

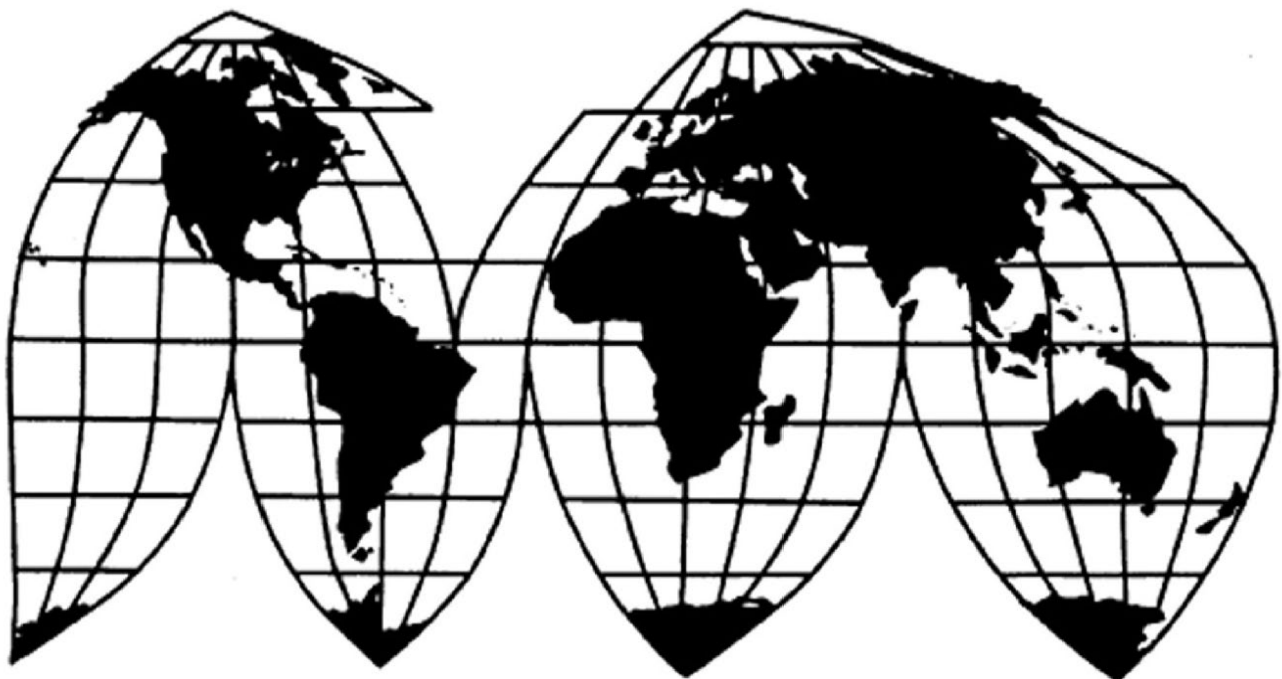
Tungsten Shot from China

Investigation Nos. 701-TA-732 and 731-TA-1701 (Final)

Publication 5655

August 2025

U.S. International Trade Commission



Washington, DC 20436

U.S. International Trade Commission

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Note.—Information that would reveal confidential operations of individual firms may not be published. Such information is identified by brackets ([]) in confidential reports and is deleted and replaced with asterisks (***) in public reports. Zeroes, null values, and undefined calculations are suppressed and shown as em dashes (—) in tables. If using a screen reader, we recommend increasing the verbosity setting.

UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigation Nos. 701-TA-732 and 731-TA-1701 (Final)

Tungsten Shot from China

DETERMINATIONS

On the basis of the record¹ developed in the subject investigations, the United States International Trade Commission (“Commission”) determines, pursuant to the Tariff Act of 1930 (“the Act”), that the establishment of an industry in the United States is materially retarded by reason of imports of tungsten shot from China, provided for in subheadings 9306.29.00 and 8101.99.80 of the Harmonized Tariff Schedule of the United States, that have been found by the U.S. Department of Commerce (“Commerce”) to be sold in the United States at less than fair value (“LTFV”), and imports of the subject merchandise from China that have been found to be subsidized by the government of China.²

BACKGROUND

The Commission instituted these investigations effective July 10, 2024, following receipt of petitions filed with the Commission and Commerce by Tungsten Parts Wyoming, Inc., Laramie, Wyoming. The final phase of the investigations was scheduled by the Commission following notification of preliminary determinations by Commerce that imports of tungsten shot from China were subsidized within the meaning of section 703(b) of the Act (19 U.S.C. 1671b(b)) and sold at LTFV within the meaning of 733(b) of the Act (19 U.S.C. 1673b(b)). Notice of the scheduling of the final phase of the Commission’s investigations and of a public hearing 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* on February 28, 2025 (90 FR 10941). The Commission conducted its

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

² 90 FR 30849 and 90 FR 30869 (July 11, 2025).

hearing on July 9, 2025. All persons who requested the opportunity were permitted to participate.

Views of the Commission

Based on the record in the final phase of these investigations, we determine that the establishment of an industry in the United States is materially retarded by reason of imports of certain tungsten shot from China, found by the U.S. Department of Commerce (“Commerce”) to be sold in the United States at less than fair value (“LTFV”) and subsidized by the government of China.

I. Background

Tungsten Parts Wyoming, Inc. (“TPW” or “Petitioner”), a domestic producer of tungsten shot corresponding to the scope of these investigations (“certain tungsten shot”), filed the petitions on July 10, 2024. Representatives of TPW appeared at the hearing with counsel and submitted prehearing and posthearing briefs.¹ No respondent interested party participated in these investigations.

Data Coverage. U.S. industry data are based on the questionnaire responses of three U.S. producers, accounting for all known U.S. production of certain tungsten shot during the January 2022 – March 2025 period of investigation (“POI”).² The Commission did not receive any responses to its foreign producer or exporter questionnaires during the final phase, but did receive questionnaires during the preliminary phase from two foreign producers/exporters of subject merchandise, which estimated that they accounted for approximately *** percent of total exports of subject merchandise to the United States in 2023.³

U.S. import data are based on questionnaire responses from 13 U.S. importers and proprietary, Census-edited Customs records for non-responsive firms that imported under HTS statistical reporting numbers 9306.29.0000 and 8101.99.8000.⁴

¹ See Petitioner’s Prehearing Brief, EDIS Doc. 855746 (July 1, 2025); Petitioner’s Posthearing Brief, EDIS Doc. 856971 (July 16, 2025).

² Confidential Report, Memorandum INV-XX-100, (“CR”); *Tungsten Shot from China*, Inv. Nos. 701-TA-732 and 731-TA-1701 (Final), USITC Pub. 5655 (August 2025) (“PR”) at 3.1.

³ CR/PR at 7.3.

⁴ CR/PR at 4.1. These statistical reporting numbers may include merchandise outside the scope of investigation, so the volume data they provide for non-responsive firms may overstate import volumes. We note that some responding importers reported that 100 percent of their imports under these HTS subheadings were in-scope merchandise. See ***, ***, ***, ***, ***, ***, ***, and *** Importer Questionnaires at Questions II-5a, II-7, and II-8a.

TPW argues that these data do not account for additional subject imports that, it argues, entered under HTS numbers 8101.10.00, 8482.91.0020, and 8101.97. CR/PR at 4.1 n.2. We find this argument unpersuasive. The Commission received importer questionnaire responses from importers (Continued...)

We are unpersuaded by TPW’s argument that its calculation of U.S. imports and apparent U.S. consumption based on data from a proprietary report compiled by *** (“Shotgun Shell Report”) is more reliable than determining imports and consumption from questionnaire data. This report is unclear as to the precise source of its data, contains only projected volumes for 2024, and does not provide any data for interim 2025.⁵ It also does not define the “tungsten super shot” on which it reports data. This omission is particularly problematic, as the scope of these investigations is circumscribed and excludes most of the tungsten shot produced in the United States.⁶ Finally, the import volume that TPW derives from the report is vastly in excess of the amounts indicated in questionnaire responses and in Customs data, and TPW provides no plausible explanation as to why the derived number is so much greater than indicated by other sources. As noted above, the information on the record does not support that there were sizable volumes of imports under the alternative HTS numbers identified by TPW.⁷ Therefore, we consider that TPW’s calculations based on Shotgun

responsible for *** percent of 2024 imports under these three HTS numbers (accounting for *** percent of 2024 imports under these HTS numbers), and none of these responding importers reported importing in-scope merchandise under them. CR/PR at 4.1 n.2. Thus, contrary to TPW’s assertions, the record does not indicate that subject imports are entering under these HTS numbers or that considering imports under these HTS numbers as in-scope merchandise would improve the accuracy of the Commission’s import data for subject imports.

