6	0.3	33.2
Germany	***	***	***	***	***
Japan	***	***	***	***	***
Korea	***	***	***	***	***
Spain	***	***	***	***	***
Total, underselling	92	45,890,855	11.6	0.3	33.2

Table V-8 (*Continued*)
Thermal paper: Instances of underselling/overselling and the range and average of margins, by country, January 2017 to June 2020

Source	(Overselling)				
	Number of quarters	Quantity (MSF)	Average margin (percent)	Margin range (percent)	
				Min	Max
Product 1	***	***	***	***	***
Product 2	***	***	***	***	***
Product 3	***	***	***	***	***
Product 4	***	***	***	***	***
Total, overselling	67	38,251,611	(12.3)	(0.1)	(50.7)
Germany	***	***	***	***	***
Japan	***	***	***	***	***
Korea	***	***	***	***	***
Spain	***	***	***	***	***
Total, overselling	67	38,251,611	(12.3)	(0.1)	(50.7)

Note: These data include only quarters in which there is a comparison between the U.S. and subject product.

Source: Compiled from data submitted in response to Commission questionnaires.

Lost sales and lost revenue

The Commission requested that U.S. producers of thermal paper report purchasers with which they experienced instances of lost sales or revenue due to competition from imports of thermal paper from Germany, Japan, Korea, and Spain during January 2017-June 2020. Of the six responding U.S. producers, five reported that they had to reduce prices, four reported they had to roll back announced price increases, and five firms reported that they had lost sales. Four U.S. producers submitted lost sales and lost revenue allegations.

Staff contacted 34 purchasers and received responses from 19 purchasers. Responding purchasers reported purchasing *** short tons of thermal paper during 2017-19 with Germany and Korea being the largest imports source for purchasers (tables V-9 and V-10).

Table V-9
Thermal paper: Purchasers' reported purchases and imports, January 2017-June 2020

Purchaser	Purchases and imports in January 2017 through June 2020 (short tons)			Change in domestic share (pp, 2017-19)	Change in subject country share (pp, 2017-19)
	Domestic	Subject	All other		
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***

Table V-9 (*Continued*)
Thermal paper: Purchasers' reported purchases and imports, January 2017-June 2020

Purchaser	Purchases and imports in January 2017 through June 2020 (short tons)			Change in domestic share (pp, 2017-19)	Change in subject country share (pp, 2017-19)
	Domestic	Subject	All other		
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
All firms	401,377	283,582	7,899	(3.9)	5.2

Note: All other includes all other sources and unknown sources.
Note: Percentage points (pp) change: Change in the share of the firm's total purchases of domestic and/or subject country imports between first and last years.

Source: Compiled from data submitted in response to Commission questionnaires.

Table V-10
Thermal paper: Purchasers' amount of purchases and imports by country, 2017-19 and January to June 2020

Item	Calendar year			Jan-Jun 2020	Comparison period		
	2017	2018	2019		2017-19	2017-18	2018-19
	Quantity (short tons)				Change (percent)		
U.S. purchasers' purchases and imports.-- United States	***	***	***	***	***	***	***
Germany	***	***	***	***	***	***	***
Japan	***	***	***	***	***	***	***
Korea	***	***	***	***	***	***	***
Spain	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***
Known import sources	***	***	***	***	***	***	***
Unknown sources	***	***	***	***	***	***	***
All sources	***	***	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

During January 2017 through June 2020, responding purchasers purchased *** percent from U.S. producers, *** percent from subject countries, and *** percent from all other countries. Purchasers were asked about changes in their purchasing patterns from different sources since 2017. Of the responding purchasers, nine reported decreasing purchases from domestic producers, two reported increasing purchases, four reported no change, two reported fluctuating purchases, and one did not purchase any domestic product. Explanations for increasing purchases of domestic product included ***. Explanations for decreasing purchases of domestic product included supply diversification, supply substitution during leuco dye shortage, price, and overall decrease in demand for thermal paper. *** stated that the need for higher quality paper was the reason for its decrease in domestic product purchases.

Of the 19 responding purchasers, 15 reported that, since 2017, they had purchased imported thermal paper from subject countries instead of U.S.-produced product. Twelve reported that the price of thermal paper imported from subject countries was lower than domestically produced product and seven reported that price was the primary reason for purchasing subject product instead of domestically produced thermal paper. Nine purchasers estimated the quantity of thermal paper from subject countries purchased instead of domestic product, totaling *** short tons (table V-11). Eight purchasers reported that price was not the primary reason for purchasing subject imports instead of domestically produced product. The most common response to non-price reason to purchase subject imports instead of domestic was availability of product. Related to availability, *** reported *** at the primary reason. *** reported *** to whether price was the primary reason for importing/purchasing subject imports rather than domestic. *** did not provide a response to the same question but provided the estimated quantity of imports purchased instead of domestic product. Both purchasers, ***, provided an explanation why prices were not the main reason for imports. *** reported that "***" while *** reported that "***."

Table V-11
Thermal paper: Purchasers' responses to purchasing subject imports instead of domestic product

Purchaser	Subject imports purchased instead of domestic (Y/N)	Imports priced lower (Y/N)	If purchased subject imports instead of domestic, was price a primary reason		
			Y/N	If Yes, quantity short tons	If No, non-price reason
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Total	Yes--15; No--4	Yes--12; No--2	Yes--7; No--8	***	

Source: Compiled from data submitted in response to Commission questionnaires.

By subject country, 12 of 18 purchasers reported purchasing thermal paper imported from Germany, 6 of 18 reported purchasing product imported from Japan, 13 of 19 reported purchasing product imported from Korea, and 11 of 19 reported purchasing product imported from Spain instead of domestic (table V-12). Nine, two, eight, and nine purchasers stated prices were lower for German, Japanese, Korean, and Spanish thermal paper, respectively. Five purchasers of German product, two purchasers of Japanese product, and six purchasers each of Korean and Spanish product reported price was the primary reason for purchasing thermal paper.

Table V-12
Thermal paper: Purchasers' responses to purchasing subject instead of domestic, by country

Source	Count of purchasers reporting subject instead of domestic	Count of purchasers reported that imports were priced lower	Count of purchasers reporting that price was a primary reason for shift	Quantity subject purchased short tons
Germany	12	9	5	***
Japan	6	2	2	***
Korea	13	8	6	***
Spain	11	9	6	***
Any subject source	15	12	7	***

Source: Compiled from data submitted in response to Commission questionnaires.

Of the 19 responding purchasers, five reported that U.S. producers had reduced prices in order to compete with lower-priced imports from subject countries, six reported no price reductions occurred, and eight reported that they did not know. The reported estimated price reduction ranged from *** percent. In describing the price reductions, *** indicated "estimated domestic pricing drops 3-5 percent to meet import pricing each time the market competitiveness changes." Purchaser *** stated that "***."

In responding to the lost sales and lost revenue survey, some purchasers provided additional information on purchases and market dynamics. Some purchasers indicated the shortage of thermal paper due to the leuco dye lead them to diversify their supply. *** stated "domestic product for multiple reasons became less available thus creating our dependency for foreign produced paper." *** stated that it "started to import thermal paper because of the thermal paper supply… and the announcement of Appvion's bankruptcy filing…. We had no choice other than to secure import relationships with companies that were on solid financial ground and able to supply us with product." Other purchasers

mentioned the negative effects of converted rolls imports. *** indicated they “were hurt by imported finished or converted products.”

Part VI: Financial experience of U.S. producers

Background

Six U.S. firms provided usable financial data on their operations on certain thermal paper. [1] Three firms coat base paper and produce jumbo rolls of thermal paper: Domtar, which is an integrated producer[2] that produces pulp and base paper, and coats the paper; Appvion and Kanzaki, [3] which purchase the base paper that they coat to make thermal paper in jumbo rolls; [4] and three independent converters, Iconex, Integrity, and Liberty,[5] which slit jumbo rolls into smaller rolls of desired width , length, and packaging that are suitable for use in thermal printers.[6] Firms that produce coated jumbo rolls are presented together; firms that convert only are presented separately but then accumulated with producers of jumbo rolls. Producers of jumbo rolls do not perform converting and sell directly to independent converters and laminators. Each of the firms reported data on a GAAP basis; each firm reported on a calendar year basis with the exception of ***.

Operations on thermal paper

Figure VI-1 presents the responding firms' share of the total net sales value for 2019.

Table VI-1 presents aggregated data on U.S. producers' operations in relation to jumbo rolls of thermal paper over the period examined, while table VI-3 presents similar data for U.S. independent converters.

[1] ***.

[2] Domtar is referred to as an integrated producer, because it produces both the pulp and the base paper to make thermal paper. The firm transfers base paper from its mills in ***.

[3] Appvion and Kanzaki are referred to as coaters, meaning that they purchase the base paper that they coat to make thermal paper.

[4] Petition, pp. 9-10, notes 15 and 16.

[5] Iconex, Integrity, and Liberty are referred to as converters, because their operation is focused on slitting the jumbo rolls into smaller rolls suitable for imaging in thermal printer. ***.

[6] Representatives from Domtar, Kanzaki, and Appvion testified that producers of thermal paper in jumbo rolls do not perform conversion operation but sell to independent converters. Conference tr., pp. 122-123 (Melton, Hefner, and Hodson, respectively).

Operational results of these two groups combined are presented in table VI-5, while table VI-7 presents selected company-specific financial data. Tables VI-2, VI-4, and VI-6 present data showing the changes in average unit values ("AUVs") for U.S. producers of jumbo rolls, U.S. independent converters, and aggregated firms respectively.

Figure VI-1
Thermal paper: Share of net sales value by firm, 2019

* * * * * * *

Source: Compiled from data submitted in response to Commission questionnaires.

Table VI-1
Thermal paper: Results of operations of U.S. producers of jumbo rolls, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (short tons)				
Total net sales	***	***	***	***	***
	Value (1,000 dollars)				
Total net sales	***	***	***	***	***
Cost of goods sold.-- Raw materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Other factory costs	***	***	***	***	***
Less: By-product revenue	***	***	***	***	***
Total COGS	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A expense	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***
Interest expense	***	***	***	***	***
All other expenses	***	***	***	***	***
All other income	***	***	***	***	***
Net income or (loss)	***	***	***	***	***
Depreciation/amortization	***	***	***	***	***
Cash flow	***	***	***	***	***
	Ratio to net sales (percent)				
Cost of goods sold.-- Raw materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Other factory costs	***	***	***	***	***
Less: By-product revenue	***	***	***	***	***
Average COGS	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A expense	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***
Net income or (loss)	***	***	***	***	***

Table continued on next page.

Table VI-1—Continued
Thermal paper: Results of operations of U.S. producers of jumbo rolls, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Ratio to total COGS (percent)				
Cost of goods sold before by-product offset.-- Raw materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Other factory costs	***	***	***	***	***
Average COGS	***	***	***	***	***
	Unit value (dollars per short ton)				
Total net sales	***	***	***	***	***
Cost of goods sold.-- Raw materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Other factory costs	***	***	***	***	***
Less: By-product revenue	***	***	***	***	***
Average COGS	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A expense	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***
Net income or (loss)	***	***	***	***	***
	Number of firms reporting				
Operating losses	***	***	***	***	***
Net losses	***	***	***	***	***
Data	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table VI-2
Thermal paper: Changes in AUVs for U.S. producers of jumbo rolls between calendar years and between partial year periods

Item	Between calendar years			Between partial year period
	2017-19	2017-18	2018-19	2019-20
	Change in AUVs (percent)			
Total net sales	▲***	▲***	▲***	▼***
Cost of goods sold.-- Raw materials	▲***	▲***	▼***	▼***
Direct labor	▲***	▲***	▲***	▼***
Other factory costs	▲***	▲***	▲***	▼***
Less: By-product revenue	▼***	▼***	▼***	▼***
Average COGS	▲***	▲***	▲***	▼***
	Change in AUVs (dollars per short ton)			
Total net sales	▲***	▲***	▲***	▼***
Cost of goods sold.-- Raw materials	▲***	▲***	▼***	▼***
Direct labor	▲***	▲***	▲***	▼***
Other factory costs	▲***	▲***	▲***	▼***
Less: By-product revenue	▼***	▼***	▼***	▼***
Average COGS	▲***	▲***	▲***	▼***
Gross profit	▲***	▲***	▼***	▲***
SG&A expense	▼***	▼***	▼***	▼***
Operating income or (loss)	▲***	▲***	▼***	▲***
Net income or (loss)	▲***	▲***	▲***	▲***

Source: Compiled from data submitted in response to Commission questionnaires.

Table VI-3
Thermal paper: Results of operations of U.S. independent converters, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (short tons)				
Total net sales	***	***	***	***	***
	Value (1,000 dollars)				
Total net sales	***	***	***	***	***
Cost of goods sold.-- Raw materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Other factory costs	***	***	***	***	***
Total COGS	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A expense	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***
Interest expense	***	***	***	***	***
All other expenses	***	***	***	***	***
All other income	***	***	***	***	***
Net income or (loss)	***	***	***	***	***
Depreciation/amortization	***	***	***	***	***
Cash flow	***	***	***	***	***
	Ratio to net sales (percent)				
Cost of goods sold.-- Raw materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Other factory costs	***	***	***	***	***
Average COGS	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A expense	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***
Net income or (loss)	***	***	***	***	***

Table continued on next page.

Table VI-3—Continued
Thermal paper: Results of operations of U.S. independent converters, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Ratio to total COGS (percent)				
Cost of goods sold.-- Raw materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Other factory costs	***	***	***	***	***
Average COGS	***	***	***	***	***
	Unit value (dollars per short ton)				
Total net sales	***	***	***	***	***
Cost of goods sold.-- Raw materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Other factory costs	***	***	***	***	***
Average COGS	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A expense	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***
Net income or (loss)	***	***	***	***	***
	Number of firms reporting				
Operating losses	***	***	***	***	***
Net losses	***	***	***	***	***
Data	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table VI-4
Thermal paper: Changes in U.S. independent converters' AUVs, between calendar years and between partial year periods

Item	Between calendar years			Between partial year period
	2017-19	2017-18	2018-19	2019-20
	Change in AUVs (percent)			
Total net sales	▲***	▲***	▲***	▼***
Cost of goods sold.-- Raw materials	▲***	▲***	▼***	▼***
Direct labor	▲***	▲***	▲***	▲***
Other factory costs	▲***	▲***	▼***	▲***
Average COGS	▲***	▲***	▼***	▼***
	Change in AUVs (dollars per short ton)			
Total net sales	▲***	▲***	▲***	▼***
Cost of goods sold.-- Raw materials	▲***	▲***	▼***	▼***
Direct labor	▲***	▲***	▲***	▲***
Other factory costs	▲***	▲***	▼***	▲***
Average COGS	▲***	▲***	▼***	▼***
Gross profit	▲***	▲***	▲***	▼***
SG&A expense	▲***	▲***	▲***	▼***
Operating income or (loss)	▼***	▲***	▼***	▲***
Net income or (loss)	▼***	▲***	▼***	▲***

Source: Compiled from data submitted in response to Commission questionnaires.

Table VI-5

Thermal paper: Results of operations of all U.S. producers, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (short tons)				
Total net sales	***	***	***	***	***
	Value (1,000 dollars)				
Total net sales	***	***	***	***	***
Cost of goods sold.-- Raw materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Other factory costs	***	***	***	***	***
Less: By-product revenue	***	***	***	***	***
Total COGS	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A expense	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***
Interest expense	***	***	***	***	***
All other expenses	***	***	***	***	***
All other income	***	***	***	***	***
Net income or (loss)	***	***	***	***	***
Depreciation/amortization	***	***	***	***	***
Cash flow	***	***	***	***	***
	Ratio to net sales (percent)				
Cost of goods sold.-- Raw materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Other factory costs	***	***	***	***	***
Less: By-product revenue	***	***	***	***	***
Average COGS	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A expense	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***
Net income or (loss)	***	***	***	***	***

Table continued on next page.

Table VI-5—Continued
Thermal paper: Results of operations of all U.S. producers, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Ratio to total COGS (percent)				
Cost of goods sold before by-product offset.-- Raw materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Other factory costs	***	***	***	***	***
Average COGS	***	***	***	***	***
	Unit value (dollars per short ton)				
Total net sales	***	***	***	***	***
Cost of goods sold.-- Raw materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Other factory costs	***	***	***	***	***
Less: By-product revenue	***	***	***	***	***
Average COGS	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A expense	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***
Net income or (loss)	***	***	***	***	***
	Number of firms reporting				
Operating losses	***	***	***	***	***
Net losses	***	***	***	***	***
Data	***	***	***	***	***

Note. —For U.S. producers of jumbo rolls and U.S. independent converters, the quantity data include double counting as jumbo rolls' sales from a U.S. producer to a U.S. independent converter may also be reported as sales of thermal paper by the U.S. independent converter. For example, in this data set, the overlap is approximately *** percent, calculated as the ratio of domestic purchases of jumbo rolls by converters of $*** in table VI-9 with jumbo rolls' sales of $*** in table VI-1. Nonetheless, quantity data and AUVs for the combined operations of U.S. jumbo rolls' producers and U.S. converters should be used with caution. Although the same underlying product could be reported more than once, the effect is reflected in both revenue and COGS and therefore results in a fair presentation of the industry's profitability.

Source: Compiled from data submitted in response to Commission questionnaires.

Table VI-6
Thermal paper: Changes in all U.S. producers' AUVs, between calendar years and between partial year periods

Item	Between calendar years			Between partial year period
	2017-19	2017-18	2018-19	2019-20
	Change in AUVs (percent)			
Total net sales	▲***	▲***	▲***	▼***
Cost of goods sold.-- Raw materials	▲***	▲***	▼***	▼***
Direct labor	▲***	▲***	▲***	▲***
Other factory costs	▲***	▲***	▲***	▼***
Less: By-product revenue	▼***	▼***	▼***	▼***
Average COGS	▲***	▲***	▲***	▼***
	Change in AUVs (dollars per short ton)			
Total net sales	▲***	▲***	▲***	▼***
Cost of goods sold.-- Raw materials	▲***	▲***	▼***	▼***
Direct labor	▲***	▲***	▲***	▲***
Other factory costs	▲***	▲***	▲***	▼***
Less: By-product revenue	▼***	▼***	▼***	▼***
Average COGS	▲***	▲***	▲***	▼***
Gross profit	▲***	▲***	▲***	▲***
SG&A expense	▲***	▲***	▲***	▼***
Operating income or (loss)	▲***	▲***	▼***	▲***
Net income or (loss)	▲***	▲***	▲***	▲***

Source: Compiled from data submitted in response to Commission questionnaires.

Table VI-7

Thermal paper: Select results of operations of U.S. producers, by firm, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Total net sales (short tons)				
Appvion	***	***	***	***	***
Domtar	***	***	***	***	***
Kanzaki	***	***	***	***	***
Jumbo rolls producers	***	***	***	***	***
Iconex	***	***	***	***	***
Integrity	***	***	***	***	***
Liberty	***	***	***	***	***
Independent converters	***	***	***	***	***
All firms	***	***	***	***	***
	Total net sales (1,000 dollars)				
Appvion	***	***	***	***	***
Domtar	***	***	***	***	***
Kanzaki	***	***	***	***	***
Jumbo rolls producers	***	***	***	***	***
Iconex	***	***	***	***	***
Integrity	***	***	***	***	***
Liberty	***	***	***	***	***
Independent converters	***	***	***	***	***
All firms	***	***	***	***	***
	Cost of goods sold (1,000 dollars)				
Appvion	***	***	***	***	***
Domtar	***	***	***	***	***
Kanzaki	***	***	***	***	***
Jumbo rolls producers	***	***	***	***	***
Iconex	***	***	***	***	***
Integrity	***	***	***	***	***
Liberty	***	***	***	***	***
Independent converters	***	***	***	***	***
All firms	***	***	***	***	***

Table continued on next page.

Table VI-7—Continued
Thermal paper: Select results of operations of U.S. producers, by firm, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Gross profit or (loss) (1,000 dollars)				
Appvion	***	***	***	***	***
Domtar	***	***	***	***	***
Kanzaki	***	***	***	***	***
Jumbo rolls producers	***	***	***	***	***
Iconex	***	***	***	***	***
Integrity	***	***	***	***	***
Liberty	***	***	***	***	***
Independent converters	***	***	***	***	***
All firms	***	***	***	***	***
	SG&A expenses (1,000 dollars)				
Appvion	***	***	***	***	***
Domtar	***	***	***	***	***
Kanzaki	***	***	***	***	***
Jumbo rolls producers	***	***	***	***	***
Iconex	***	***	***	***	***
Integrity	***	***	***	***	***
Liberty	***	***	***	***	***
Independent converters	***	***	***	***	***
All firms	***	***	***	***	***
	Operating income or (loss) (1,000 dollars)				
Appvion	***	***	***	***	***
Domtar	***	***	***	***	***
Kanzaki	***	***	***	***	***
Jumbo rolls producers	***	***	***	***	***
Iconex	***	***	***	***	***
Integrity	***	***	***	***	***
Liberty	***	***	***	***	***
Independent converters	***	***	***	***	***
All firms	***	***	***	***	***

Table continued on next page.

Table VI-7—Continued
Thermal paper: Select results of operations of U.S. producers, by firm, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Net income or (loss) (1,000 dollars)				
Appvion	***	***	***	***	***
Domtar	***	***	***	***	***
Kanzaki	***	***	***	***	***
Jumbo rolls producers	***	***	***	***	***
Iconex	***	***	***	***	***
Integrity	***	***	***	***	***
Liberty	***	***	***	***	***
Independent converters	***	***	***	***	***
All firms	***	***	***	***	***
	COGS to net sales ratio (percent)				
Appvion	***	***	***	***	***
Domtar	***	***	***	***	***
Kanzaki	***	***	***	***	***
Jumbo rolls producers	***	***	***	***	***
Iconex	***	***	***	***	***
Integrity	***	***	***	***	***
Liberty	***	***	***	***	***
Independent converters	***	***	***	***	***
All firms	***	***	***	***	***
	Gross profit or (loss) to net sales ratio (percent)				
Appvion	***	***	***	***	***
Domtar	***	***	***	***	***
Kanzaki	***	***	***	***	***
Jumbo rolls producers	***	***	***	***	***
Iconex	***	***	***	***	***
Integrity	***	***	***	***	***
Liberty	***	***	***	***	***
Independent converters	***	***	***	***	***
All firms	***	***	***	***	***

Table continued on next page.

Table VI-7—Continued
Thermal paper: Select results of operations of U.S. producers, by firm, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	SG&A expense to net sales ratio (percent)				
Appvion	***	***	***	***	***
Domtar	***	***	***	***	***
Kanzaki	***	***	***	***	***
Jumbo rolls producers	***	***	***	***	***
Iconex	***	***	***	***	***
Integrity	***	***	***	***	***
Liberty	***	***	***	***	***
Independent converters	***	***	***	***	***
All firms	***	***	***	***	***
	Operating income or (loss) to net sales ratio (percent)				
Appvion	***	***	***	***	***
Domtar	***	***	***	***	***
Kanzaki	***	***	***	***	***
Jumbo rolls producers	***	***	***	***	***
Iconex	***	***	***	***	***
Integrity	***	***	***	***	***
Liberty	***	***	***	***	***
Independent converters	***	***	***	***	***
All firms	***	***	***	***	***
	Net income or (loss) to net sales ratio (percent)				
Appvion	***	***	***	***	***
Domtar	***	***	***	***	***
Kanzaki	***	***	***	***	***
Jumbo rolls producers	***	***	***	***	***
Iconex	***	***	***	***	***
Integrity	***	***	***	***	***
Liberty	***	***	***	***	***
Independent converters	***	***	***	***	***
All firms	***	***	***	***	***

Table continued on next page.

Table VI-7—Continued
Thermal paper: Select results of operations of U.S. producers, by firm, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Unit net sales value (dollars per short ton)				
Appvion	***	***	***	***	***
Domtar	***	***	***	***	***
Kanzaki	***	***	***	***	***
Jumbo rolls producers	***	***	***	***	***
Iconex	***	***	***	***	***
Integrity	***	***	***	***	***
Liberty	***	***	***	***	***
Independent converters	***	***	***	***	***
All firms	***	***	***	***	***
	Unit raw materials (dollars per short ton)				
Appvion	***	***	***	***	***
Domtar	***	***	***	***	***
Kanzaki	***	***	***	***	***
Jumbo rolls producers	***	***	***	***	***
Iconex	***	***	***	***	***
Integrity	***	***	***	***	***
Liberty	***	***	***	***	***
Independent converters	***	***	***	***	***
All firms	***	***	***	***	***
	Unit direct labor (dollars per short ton)				
Appvion	***	***	***	***	***
Domtar	***	***	***	***	***
Kanzaki	***	***	***	***	***
Jumbo rolls producers	***	***	***	***	***
Iconex	***	***	***	***	***
Integrity	***	***	***	***	***
Liberty	***	***	***	***	***
Independent converters	***	***	***	***	***
All firms	***	***	***	***	***

Table continued on next page.

Table VI-7—Continued
Thermal paper: Select results of operations of U.S. producers, by firm, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Unit other factory costs (dollars per short ton)				
Appvion	***	***	***	***	***
Domtar	***	***	***	***	***
Kanzaki	***	***	***	***	***
Jumbo rolls producers	***	***	***	***	***
Iconex	***	***	***	***	***
Integrity	***	***	***	***	***
Liberty	***	***	***	***	***
Independent converters	***	***	***	***	***
All firms	***	***	***	***	***
	Unit COGS (dollars per short ton)				
Appvion	***	***	***	***	***
Domtar	***	***	***	***	***
Kanzaki	***	***	***	***	***
Jumbo rolls producers	***	***	***	***	***
Iconex	***	***	***	***	***
Integrity	***	***	***	***	***
Liberty	***	***	***	***	***
Independent converters	***	***	***	***	***
All firms	***	***	***	***	***
	Unit gross profit or (loss) (dollars per short ton)				
Appvion	***	***	***	***	***
Domtar	***	***	***	***	***
Kanzaki	***	***	***	***	***
Jumbo rolls producers	***	***	***	***	***
Iconex	***	***	***	***	***
Integrity	***	***	***	***	***
Liberty	***	***	***	***	***
Independent converters	***	***	***	***	***
All firms	***	***	***	***	***

Table continued on next page.

Table VI-7--Continued

Thermal paper: Select results of operations of U.S. producers, by firm, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Unit SG&A expenses (dollars per short ton)				
Appvion	***	***	***	***	***
Domtar	***	***	***	***	***
Kanzaki	***	***	***	***	***
Jumbo rolls producers	***	***	***	***	***
Iconex	***	***	***	***	***
Integrity	***	***	***	***	***
Liberty	***	***	***	***	***
Independent converters	***	***	***	***	***
All firms	***	***	***	***	***
	Unit operating income or (loss) (dollars per short ton)				
Appvion	***	***	***	***	***
Domtar	***	***	***	***	***
Kanzaki	***	***	***	***	***
Jumbo rolls producers	***	***	***	***	***
Iconex	***	***	***	***	***
Integrity	***	***	***	***	***
Liberty	***	***	***	***	***
Independent converters	***	***	***	***	***
All firms	***	***	***	***	***
	Unit net income or (loss) (dollars per short ton)				
Appvion	***	***	***	***	***
Domtar	***	***	***	***	***
Kanzaki	***	***	***	***	***
Jumbo rolls producers	***	***	***	***	***
Iconex	***	***	***	***	***
Integrity	***	***	***	***	***
Liberty	***	***	***	***	***
Independent converters	***	***	***	***	***
All firms	***	***	***	***	***

Note. —See earlier note in table VI-5 regarding the use with caution when analyzing quantity data and AUVs for the combined operations of U.S. jumbo rolls producers and U.S. converters.

Source: Compiled from data submitted in response to Commission questionnaires.

Net sales

The three U.S. producers of jumbo rolls reported only commercial sales, which totaled *** short tons in 2019. [7] As shown in table VI-1 the reported net sales quantities for U.S. producers of jumbo rolls increased by *** percent from 2017 to 2018 and declined by *** percent from 2018 to 2019, with an overall decline of *** percent between 2017 and 2019. The U.S. producers of jumbo rolls that operated continuously throughout the period for which data were collected reported an irregular decrease in net sales quantities between 2017 and 2019, and lower net sales quantities of *** percent for *** and *** percent for *** in interim 2020 compared to interim 2019 (table VI-7). [8] Net sales values for U.S. jumbo rolls producers increased by *** percent between 2017 and 2018 and declined by *** percent between 2018 and 2019, with an overall increase of *** percent between 2017 and 2019 (table VI-1). Both net sales quantities and values were lower in interim 2020 than interim 2019 by *** percent and *** respectively. The net sales AUV for U.S. producers of jumbo rolls increased from $*** per short ton in 2017 to $*** per short ton in 2018 and $*** in 2019, but was lower in interim 2020 at $*** per short ton than interim 2019 at $*** per short ton (table VI-1).

In 2019, U.S. independent converters reported total net sales of *** short tons, which were mostly commercial sales.[9] U.S. independent converters reported an irregular increase in net sales quantities: in 2018 the commercial sales quantity increased noticeably to *** short tons from *** short tons in 2017 and declined to *** short tons in 2019.[10] Net sales quantity was lower in interim 2020 in comparison to interim 2019. Net sales

[7] ***.

[8] ***.

[9] ***. Email from ***, November 4, 2020.