⁵ TPW Posthearing Br., Exhibit 9 at 14.

⁶ Compare CR/PR at 1.7 to TPW Posthearing Br. at 6 and Exhibit 9 at 13. Military grade tungsten shot is predominantly available as Class 2 tungsten alloys. CR/PR at 1.13. Class 2 tungsten alloy has a nominal tungsten content of 92.5 percent by weight, and Class 3 tungsten alloy has a nominal tungsten content of 95 percent by weight. *Id.* at Table 1.7. The dataset on which the Shotgun Shell Report is based appears to include a substantial volume of defense and military shotgun shells, applications that TPW asserts are not served by subject merchandise. *See id.* at 70 (reporting sales for “Military & Defense” applications of ***). TPW itself reports that tungsten shot shotgun shells are only beginning to penetrate commercial markets, which suggests that a significant portion of the tungsten shot shotgun shells that the Verified Market Research Report indicates (***) are for “Military & Defense” applications that would not use certain tungsten shot covered by these investigations. TPW Posthearing Br. at 3 (citing TPW Prehearing Br. Exhibit 13 (“Tungsten Super Shot shotgun shells are a game-changer in the world of hunting and shooting sports”)); Hearing Tr. at 13 (Holden) (“Popularity of tungsten super-shot loads in water fowl and turkey hunting continues to expand”).

⁷ The Commission received questionnaire responses from firms that accounted for over *** percent of all imports under HTS subheadings 8101.99.80 and 9306.29.00, the two main HTS subheadings identified by Petitioner. CR/PR at 4.1, fn. 2; *Tungsten Shot from China*, Inv. Nos. 701-TA-732 and 731-TA-1701 (Preliminary), USITC Pub. 5542 (Aug 2024) at I-5 n.13 (“Preliminary Determinations”). In addition, as noted above, the Commission received importer questionnaire responses from importers responsible for *** percent of 2024 imports under HTS numbers 8101.10.00, 8482.91.0020, and 8101.97, all of whom certified that their imports consisted exclusively of out-of-scope merchandise. Thus, our questionnaire responses do not account for less than *** percent of the (Continued...)

Shell Report data do not provide reasonable estimates of subject imports or apparent U.S. consumption. For these reasons, we find that U.S. import data based on questionnaire responses and proprietary, Census-edited Customs records are the best available information on the record.

II. Domestic Like Product

A. In General

In determining whether an industry in the United States is materially injured or threatened with material injury by reason of imports of subject merchandise, the Commission first defines the “domestic like product” and the “industry.”⁸ 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.”⁹ 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.”¹⁰

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.¹¹ 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

imports under HTS subheadings 8101.99.80 and 9306.29.00 and *** percent of 2024 imports under HTS subheadings 8101.10.00, 8482.91.0020, and 8101.97. In addition, Luoyang Combat Tungsten Shot submitted an exporter questionnaire response in the preliminary phase projecting exports of certain tungsten shot to the United States under HTS subheading *** in 2024. Even assuming *arguendo* that all of these 2024 imports were subject merchandise, including them in the calculation of apparent domestic consumption would result in apparent domestic consumption being at most approximately *** pounds in 2024, far less than the *** pounds estimated by the Petitioner based on the Shotgun Shell Report. CR/PR at 4.1 n.2.

⁸ 19 U.S.C. § 1677(4)(A).

⁹ 19 U.S.C. § 1677(4)(A).

¹⁰ 19 U.S.C. § 1677(10).

¹¹ 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).

Commission's like product analysis."¹² The Commission then defines the domestic like product in light of the imported articles Commerce has identified.¹³ 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.¹⁴ No single factor is dispositive, and the Commission may consider other factors it deems relevant based on the facts of a particular investigation.¹⁵ The Commission looks for clear dividing lines among possible like products and disregards minor variations.¹⁶

B. Product Description

Commerce defined the imported merchandise within the scope of these investigations as:

The merchandise covered by the investigation is certain tungsten spheres or balls, also known as shot, that are 92.6 percent or greater tungsten by weight, not including the weight of any additional coating. In scope shot have a diameter

¹² *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. Cir. Feb. 7, 2020) (the statute requires the Commission to start with Commerce's subject merchandise in reaching its own like product determination).

¹³ *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).

¹⁴ See, e.g., *Cleo Inc. v. United States*, 501 F.3d 1291, 1299 (Fed. Cir. 2007); *NEC Corp. v. Department 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. v. United States*, 747 F. Supp. 744, 749 n.3 (Ct. Int'l Trade 1990), *aff'd*, 938 F.2d 1278 (Fed. Cir. 1991) ("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).

¹⁵ See, e.g., S. Rep. No. 96-249 at 90-91 (1979).

¹⁶ *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.").

ranging from 1.5 millimeters (mm) to 10.0 mm. Subject shot can be referred to as “Tungsten Super Shot.” Merchandise is covered regardless of the combination of compounds that comprise the non-tungsten material and whether or not the tungsten shot is additionally coated with another material, including but not limited to copper, nickel, iron, or metallic alloys.

Tungsten shot subject to the investigation may be classified under the following Harmonized Tariff Schedule of the United States (HTSUS) subheading: 9306.29.0000. Merchandise may also be entered under HTSUS subheading 8101.99.8000. The HTSUS subheadings are provided for convenience and customs purposes only. The written description of the scope of the investigation is dispositive.¹⁷

Tungsten shot is a tungsten alloy material in the form of small spherical pellets for the production of shotgun shells. Tungsten shot has improved ballistic performance and environmental benefits over other types of shotgun shot. The denser tungsten metal provides greater range, tighter dispersal, and greater impact than either lead or steel shot.¹⁸ SAE International standard 7725F provides standard specifications for tungsten alloy metal classes based in part on nominal tungsten content, density range, and hardness.¹⁹ The class of tungsten shot aligned with the scope includes class 3 tungsten shot, referred to as commercial grade tungsten shot.

The manufacturing process for certain tungsten shot corresponding to the scope begins with mixing of a ready-to-press (“RTP”) powder containing high-purity (99.9 percent) tungsten, nickel, iron, small amounts of other metals, and a binding agent to keep the powder together during compaction. To ensure suitability for production usage, the manufacturer first tests the

¹⁷ *Certain Tungsten Shot From the People's Republic of China: Final Affirmative Determination of Sales at Less Than Fair Value*, 90 Fed. Reg. 30849 (July 11, 2025); *Certain Tungsten Shot From the People's Republic of China: Final Affirmative Countervailing Duty Determination*, 90 Fed. Reg. 30869, 30871 (July 11, 2025).

¹⁸ CR/PR at 1.9.

¹⁹ CR/PR at 1.13 and Table 1.7. Class 1 tungsten alloy has a nominal tungsten content of 90 percent, a density *** grams per cubic centimeters (“g/cc”), and a Rockwell Hardness scale of *** HRC maximum. Class 2 tungsten alloy has a nominal tungsten content of 92.5 percent, a density *** g/cc, and a Rockwell Hardness scale of *** HRC maximum. Class 3 tungsten alloy has a nominal tungsten content of 95 percent, a density *** g/cc, and a Rockwell Hardness scale of *** HRC maximum. Class 4 tungsten alloy has a nominal tungsten content of 97 percent, a density *** g/cc, and a Rockwell Hardness scale of *** HRC maximum. *Id.*

powder to verify size, density, and flowability. The manufacturer then compacts the verified powder, typically in presses that cycle through the following steps: 1) powder filling of the compaction cavity; 2) pre-compression that expels the excess air from the cavity; 3) compression to form the powder into size and shape; and 4) ejection of the compressed pellet from the press.²⁰

After the compaction, the pellets undergo a series of furnace operations. In the first “debinding” operation, the pellets are baked at a temperature hot enough to drive off the binding agent from the product. The pellets are then sintered, which involves loading them into carriers with substances that separate them and then heating them to temperatures that melt the nickel, iron, and other metals so that they bond with the non-melted tungsten particles in each pellet, which causes the product to shrink and harden. The resulting product is shiny, smaller sized, and extremely strong. After sintering, the resulting shot is sent through a tumbling process to remove the substances that separated the pellets during the sintering stage. Next, the pellets are sent through sorters to capture and remove shot that fused together during sintering. After sorting, the pellets are loaded into an annealing furnace, which removes trapped hydrogen, thereby improving their overall strength and ductility. At this point, the shot has its full mechanical properties.²¹

To achieve its final size, the shot is sent through grinding machines. Steel alloy grinding plates apply pressure and spin the shot, slowly removing material and rounding it out, while imparting a shiny surface. The shot is ground until its size is measured to be within specifications. The ground shot is subsequently washed and dried in a rotary-drum washer. The clean product is finally sent through roller meters to verify the size of each shot and to capture those that are over- or undersized. After the shot is sized, it is checked by the quality team before packaging and shipping.²²

C. Arguments of the Parties

Petitioner’s Argument. TPW argues that the Commission should define a single domestic like product coextensive with the scope of these investigations. It notes that no party has requested the Commission collect data on alternative products in comments on the questionnaires or raised any like product issues.²³

²⁰ CR/PR at 1.16.

²¹ CR/PR at 1.16-1.17.

²² CR/PR at 1.17.

²³ TPW Prehearing Br. at 16.

D. Analysis and Conclusion

In the preliminary determinations, the Commission defined a single domestic like product consisting of certain tungsten shot, corresponding with the scope of investigations.²⁴ In the final phase of these investigations, no interested party requested data on alternative products in comments on the final phase questionnaires.²⁵

The record of these final phase investigations does not contain any new information or argument suggesting that the Commission should revisit the domestic like product definition from the preliminary determinations.²⁶ No party contests TPW's argument that the Commission should adopt the same definition in the final phase of the investigations. Accordingly, we again define a single domestic like product consisting of certain tungsten shot (also sometimes referred to as "tungsten shot" below) coextensive with the scope of these investigations.

III. 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."²⁷ 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.

²⁴ *Preliminary Determinations*, USITC Pub. 5542 at 8-12"). Specifically, the Commission found that the record in the preliminary phase did not support expanding the definition of the domestic like product beyond the scope to include different types of shotgun shot made of lead or steel, finding that interchangeability was limited due to certain ballistic and environmental advantages, producers and customers perceived them to be distinct products, and they were priced differently.

The Commission also found that the record in the preliminary phase supported not expanding the domestic liked product definition to include TPW's military-grade tungsten shot, which is not included in the scope. Specifically, it found that domestically produced commercial-grade class 3 tungsten shot is similar to military-grade class 2 tungsten shot in that both consist of tungsten alloy and share at least some common manufacturing facilities, machinery, and production processes. However, the Commission also found that different tungsten levels make TPW's domestically produced commercial-grade tungsten shot and military-grade tungsten shot suitable for distinct end uses, limiting their interchangeability, they are sold through different channels of distribution, are perceived by producers and customers to be distinct products, and are priced differently. *Id.*

²⁵ CR/PR at 1.18.

²⁶ See generally CR/PR at 1.9-1.17.

²⁷ 19 U.S.C. § 1677(4)(A).

In these investigations, there are no related party issues.²⁸ Accordingly, consistent with our definition of the domestic like product, we define the domestic industry to include all three domestic producers of certain tungsten shot.²⁹

A. Material Retardation and Whether the Domestic Industry is Established

In antidumping and countervailing duty investigations, the statute provides that as an alternative to material injury and threat of material injury determinations, the Commission may make a determination concerning whether “the establishment of an industry in the United States is materially retarded” by reason of subject imports.³⁰ The Commission has previously found that material retardation and material injury/threat forms of injury are mutually exclusive standards, whereby a determination concerning whether the domestic industry is materially retarded is appropriate only when the Commission finds that the domestic industry is not yet established.³¹ If a domestic industry is found to be established, the analysis instead turns on the issues of material injury or threat thereof.

In the preliminary determinations, the Commission assessed whether the industry was established by examining several factors and found that all but one of these factors (whether the start-up production was more in the nature of the introduction of a new product line by an already established business) weighed in favor of finding that the industry is not established. The Commission stated that it would further investigate the “new product line” factor in the final phase.³²

²⁸ No U.S. producers imported or purchased subject merchandise during the period of investigation or were related to a foreign producer or exporter of subject merchandise. CR/PR at 3.2, 3.12.

²⁹ The Commission has previously rejected the notion that a domestic producer must satisfy a certain minimum amount of U.S. consumption to be considered a “producer” in the domestic industry. See *Brake Rotors from China*, Inv. No. 731-TA-744 (Second Review), USITC Pub. 4009 (June 2008) at 8 n.39. All three domestic producers produced certain tungsten shot during the POI. CR/PR at Table 3.7.

³⁰ 19 U.S.C. § 1671d(b)(1)(B); 19 U.S.C. § 1673d(b)(1)(B).

³¹ *Laminated Woven Sacks from China*, Inv. Nos. 701-TA-450 and 731-TA-1122 (Preliminary), USITC Pub. 3942 (Aug. 2007) at 21.

³² *Preliminary Determinations*, USITC Pub. 5542 at 26.

1. Historical Overview

The issue of material retardation has arisen infrequently in antidumping/countervailing duty original investigations, and the Commission has reached the question of material retardation in six original investigations.³³

Injury provisions under the United States' first antidumping laws, namely, the antidumping provisions of the Revenue Act of 1916 and the Antidumping Act of 1921 ("1921 Act"), included a concept similar to material retardation: the prevention of establishment of a domestic industry.^{34 35} The "prevention" standard appears to have emerged from concerns

³³ The Commission made affirmative material retardation determinations in three of these investigations. See *Refillable Stainless Steel Kegs from Mexico*, Inv. No. 731-TA-1427, USITC Pub. 4976 (Final) ("*Stainless Steel Kegs*"); *Benzyl Paraben from Japan*, Inv. No. 731-TA-462 (Final), USITC Pub. 2355 (Feb. 1991) ("*Benzyl Paraben*"); and *Certain Dried Codfish from Canada*, Inv. No. 731-TA-199 (Final), USITC Pub. 1711 (Jul. 1985) ("*Dry Salted Codfish*"), *aff'd*, *BMT Commodity Corp. v. United States*, 667 F. Supp. 880 (Ct. Int'l Trade 1987), *aff'd*, 852 F.2d 1285 (Fed. Cir.), *cert. denied*, 489 U.S. 1012 (1989). The Commission reached negative determinations in the other three. See *53-Foot Domestic Dry Containers from China*, Inv. Nos. 701-TA-514 and 731-TA-1250 (Final), USITC Pub. 4537 (June 2015) ("*Domestic Dry Containers*"); *Certain Copier Toner from Japan*, Inv. No. 731-TA-373 (Preliminary), USITC Pub. 1960 (March 1987) ("*Copier Toner*"); *Certain Commuter Airplanes from France and Italy*, Inv. Nos. 701-TA-174-175 (Preliminary), USITC Pub. 1269 (July 1982). The issue of material retardation has arisen in three changed circumstances reviews, see, e.g., *Salmon Gill Fish Netting of Manmade Fibers from Japan*, Inv. No. 751-TA-5, USITC Pub. 1234 (March 1982) (affirmative material retardation), and the related question of the "prevention of the establishment of a domestic industry" arose under the Antidumping Act of 1921, see *Regenerative Blower/Pumps from West Germany*, Inv. No. AA1921-140, USITC Pub. 676 (May 1974) (negative material retardation).

³⁴ The antidumping provisions of the Revenue Act of 1916 provided for relief where imports "prevented the establishment of an industry." Specifically, the antidumping provisions of the Revenue Act of 1916 provided a cause of action for individuals in Federal court against parties that sold foreign merchandise in the U.S. market at a price substantially less than at prices in other principal markets, provided that such act was done with the intent of destroying or injuring a U.S. industry, or of *preventing the establishment of an industry*. Act of September 8, 1916, 15 U.S.C. § 72. The difficulty in proving a violation under this statute, which required evidence of intent, resulted in only a single reported case, which did not result in a final ruling. See *Cast Iron and Soil Pipe from Poland*, Inv. No. AA1921-50, 32 Fed. Reg. 12,926 (Sept. 9, 1967) (discussing history of injury determinations under U.S. law). The law was repealed in 2004 following a WTO challenge of its legality. P.L. 108-429.