[10] The increase is largely due to ***. Email from ***, November 4, 2020. ***.

values for U.S. independent converters also increased noticeably from $*** in 2017 to $*** in 2018 but declined to $*** in 2019. Net sales values were also lower in interim 2020 by *** percent ($***) than interim 2019 ($***). The net sales AUV for U.S. independent converters increased from $*** per short ton in 2017 to $*** per short ton in 2018 and $*** per short ton in 2019, but was lower in interim 2020 at $*** per short ton than $*** per short ton in interim 2019 (table VI-3).

For U.S. producers of jumbo rolls and U.S. independent converters together, net sales values increased by *** percent between 2017 and 2018, then decreased by *** percent between 2018 and 2019, and overall increased from 2017 to 2019 by *** percent. Net sales value was lower in interim 2020 than interim 2019 by *** percent (table VI-5).

Cost of goods sold and gross profit or loss

Raw materials

For both U.S. producers of jumbo rolls and independent converters the largest component of COGS is raw material cost, which represented *** percent of total COGS for U.S. producers of jumbo rolls, and *** percent for U.S. independent converters in 2019 (table VI-1 and table VI-3).

Raw material costs for U.S. producers of jumbo rolls increased by *** percent between 2017 and 2018 and decreased by *** percent from 2018 to 2019; they were lower in interim 2020 than in interim 2019 (by *** percent). On a per unit basis, raw material costs irregularly increased from $*** in 2017 to $*** in 2019 and were lower in interim 2020 at $*** than in interim 2019 at $***. As a ratio to net sales, raw material costs increased slightly in 2018 to *** percent from *** percent in 2017 and then declined to *** percent in 2019 but were only *** percentage points higher in interim 2020 than in interim 2019 (table VI-1). Raw materials for U.S. producers of jumbo rolls represent a combination of virgin pulp and coating material as seen in table VI-8.

As shown in table VI-3 raw material costs of U.S. independent converters significantly increased from $*** in 2017 to $*** in 2018 following the increase in net sales quantities in 2018. Between 2018 and 2019 raw material costs declined by *** percent and were lower in interim 2020 than in interim 2019. On a per unit basis, raw material costs increased to $*** in 2018 from $*** in 2017 and declined to $*** in 2019. The average unit value of raw material costs was lower in interim 2020 than in interim 2019. As a ratio to net sales, raw material costs declined continuously between 2017 and 2019 and were lower in interim 2020 at *** percent than in interim 2019 at *** percent. U.S. independent converters use jumbo rolls for converting operations as shown in table VI-9, converters reported using approximately twice the quantity of imported subject jumbo rolls compared to their consumption of domestically produced rolls.

For U.S. producers of jumbo rolls and U.S. independent converters raw material costs increased irregularly from $*** in 2017 to $*** in 2018 and $*** in 2019. These costs were also lower in interim 2020 by *** percent than in interim 2019. On a per unit basis, raw material costs increased from $*** in 2017 to $*** in 2018 and decreased by *** percent between 2018 and 2019 to $***. The average unit value for raw materials was lower in interim 2020 than in interim 2019 (table VI-5).

Table VI-8
Thermal paper: U.S. Jumbo rolls producers' raw material costs, 2019

Raw materials	Calendar 2019		
	Value (1,000 dollars)	Unit value (dollars per short ton)	Share of value (percent)
Virgin pulp / paper	***	***	***
Recycled pulp / paper	***	***	***
All base paper	***	***	***
Coating materials	***	***	***
Converting / packaging	***	***	***
Other materials inputs	***	***	***
All raw materials	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table VI-9
Thermal paper: U.S. Independent converters' raw material costs, 2019

Raw materials	Calendar		
	Value (1,000 dollars)	Unit value (dollars per short ton)	Share of value (percent)
Domestic jumbo rolls	***	***	***
Imported nonsubject	***	***	***
Imported subject	***	***	***
Imports	***	***	***
Rolls	***	***	***
Other materials inputs	***	***	***
All raw materials	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Direct labor and other factory costs

Direct labor cost is the smallest component of total COGS for both U.S. producers of jumbo rolls and U.S. independent converters. In 2019 direct labor represented *** percent of total COGS for U.S. producers of jumbo rolls and *** percent of total COGS for U.S. independent converters. While direct labor cost fluctuated somewhat, it remained within a relatively narrow range throughout the period investigated for U.S. producers of jumbo rolls. In contrast, direct labor costs reported by U.S. independent converters increased from $*** in 2017 to $*** in 2018 and $*** in 2019 reflecting the increase in net sales in those three years.

Other factory costs are the second largest component of COGS, accounting for *** percent of total COGS in 2019 for U.S. producers of jumbo rolls and *** percent for U.S. independent converters. For U.S. producers of jumbo rolls other factory costs increased from $*** in 2017 to $*** in 2019, despite a decrease in net sales quantities during the same period.[11] Other factory costs of U.S. independent converters rose noticeably from 2017 to 2018 corresponding with the increase in sales. However, these costs declined somewhat in 2019 from 2018 and were lower in interim 2020 compared with interim 2019.

Total COGS of U.S. producers of jumbo rolls rose irregularly from 2017 to 2019, but were lower in interim 2020 than in the same period one year earlier. As a ratio to total net sales for

[11] ***. Email from ***, November 9, 2020.

the three annual periods, COGS fluctuated within a narrow range, *** percent in 2018 to *** percent in 2019. The ratio was lower at *** percent in interim 2020 than in interim 2019 when it was *** percent. The average unit value of COGS rose between the full yearly periods and was lower in interim 2020 than in interim 2019. With regard to independent converters, the value of total COGS irregularly increased with sales and the average unit value of COGS and COGS as a ratio to net sales irregularly increased between 2017 and 2019. Total COGS fell between the interim periods as did the average unit value and the ratio to total net sales. The data in table VI-3 reflect the impact of the data of ***: COGS increased irregularly with sales; the ratio of COGS to sales was steady during the periods investigated; the average unit value, however, noticeably increased, driven largely by raw material costs.[12]

Given the above changes in sales and cost, gross profit of U.S. producers of jumbo rolls increased by *** percent between 2017 and 2018, then decreased by *** percent between 2018 and 2019 and was higher in interim 2020 by *** percent than in interim 2019 (table VI-1). Likewise**,** for U.S. independent converters gross profit nearly doubled from $*** to $*** in 2018 and $*** in 2019 but was lower by *** percent in interim 2020 than in interim 2019 (table VI-3).

For U.S. producers of jumbo rolls and U.S. independent converters gross profit overall increased by *** percent between 2017 and 2019, but declined by *** percent between 2018 and 2019, it was also lower in interim 2020 by *** percent than in interim 2019. As a ratio to net sales, gross profit was higher in 2019 than in 2017, and was higher in interim 2020 than in interim 2019 (table VI-5).

SG&A expenses and operating income or loss

The ratio of selling, general, and administrative ("SG&A") expense to total net sales for U.S. producers of jumbo rolls declined from *** percent in 2017 to *** percent in 2018 and *** percent in 2019 and was lower in interim 2020 (*** percent) than in interim 2019 (***

[12] Value-added may be calculated as the ratio of conversion costs (which are direct labor and other factory costs) to total COGS. ***. Calculation derived from the data in table VI-3.

percent). Per unit SG&A expenses also declined each year from 2017 to 2019 and were lower in interim 2020 than in interim 2019 (table VI-1).

As seen in table VI-3, SG&A expenses reported by independent converters increased by over *** percent between 2017 and 2019 and were lower in interim 2020 compared to interim 2019. The increase in SG&A expenses was driven primarily by ***.[13] The SG&A expense ratio for U.S. independent converters decreased from *** percent in 2017 to *** percent in 2018 and then increased to *** percent in 2019; it was lower in interim 2020 than interim 2019. Per unit SG&A expenses slightly increased by *** percent between 2017 and 2018 but noticeably increased by *** percent between 2018 and 2019; it was lower in interim 2020 than in interim 2019 by *** percent (table VI-3).

The SG&A expense ratio to net sales for U.S. producers of jumbo rolls and U.S. independent converters increased from *** percent in 2017 to *** percent in 2019 but was lower in 2018 at *** percent; the ratio was also lower in interim 2020 (*** percent) than in interim 2019 (*** percent).

Operating income reported by producers of jumbo rolls approximately *** between 2017 and 2018 (from $*** to $***) but then declined in 2019 to ($***). Operating income was higher in interim 2020 at $***, than in interim 2019 at $***. The ratio of operating income to net sales also increased from *** percent in 2017 to *** percent in 2018 and *** percent in 2019, it was higher in interim period 2020 at *** percent than in interim 2019 at *** percent (table VI-1).

Operating income reported by the independent converters increased from $*** in 2017 to $*** in 2018 but fell to $*** in 2019; operating income was again higher in interim 2020 at $*** than in interim 2019 at $***. *** accounted for the largest share of this increase.[14] The ratio of operating income to sales fluctuated within a narrow range during the full yearly periods, from *** percent in 2019 to *** percent in

[13] ***.

[14] ***.

2018; the ratio was *** percent in interim 2020 compared with *** percent in interim 2019. The per-unit value of operating income rose from $*** per short ton in 2017 to $*** per short ton in 2018 before falling to $*** per short ton in 2019; it was $*** per short ton in interim 2020 and $*** per short ton in interim 2019.

As may be seen from the data in table VI-5, operating income for U.S. producers of jumbo rolls and U.S. independent converters *** between 2017 and 2018, from $*** to $*** and fell in 2019 to $***. The ratio of operating income rose irregularly from *** percent in 2017 to *** percent in 2019; it was *** percent in interim 2020 compared with *** percent in interim 2019. The average per-unit value of operating income also rose irregularly from $*** per short ton in 2017 to $*** per short ton in 2019 but was much higher in interim 2020 at $*** per short ton than in interim 2019 at $*** per short ton.[15]

Other expenses and net income or loss

Classified below the operating income level are interest expense, other expense, and other income. For both the producers of jumbo rolls and independent converters, the largest item was interest expense. As seen in table VI-1 interest expense for U.S. producers of jumbo rolls decreased from $*** in 2017 to $*** in 2019 and was *** percent lower in interim 2020 than in interim 2019. ***. All other expenses *** in 2018, driven primarily by *** , which recorded an increase from $*** in 2017 to $*** in 2018 and $*** in 2019. [16] Net income for the U.S. producers of jumbo rolls increased between 2017 to 2019, from a net loss of *** to positive net income of $***. *** and *** reported a *** in the January-June 2019 period but net income of $*** in

[15] ***.

[16] ***. Questionnaire response of ***, III-9d.

the same period one year later (the net income reported for interim 2020 included $*** from ***). Charges for depreciation increased from 2017 to 2019 but were lower in January-June 2020 compared to the same period one year earlier. Given the changes in net income and depreciation, cash flow increased noticeably between the full yearly periods and was positive in both interim periods.

In table VI-3 interest expenses, reported by ***, increased from $*** in 2017 to $*** in 2019 and were slightly higher in interim 2020 compared to interim 2019. All other expenses were reported by ***: and were $*** for the year 2019 and $*** in interim 2019. [17] *** reported the data for other income shown in table VI-3. Net income of U.S. independent converters was mainly driven by the data reported by ***. Aggregate net income for the U.S. independent converters increased from $*** in 2017 to $*** in 2018 but declined to a *** in 2019. U.S. Independent converters reported a ***, largely attributable to ***. The fluctuations are shown in tables VI-3 and VI-7.[18]

Net income of U.S. producers of jumbo rolls and U.S. independent converters rose noticeably from a loss of $*** in 2017 to a positive net income of $*** in 2019; all firms aggregated together reported a loss of $*** in interim 2019 but a positive $*** in interim 2020. The ratio of net income or loss to total net sales and the per-unit value of net income or loss followed the trend of the dollar value.[19]

[17] ***.
[18] ***.
[19] ***.

Variance analysis

A variance analysis[20] for the operations of U.S. producers of jumbo rolls is presented in table VI-10, table VI-11 presents similar data for U.S independent converters and table VI-12 present the same data for U.S. jumbo rolls producers and U.S. independent converters combined. The information for these variance analyses is derived from tables VI-1 and VI-3, and VI-5, respectively.

The data in these tables indicate that the price variance was favorable (unit sales prices increased) between the full yearly periods but was unfavorable (unit sales prices decreased) between the interim periods. The cost/expense variance was generally unfavorable (unit costs/expenses increased) between the full yearly periods but was favorable between the interim periods. The combination of variances on price, cost/expense, and volume led to changes in operating income.

[20] The Commission's variance analysis is calculated in three parts: Sales variance, cost of sales variance (COGS variance), and SG&A expense variance. Each part consists of a price variance (in the case of the sales variance) or a cost or expense variance (in the case of the COGS and SG&A expense variance), and a volume variance. The sales or cost/expense variance is calculated as the change in unit price or per-unit cost/expense times the new volume, while the volume variance is calculated as the change in volume times the old unit price or per-unit cost/expense. Summarized at the bottom of the table, the price variance is from sales; the cost/expense variance is the sum of those items from COGS and SG&A variances, respectively, and the volume variance is the sum of the volume components of the net sales, COGS, and SG&A expense variances. The overall volume component of the variance analysis is generally small.

Table VI-10

Thermal paper: Variance analysis for U.S. producers of jumbo rolls, between calendar years and between partial year periods

Item	Between Calendar years			Between partial year period
	2017-19	2017-18	2018-19	2019-20
	Value (1,000 dollars)			
Net sales:				
Price variance	***	***	***	***
Volume variance	***	***	***	***
Net sales variance	***	***	***	***
COGS:				
Cost variance	***	***	***	***
Volume variance	***	***	***	***
COGS variance	***	***	***	***
Gross profit variance	***	***	***	***
SG&A expenses:				
Cost/expense variance	***	***	***	***
Volume variance	***	***	***	***
Total SG&A expense variance	***	***	***	***
Operating income variance	***	***	***	***
Summarized (at the operating income level) as:				
Price variance	***	***	***	***
Net cost/expense variance	***	***	***	***
Net volume variance	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table VI-11
Thermal paper: Variance analysis for U.S. independent converters, between calendar years and between partial year periods

Item	Between Calendar years			Between partial year period
	2017-19	2017-18	2018-19	2019-20
	Value (1,000 dollars)			
Net sales:				
Price variance	***	***	***	***
Volume variance	***	***	***	***
Net sales variance	***	***	***	***
COGS:				
Cost variance	***	***	***	***
Volume variance	***	***	***	***
COGS variance	***	***	***	***
Gross profit variance	***	***	***	***
SG&A expenses:				
Cost/expense variance	***	***	***	***
Volume variance	***	***	***	***
Total SG&A expense variance	***	***	***	***
Operating income variance	***	***	***	***
Summarized (at the operating income level) as:				
Price variance	***	***	***	***
Net cost/expense variance	***	***	***	***
Net volume variance	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table VI-12
Thermal paper: Variance analysis for all U.S. producers, between calendar years and between partial year periods

Item	Between calendar years			Between partial year period
	2017-19	2017-18	2018-19	2019-20
	Value (1,000 dollars)			
Net sales:				
Price variance	***	***	***	***
Volume variance	***	***	***	***
Net sales variance	***	***	***	***
COGS:				
Cost variance	***	***	***	***
Volume variance	***	***	***	***
COGS variance	***	***	***	***
Gross profit variance	***	***	***	***
SG&A expenses:				
Cost/expense variance	***	***	***	***
Volume variance	***	***	***	***
Total SG&A expense variance	***	***	***	***
Operating income variance	***	***	***	***
Summarized (at the operating income level) as:				
Price variance	***	***	***	***
Net cost/expense variance	***	***	***	***
Net volume variance	***	***	***	***

Note.—See earlier note in table VI-5. Because the variance analysis relies on changes in unit revenue and costs and total volume, caution should also be used when analyzing the variance analysis for the combined operations of U.S. jumbo rolls producers and U.S. converters.