³⁵ The 1921 Act provided relief if the U.S. Treasury (and after 1954, the U.S. Tariff Commission, the predecessor of the Commission) determined that "an industry in the United States . . . is prevented from being established" by reason of dumped imports. Act of May 27, 1921, ch. 14, sec. 201(a), 42 Stat. 11, 19 § U.S.C. 160 (now repealed).

regarding both so-called “nascent” industries and industries not yet in production.^{36 37}

The Trade Agreements Act of 1979 (“1979 Act”) adopted the current language of the statute,³⁸ requiring that the Commission determine whether “the establishment of an industry in the United States is materially retarded” by reason of subject imports.³⁹ The statutory language concerning “material retardation” has remained unchanged since the 1979 Act, and Congress has not further addressed the meaning of this provision since that time. The change from “prevention” to “material retardation” in the standard to be applied in investigations was not considered a substantive difference.⁴⁰

³⁶ The “prevention” standard appears to have evolved from concerns regarding the U.S. chemical and dyestuffs industry. A discussion before the Senate Finance Committee concerning tariff policy and the protection of the U.S. chemical industry regarding the 1921 Act makes reference to the concept of allowing a domestic industry to become established:

Admiral Earl:	The only way to get distillation of by-products, and so forth...and increase production in this country, is by protecting the dye industry.
Senator Simmons:	In connection with your use of the word, “protecting,” you mean by permitting the industry to become established?
Admiral Earl:	Yes sir.
Senator Simmons:	I like that very much better.

Tariff Hearings before the Committee on Finance, 66th Cong., 1st Sess. 14 (1920).

While the chemical and dyestuff industry had been in existence for a number of years at the time of the passage of the 1921 Act and had reached significant production levels, the industry, which faced competition from German imports, nonetheless was considered “nascent” relative to German firms because of U.S. producers’ lesser technical expertise, inability to make certain products, and their less efficient or higher cost production. *See generally* Steen, Kathryn, *The American Synthetic Organic Chemicals Industry: War and Politics, 1910-1930* (2014) at 191-195; *see also* Seo, Dong Woo, *Material Retardation in the U.S. Antidumping Law*, 24 *Law & Pol’y Int’l Bus.* 835, 843-44 (1993).

³⁷ In a floor debate, Senator Simmons remarked:

{l}t is not necessary that an industry should be in existence. If importations are being brought in for the purposes of preventing the establishment of an industry, or an industry that is likely to be established, the provision applies.

61 Cong. Rec. 1101 (1920).

³⁸ The 1979 Act replaced the 1921 Act and incorporated antidumping and injury provisions into Title VII of the Tariff Act of 1930.

³⁹ P.L. 96-39, approved July 26, 1979. The 1979 Act amended U.S. trade laws to conform with international commitments in the Tokyo Round of negotiations under the General Agreement on Tariffs and Trade (“GATT 1947”), and the use of the term “material retardation” reflected the language adopted in the GATT 1947. GATT 1947 Art. VI(1), providing that dumping was to be condemned if it “materially retards the establishment of a domestic industry.”

⁴⁰ Negotiators to the GATT 1947 appear to have adopted the “material retardation” standard out of the same historical context as the “prevention” standard under the 1921 Act. John H. Jackson, (Continued...)

2. Legal Framework

Neither the statute nor the legislative history provides a framework for how the Commission should apply this provision. The Commission has applied the material retardation provision to both domestic producers that have not yet engaged in U.S. production and those that have engaged in domestic production. If there is or was at least some domestic production,⁴¹ which is the case in these investigations, then the Commission has applied a two-step framework in which it first determines whether the domestic industry is established. If producers have made a substantial commitment to production but the domestic industry is not yet established, then the Commission moves to the second step of its analysis and examines whether a potential domestic industry has been materially retarded by reason of subject imports.⁴² If the industry is established, then the Commission has instead examined whether

World Trade and the Law of GATT (1969), at 419-420 (citing U.N. documents concerning the negotiation of the GATT 1947 indicating that this was the only example discussed by negotiators relating to this provision). An executive branch legal analysis found that “material retardation” was a “reasonable interpretation” of the “prevention” standard. Specifically, in connection with testimony concerning the Code under the Kennedy Round of GATT negotiations, the executive branch analysis provided:

The Code speaks in terms of ‘material retardation of the establishment of such an industry’ and the *** Act reads ‘is prevented from being established.’ The notion of ‘material retardation’ is a reasonable interpretation of the idea of prevention and would permit injury to be found even though it is not shown that dumped imports absolutely prevent the establishment of an industry.

See Hearing on the International Antidumping Code, Sen. Comm. on Finance, 90th Cong., 2d Sess. at 18, 279, 287 (1968).

⁴¹ When domestic firms had not yet undertaken production, the Commission looked for an indication that the producers made a “substantial commitment” to commence production before examining whether the industry’s establishment was materially retarded by subject imports. See, e.g., *Certain Commuter Airplanes from France and Italy*, Inv. Nos. 701-TA-174-175 (Preliminary), USITC Pub. 1269 (Jul. 1982) at 8 (domestic producers had not yet commenced production but had made a substantial commitment to do so); *Motorcycle Batteries from Taiwan*, Inv. No. 731-TA-42 (Final), USITC Pub. 1228 (Oct. 1981) (finding U.S. firms did not take substantial steps or make an affirmative commitment to produce 6-volt motorcycle batteries); *Thin Sheet Glass from Switzerland, Belgium, and the Federal Republic of Germany*, Inv. Nos. 731-TA-127 and 129 (Preliminary), USITC Pub. 1376 (May 1983) (not finding a substantial commitment to commence production of high-quality thin sheet glass because domestic producer’s marketing efforts were not very intensive, as it had not purchased testing equipment that would have allowed it to differentiate between regular and high-quality glass, and it had problems qualifying its product), *aff’d*, *Jeanette Sheet Glass Corp. v. United States*, 607 F. Supp. 123, 131-32 (Ct. Int’l Trade 1985) (affirming “substantial commitment” test where domestic producers had not yet engaged in producing high-quality thin sheet glass).

⁴² See *Domestic Dry Containers* at 10-11.

the domestic industry is materially injured or threatened with material injury by reason of subject imports. The Commission has not reached the question of material retardation in the majority of investigations in which the issue has arisen, either because it found the domestic industry to be established (and thus applied the material injury or threat standard),⁴³ or because it found that producers had not made a substantial commitment to commence production (and thus reached a negative determination).⁴⁴

3. Analysis

Because there is some production of tungsten shot in the United States, the first step in this analysis is to determine whether a domestic industry is established. In making this determination in previous investigations, the Commission has examined all or several of the following criteria: (1) the length of domestic production operations; (2) the nature of domestic production; (3) the size of domestic operations; (4) whether the proposed domestic industry has reached a reasonable financial “break-even” point; and (5) whether the activity is more in the nature of introducing a new product line by an already established business.⁴⁵ The Commission makes this determination on a case-by-case basis according to the record of each investigation.⁴⁶ None of the factors is by itself dispositive, and a factor favoring a finding one way may be outweighed by other factors favoring the opposite conclusion.

⁴³ See *Fabric and Expanded Neoprene Laminate from Japan*, Inv. No. 731-TA-206 (Preliminary), USITC Pub. 1608 (Nov. 1984) (“*Neoprene Laminate*”); *Lime Oil from Peru*, Inv. No. 303-TA-16, USITC Pub. 1723 (July 1985) (“*Lime Oil*”); *Certain All-Terrain Vehicles from Japan*, Inv. No. 731-TA-388 (Preliminary), USITC Pub. 2071 (March 1988); *Pressure-Sensitive PVC Battery Covers from West Germany*, Inv. No. 731-TA-452 (Preliminary), USITC Pub. 2265 (March 1990) (“*PVC Battery Covers*”); *Fresh and Chilled Atlantic Salmon from Norway*, Inv. No. 701-TA-302 (Preliminary), USITC Pub. 2272 (April 1990) (“*Salmon*”); *Tungsten Ore Concentrates from the People’s Republic of China*, Inv. No. 731-TA-497 (Preliminary), USITC Pub. 2367 (March 1991); *Certain Gene Amplification Thermal Cyclers and Subassemblies Thereof from the United Kingdom*, Inv. No. 731-TA-485 (Final), USITC Pub. 2412 (Aug. 1991) (“*Gene Amplification Thermal Cyclers*”); *Wheel Inserts from Taiwan*, Inv. No. 731-TA-721 (Preliminary), USITC Pub. 2824 (Oct. 1994) (“*Wheel Inserts*”); *Laminated Woven Sacks*, USITC Pub. 4025.

⁴⁴ See *Synthetic L-Methionine from Japan*, Inv. No. 751-TA-4, USITC Pub. 1167 (July 1981); *Motorcycle Batteries from Taiwan*, Inv. No. 731-TA-42 (Final), USITC Pub. 1228 (Oct. 1981); *Thin Sheet Glass from Switzerland, Belgium, and Germany*, Inv. Nos. 731-TA-127-129 (Preliminary), USITC Pub. 1376 (May 1983); *Liquid Crystal Display Television Receivers from Japan*, Inv. No. 751-TA-14, USITC Pub. 2042 (Dec. 1987) (dissenting views).

⁴⁵ *Stainless Steel Kegs*, USITC Pub. 4976 at 12; *Laminated Woven Sacks*, USITC Pub. 4025 at 19; see *Benzyl Paraben*, USITC Pub. 2355 at 8-9 (enumerating these five factors).

⁴⁶ *Domestic Dry Containers*, USITC Pub. 4537, at 11.

a. The Length of Domestic Operations

In general, where domestic producers have produced the domestic like product for fewer than two to three years, the Commission has found this favored finding that the domestic industry was not established.⁴⁷ Where some or all of the domestic producers have produced for longer periods of time, then the Commission has generally found this factor favored finding an established industry.⁴⁸ Nonetheless, the Commission has rejected defining a specific time period for production that favors an industry being established, given that each industry may be distinct and require varying lengths of production for a firm to become established.⁴⁹ For example, the Commission has characterized four years of domestic production as being “relatively limited” and favoring that a domestic industry is not established in some circumstances.⁵⁰ It is also noteworthy that the original legislative context for the “prevention” standard concerned an industry that had been producing for at least six years, but was considered not to be established.⁵¹

⁴⁷ See, e.g., *Benzyl Paraben*, USITC Pub. 2355 (Feb. 1991) (firm produced for 15 months, shut down, began again, shut down less than a year later, and then supplied customers out of inventory); *Dried Salted Codfish*, USITC Pub. 1711 at 6 (codfish production suspended after two years with intent to resume production); *Copier Toner*, USITC Pub. 1960 at 9-10 (domestic production began about three years earlier).

⁴⁸ See, e.g., *Laminated Woven Sacks*, USITC Pub. 4025 at 20-22 (one or more domestic producers had supplied the major types of products to the U.S. market long enough to weigh in favor of established industry); *Wheel Inserts*, USITC Pub. 2824 (steady production throughout the period of investigation by at least three producers and since the late 1980s by at least two U.S. producers); *Gene Amplification Thermal Cyclers*, USITC Pub. 2412 (domestic production for more than three years); *Certain High-Information Content Flat Panel Displays and Display Glass Therefor from Japan*, Inv. No. 731-TA-469, USITC Pub. 2413 (Aug. 1991) (“*Flat Panel Displays*”) at 18-19 (domestic production began before the period of investigation); *Tungsten Ore Concentrates*, USITC Pub. 2367 at 18 n.49 (continuous production over a long period of time); *Salmon*, USITC Pub. 2272 at 16-18 (domestic producers had been engaging in activities leading to production for a number of years, and some had recently produced the product); *PVC Battery Covers*, USITC Pub. 2265 at 12 (production began three to four years prior to investigation); *Neoprene Laminate*, USITC Pub. 1608 at 8 n.24 (producing for several years).

⁴⁹ *Stainless Steel Kegs*, USITC Pub. 4976 at 13-14 (length of production appeared limited in context of foreign industry operations); *Benzyl Paraben*, USITC Pub. 2303 at 12-13 (“...we have never stated that any specific period of production would “establish” an industry.”).

⁵⁰ *Domestic Dry Containers*, USITC Pub. 4537 at 13 (describing four years of domestic production as a “relatively limited time period” and finding that this length of production favored the industry not being established).

⁵¹ See *Material Retardation in the U.S. Antidumping Law*, 24 Law & Pol’y Int’l Bus. at 843-44 (describing U.S. chemical dye industry at time of 1921 Act).

Parties' Arguments. TPW asserts that it began production of the domestic like product in 2023 and stopped production in April 2025.⁵² It also argues that TPW is the sole U.S. producer of certain tungsten shot, and that other domestic producers did not ***. Specifically, it contends that although ***,⁵³ TPW argues that this factor supports finding that the domestic tungsten shot industry is not established.⁵⁴

Analysis. Of the three domestic producers of certain tungsten shot in the United States, TPW began commercial production in 2023, ***, and GTP produced a ***.⁵⁵ ***, it provided limited information about this prior production.⁵⁶

In the preliminary determinations, the Commission found that TPW was the only domestic producer of certain tungsten shot and that its commencement of commercial-scale production slightly more than a year prior to the filing of the petitions favored finding the industry was not established.⁵⁷ TPW's subsequent experience of ramping up and then ceasing production indicates that this conclusion holds true at the present time. Additional evidence obtained in these final investigations regarding Elmet and GTP indicates that while they produced certain tungsten shot, their production was ***. This provides further evidence that the industry is not established.

b. The Nature of Domestic Production

In examining the characteristics of domestic production, the Commission has asked whether domestic production has been "modest," continuous, or more akin to start and stop.⁵⁸ In previous investigations, when domestic production was "modest" or domestic production began but halted and domestic producers were not producing at the time of the Commission's vote, the Commission concluded that this factor supported that the domestic industry was not established.⁵⁹ Where domestic production was continuous or continuous and growing, the

⁵² TPW Prehearing Br. at 24; Hearing Tr. at 16 (Heintz); TPW Posthearing Br. at 10.

⁵³ TPW Prehearing Br. at 24-25. ***, *** U.S. Producers' Questionnaire at II-8 and V-1.

⁵⁴ TPW Posthearing Br. at 25.

⁵⁵ CR/PR at D.3 and Tables D.1-D.2. Although Elmet and GTP reported that they ***, ***, ***. CR/PR at 1.18-1.19.

⁵⁶ CR/PR at D.4 and Table D.4.

⁵⁷ *Preliminary Determinations*, USITC Pub. 5542 at 17.

⁵⁸ *See, e.g., Laminated Woven Sacks*, USITC Pub. 4025 at 24 (considering the specific circumstances of individual producers as well as the circumstances of domestic producers as a whole); *Flat Panel Displays*, USITC Pub. 2413 at 18-19 (conducting inquiry on an industry-wide basis).

⁵⁹ *See, e.g., Benzyl Paraben*, USITC Pub. 2355 at 9-10 (petitioner produced for 15 months, shut down production, resumed production but shut down less than a year later and supplied the U.S. market out of inventory); *Copier Toner*, USITC Pub. 1960 at 9 n.24 (domestic production was "modest"); (Continued...)

Commission has concluded that this factor supported finding an established domestic industry.⁶⁰ The Commission has also considered the number of firms engaged in domestic production and whether new entrants have commenced domestic production, finding that more firms engaging in or beginning domestic production supported a finding that the domestic industry was established.⁶¹ And as noted above, the historical context of the “prevention” standard considered the relative technical abilities and production efficiencies of domestic producers versus foreign competitors.

Parties’ Arguments. TPW argues that this factor supports finding the industry is not established as TPW is ***, TPW’s production began only two years ago, and the ***.⁶²

Analysis. Domestic producers’ reported production increased over the POI, from *** pounds in 2022 to *** pounds in 2023 and to *** pounds in 2024; their production was higher in January-March (“interim”) 2025 (*** pounds) than in interim 2024 (*** pounds).⁶³ Although its production volume rose consistently, TPW reported that production ***,⁶⁴ and that it

Codfish, USITC Pub. 1711 at 4-5 & n.8, (domestic producer began production in late 1982 but suspended operations in November 1984 with the intent to reopen the plant in summer 1985 pending conclusion of negotiations with the FDIC concerning certain loans from an eventually bankrupt bank and the receipt of additional financing from another source); *Domestic Dry Containers*, USITC Pub. 4537 at 13-14 (domestic producer’s production had been intermittent and supported industry not being established).

⁶⁰ See, e.g., *Laminated Woven Sacks*, USITC Pub. 4025 at 22-24 (domestic producers as a whole have been continuously supplying the U.S. market throughout the period of investigation and since mid-2003, even if some reported intermittent or suspended production operations); *Wheel Inserts*, USITC Pub. 2824 (Oct. 1994) (steady production throughout the period of investigation by at least three producers and since the late 1980s by at least two producers); *Gene Amplification Thermal Cyclers*, USITC Pub. 2412 (steady and substantial increases in domestic production capacity and production); *Flat Panel Displays*, USITC Pub. 2413 at 18-19 (steady rather than start-up production); *Salmon*, USITC Pub. 2272 at 16-18 (substantial U.S. shipments); *PVC Battery Covers*, USITC Pub. 2265 at 12 (production was increasing).