Source: Compiled from data submitted in response to Commission questionnaires.

Capital expenditures and research and development expenses

Table VI-13 presents capital expenditures and research and development ("R&D") expenses by firm. U.S. producers' comments on the nature and focus of their capital expenditures and R&D expenses are shown in table VI-14.

Two U.S. producers of jumbo rolls, *** and ***, reported capital expenditures and research development expense during the period of investigation, and *** only reported data for the interim period of 2020. The narrative description of capital expenditures for both U.S. producers of jumbo rolls and U.S. independent converters included expenses related to improvement and maintenance to the machinery.

For U.S. producers of jumbo rolls capital expenditures decreased by *** percent between 2017 and 2019 and were also lower in interim 2020 than interim 2019. ***'s capital expenditures were significantly higher than ***'s throughout the period of investigation and accounted for *** percent of the U.S. producers of jumbo rolls total capital expenditures in 2019. R&D expenses decreased by *** percent between 2017 and 2019 and were also lower during interim 2020 than in interim 2019. Similar to capital expenditures, R&D expenses were significantly higher for ***, accounting for *** percent of the U.S. producers of jumbo rolls R&D expenses total in 2019.

Among U.S. independent converters only *** and *** reported capital expenditures. For ***, capital expenditures decreased by *** percent between 2017 and 2019 and were higher in interim 2020 than interim 2019 by *** percent. For the same period *** reported that its capital expenditures increased from $*** in 2017 to $*** in 2019 but were lower in interim 2020 than interim 2019 by *** percent. R&D expenses were only reported by *** for U.S. independent converters and increased *** percent from 2017 to 2019 (table VI-13).

For U.S. producers of jumbo rolls and U.S. independent converters, capital expenditures decreased by *** between 2017 and 2018, and increased by *** percent in between 2018 and 2019; they were lower in interim 2020 than interim 2019 by *** percent. R&D expenses decreased by *** between 2017 and 2018, and *** percent between 2018 and 2019. They were lower in interim 2020 than in interim 2019 by *** percent (table VI-13).

Table VI-13

Thermal paper: Capital expenditures and research and development expenses for U.S. producers, by firm, 2017-19, January to June 2019, and January to June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Capital expenditures (1,000 dollars)				
Appvion	***	***	***	***	***
Domtar	***	***	***	***	***
Kanzaki	***	***	***	***	***
Jumbo producers	***	***	***	***	***
Iconex	***	***	***	***	***
Integrity	***	***	***	***	***
Liberty	***	***	***	***	***
Independent converters	***	***	***	***	***
All firms	***	***	***	***	***
	Research and development expenses (1,000 dollars)				
Appvion	***	***	***	***	***
Domtar	***	***	***	***	***
Kanzaki	***	***	***	***	***
Jumbo producers	***	***	***	***	***
Iconex	***	***	***	***	***
Integrity	***	***	***	***	***
Liberty	***	***	***	***	***
Independent converters	***	***	***	***	***
All firms	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table VI-14
Thermal paper: Nature and focus of capital expenditures and research and development, since January 1, 2017

Item / Firm	Narrative
Nature and focus of capital expenditures	
***	***
***	***
***	***
***	***
***	***
Nature and focus of research and development	
***	***
***	***
***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Assets and return on assets

Table VI-15 and table VI-16 present total asset and return on assets data ("ROA") for U.S. producers of jumbo rolls and U.S. independent converters.

As seen in table VI-15 total net assets for all U.S. producers of jumbo rolls increased by *** percent in 2018 and then decreased by *** percent in 2019. *** total net assets were significantly higher than *** and constituted *** percent of U.S. producers' jumbo rolls total net assets. Given that the total net assets for *** is lower, its ROA percentage was significantly higher than ***. [21]

Total net assets for U.S. independent converters increased by *** percent between 2017 and 2019 with *** driving the increase. In 2019, *** percent of total net assets of U.S independent converters was held by ***. The ROA of U.S. independent converters irregularly declined to *** percent in 2019 after increasing to *** percent in 2018 from *** percent in 2017. ***'s ROA was significantly higher than the remaining two converters throughout the period and declined from *** percent in 2017 to *** percent in 2019. [22]

[21] ***. Email from ***, November,12 2020.
[22] ***. Email from ***, November 10,2020.

Overall, combined total net assets for U.S. producers of jumbo rolls and independent converters increased by *** percent from 2017 to 2019, while ROA increased from *** percent in 2017 to *** percent in 2018 and then decreased in 2019 to *** percent.

Table VI-15
Thermal paper: Total assets and return on assets of U.S. producers of jumbo rolls and U.S. independent converters, 2017-19, January to June 2019, and January to June 2020

Firm	Calendar years		
	2017	2018	2019
	Total net assets (1,000 dollars)		
Appvion	***	***	***
Kanzaki	***	***	***
Jumbo producers	***	***	***
Iconex	***	***	***
Integrity	***	***	***
Liberty	***	***	***
Independent converters	***	***	***
All firms	***	***	***
	Operating return on assets (percent)		
Appvion	***	***	***
Kanzaki	***	***	***
Jumbo producers	***	***	***
Iconex	***	***	***
Integrity	***	***	***
Liberty	***	***	***
Independent converters	***	***	***
All firms	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table VI-16
Thermal paper: Firms' narrative responses relating to asset values, since January 1, 2017

Item / Firm	Narrative
***	***
***	***
***	***
***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Capital and investment

The Commission requested U.S. producers of jumbo rolls and U.S. converters to describe any actual or potential negative effects of imports from Germany, Japan, Korea, and Spain, on their firms' growth, investment, ability to raise capital, development and production efforts, or the scale of capital investments. Table VI-17 presents the number of firms reporting an impact in each category and table VI-18 provides the firms' narrative responses.

Table VI-17
Thermal paper: Actual and anticipated negative effects of imports on investment and growth and development

Item	No	Yes
Negative effects on investment	***	***
Cancellation, postponement, or rejection of expansion projects		***
Denial or rejection of investment proposal		***
Reduction in the size of capital investments		***
Return on specific investments negatively impacted		***
Other		***
Negative effects on growth and development	***	***
Rejection of bank loans		***
Lowering of credit rating		***
Problem related to the issue of stocks or bonds		***
Ability to service debt		***
Other		***
Anticipated negative effects of imports	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table VI-18

Thermal paper: Narratives relating to actual and anticipated negative effects of imports on investment and growth and development, since January 1, 2017

Item / Firm	Narrative
Cancellation, postponement, or rejection of expansion projects:	
***	***
***	***
Denial or rejection of investment proposal:	
***	***
Reduction in the size of capital investments:	
***	***
Return on specific investments negatively impacted:	
***	***
***	***
***	***
Other negative effects on investments:	
***	***

Table continued on next page.

Table VI-18—Continued

Thermal paper: Narratives relating to actual and anticipated negative effects of imports on investment and growth and development, since January 1, 2017

Lowering of credit rating:	
***	***
Ability to service debt:	
***	***
Other effects on growth and development:	
***	***
***	***
***	***
***	***

Table continued on next page.

Table VI-18—Continued

Thermal paper: Narratives relating to actual and anticipated negative effects of imports on investment and growth and development, since January 1, 2017

Anticipated effects of imports:	
***	***
***	***
***	***
***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Part VII: Threat considerations and information on nonsubject countries

Section 771(7)(F)(i) of the Act (19 U.S.C. § 1677(7)(F)(i)) provides that—

> *In determining whether an industry in the United States is threatened with material injury by reason of imports (or sales for importation) of the subject merchandise, the Commission shall consider, among other relevant economic factors*[1]*--*
>
> *(I) if a countervailable subsidy is involved, such information as may be presented to it by the administering authority as to the nature of the subsidy (particularly as to whether the countervailable subsidy is a subsidy described in Article 3 or 6.1 of the Subsidies Agreement), and whether imports of the subject merchandise are likely to increase,*
>
> *(II) any existing unused production capacity or imminent, substantial increase in production capacity in the exporting country indicating the likelihood of substantially increased imports of the subject merchandise into the United States, taking into account the availability of other export markets to absorb any additional exports,*
>
> *(III) a significant rate of increase of the volume or market penetration of imports of the subject merchandise indicating the likelihood of substantially increased imports,*
>
> *(IV) whether imports of the subject merchandise are entering at prices that are likely to have a significant depressing or suppressing effect on domestic prices, and are likely to increase demand for further imports,*
>
> *(V) inventories of the subject merchandise,*

---

[1] Section 771(7)(F)(ii) of the Act (19 U.S.C. § 1677(7)(F)(ii)) provides that "The Commission shall consider {these factors} . . . as a whole in making a determination of whether further dumped or subsidized imports are imminent and whether material injury by reason of imports would occur unless an order is issued or a suspension agreement is accepted under this title. The presence or absence of any factor which the Commission is required to consider . . . shall not necessarily give decisive guidance with respect to the determination. Such a determination may not be made on the basis of mere conjecture or supposition."

(VI) the potential for product-shifting if production facilities in the foreign country, which can be used to produce the subject merchandise, are currently being used to produce other products,

(VII) 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),

(VIII) the actual and potential negative effects on the existing development and production efforts of the domestic industry, including efforts to develop a derivative or more advanced version of the domestic like product, and

(IX) any other demonstrable adverse trends that indicate the probability that there is likely to be material injury by reason of imports (or sale for importation) of the subject merchandise (whether or not it is actually being imported at the time).[2]

Information on the volume and pricing of imports of the subject merchandise is presented in *Parts IV* and *V*; and information on the effects of imports of the subject merchandise on U.S. producers' existing development and production efforts is presented in *Part VI*. Information on inventories of the subject merchandise; foreign producers' operations, including the potential for "product-shifting;" any other threat indicators, if applicable; and any dumping in third-country markets, follows. Also presented in this section of the report is information obtained for consideration by the Commission on nonsubject countries.

[2] Section 771(7)(F)(iii) of the Act (19 U.S.C. § 1677(7)(F)(iii)) further provides that, in antidumping investigations, ". . . the Commission shall consider whether dumping in the markets of foreign countries (as evidenced by dumping findings or antidumping remedies in other WTO member markets against the same class or kind of merchandise manufactured or exported by the same party as under investigation) suggests a threat of material injury to the domestic industry."

The industry in Germany

The Commission issued foreign producers' or exporters' questionnaires to three firms believed to produce and/or export thermal paper from Germany.[3] Usable responses to the Commission's questionnaire were received from two producers and one reseller: Mitsubishi HiTec Paper Europe GmbH ("Mitsubishi HiTec"), Papierfabrik August Koehler SE ("Koehler"), and Matra Atlantic GmbH ("Matra").[4]

Koehler is a *** producer of thermal paper in Germany. The firm was founded in 1807 in Oberkirch, Germany, is owned by parent company Koehler Holding GmbH & Co. KG, and its subsidiaries include Koehler Energy Group, Koehler Innovative Solutions, and The Katz Group.[5] Koehler produces thermal paper, flexible packaging paper, coated and uncoated paper, and carbonless paper, as well as playing card board and other specialty papers.[6] The firm produces BPA-free, phenol-free, and developer-free thermal paper.[7]

Mitsubishi HiTec is part of Mitsubishi Paper Mills Ltd., producer of thermal paper in Japan, and is located in Bielefeld, Germany, with manufacturing locations in Bielefeld and Flensburg. Mitsubishi HiTec produces inkjet, thermal, carbonless, label, and barrier paper. The company has a total coating capacity of 185,000 tons of specialty paper per year.[8]

These firms' exports to the United States are believed to account for the majority of U.S. imports of thermal paper from Germany in 2019.[9] According to estimates requested of the responding German producers, the production of thermal paper in Germany reported in

[3] These firms were identified through a review of information submitted in the petition and contained in *** records.

[4] Matra is ***. The firm ***.

[5] Koehler Paper Group, "History," https://www.koehlerpaper.com/en/company/history.php (retrieved November 4, 2020).

[6] Koehler Paper Group, "Products," https://www.koehlerpaper.com/en/products/ (retrieved November 4, 2020).

[7] Koehler Paper Group, "Products: Thermal Paper," https://www.koehlerpaper.com/en/products/ (retrieved November 4, 2020).

[8] Mitsubishi HiTec, "About Us: Facts" https://www.mitsubishi-paper.com/en/hitec-paper/about-us/facts/ (retrieved November 4, 2020).

[9] ***.

questionnaires accounts for approximately *** percent of overall production of thermal paper in Germany. Tables VII-1 and VII-2 present information on the thermal paper operations of the responding producers and exporters in Germany.

Table VII-1
Thermal paper: Summary data for producers in Germany, 2019

Firm	Production (short tons)	Share of reported production (percent)	Exports to the United States (short tons)	Share of reported exports to the United States (percent)	Total shipments (short tons)	Share of firm's total shipments exported to the United States (percent)
Mitsubishi HiTec	***	***	***	***	***	***
Koehler Germany	***	***	***	***	***	***
All firms	***	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Changes in operations

As presented in table VII-2 thermal paper firms in Germany reported several operational and organizational changes since January 1, 2017.

Table VII-2
Thermal paper: German producers' reported changes in operations, since January 1, 2017

Item / Firm	Reported changed in operations
Expansions:	
***	***
Other:	
***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Operations on thermal paper

Table VII-3 presents information on the thermal paper operations of the responding producers and exporters in Germany. German producers' capacity increased overall during 2017-19 by *** percent, increasing by *** percent between 2018 and 2019 after decreasing by *** percent between 2017 and 2018. German producers' capacity was higher in January-June 2020 than in January-June 2019. Capacity is projected to increase by *** percent in 2020, then decrease in 2021 by *** percent. German producers' production decreased during 2017-19 by *** percent, but was higher in January-June 2020 than in January-June 2019. German producers projected decreased production in 2020 by *** percent, increasing in 2021 by *** percent, but still lower than levels reported during 2017-19. As a result of increased capacity coupled with decreased production, German producers' capacity utilization *** decreased during 2017-19, from *** percent in 2017 to *** percent in 2019. Capacity utilization was lower in January-June 2020 than in January-June 2019, and is projected to be higher in 2021 than in 2020.

Home market shipments and export shipments to the United States accounted for *** of German producers' total shipments during 2017-19 and January-June 2019. Home market shipments were slightly higher in January-June 2020 than in January-June 2019, accounting for *** percent of total shipments, while export shipments to the United States peaked in 2018 at *** percent before decreasing in 2019 to end *** percentage points lower than the 2017 share levels. The quantity of German producers' export shipments to the United States is projected to *** in 2020 and 2021.

Table VII-3
Thermal paper: Data for producers in Germany, 2017-19

Item	Actual experience					Projections	
	Calendar year			January to June		Calendar year	
	2017	2018	2019	2019	2020	2020	2021
	Quantity (short tons)						
Capacity	***	***	***	***	***	***	***
Production	***	***	***	***	***	***	***
End-of-period inventories	***	***	***	***	***	***	***
Shipments: Home market shipments:	***	***	***	***	***	***	***
Export shipments: Jumbo rolls to the United States:	***	***	***	***	***	***	***
Converted rolls to the United States	***	***	***	***	***	***	***
Total exports to United States	***	***	***	***	***	***	***
Exports to all other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***
	Ratios and shares (percent)						
Capacity	***	***	***	***	***	***	***
Inventories/production	***	***	***	***	***	***	***
Inventories/total shipments	***	***	***	***	***	***	***
Share of shipments: Home market shipments:	***	***	***	***	***	***	***
Export shipments: Jumbo rolls to the United States:	***	***	***	***	***	***	***
Converted rolls to the United States	***	***	***	***	***	***	***
Total exports to United States	***	***	***	***	***	***	***
Exports to all other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Alternative products

As shown in table VII-4, responding German firms produced other products on the same equipment and machinery used to produce thermal paper.[10]

Table VII-4
Thermal paper: German producers' overall capacity and production on the same equipment as subject production, 2017-19

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (short tons)				
Overall capacity	***	***	***	***	***
Production:					
Thermal paper	***	***	***	***	***
Out-of-scope production	***	***	***	***	***
Total production on same machinery	***	***	***	***	***
	Ratios and shares (percent)				
Overall capacity utilization	***	***	***	***	***
Share of production:					
Thermal paper	***	***	***	***	***
Out-of-scope production	***	***	***	***	***
Total production on same machinery	***	***	***	***	***

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.
*** reported producing four products *** on the same machinery as thermal paper.

Source: Compiled from data submitted in response to Commission questionnaires.

[10] ***.

Exports

According to GTA, the leading export markets for paper, paperboard, cellulose wadding, and webs of cellulose fibers from Germany are the United States, Italy, and France (table VII-5). During 2019, the United States was the top export market for paper, paperboard, cellulose wadding, and webs of cellulose fibers from Germany, accounting for 10.8 percent, followed by Italy and France, each accounting for 7.7 percent.

Table VII-5
Paper, paperboard, cellulose wadding, and webs of cellulose fiber: Exports from Germany by destination market, 2017-19

Destination market	Calendar year		
	2017	2018	2019
	Value (1,000 dollars)		
United States	107,464	157,271	141,405
Italy	102,897	120,514	100,340
France	90,133	111,141	99,995
United Kingdom	75,778	92,675	91,099
Poland	87,123	105,294	87,734
Turkey	77,284	74,285	86,432
Russia	69,655	82,330	71,509
Austria	60,928	64,745	57,366
Spain	50,173	54,655	49,428
All other destination markets	462,448	542,140	519,075
All destination markets	1,183,883	1,405,052	1,304,382
	Share of value (percent)		
United States	9.1	11.2	10.8
Italy	8.7	8.6	7.7
France	7.6	7.9	7.7
United Kingdom	6.4	6.6	7.0
Poland	7.4	7.5	6.7
Turkey	6.5	5.3	6.6
Russia	5.9	5.9	5.5
Austria	5.1	4.6	4.4
Spain	4.2	3.9	3.8
All other destination markets	39.1	38.6	39.8
All destination markets	100.0	100.0	100.0

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. United States is shown at the top, all remaining top export destinations shown in descending order of 2019 data.

Source: Official exports statistics under HS subheading 4811.90 as reported by Eurostat in the Global Trade Atlas database, accessed October 23rd, 2020.

The industry in Japan

The Commission issued foreign producers' or exporters' questionnaires to three firms believed to produce and/or export thermal paper from Japan.[11] Usable responses to the Commission's questionnaire were received from three firms: Mitsubishi Paper Mills, Limited ("Mitsubishi"), Nippon Paper Industries Co., Ltd. ("Nippon"), and Oji Imaging Media Co., Ltd. ("Oji Imaging"). These firms' exports to the United States accounted for *** U.S. imports of thermal paper from Japan in 2019.[12] According to estimates requested of the responding Japanese producers, the production of thermal paper in Japan reported in questionnaires accounts for *** of overall production of thermal paper in Japan. Table VII-6 presents information on the thermal paper operations of the responding producers and exporters in Japan.

Nippon was founded in 1949. The firm has over 12,000 employees and produces a variety of paper products, including printing and writing paper, newsprint, specialty paper, wrapping paper, and specialty paper products designed for the foodservice and healthcare sectors.[13]

Mitsubishi was established in 1898, and produces products such as pressure-sensitive, thermal, magnetic, electrographic, photography, and inkjet paper.[14] Mitsubishi has production and R&D locations in Japan and Germany. In March 2019 the firm became an equity-method affiliate of Oji Holdings Corporation, parent company of Oji Imaging Media Co., Ltd.[15]

Oji Imaging Media Co., Ltd. is a producer of paper products. The company is owned by parent company Oji Paper Company, and ultimate parent Oji Holdings Corporation.[16]

---

[11] These firms were identified through a review of information submitted in the petition and contained in *** records.

[12] Based on the responses to the Commission's U.S. importers' questionnaire.

[13] Nippon Paper Industries, "Corporate Profile," https://www.nipponpapergroup.com/english/about/corporate/ (retrieved November 9, 2020).

[14] Mitsubishi Paper Mills Limited, "Corporate Profile/Business Fields," https://www.mpm.co.jp/eng/company/gaiyo.html (retrieved November 5, 2020).

[15] Mitsubishi Paper Mills Limited, "History," https://www.mpm.co.jp/eng/company/history.html (retrieved November 5, 2020).

[16] Oji Imaging Media Co., Ltd., "Company Profile," http://www.ojiimagingmedia.co.jp/profile.html (retrieved November 5, 2020). As mentioned in Part III, Kanzaki Specialty Papers (Ware, Massachusetts) is a subsidiary of Oji Imaging Media, and ultimate parent company Oji Holdings Corporation. ***.

Table VII-6
Thermal paper: Summary data for producers in Japan, 2019

Firm	Production (short tons)	Share of reported production (percent)	Exports to the United States (short tons)	Share of reported exports to the United States (percent)	Total shipments (short tons)	Share of firm's total shipments exported to the United States (percent)
Mitsubishi	***	***	***	***	***	***
Nippon	***	***	***	***	***	***
Oji Imaging	***	***	***	***	***	***
All firms	***	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Changes in operations

As presented in table VII-7, producers in Japan reported several operational and organizational changes since January 1, 2017.

Table VII-7
Thermal paper: Japanese producers' reported changes in operations, since January 1, 2017

Item / Firm	Reported changed in operations
Acquisitions:	
***	***
Consolidations:	
***	***
Other:	
***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Operations on thermal paper

Table VII-8 presents information on the thermal paper operations of the responding producers and exporters in Japan. Japanese producers' capacity increased each year during 2017-19, for a total increase of *** percent. Japanese producers' capacity was slightly higher in January-June 2020 than in January-June 2019. Capacity is projected to decrease by *** percent in 2020, then decrease again in 2021 by *** percent, ending ***. Japanese producers' production increased during 2017-19 by *** percent, but was lower in January-June 2020 than in January-June 2019. Japanese producers projected production to decline in 2020 by *** percent, but then rise in 2021 by *** percent. Japanese producers' capacity utilization increased during 2017-19, from *** percent in 2017 to *** percent in 2019. Capacity utilization was lower in January-June 2020 than in January-June 2019, and is projected to decrease in 2020 and 2021 from 2019.

The majority of Japanese producers' shipments were of shipments within the home market. Export shipments to the United States and other markets accounted for *** of Japanese producers' total shipments during 2017-19 and January-June 2019. Home market shipments increased during 2017-19 by *** percent, and were higher in January-June 2020 than in January-June 2019. Export shipments to the United States as a share of total shipments peaked in 2018 at *** percent before decreasing in 2019 to end *** percentage points lower than the 2017 share levels. The quantity of Japanese producers' export shipments to the United States is projected to *** in 2020 and 2021.

Table VII-8
Thermal paper: Data for producers in Japan, 2017-19

Item	Actual experience					Projections	
	Calendar year			January to June		Calendar year	
	2017	2018	2019	2019	2020	2020	2021
	Quantity (short tons)						
Capacity	***	***	***	***	***	***	***
Production	***	***	***	***	***	***	***
End-of-period inventories	***	***	***	***	***	***	***
Shipments:							
Home market shipments:	***	***	***	***	***	***	***
Export shipments:							
Jumbo rolls to the United States:	***	***	***	***	***	***	***
Converted rolls to the United States	***	***	***	***	***	***	***
Total exports to United States	***	***	***	***	***	***	***
Exports to all other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***
	Ratios and shares (percent)						
Capacity utilization	***	***	***	***	***	***	***
Inventories/production	***	***	***	***	***	***	***
Inventories/total shipments	***	***	***	***	***	***	***
Share of shipments:							
Home market shipments:	***	***	***	***	***	***	***
Export shipments:							
Jumbo rolls to the United States:	***	***	***	***	***	***	***
Converted rolls to the United States	***	***	***	***	***	***	***
Total exports to United States	***	***	***	***	***	***	***
Exports to all other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Alternative products

As shown in table VII-9, responding Japanese firms produced other products on the same equipment and machinery used to produce thermal paper.

Table VII-9
Thermal paper: Japanese producers' overall capacity and production on the same equipment as subject production, 2017-19

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (short tons)				
Overall capacity	***	***	***	***	***
Production:					
Thermal paper	***	***	***	***	***
Out-of-scope production	***	***	***	***	***
Total production on same machinery	***	***	***	***	***
	Ratios and shares (percent)				
Overall capacity utilization	***	***	***	***	***
Share of production:					
Thermal paper	***	***	***	***	***
Out-of-scope production	***	***	***	***	***
Total production on same machinery	***	***	***	***	***

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.
*** reported producing seven products: *** on same machinery as thermal paper.

Source: Compiled from data submitted in response to Commission questionnaires.

Exports

According to GTA, the leading export markets for leading export markets for paper, paperboard, cellulose wadding, and webs of cellulose fibers from Japan are the United States, China, and Indonesia (table VII-10).[17] During 2019, the United States was the top export market for paper, paperboard, cellulose wadding, and webs of cellulose fibers from Japan, accounting for 39.2 percent, followed by China, accounting for 11.2 percent.

Table VII-10
Paper, paperboard, cellulose wadding, and webs of cellulose fiber: Exports from Japan by destination market, 2017-19

Destination market	Calendar year		
	2017	2018	2019
	Value (1,000 dollars)		
United States	73,341	57,719	43,732
China	14,975	13,681	12,537
Indonesia	8,284	9,386	7,967
France	8,846	9,110	6,595
Netherlands	3,972	6,078	5,965
Taiwan	6,201	6,525	5,887
Korea	7,266	5,664	4,837
Vietnam	5,558	4,919	4,408
India	2,838	3,386	3,329
All other destination markets	20,029	23,226	16,337
All destination markets	151,310	139,695	111,594
	Share of value (percent)		
United States	48.5	41.3	39.2
China	9.9	9.8	11.2
Indonesia	5.5	6.7	7.1
France	5.8	6.5	5.9
Netherlands	2.6	4.4	5.3
Taiwan	4.1	4.7	5.3
Korea	4.8	4.1	4.3
Vietnam	3.7	3.5	4.0
India	1.9	2.4	3.0
All other destination markets	13.2	16.6	14.6
All destination markets	100.0	100.0	100.0

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. United States is shown at the top, all remaining top export destinations shown in descending order of 2019 data.

Source: Official exports statistics under HS subheading 4811.90 as reported by Japan's Ministry of Finance in the Global Trade Atlas database, accessed October 23rd, 2020.

[17] GTA data for HTS subheading 4811.90 includes products that are outside the scope of these investigations. Consequently, the global export data presented are overstated.

The industry in Korea

The Commission issued foreign producers' or exporters' questionnaires to one firm, Hansol Paper Co., Ltd. ("Hansol"), believed to produce and/or export thermal paper from Korea.[18] Hansol provided a usable response; information on the firm's thermal paper operations is presented in table VII-11. Hansol was founded in 1965, and launched its first product in 1968. In addition to thermal paper, the firm produces various printing, industrial, and specialty papers at its three facilities in Janghang, Daejeon, and Cheonan.[19]

Table VII-11
Thermal paper: Summary data for producers in Korea, 2019

Firm	Production (short tons)	Share of reported production (percent)	Exports to the United States (short tons)	Share of reported exports to the United States (percent)	Total shipments (short tons)	Share of firm's total shipments exported to the United States (percent)
Hansol	***	***	***	***	***	***
All firms	***	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

[18] This firm was identified through a review of information submitted in the petition and contained in *** records.

[19] Hansol, "Hansol in the present," http://hansol.com/english/hansol/current/paper.jsp (retrieved November 4, 2020).

Changes in operations

As presented in table VII-12 producers in Korea reported several operational and organizational changes since January 1, 2017.

Table VII-12
Thermal paper: Korean producers' reported changes in operations, since January 1, 2017

Item / Firm	Reported changed in operations
Expansions:	
***	***
Prolonged shutdowns or curtailments:	
***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Operations on thermal paper

Table VII-13 presents information on Hansol's thermal paper operations. During 2017-19, the firm's capacity increased by *** percent, and was slightly lower in January-June 2020 than in January-June 2019. The firm projects its capacity in 2020 and 2021 to ***. Likely owing to its ***, Hansol's production increased during 2017-19 by *** percent, and was higher in January-June 2020 than in January-June 2019. The firm's capacity utilization increased overall during 2017-19, though was *** in 2018, and was higher in January-June 2020 than in January-June 2019. *** Hansol's shipments were to ***, though its share of shipments *** during 2017-19 by *** percentage points.