⁶¹ See, e.g., *Stainless Steel Kegs*, USITC Pub. 4976 at 13-14 (single domestic producer, continuously producing, but production modest in relation to total market favored supported the industry was not established); *Benzyl Paraben*, USITC Pub. 2355 at 11 (noting only a single domestic producer, which supported that the domestic industry was not established); *Laminated Woven Sacks from China*, USITC Pub. 4025 at 23-24 (multiple firms engaged in domestic production supported that the domestic industry was established); *Certain Gene Amplification Thermal Cyclers*, USITC Pub. 2412 at 11-12 (new entrants commenced domestic production during POI, which supported that the domestic industry was established).

⁶² TPW Prehearing Br. at 26.

⁶³ CR/PR at Table 3.7.

⁶⁴ CR/PR at 2.6.

stopped production of certain tungsten shot on April ***, 2025 ***.^{65 66} The record indicates that demand for tungsten shot exhibits some seasonality, with increases in demand in the fall and spring due to hunting seasons,⁶⁷ which may contribute to the start and stop of production in addition to a lack of commercial sales.⁶⁸

Information from other producers also shows that the nature of any production was very limited. Elmet produced only *** pounds of certain tungsten shot in *** and *** pounds of certain tungsten shot in ***.⁶⁹ GTP produced only *** pounds of certain tungsten shot in ***.⁷⁰ At the end of the POI, there were no domestic producers of certain tungsten shot, as *** indicated they could not compete with subject import prices that were below their cost of production.⁷¹ We find that these patterns weigh in favor of finding that the industry is not established.

c. The Size of Domestic Operations

The Commission has sometimes considered the size of domestic operations, with larger operation levels generally supporting a finding that the domestic industry was established,⁷² and lower operation levels sometimes suggesting the domestic industry was not established.⁷³

⁶⁵ CR/PR at Table 3.3; TPW Final Comments at 2; (“{TPW’s New CEO} decided to stop TPW’s production of tungsten shot and to cease sales activities . . . this decision was based solely on the basis that Chinese prices prevented the company from making a profit on its sales.”).

⁶⁶ TPW indicated it has made a substantial commitment to production of certain tungsten shot through its investments and is committed to restarting production upon receiving trade relief from unfairly traded subject imports. *See, e.g.*, CR/PR at Table 6.8; TPW Final Comments at 14; TPW Posthearing Br. at 1 (“With the arrival of a new CEO at TPW, a decision was made to stop producing and selling tungsten shot until and unless trade relief was obtained.”). Elmet indicated that it is ***. CR/PR at 1.19; GTP’s Producer Questionnaire at Questions IV-28, V-13a.

⁶⁷ CR/PR at 2.10.

⁶⁸ Hearing Tr. at 62 (Holden); TPW Posthearing Br. at Exhibit 1 at 6, Exhibit 15.

⁶⁹ CR/PR at 1.18 and Table 3.7.

⁷⁰ CR/PR at 1.18 and Table 3.7.

⁷¹ CR/PR at 1.18-1.19.

⁷² *See, e.g., Gene Amplification Thermal Cyclers*, USITC Pub. 2412 (established industry where, among other factors, the vast majority of the U.S. market was supplied by the domestic industry); *Certain All-Terrain Vehicles*, USITC Pub. 2071 at A-15 (domestic industry established because, *inter alia*, domestic producers had achieved significant and increasing U.S. market share). *But see Benzyl Paraben*, USITC Pub. 2355 at 10 (industry not established even though firm had been increasing its market share, not finding market share to be particularly indicative of establishment given the small number of purchasers and findings on other factors).

⁷³ *See, e.g., Stainless Steel Kegs*, USITC Pub. 4976 at 16 (industry not established where domestic operations are small relative to the market); *Copier Toner*, USITC Pub. 1960 at 9 n.24 (not finding established industry where, *inter alia*, domestic production was small compared to the market as a (Continued...))

In one instance, the Commission found the domestic industry was established where the domestic producers' market share was "relatively stable."⁷⁴ As the Commission has previously noted, depending on the facts, production as a share of the total market, shipments as a share of the total market, capacity compared to the total market, or even share of the customer base to which domestic producers have made sales may yield different results.

Parties' Arguments. TPW argues that regardless of the method for calculating apparent U.S. consumption, the domestic industry's size compared to the total market is "unarguably small" and supports a finding that the domestic tungsten shot industry is not established.⁷⁵ It asserts the Commission's questionnaire responses indicate that the domestic industry's market share ranged from *** to *** percent over the POI.⁷⁶

Analysis. The domestic industry's capacity utilization fluctuated over the period of investigation as it ramped up production and increased practical capacity; the industry's practical capacity was sufficient to supply *** of apparent domestic consumption in 2024 and interim 2025.⁷⁷ Specifically, the domestic industry's capacity utilization decreased from *** percent in 2022 to *** percent in 2023 before increasing to *** percent in 2024; it was *** percent in interim 2024, and *** percent in interim 2025.⁷⁸ The domestic industry's U.S. shipments of certain tungsten shot also increased over this time, from *** pounds in 2022 to *** pounds in 2023 and *** pounds in 2024; they were higher in interim 2025, at *** pounds, than in interim 2024, at *** pounds.⁷⁹ The domestic industry's market share rose from *** percent in 2022 to *** percent in 2023 and *** percent in 2024; it was higher in interim 2025,

whole). *But see Flat Panel Displays*, USITC Pub. 2413 at 18-19 (finding established industry despite finding that domestic production accounted for "at least some" if only a "small" share of total U.S. market); *Salmon*, USITC Pub. 2272 at 17 (finding established industry despite low domestic market share); *Domestic Dry Containers*, USITC Pub. 4537 at 14-15 (industry not established where, *inter alia*, domestic producer's production, production capacity, shipments, and market share were "relatively small").

⁷⁴ See, e.g., *Laminated Woven Sacks*, USITC Pub. 4025 at 25-26 (finding relative capacity to be relevant but not determinative and that this factor favored finding an established industry where domestic producers clearly increased production capacity, production, and U.S. shipments); *Wheel Inserts*, USITC Pub. 2824 (finding established industry where, *inter alia*, domestic producers had relatively stable U.S. market share).

⁷⁵ TPW Prehearing Br. at 28.

⁷⁶ TPW Prehearing Br. at 27-28. TPW also argues that its proposed alternative data indicates the domestic industry had a much lower market share. *Id.* However, as indicated above in section I, we find that these data do not provide a reliable basis for evaluating subject import volume or market share.

⁷⁷ CR/PR at Table C.1.

⁷⁸ CR/PR at Table 3.5.

⁷⁹ CR/PR at Table 3.5.

at *** percent, than in interim 2024, at *** percent.⁸⁰ However, as of April 2025, TPW reports that it has halted operations.⁸¹

The foregoing evidence shows that the domestic industry made the investments necessary to satisfy *** of domestic demand and achieved a substantial share of the domestic market in 2024 and interim 2025, both of which indicate that it has achieved a meaningful size during the period of investigation. However, as noted, the industry's operations were halted in April 2025. On balance, we find that the evidence with respect to this factor weighs in favor of finding that the industry was established, at least as of the end of the POI.

d. Whether the Proposed Domestic Industry Has Reached a Reasonable Financial “Break-Even” Point

The Commission has examined whether the domestic industry has reached a reasonable financial “break-even” point. In some previous cases, the Commission has examined whether total revenues and total expenses are equal. Where possible, the Commission has calculated a break-even level of production by dividing total fixed costs and expenses by the unit contribution margin (which is equal to the unit sales price minus the unit variable cost).⁸² In cases where domestic producers as a whole have not reached that level, the Commission generally found that this factor favored finding the domestic industry not to be established.⁸³ By contrast, where it found that domestic producers as a whole had reached a reasonable break-even point, the Commission found this factor favored finding the domestic industry to be established.⁸⁴ Where available, the Commission has also examined domestic producers' plans,

⁸⁰ CR/PR at Table 4.5.

⁸¹ CR/PR at Table 3.3. TPW has indicated it is committed to fully restarting production operations if trade relief is provided. *See, e.g.*, TPW Posthearing Br., Exhibit 1 at 5.

⁸² *See, e.g., Stainless Steel Kegs*, USITC Pub. 4976 at 17; *Benzyl Paraben*, USITC Pub. 2355 at 10; *Laminated Woven Sacks*, USITC Pub. 4025 at 26-27.