Table VII-13
Thermal paper: Data for producers in Korea, 2017-19

Item	Actual experience					Projections	
	Calendar year			January to June		Calendar year	
	2017	2018	2019	2019	2020	2020	2021
	Quantity (short tons)						
Capacity	***	***	***	***	***	***	***
Production	***	***	***	***	***	***	***
End-of-period inventories	***	***	***	***	***	***	***
Shipments:							
Home market shipments:	***	***	***	***	***	***	***
Export shipments:							
Jumbo rolls to the United States:	***	***	***	***	***	***	***
Converted rolls to the United States	***	***	***	***	***	***	***
Total exports to United States	***	***	***	***	***	***	***
Exports to all other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***
	Ratios and shares (percent)						
Capacity utilization	***	***	***	***	***	***	***
Inventories/production	***	***	***	***	***	***	***
Inventories/total shipments	***	***	***	***	***	***	***
Share of shipments:							
Home market shipments:	***	***	***	***	***	***	***
Export shipments:							
Jumbo rolls to the United States:	***	***	***	***	***	***	***
Converted rolls to the United States	***	***	***	***	***	***	***
Total exports to United States	***	***	***	***	***	***	***
Exports to all other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Alternative products

As shown in table VII-14, responding Korean firms produced other products on the same equipment and machinery used to produce thermal paper.

Table VII-14
Thermal paper: Korean producers' overall capacity and production on the same equipment as subject production, 2017-19

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (short tons)				
Overall capacity	***	***	***	***	***
Production:					
Thermal paper	***	***	***	***	***
Out-of-scope production	***	***	***	***	***
Total production on same machinery	***	***	***	***	***
	Ratios and shares (percent)				
Overall capacity utilization	***	***	***	***	***
Share of production:					
Thermal paper	***	***	***	***	***
Out-of-scope production	***	***	***	***	***
Total production on same machinery	***	***	***	***	***

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.
One foreign producer *** reported producing two products *** on same machinery as thermal paper.

Source: Compiled from data submitted in response to Commission questionnaires.

Exports

According to GTA, the leading export markets for paper, paperboard, cellulose wadding, and webs of cellulose fibers from Korea are India, Italy, and Spain (table VII-15). [20] During 2019, the United States accounted for 2.8 percent of the value of exports of for paper, paperboard, cellulose wadding, and webs of cellulose fibers from Korea, while India accounted for 20.3 percent.

[20] GTA data for HTS subheading 4811.90 includes products that are outside the scope of these investigations. Consequently, the global export data presented are overstated.

Table VII-15
Paper, paperboard, cellulose wadding, and webs of cellulose fiber: Exports from Korea by destination market, 2017-19

Destination market	Calendar year		
	2017	2018	2019
	Value (1,000 dollars)		
United States	2,341	2,791	3,133
India	15,788	23,067	23,090
Italy	0	808	11,211
Spain	1	178	10,095
Malaysia	606	4,385	9,895
Thailand	4,498	8,442	9,266
Vietnam	5,654	8,880	8,411
Finland	3,721	8,217	5,806
Argentina	3,393	5,253	5,332
All other destination markets	25,157	28,640	27,601
All destination markets	61,160	90,661	113,841
	Share of value (percent)		
United States	3.8	3.1	2.8
India	25.8	25.4	20.3
Italy	0.0	0.9	9.8
Spain	0.0	0.2	8.9
Malaysia	1.0	4.8	8.7
Thailand	7.4	9.3	8.1
Vietnam	9.2	9.8	7.4
Finland	6.1	9.1	5.1
Argentina	5.5	5.8	4.7
All other destination markets	41.1	31.6	24.2
All destination markets	100.0	100.0	100.0

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. United States is shown at the top, all remaining top export destinations shown in descending order of 2019 data.

Source: Official exports statistics under HS subheading 4811.90 as reported by Korea's Trade Statistics Promotion Institute in the Global Trade Atlas database, accessed October 23rd, 2020.

The industry in Spain

The Commission issued foreign producers' or exporters' questionnaires to one firm, Torraspapel S.A., believed to be the sole producer and/or export of thermal paper from Spain.[21] Torraspapel provided a usable response; information on their thermal paper operations is presented below in table VII-16. Torraspapel is part of the Lecta Group, which manufactures and distributes specialty paper for labels and flexible packaging, coated and uncoated paper, and other value-added print media.[22] The Lecta Group was created between 1997 and 1999 as a result of an acquisition of Torraspapel, Condat in France, and Cartiere del Garda in Italy. The Zaragoza mill of the Lecta Group produces 2-sided coated and uncoated paper, as well as pulp and base paper. The Zaragoza mill has an annual paper production capacity of 198,000 tons per year, and an annual pulp production capacity of 232,000 tons per year.[23] The Leitza mill of the Lecta Group *** produces carbonless, thermal, metallized, and cast-coated paper, with an annual production capacity of 138,000 tons per year.[24] The Almazan mill of the Lecta group produces pressure-sensitive paper, with a production capacity of 143,000 tons per year.[25] Torraspapel's exports to the United States accounted for *** U.S. imports of thermal paper from Spain in 2019, and the United States accounted for *** percent of the firm's total shipments.[26] According to requested estimates, the production of thermal paper reported in the questionnaire accounts for *** percent of overall production of thermal paper in Spain.

[21] This firms was identified through a review of information submitted in the petition and contained in *** records.

[22] Lecta, "Torraspapel," https://www.lecta.com/en/torraspapel (retrieved November 4, 2020).

[23] Lecta, "Manufacturing Sites: Zaragoza," https://www.lecta.com/en/mill-zaragoza (retrieved November 4, 2020).

[24] Lecta, "Manufacturing Sites: Leitza," https://www.lecta.com/en/mill-leitza (retrieved November 4, 2020).

[25] Lecta, "Manufacturing Sites: Almazan," https://www.lecta.com/en/mill-almazan (retrieved November 4, 2020).

[26] Torraspapel ***.

Table VII-16
Thermal paper: Summary data for producers in Spain, 2019

Firm	Production (short tons)	Share of reported production (percent)	Exports to the United States (short tons)	Share of reported exports to the United States (percent)	Total shipments (short tons)	Share of firm's total shipments exported to the United States (percent)
Torraspapel	***	***	***	***	***	***
All firms	***	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Changes in operations

As presented in table VII-17 Torraspapel reported changes in the firm's operations since January 1, 2017.

Table VII-17
Thermal paper: Spanish producers' reported changes in operations, since January 1, 2017

Item / Firm	Reported changed in operations
Expansions:	
***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Operations on thermal paper

Table VII-18 presents information on Torraspapel's thermal paper operations. Torraspapel's capacity *** during 2017-19, and was higher in January-June 2020 than in January-June 2019. Capacity is projected to increase by *** percent in 2020, then decrease slightly in 2021 by *** percent. Torraspapel's production increased during 2017-19 by *** percent, but was lower in January-June 2020 than in January-June 2019. Torraspapel projected decreased production in 2020 by *** percent, but then increased production in 2021 by *** percent. As a result of disproportional increases in capacity and production, Torraspapel's capacity utilization decreased during 2017-19, from *** percent in 2017 to *** percent in 2019. Capacity utilization was lower in January-June 2020 than in January-June 2019, and is projected to decrease in 2020, then increase 2021.

Home market shipments and export shipments to the United States accounted for *** of Torraspapel's total shipments during 2017-19. Home market shipments were slightly lower in January-June 2020 than in January-June 2019, accounting for *** percent of total shipments in January-June 2020, while export shipments to the United States peaked in 2018 at *** percent before decreasing in 2019 to end at the 2017 share level. The quantity of Torraspapel's export shipments to the United States is projected to increase in 2020, then decrease in 2021.

Table VII-18
Thermal paper: Data for producers in Spain, 2017-19

Item	Actual experience					Projections	
	Calendar year			January to June		Calendar year	
	2017	2018	2019	2019	2020	2020	2021
	Quantity (short tons)						
Capacity	***	***	***	***	***	***	***
Production	***	***	***	***	***	***	***
End-of-period inventories	***	***	***	***	***	***	***
Shipments:							
Home market shipments:	***	***	***	***	***	***	***
Export shipments:							
Jumbo rolls to the United States:	***	***	***	***	***	***	***
Converted rolls to the United States	***	***	***	***	***	***	***
Total exports to United States	***	***	***	***	***	***	***
Exports to all other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***
	Ratios and shares (percent)						
Capacity utilization	***	***	***	***	***	***	***
Inventories/production	***	***	***	***	***	***	***
Inventories/total shipments	***	***	***	***	***	***	***
Share of shipments:							
Home market shipments:	***	***	***	***	***	***	***
Export shipments:							
Jumbo rolls to the United States:	***	***	***	***	***	***	***
Converted rolls to the United States	***	***	***	***	***	***	***
Total exports to United States	***	***	***	***	***	***	***
Exports to all other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Alternative products

As shown in table VII-19, Torrraspapel ***. During 2017-19, ***.

Table VII-19
Thermal paper: Spanish producers' overall capacity and production on the same equipment as subject production, 2017-19

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Quantity (short tons)				
Overall capacity	***	***	***	***	***
Production: Thermal paper	***	***	***	***	***
Out-of-scope production	***	***	***	***	***
Total production on same machinery	***	***	***	***	***
	Ratios and shares (percent)				
Overall capacity utilization	***	***	***	***	***
Share of production: Thermal paper	***	***	***	***	***
Out-of-scope production	***	***	***	***	***
Total production on same machinery	***	***	***	***	***

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.
*** reported producing *** on same machinery as thermal paper.

Source: Compiled from data submitted in response to Commission questionnaires.

Exports

According to GTA, the leading export markets for paper, paperboard, cellulose wadding, and webs of cellulose fibers from Spain are the United States, Turkey, and Italy (table VII-20). [27] During 2019, the United States was the top export market for paper, paperboard, cellulose wadding, and webs of cellulose fibers from Spain, accounting for 12.4 percent by value, followed by Turkey, accounting for 11.9 percent, and Italy, at 9.5 percent.

Table VII-20
Paper, paperboard, cellulose wadding, and webs of cellulose fiber: Exports from Spain by destination market, 2017-19

Destination market	Calendar year		
	2017	2018	2019
	Value (1,000 dollars)		
United States	12,366	15,015	30,164
Turkey	12,844	13,937	28,799
Italy	14,520	16,788	23,047
Colombia	7,941	13,356	20,614
Germany	12,569	14,811	16,211
United Kingdom	3,032	3,878	12,707
France	10,768	10,393	11,382
Portugal	5,022	4,959	9,038
Mexico	6,297	8,127	7,732
All other destination markets	59,270	62,580	82,816
All destination markets	144,631	163,843	242,509
	Share of value (percent)		
United States	8.6	9.2	12.4
Turkey	8.9	8.5	11.9
Italy	10.0	10.2	9.5
Colombia	5.5	8.2	8.5
Germany	8.7	9.0	6.7
United Kingdom	2.1	2.4	5.2
France	7.4	6.3	4.7
Portugal	3.5	3.0	3.7
Mexico	4.4	5.0	3.2
All other destination markets	41.0	38.2	34.1
All destination markets	100.0	100.0	100.0

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. United States is shown at the top, all remaining top export destinations shown in descending order of 2019 data.

Source: Official exports statistics under HS subheading 4811.90 as reported by Eurostat in the Global Trade Atlas database, accessed October 23rd, 2020.

[27] GTA data for HTS subheading 4811.90 includes products that are outside the scope of these investigations. Consequently, the global export data presented are overstated.

Subject countries combined

Table VII-21 presents summary data on the thermal paper operations of the reporting subject producers in the subject countries. The collective annual production capacity for the responding foreign producers in the subject countries increased by *** percent during 2017-19 and was higher in January-June 2020 than in January-June 2019. Their collective annual production capacity is projected to increase by *** percent in 2020 and decrease by *** percent from 2020 to 2021. Responding foreign producers' collective production in the subject countries increased by *** percent during 2017-19 and was higher in January-June 2020 than in January-June 2019. It is projected to decrease by *** percent in 2020, but increase by *** percent from 2020 to 2021. Responding foreign producers' capacity utilization in the subject countries decreased from *** percent in 2017 to *** percent in 2019. It was *** percent in January-June 2020, compared with *** percent in January-June 2019. Responding foreign producers' capacity utilization in the subject countries is projected to be at its *** reported in 2020 at *** percent in 2020, then increase to *** percent in 2021.

Responding foreign producers' collective home market shipments in the subject countries increased overall by *** percent during 2017-19 and were lower in January-June 2020 than in January-June 2019. They are projected to decrease by *** percent in 2020, then increase in 2021 by *** percent. Responding foreign producers' collective exports to the United States increased during 2017-19 by *** percent, but were lower in January-June 2020 than in January-June 2019. They are projected to decrease by *** percent in 2020, then increase slightly by *** percent from 2020 to 2021.

Table VII-21
Thermal paper: Data on the industry in subject countries, 2017-19, January-June 2019, January-June 2020, and projected calendar years 2020 and 2021.

Item	Actual experience					Projections	
	Calendar year			January to June		Calendar year	
	2017	2018	2019	2019	2020	2020	2021
	Quantity (short tons)						
Capacity	***	***	***	***	***	***	***
Production	***	***	***	***	***	***	***
End-of-period inventories	***	***	***	***	***	***	***
Shipments: Home market shipments:	***	***	***	***	***	***	***
Export shipments: Jumbo rolls to the United States:	***	***	***	***	***	***	***
Converted rolls to the United States	***	***	***	***	***	***	***
Total exports to United States	***	***	***	***	***	***	***
Exports to all other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***
	Ratios and shares (percent)						
Capacity	***	***	***	***	***	***	***
Inventories/production	***	***	***	***	***	***	***
Inventories/total shipments	***	***	***	***	***	***	***
Share of shipments: Home market shipments:	***	***	***	***	***	***	***
Export shipments: Jumbo rolls to the United States:	***	***	***	***	***	***	***
Converted rolls to the United States	***	***	***	***	***	***	***
Total exports to United States	***	***	***	***	***	***	***
Exports to all other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

U.S. inventories of imported merchandise

Table VII-22 presents data on U.S. importers' reported inventories of thermal paper. U.S. importers' end-of-period inventories from all subject sources increased by *** percent during 2017-19, and volumes were higher in January-June 2020 than in January-June 2019. *** firms reported holding inventories in 2019, of which *** accounted for the majority of the increase in end-of-period inventories from subject sources. Inventories from subject sources generally increased relative to U.S. imports, U.S. shipments, and total shipments during 2017-19. U.S. importers reported *** end-of-period inventories from nonsubject sources during 2017-19.

Table VII-22
Thermal paper: U.S. importers' end-of-period inventories of imports by source, 2017-19, January-June 2019, and January-June 2020

Item	Calendar year			January to June	
	2017	2018	2019	2019	2020
	Inventories (short tons); Ratios (percent)				
Imports from Germany					
Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***
Imports from Japan					
Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***
Imports from Korea					
Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***
Imports from Spain					
Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***
Imports from subject sources					
Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***
Imports from nonsubject sources					
Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***
Imports from all import sources					
Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

U.S. importers' outstanding orders

The Commission requested importers to indicate whether they imported or arranged for the importation of thermal paper after June 30, 2020. In the first three periods for which data were collected, Germany accounted for the largest share of imports, while Korea accounted for the second largest share. Table VII-23 presents data for the quantity of thermal paper arranged for U.S. importation after June 30, 2020.