⁸³ *See, e.g., Stainless Steel Kegs*, USITC Pub. 4976 at 17 (industry not established where firm did not reach production or sales break-even point by end of POI; *Benzyl Paraben*, USITC Pub. 2355 at 10 (industry not established where, *inter alia*, firm did not reach reasonable break-even point during the latest period for which the Commission had data (interim 1990)); *Codfish*, USITC Pub. 1711 at 5 (industry not established where company did not reach break-even point); *Domestic Dry Containers*, USITC Pub. 4537 at 16 (industry not established where company had not reached break-even point).

⁸⁴ *See, e.g., Wheel Inserts*, USITC Pub. 2824 (industry established where, *inter alia*, producers as a whole had passed the break-even point and reached profitability during the period of investigation; they were able to cover fixed and variable costs); *Gene Amplification Thermal Cyclers*, USITC Pub. 2412 (established industry where, *inter alia*, an overwhelming majority of domestic producers already had reached a break-even point); *Salmon*, USITC Pub. 2272 at 16-18 (established industry where, *inter alia*, by 1988 a portion of the domestic producers had achieved profitability and another firm showed improvement from 1987 to 1988, even though there were no sustained profits for producers as a whole).

assumptions, and expectations in measuring firms' performance, including whether such plans and assumptions were reasonable.⁸⁵

Parties' Arguments. TPW argues that it did not reach a break-even point in 2024 or interim 2025 due to its low volume of sales at low prices. As a result, it claims it was ***.⁸⁶

Analysis. Using the formula from past investigations, TPW and GTP (the only two domestic producers to provide financial information) would reach a break-even point if they produced *** pounds of certain tungsten shot each year.⁸⁷ The domestic industry's peak production of *** pounds of certain tungsten shot in 2024 falls well short of that level.⁸⁸ Consistent with these data, domestic producers as a whole experienced operating losses of \$*** in 2024, with operating losses as a share of net sales of *** percent.⁸⁹ We find that this factor weighs strongly in favor of finding the industry is not yet established.

e. Whether the Start-Up Production Is More in the Nature of the Introduction of a New Product Line by an Already Established Business

The Commission also has examined whether the start-up production is more in the nature of the introduction of a new product line by an already established business. In examining this factor, the Commission has focused on whether the domestic producers' production of other products aided introduction of the domestic like product. Where the Commission found the start-up production to be akin to the introduction of a new product line by an already established business, then it has tended to find that the domestic industry was established.⁹⁰ To the extent domestic producers already possess some of the equipment,

⁸⁵ See, e.g., *Laminated Woven Sacks*, USITC Pub. 4025 at 26-27 (finding this factor suggested that the domestic industry was not established where domestic producers had conducted market research, talked to prospective customers, set goals, and developed strategies for entering the market but as a whole experienced operating losses); *Codfish*, USITC Pub. 1711 at 6-7 (using domestic producer's "market and feasibility study" when gauging performance over POI, and finding that failure to reach break-even production volumes in study supported domestic industry not being established); *but see Copier Toner*, USITC Pub. 1960 at 11 (finding that domestic producer's projected performance was not reasonable).

⁸⁶ TPW Prehearing Br. at 29.

⁸⁷ CR/PR at Table 6.3.

⁸⁸ CR/PR at Table 3.7.

⁸⁹ CR/PR at Table 6.1.

⁹⁰ See, e.g., *Stainless Steel Kegs*, USITC Pub. 4976 at 18 (industry not established where a producer of steel kegs prior to the POI stopped production nine years before POI and during the POI, and single domestic producer during the POI acted as a start-up); *Wheel Inserts*, USITC Pub. 2824 (established industry where, *inter alia*, wheel inserts were produced as just one of several product lines (Continued...))

employees, expertise, distribution systems, customer bases, or other components needed to produce and distribute the certain tungsten shot, and are able to leverage these assets for purposes of their certain tungsten shot operations, then this factor would suggest a finding that the domestic industry is established.⁹¹

Parties' Arguments. TPW argues that production of certain tungsten shot required new production processes, new equipment, a new business strategy, and new marketing approaches. It argues that the majority of domestic producers indicated that the technical specifications and designs for certain tungsten shot are not entirely derived from other products. It also contends that the *** for certain tungsten shot.⁹²

Analysis. All domestic producers produced out-of-scope class 2 military grade tungsten products during the POI. TPW began producing class 2 military grade tungsten products in 2019,⁹³ and testified that it supplies "a significant amount of product to DoD."⁹⁴ ***.⁹⁵ ***.⁹⁶

of established firms); *Gene Amplification Thermal Cyclers*, USITC Pub. 2412 (established industry where some producers were existing firms with other products and some producers were newly formed firms); *Battery PVC Covers*, USITC Pub. 2265 at 13 (finding pressure-sensitive battery covers were merely a new product line of an established firm that had been producing labels for 76 years); *Lime Oil*, USITC Pub. 1723 at 8 n.19 (noting in *dicta* that it would have found distilled lime oil to be an established industry because, *inter alia*, "unlike a new entrant, petitioner has been in the business of selling lime oil for years and could use existing customer contacts and distribution infrastructure in introducing distilled lime oil. Rather than establishing an industry, petitioner was introducing a new product line which has established a stable presence in the market."); *Neoprene Laminate*, USITC Pub. 1608 at 8 nn.24-26 (finding R-131 neoprene was merely a change in the product line of the established fabric and expanded neoprene laminate industry); *Domestic Dry Containers*, USITC Pub. at 4537 at 17 (finding that domestic producer had benefited from production of other products, including trailers, flatbeds and aluminum containers). *But see, e.g., Benzyl Paraben*, USITC Pub. 2355 at 11 (even though petitioner was an established firm, its benzyl paraben operations did not appear to have derived a benefit from its other arguably 'established' operations); *Copier Toner*, USITC Pub. 1960 at 9 n.24 (not discussing this factor but determining that the electrically resistive monocomponent toner ("ERMT") industry was "nascent" even though the ERMT producers manufactured other toners as well); *Codfish*, USITC Pub. 1711, (even though petitioner was also producing other dried salted fish such as pollock or hake, that did not prevent finding the industry was not established).

⁹¹ *Laminated Woven Sacks*, USITC Pub. 4025 at 28-29 (this factor favored finding established industry where at least for some domestic producers, there was some overlap in the production equipment and employees used to produce laminated woven sacks and other products, and at least some domestic producers were able to leverage, at least to some degree, their existing customer lists and distribution systems).

⁹² TPW Prehearing Br. at 30-31.

⁹³ Conf. Tr. at 8, 78 (Omanoff).

⁹⁴ Hearing Tr. at 11 (Holden).

⁹⁵ CR/PR at 1.17, D.3 and Table D.1.

⁹⁶ CR/PR at D.3 and Table 3.7.

*** indicated that they could use their existing equipment to ***, although *** and ***.⁹⁷ TPW indicates that production of certain tungsten shot ***.⁹⁸ Specifically, TPW indicated that it required ***.⁹⁹

*** also stated that ***.¹⁰⁰ ***.¹⁰¹

All domestic producers reported that ***.¹⁰² A majority of domestic producers also indicated they used at least some different marketing strategies and new business plans to target the new customer base.¹⁰³ ***.¹⁰⁴

*** indicated that the technical specifications and/or designs of certain tungsten shot were not derived from other products. A witness for TPW indicated that certain tungsten shot has distinct specifications and customers focus on pattern density and retail price, while military buyers of class 2 military grade products focus on kinetic energy performance and quality assurance protocols.¹⁰⁵ ***.¹⁰⁶

Although *** considered it possible to use their existing distribution infrastructure for certain tungsten shot, TPW stated ***.¹⁰⁷ The record indicates that certain tungsten shot is sold in distinct channels of distribution, almost exclusively to civil ammunition manufacturers for the creation of Tungsten Super Shot,¹⁰⁸ whereas out-of-scope class 2 military grade tungsten shot is sold to the defense industry, particularly major contractors like Northrup Grumman or Lockheed Martin.¹⁰⁹

In the preliminary determinations, the Commission found that the record appeared to suggest that TPW was aided in the production of tungsten shot by its experience in producing out-of-scope class 2 military grade tungsten shot, but it was unclear whether, or to what extent, it was able to leverage such experience to obtain sales and customers.¹¹⁰ In the final phase, two firms indicated they could leverage their existing equipment, technical expertise, and distribution systems from their existing production to produce and sell certain tungsten shot,

⁹⁷ CR/PR at Tables D.8, D.15, D.16.

⁹⁸ CR/PR at Tables D.8 and D.15.

⁹⁹ CR/PR at Table D.8.

¹⁰⁰ CR/PR at Table D.15; Hearing Tr. at 75 (Holden).