Table VII-23
Thermal paper: U.S. importers' arranged imports, July 2020 through June 2021

Item	Period				
	Jul-Sep 2020	Oct-Dec 2020	Jan-Mar 2021	Apr-Jun 2021	Total
	Quantity (short tons)				
Arranged U.S. imports from.--					
Germany	***	***	***	***	***
Japan	***	***	***	***	***
Korea	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Antidumping or countervailing duty orders in third-country markets

Lightweight thermal paper[28] and heavyweight thermal paper[29] manufactured in Korea are currently subject to antidumping duties in the European Union.

Information on nonsubject countries

Data on global exports of paper, paperboard, cellulose wadding, and webs of cellulose fibers, during 2017-19, are presented in Table VII-24.[30] According to GTA, Germany (31.5 percent of total global exports by value) was the leading global exporter in 2019. China[31] (14.9 percent), the United States (9.9 percent), and Spain (5.9 percent) were the second, third, and fourth largest, respectively. Of the other subject countries, Korea (2.7 percent) was the ninth largest and Japan (2.7 percent) was the tenth largest. Nonsubject countries (including China) together accounted for 47.3 percent) of all global exports.

[28] Official Journal of the European Union, Commission Implementing Regulation Imposing a Definitive Anti-Dumping Duty and Collecting the Provisional Duty Imposed on Imports of Certain Lightweight Thermal Paper Originating in the Republic of Korea, OJ L 114/3, May 2, 2017.

[29] Official Journal of the European Union, Commission Implementing Regulation Imposing a Definitive Anti-Dumping Duty and Collecting the Provisional Duty Imposed on Imports of Certain Heavyweight Thermal Paper Originating in the Republic of Korea, OJ L 346/19, October 19, 2020.

[30] GTA data for HTS subheading 4811.90 includes products that are outside the scope of these investigations. Consequently, the global export data presented are overstated.

[31] China is subject to U.S. antidumping and countervailing duty orders on lightweight thermal paper. USITC, Lightweight Thermal Paper from China, Investigation Nos. 701-TA-451 and 731-TA-1126 (Second Review), June 11, 2020.

Table VII-24
Paper, paperboard, cellulose wadding, and webs of cellulose fiber: Global exports by exporter, 2017-19

Exporter	Calendar year		
	2017	2018	2019
	Value (1,000 dollars)		
United States	432,833	433,439	408,898
Germany	1,183,883	1,405,052	1,304,382
Spain	144,631	163,843	242,509
Korea	61,160	90,661	113,841
Japan	151,310	139,695	111,594
Subject exporters	1,540,984	1,799,252	1,772,327
China	497,279	547,269	615,659
France	181,323	267,958	240,203
Italy	121,263	149,539	145,097
Belgium	119,333	125,856	124,651
Poland	117,239	130,874	121,539
United Kingdom	150,733	162,470	109,719
Finland	82,133	108,633	95,004
All other exporters	919,742	994,957	916,213
All reporting exporters	3,730,028	4,286,808	4,140,411
	Share of value (percent)		
United States	11.6	10.1	9.9
Germany	31.7	32.8	31.5
Spain	3.9	3.8	5.9
Korea	1.6	2.1	2.7
Japan	4.1	3.3	2.7
Subject exporters	41.3	42.0	42.8
China	13.3	12.8	14.9
France	4.9	6.3	5.8
Italy	3.3	3.5	3.5
Belgium	3.2	2.9	3.0
Poland	3.1	3.1	2.9
United Kingdom	4.0	3.8	2.6
Finland	2.2	2.5	2.3
All other exporters	24.7	23.2	22.1
All reporting exporters	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

APPENDIX A

FEDERAL REGISTER NOTICES

The Commission makes available notices relevant to its investigations and reviews on its website, www.usitc.gov. In addition, the following tabulation presents, in chronological order, *Federal Register* notices issued by the Commission and Commerce during the current proceeding.

Citation	Title	Link
85 FR 65073, October 14, 2020	*Institution of Anti-Dumping Duty Investigations and Scheduling of Preliminary Phase Investigations; Thermal Paper From Germany, Japan, Korea, and Spain*	https://www.govinfo.gov/content/pkg/FR-2020-10-23/pdf/2020-23460.pdf
85 FR 69580, November 3, 2020	*Thermal Paper From Germany, Japan, the Republic of Korea, and Spain: Initiation of Less-Than-Fair-Value Investigations*	https://www.govinfo.gov/content/pkg/FR-2020-11-03/pdf/2020-24333.pdf

APPENDIX B

LIST OF STAFF CONFERENCE WITNESSES

CALENDAR OF PUBLIC PRELIMINARY CONFERENCE

Those listed below appeared in the United States International Trade Commission's preliminary conference via videoconference:

Subject: Thermal Paper from Germany, Japan, Korea, and Spain

Inv. Nos.: 731-TA-1546-1549 (Preliminary)

Date and Time: October 28, 2020 - 9:30 a.m.

OPENING REMARKS:

In Support of Imposition (**Stephen J. Orava**, King & Spalding LLP)
In Opposition to Imposition (**F. Amanda DeBusk**, Dechert LLP)

In Support of the Imposition of Antidumping Duty Orders:

King & Spalding LLP
Washington, DC
on behalf of

Appvion Operations, Inc.
Domtar Corporation

Graeme Hodson, President of Paper Division, Appvion Operations, Inc.

Meyer Weiss, Vice President, Thermal, Appvion Operations, Inc.

Robert Melton, Vice President Pulp & Paper, Domtar Corporation

Tina Howard, Director of Sales, Converting, and Specialty Channel, Domtar Corporation

Steve Hefner, President and Chief Executive Officer, Kanzaki Specialty Papers

Roy Houseman, Legislative Director, United Steelworkers

Charles Anderson, Principal, Capital Trade, Inc.

Andrew Szamosszegi, Principal, Capital Trade, Inc.

In Support of the Imposition of Antidumping Duty Orders (continued):

Bonnie B. Byers, Consultant, King & Spalding LLP

Stephen J. Orava)
Stephen P. Vaughn) – OF COUNSEL
Clinton R. Long)

In Opposition to the Imposition of Antidumping Duty Orders:

Sidley Austin LLP
Washington, DC
on behalf of

Nippon Paper Industries Co., Ltd. ("NPI")
Paper Products Marketing (USA) Inc. ("PPM-USA")

Steven Leith, President of PPM-USA

Richard L.A. Weiner)
) – OF COUNSEL
Shawn M. Higgins)

Dechert LLP
Washington, DC
on behalf of

Papierfabrik August Koehler SE ("Koehler")

Katja Frede, Thermal & Carbonless Paper Product Manager, Koehler

Emre Uyar, Principal, Cornerstone Research

James Dougan, Vice President, Economic Consulting Services, LLC

Cara Groden, Senior Economist, Economic Consulting Services, LLC

F. Amanda DeBusk)
) – OF COUNSEL
Melissa L. Duffy)

In Opposition to the Imposition of
Antidumping Duty Orders (continued):

Steptoe & Johnson LLP
Washington, DC
on behalf of

Mitsubishi HiTec Paper Europe GmbH
Mitsubishi Imaging, Inc.

Eric C. Emerson)
) – OF COUNSEL
Stephanie W. Wang)

Perkins Coie LLP
Washington, DC
on behalf of

Torraspapel S.A. ("Torraspapel")

Michael P. House)
) – OF COUNSEL
Andrew Caridas)

REBUTTAL/CLOSING REMARKS:

In Support of Imposition (**Stephen P. Vaughn**, King & Spalding LLP)
In Opposition to Imposition (**Melissa L. Duffy**, Dechert LLP)

-END-

APPENDIX C

SUMMARY DATA

Table C-1
Thermal paper: Summary data concerning the U.S. market, 2017-19, January to June 2019, and January to June 2020
(Quantity=short tons; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per short ton; Productivity=Pounds per hour; and Period changes=percent-exceptions noted)

	Reported data					Period changes			
	Calendar year			January to June		Calendar year			Jan-Jun
	2017	2018	2019	2019	2020	2017-19	2017-18	2018-19	2019-20
U.S. consumption quantity:									
Amount	***	***	***	***	***	▲***	▲***	▼***	▼***
Producers' share (fn1)	***	***	***	***	***	▼***	▲***	▼***	▼***
Importers' share (fn1):									
Germany	***	***	***	***	***	▼***	▼***	▼***	▲***
Japan	***	***	***	***	***	▲***	▲***	▼***	▼***
Korea	***	***	***	***	***	▲***	▼***	▲***	▼***
Spain	***	***	***	***	***	▲***	▲***	▲***	▲***
Subject sources	***	***	***	***	***	▲***	▼***	▲***	▲***
Nonsubject sources	***	***	***	***	***	▲***	▲***	▼***	▲***
All import sources	***	***	***	***	***	▲***	▼***	▲***	▲***
U.S. consumption value:									
Amount	***	***	***	***	***	▲***	▲***	▼***	▼***
Producers' share (fn1)									
Fully domestic value	***	***	***	***	***	▼***	▼***	▼***	▲***
Value added by independent converters	***	***	***	***	***	▲***	▲***	▲***	▼***
Total	***	***	***	***	***	▼***	▼***	▼***	▲***
Importers' share (fn1):									
Germany	***	***	***	***	***	▼***	▼***	▼***	▲***
Japan	***	***	***	***	***	▲***	▲***	▼***	▼***
Korea	***	***	***	***	***	▲***	▲***	▲***	▼***
Spain	***	***	***	***	***	▲***	▲***	▼***	▲***
Subject sources	***	***	***	***	***	▲***	▲***	▲***	▼***
Nonsubject sources	***	***	***	***	***	▲***	▲***	▼***	▲***
All import sources	***	***	***	***	***	▲***	▲***	▲***	▼***
U.S. importers' U.S. shipments of imports from:									
Germany:									
Quantity	***	***	***	***	***	▼***	▲***	▼***	▲***
Value	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	▲***	▼***	▲***	▼***
Japan:									
Quantity	***	***	***	***	***	▲***	▲***	▼***	▼***
Value	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▼***	▼***
Korea:									
Quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
Value	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	▲***	▼***	▲***	▲***
Spain:									
Quantity	***	***	***	***	***	▲***	▲***	▼***	▲***
Value	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
Subject sources:									
Quantity	***	***	***	***	***	▲***	▲***	▼***	▼***
Value	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▲***	▲***
Nonsubject sources:									
Quantity	***	***	***	***	***	▲***	▲***	▼***	▲***
Value	***	***	***	***	***	▲***	▲***	▼***	▲***
Unit value	***	***	***	***	***	▼***	▲***	▼***	▲***
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▲***	▲***
All import sources:									
Quantity	***	***	***	***	***	▲***	▲***	▼***	▼***
Value	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▲***	▲***

Table continued.

Table C-1--Continued
Thermal paper: Summary data concerning the U.S. market, 2017-19, January to June 2019, and January to June 2020
(Quantity=short tons; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per short ton; Productivity=Pounds per hour; and Period changes=percent-exceptions noted)

	Reported data					Period changes			
	Calendar year			January to June		Calendar year			Jan-Jun
	2017	2018	2019	2019	2020	2017-19	2017-18	2018-19	2019-20
U.S. producers':									
Jumbo producers: Average capacity quantity	***	***	***	***	***	▼***	▼***	▼***	▼***
Jumbo producers: Production quantity	***	***	***	***	***	▼***	▲***	▼***	▼***
Jumbo producers: Capacity utilization (fn1)	***	***	***	***	***	▼***	▲***	▼***	▼***
Independent converters: Average capacity quantity	***	***	***	***	***	▲***	▲***	▲***	▲***
Independent converters: Production quantity	***	***	***	***	***	▲***	▲***	▼***	▼***
Independent converters: Capacity utilization (fn1)	***	***	***	***	***	▼***	▲***	▼***	▼***
U.S. shipments (fn2):									
Quantity	***	***	***	***	***	▼***	▲***	▼***	▼***
Value									
Fully domestic value	***	***	***	***	***	▲***	▲***	▼***	▼***
Value added to imports	***	***	***	***	***	▲***	▲***	▲***	▼***
Total	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▲***	▼***
Export shipments:									
Quantity	***	***	***	***	***	▼***	▼***	▼***	▼***
Value	***	***	***	***	***	▼***	▼***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▲***	▲***
Jumbo producer: Ending inventory quantity	***	***	***	***	***	▼***	▼***	▼***	▲***
Jumbo producer: Inv./Jumbo ship. (fn1)	***	***	***	***	***	▼***	▼***	▲***	▲***
Independent converters: Ending inventory quantity	***	***	***	***	***	▼***	▲***	▼***	▼***
Independent converters: Inv./Converter ship. (fn1)	***	***	***	***	***	▼***	▼***	▼***	▼***
Production workers	***	***	***	***	***	▲***	▲***	▲***	▲***
Hours worked (1,000s)	***	***	***	***	***	▼***	▲***	▼***	▼***
Wages paid ($1,000)	***	***	***	***	***	▲***	▲***	▲***	▼***
Hourly wages (dollars per hour)	***	***	***	***	***	▲***	▼***	▲***	▼***
Jumbo producer: Productivity	***	***	***	***	***	▲***	▲***	▼***	▲***
Jumbo producer: Unit labor costs	***	***	***	***	***	▼***	▼***	▲***	▲***
Independent converter: Productivity	***	***	***	***	***	▲***	▲***	▲***	▼***
Independent converter: Unit labor costs	***	***	***	***	***	▲***	▼***	▲***	▲***
Net sales:									
Quantity	***	***	***	***	***	▲***	▲***	▼***	▼***
Value	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▲***	▼***
Cost of goods sold (COGS)	***	***	***	***	***	▲***	▲***	▼***	▼***
Gross profit or (loss) (fn3)	***	***	***	***	***	▲***	▲***	▼***	▼***
SG&A expenses	***	***	***	***	***	▲***	▲***	▲***	▼***
Operating income or (loss) (fn3)	***	***	***	***	***	▲***	▲***	▼***	▲***
Net income or (loss) (fn3)	***	***	***	***	***	▲***	▲***	▲***	▲***
Capital expenditures	***	***	***	***	***	▼***	▼***	▲***	▼***
Research and development expenses	***	***	***	***	***	▼***	▼***	▼***	▼***
Net assets	***	***	***	***	***	▲***	▲***	▲***	***
Unit COGS	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit SG&A expenses	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit operating income or (loss) (fn3)	***	***	***	***	***	▲***	▲***	▼***	▲***
Unit net income or (loss) (fn3)	***	***	***	***	***	▲***	▲***	▲***	▲***
COGS/sales (fn1)	***	***	***	***	***	▼***	▼***	▲***	▼***
Operating income or (loss)/sales (fn1)	***	***	***	***	***	▲***	▲***	▼***	▲***
Net income or (loss)/sales (fn1)	***	***	***	***	***	▲***	▲***	▲***	▲***

Note.--Shares and ratios shown as "0.0" percent represent non-zero values less than "0.05" percent (if positive) and greater than "(0.05)" percent (if negative). Zeroes, null values, and undefined calculations are suppressed and shown as "---". Period changes preceded by a "▲" represent an increase, while period changes preceded by a "▼" represent a decrease.

fn1.--Reported data are in percent and period changes are in percentage points.
fn2.--The quantity for U.S. producers' U.S. shipments reflects the quantity of thermal paper sold in the United States by U.S. jumbo producers; The value for U.S. producers' U.S. shipments reflects the value of thermal paper sold in the United States by U.S. jumbo producers plus the additional value added to U.S. produced and imported jumbo rolls of thermal paper by U.S. independent converters based on U.S. conversion operations. In measuring consumption and market share this methodology avoids reclassifying and/or double counting merchandise already reported once by U.S. jumbo producers or by U.S. importers. Unit value of U.S. producers' U.S. shipments is based the fully domestic value added to domestic jumbo rolls.
fn3.--Percent changes only calculated when both comparison values represent profits; The directional change in profitability provided when one or both comparison values represent a loss.

Source: Compiled from data submitted in response to Commission questionnaires.

Table C-2
Jumbo thermal paper: Summary data concerning the U.S. market, 2017-19, January to June 2019, and January to June 2020
(Quantity=short tons; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per short ton; Productivity=Pounds per hour; and Period changes=percent-exceptions noted)

	Reported data					Period changes			
	Calendar year			January to June		Calendar year			Jan-Jun
	2017	2018	2019	2019	2020	2017-19	2017-18	2018-19	2019-20
U.S. consumption quantity:									
Amount	***	***	***	***	***	▲***	▲***	▼***	▼***
Producers' share (fn1)	***	***	***	***	***	▼***	▲***	▼***	▼***
Importers' share (fn1):									
Germany	***	***	***	***	***	▼***	▼***	▼***	▲***
Japan	***	***	***	***	***	▲***	▲***	▼***	▼***
Korea	***	***	***	***	***	▲***	▼***	▲***	▼***
Spain	***	***	***	***	***	▲***	▲***	▲***	▲***
Subject sources	***	***	***	***	***	▲***	▼***	▲***	▲***
Nonsubject sources	***	***	***	***	***	▲***	▲***	▼***	▲***
All import sources	***	***	***	***	***	▲***	▼***	▲***	▲***
U.S. consumption value:									
Amount	***	***	***	***	***	▲***	▲***	▼***	▼***
Producers' share (fn1)	***	***	***	***	***	▼***	▼***	▼***	▲***
Importers' share (fn1):									
Germany	***	***	***	***	***	▲***	▲***	▲***	▲***
Japan	***	***	***	***	***	▲***	▲***	▼***	▼***
Korea	***	***	***	***	***	▲***	▲***	▲***	▼***
Spain	***	***	***	***	***	▲***	▲***	▼***	▲***
Subject sources	***	***	***	***	***	▲***	▲***	▲***	▼***
Nonsubject sources	***	***	***	***	***	▲***	▲***	▼***	▲***
All import sources	***	***	***	***	***	▲***	▲***	▲***	▼***
U.S. importers' U.S. shipments of imports from:									
Germany:									
Quantity	***	***	***	***	***	▼***	▲***	▼***	▲***
Value	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	▲***	▼***	▲***	▼***
Japan:									
Quantity	***	***	***	***	***	▲***	▲***	▼***	▼***
Value	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▼***	▼***
Korea:									
Quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
Value	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	▲***	▼***	▲***	▲***
Spain:									
Quantity	***	***	***	***	***	▲***	▲***	▼***	▲***
Value	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
Subject sources:									
Quantity	***	***	***	***	***	▲***	▲***	▼***	▼***
Value	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▲***	▲***
Nonsubject sources:									
Quantity	***	***	***	***	***	▲***	▲***	▼***	▲***
Value	***	***	***	***	***	▲***	▲***	▼***	▲***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
All import sources:									
Quantity	***	***	***	***	***	▲***	▲***	▼***	▼***
Value	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▲***	▲***

Table continued.

Table C-2--Continued
Jumbo thermal paper: Summary data concerning the U.S. market, 2017-19, January to June 2019, and January to June 2020
(Quantity=short tons; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per short ton; Productivity=Pounds per hour; and Period changes=percent--exceptions noted)

	Reported data					Period changes			
	Calendar year			January to June		Calendar year			Jan-Jun
	2017	2018	2019	2019	2020	2017-19	2017-18	2018-19	2019-20
Jumbo U.S. producers':									
Average capacity quantity	***	***	***	***	***	▼***	▼***	▼***	▼***
Production quantity	***	***	***	***	***	▼***	▲***	▼***	▼***
Capacity utilization (fn1)	***	***	***	***	***	▼***	▲***	▼***	▼***
U.S. shipments:									
Quantity	***	***	***	***	***	▼***	▲***	▼***	▼***
Value	***	***	***	***	***				
Unit value	***	***	***	***	***	▲***	▲***	▲***	▼***
Export shipments:									
Quantity	***	***	***	***	***	▼***	▼***	▼***	▼***
Value	***	***	***	***	***	▼***	▼***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▲***	▲***
Ending inventory quantity	***	***	***	***	***	▼***	▼***	▼***	▲***
Inventories/total shipments (fn1)	***	***	***	***	***	▼***	▼***	▲***	▲***
Production workers	***	***	***	***	***	▼***	▼***	▼***	▲***
Hours worked (1,000s)	***	***	***	***	***	▼***	▼***	▼***	▼***
Wages paid ($1,000)	***	***	***	***	***	▼***	▼***	▼***	▼***
Hourly wages (dollars per hour)	***	***	***	***	***	▲***	▲***	▲***	▲***
Productivity (pounds per hour)	***	***	***	***	***	▲***	▲***	▼***	▲***
Unit labor costs	***	***	***	***	***	▼***	▼***	▲***	▲***
Net sales:									
Quantity	***	***	***	***	***	▼***	▲***	▼***	▼***
Value	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▲***	▼***
Cost of goods sold (COGS)	***	***	***	***	***	▲***	▲***	▼***	▼***
Gross profit or (loss) (fn2)	***	***	***	***	***	▲***	▲***	▼***	▲***
SG&A expenses	***	***	***	***	***	▼***	▼***	▼***	▼***
Operating income or (loss) (fn2)	***	***	***	***	***	▲***	▲***	▼***	▲***
Net income or (loss) (fn2)	***	***	***	***	***	▲***	▲***	▲***	▲***
Capital expenditures	***	***	***	***	***	▼***	▼***	▲***	▼***
Research and development expenses	***	***	***	***	***	▼***	▼***	▼***	▼***
Net assets	***	***	***	***	***	▲***	▲***	▼***	***
Unit COGS	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit SG&A expenses	***	***	***	***	***	▼***	▼***	▼***	▼***
Unit operating income or (loss) (fn2)	***	***	***	***	***	▲***	▲***	▼***	▲***
Unit net income or (loss) (fn2)	***	***	***	***	***	▲***	▲***	▲***	▲***
COGS/sales (fn1)	***	***	***	***	***	▲***	▼***	▲***	▼***
Operating income or (loss)/sales (fn1)	***	***	***	***	***	▲***	▲***	▼***	▲***
Net income or (loss)/sales (fn1)	***	***	***	***	***	▲***	▲***	▲***	▲***

Note.--Shares and ratios shown as "0.0" percent represent non-zero values less than "0.05" percent (if positive) and greater than "(0.05)" percent (if negative). Zeroes, null values, and undefined calculations are suppressed and shown as "---". Period changes preceded by a "▲" represent an increase, while period changes preceded by a "▼" represent a decrease.

fn1.--Reported data are in percent and period changes are in percentage points.
fn2.--Percent changes only calculated when both comparison values represent profits; The directional change in profitability provided when one or both comparison values represent a loss.

Source: Compiled from data submitted in response to Commission questionnaires.

APPENDIX D

U.S. PRODUCERS' AND U.S. IMPORTERS' RESPONSES TO THE COMPARABILITY OF IN-SCOPE AND OUT-OF-SCOPE CONVERTED THERMAL PAPER

Table D-1
Thermal paper: U.S. producers' and U.S. importers' responses to the comparability of in-scope and out-of-scope converted thermal paper

Factor	Fully	Mostly	Somewhat	Never
	U.S. producers			
Physical characteristics	---	1	1	3
Interchangeability	---	1	---	4
Manufacturing	1	---	---	4
Channels	1	1	2	2
Perceptions	---	---	1	4
Price	1	---	---	4
	U.S. importers			
Physical characteristics	1	1	6	3
Interchangeability	---	1	3	5
Manufacturing	1	1	3	2
Channels	---	---	5	---
Perceptions	---	1	2	3
Price	---	1	2	5

Source: Compiled from data submitted in response to Commission questionnaires.

Table D-2
Thermal paper: U.S. producers' narrative responses to the comparability of in-scope and out-of-scope converted thermal paper

Firm	Narrative
Physical characteristics	
***	***
***	***
***	***
***	***
***	***

Table continued on next page.

Table D-2--Continued
Thermal paper: U.S. producers' narrative responses to the comparability of in-scope and out-of-scope converted thermal paper

Firm	Narrative
Interchangeability	
***	***
***	***
***	***
***	***
***	***
Manufacturing	
***	***
***	***
***	***
***	***
***	***
Channels	
***	***
***	***
***	***
***	***
***	***
***	***

Table continued on next page.

Table D-2--Continued
Thermal paper: U.S. producers' narrative responses to the comparability of in-scope and out-of-scope converted thermal paper

Firm	Narrative
Perceptions	
***	***
***	***
***	***
***	***
***	***
Price	
***	***
***	***
***	***
***	***
***	***
***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table D-3
Thermal paper: U.S. importers' narrative responses to the comparability of in-scope and out-of-scope converted thermal paper

Firm	Narrative
Physical characteristics	
***	***
***	***
***	***
***	***
***	***
***	***
***	***

Table continued on next page.

Table D-3--Continued
Thermal paper: U.S. importers' narrative responses to the comparability of in-scope and out-of-scope converted thermal paper

Firm	Narrative
Physical characteristics	
***	***
***	***

Table continued on next page.

Table D-3--Continued
Thermal paper: U.S. importers' narrative responses to the comparability of in-scope and out-of-scope converted thermal paper

Firm	Narrative
Interchangeability	
***	***
***	***
***	***
***	***
***	***
***	***
***	***
***	***
***	***
Manufacturing	
***	***
***	***
***	***
***	***
***	***
***	***
***	***
***	***

Table continued on next page.

Table D-3--Continued
Thermal paper: U.S. importers' narrative responses to the comparability of in-scope and out-of-scope converted thermal paper

Firm	Narrative
Channels	
***	***
***	***
***	***
***	***
***	***
***	***
***	***
***	***
Perceptions	
***	***
***	***
***	***
***	***
***	***
***	***
***	***
***	***

Table continued on next page.

Table D-3--Continued
Thermal paper: U.S. importers' narrative responses to the comparability of in-scope and out-of-scope converted thermal paper

Firm	Narrative
Price	
***	***
***	***
***	***
***	***
***	***
***	***
***	***
***	***

Source: Compiled from data submitted in response to Commission questionnaires.

APPENDIX E

U.S. PRODUCERS' AND U.S. IMPORTERS' RANGE OF AVERAGE UNIT VALUES

Table E-1
Thermal paper: U.S. producers' range of AUVs

Firm	Average unit value of US shipments in 2019 (dollars per short ton)	Lowest AUV product		Highest AUV product		Highest volume product	
		Price (dollars per short ton)	Description	Price (dollars per short ton)	Description	Price (dollars per short ton)	Description
***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table E-2
Thermal paper: U.S. importers' range of AUVs

Firm	Average unit value of US shipments (dollars per short ton)	Lowest AUV product		Highest AUV product		Highest volume product	
		Price (dollars per short ton)	Description	Price (dollars per short ton)	Description	Price (dollars per short ton)	Description
***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***

Table continued on next page.

Table E-2--Continued
Thermal paper: U.S. importers' range of AUVs

Firm	Average unit value of US shipments (dollars per short ton)	Lowest AUV product		Highest AUV product		Highest volume product	
		Price (dollars per short ton)	Description	Price (dollars per short ton)	Description		Price (dollars per short ton)
***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

APPENDIX F

U.S. PRODUCERS' AND U.S. IMPORTERS' U.S. SHIPMENTS OF THERMAL PAPER BY HEAVY AND LIGHT BASIS WEIGHT

Table F-1
Thermal paper: U.S. producers' and U.S. importers' U.S. shipments by heavy vs light basis weight products

Item	Calendar year 2019					
	Light weight jumbo	Light weight converted	Heavy weight jumbo	All light weight	All jumbo	All in-scope products
	Quantity (short tons)					
U.S. producers	***	***	***	***	***	***
U.S. importers.-- Germany	***	***	***	***	***	***
Japan	***	***	***	***	***	***
Korea	***	***	***	***	***	***
Spain	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***
All import sources	***	***	***	***	***	***
Combined producer and importer	***	***	***	***	***	***
	Share of U.S. importers' U.S. shipments (percent)					
U.S. importers.-- Germany	***	***	***	***	***	***
Japan	***	***	***	***	***	***
Korea	***	***	***	***	***	***
Spain	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***
All import sources	***	***	***	***	***	***
	Share of combined U.S. producers' and U.S. importers' U.S. shipments (percent)					
U.S. producers	***	***	***	***	***	***
U.S. importers.-- Germany	***	***	***	***	***	***
Japan	***	***	***	***	***	***
Korea	***	***	***	***	***	***
Spain	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***
All import sources	***	***	***	***	***	***
Combined producer and importer	***	***	***	***	***	***

Note.--Light weight is equal to or less than 70 gsm and heavy weight is more than 70 gsm. This table does not combine U.S. producers' shipments of all light weight thermal paper (i.e., jumbo rolls plus converted rolls) as all of the paper converted domestically were reported once either as a U.S. producers' U.S. shipment of a light weight jumbo roll, or as a U.S. importers' U.S. shipment of a light weight jumbo roll depending on the business model of the converter. Overall all the responding independent U.S converters sourced approximately *** of their production from domestic jumbo rolls, and *** of their production from imported jumbo rolls *** in 2019. This treatment then across level of production and product type is consistent with Table C-1 in measuring the overall market for all in-scope thermal paper products.

Source: Compiled from data submitted in response to Commission questionnaires.