¹⁰¹ CR/PR at Table D.15; Hearing Tr. at 75 (Holden).

¹⁰² CR/PR at Tables D.10 and D.15.

¹⁰³ CR/PR at Table D.9.

¹⁰⁴ CR/PR at Table D.9; TPW Prehearing Br. at 30.

¹⁰⁵ Hearing Tr. at 11-12 (Holden).

¹⁰⁶ CR/PR at Table D.7.

¹⁰⁷ CR/PR at Table D.15.

¹⁰⁸ CR/PR at Table 2.2.

¹⁰⁹ CR/PR at Table 2.2; TPW Postconference Br. at 6; Conf. Tr. at 31-32 (Omanoff).

¹¹⁰ *Preliminary Determinations*, USITC Pub. 5542 at 25-26.

and the remaining firm ***.¹¹¹ All domestic producers indicated that certain tungsten shot was sold to an entirely different customer base and would require different marketing and business plans.¹¹² A majority of domestic producers also indicated certain tungsten shot required different specifications and designs than other products they produced.¹¹³ TPW, *** producer of certain tungsten shot during the POI, indicated that it was not able to leverage its existing distribution system and only some of its equipment.¹¹⁴

We consider that the evidence with respect to this factor is mixed. On the one hand, the record indicates meaningful overlap in terms of manufacturing facilities, production equipment, production processes, and employee skills and training as between certain tungsten shot and out-of-scope class 2 military grade tungsten products. On the other hand, the record also indicates some differences in production equipment and processes and that the actual or potential customers for these two products are wholly separate entities in separate markets that likely require different sales and marketing strategies.

f. Conclusion

Based on the record evidence as a whole, we find that the domestic industry is not established. The size of the industry, based on its production and market share as of the end of the POI weighs in favor of finding that the domestic industry is established as of the end of the POI, as noted, although the domestic industry ceased production shortly after the end of the POI in April 2025. The evidence is mixed with respect to whether certain tungsten shot is a new product line. All other factors weigh in favor of finding that the domestic industry is not established. Specifically, the short time period of production, the start-stop nature of production, and the domestic industry's failure to reach a break-even point demonstrate that the industry remained well short of being established, even before TPW ceased production. Accordingly, we find that the domestic industry is not established and conduct a material retardation analysis.

IV. Negligibility

Section 771(24) of the Tariff Act, which defines "negligibility," provides that imports from a subject country that are 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

¹¹¹ CR/PR at Table D.15.

¹¹² CR/PR at Tables D.9-D.10, D.15.

¹¹³ CR/PR at Table D.15.

¹¹⁴ CR/PR at Table D.15.

available that precedes the filing of the petition or self-initiation, as the case may be, shall be deemed negligible.¹¹⁵

Based on questionnaires responses from U.S. importers and proprietary, Census-edited Customs records, the data for the July 2023 through June 2024 period preceding the filing of these petitions indicate that subject imports accounted for *** percent of total imports.¹¹⁶ As subject imports from China are above the statutory threshold, we find that that imports of certain tungsten shot from China subject to the antidumping duty and countervailing duty investigations are not negligible.

V. Material Retardation by Reason of Subject Imports

Based on the record in the final phase of these investigations, we find that the establishment of a domestic industry in the United States is materially retarded by reason of imports of certain tungsten shot from China that Commerce has found to be sold in the United States at LTFV and subsidized by the government of China.

A. Legal Standards for Material Retardation

The Commission has previously stated that because each attempt to establish a new industry is inherently unique, it makes its determination of whether the establishment of an industry is materially retarded on a case-by-case basis.¹¹⁷ Section 1677(7)(B) specifies that the requirement to address volume, price, and impact of subject imports applies to all final determinations under sections 1671d(b) and 1673d(b), which include determinations of material retardation.¹¹⁸ The legislative history of this provision further confirms that it applies to “every investigation,” including material retardation.¹¹⁹ In past material retardation analyses, the Commission’s assessed many of the same factors it considers in its material injury determinations: domestic production, shipments, capacity utilization, inventories, financial

¹¹⁵ 19 U.S.C. § 1677(24)(A)(i). China is not on USTR’s list of developing or least-developed countries and therefore not subject to the 4 percent and 9 percent negligibility limits. *See Designations of Developing Countries and Least-Developed Countries Under the Countervailing Duty Law*, 85 Fed. Reg. 7613 (Feb. 10, 2020).

¹¹⁶ Subject import volumes from China are the same with respect to the antidumping and countervailing duty investigations. CR/PR at Table 4.4.

¹¹⁷ *See, e.g., Stainless Steel Kegs*, USITC Pub. 4976 at 26; *Codfish*, USITC Pub. 1711 at 4.

¹¹⁸ *See* 19 U.S.C. § 1677(7)(B).

¹¹⁹ H.R. Rep. 100-40, 100th Cong. 1st Sess. at 127 (1987).

condition, employment, projected performance compared to actual performance, and other market conditions.¹²⁰

Nonetheless, the Commission has noted that these criteria are not “viewed in the same light” given the unique circumstances of a material retardation analysis. For instance, the Commission has “discounted” various improvements in the domestic industry’s performance when new firms have commenced production over the POI and some increases in production, shipments, and capacity utilization would thus be expected as a result.¹²¹ Similarly, the Commission has discounted increases in the domestic industry’s share of apparent U.S. consumption when the market is nonetheless dominated by subject imports, reasoning that some increase in market share is inevitable when nascent firms commence domestic production.¹²²

The Commission has framed its inquiry as whether the industry’s performance “reflects merely the normal start-up condition of a company entering an admittedly difficult market or, is the performance worse than what could reasonably be expected”¹²³ The Commission has sometimes examined the projections of individual producers at the time of their inception to gauge whether a reasonable level of operations has been achieved.¹²⁴

B. Conditions of Competition and the Business Cycle

The following conditions of competition inform our analysis of whether subject imports materially retarded the establishment of a domestic industry.

1. Demand Considerations

Demand for certain tungsten shot is driven by demand for U.S.-produced downstream products.¹²⁵ The primary downstream product that is produced using certain tungsten shot is shotgun shells, but there are also reported niche end uses including warhead payloads, scuba

¹²⁰ See, e.g., *Stainless Steel Kegs*, USITC Pub. 4976 at 26; *Benzyl Paraben*, USITC Pub. 2355 at 9, 14; *Copier Toner*, USITC Pub. 1960 at 11-14; *Dried Salted Codfish*, USITC Pub. 1711 at 6-7.

¹²¹ *Stainless Steel Kegs*, USITC Pub. 4976 at 27; *Laminated Woven Sacks*, USITC Pub. 3942 at 37-39 (noting that in examining the impact of subject imports, criteria are not viewed “in the same light” in a material retardation analysis).

¹²² *Benzyl Paraben*, USITC Pub. 2355 at 13-14.

¹²³ See, e.g., *Stainless Steel Kegs*, USITC Pub. 4976 at 27; *Codfish*, USITC Pub. 1711 at 5.

¹²⁴ *Copier Toner*, USITC Pub. 1960 at 9-10 (finding that domestic industry was performing better than would be expected and that producer’s business plan predicting higher market share was unrealistic); *Dried Salted Codfish*, USITC Pub. 1711 at 6-7 (considering market feasibility study done at inception of business operations).

¹²⁵ CR/PR at 2.9

weights, and aviation weights.¹²⁶ According to TPW, demand for commercial tungsten shot has increased recently due to the popularity of hunting and the increasing popularity of recreational shooting, such as clay shooting.¹²⁷ TPW asserts that increasing restrictions on the use of lead shot due to safety and environmental concerns have also contributed to increased demand for tungsten shot, which is a non-toxic alternative to lead-based products.¹²⁸ Most responding market participants reported that demand for certain tungsten shot has increased since January 1, 2021.¹²⁹ *** domestic producers, four of 12 importers, and 6 of 8 purchasers indicated that the market was subject to business cycles, including increased sales in the fall and spring due to hunting seasons and annual defense budget cycles.¹³⁰

Based on questionnaire responses and proprietary, Census-edited Customs records, apparent U.S. consumption decreased from *** pounds in 2022 to *** pounds in 2023 and *** pounds in 2024; it was higher in interim 2025, at *** pounds, than in interim 2024, at *** pounds.¹³¹

2. Supply Considerations

As discussed above, the domestic industry consists of three domestic producers of tungsten shot. TPW began producing military-grade tungsten shot products in 2019 and only commenced commercial-scale production of commercial-grade tungsten shot in *** 2023.¹³² TPW indicated that it stopped commercial production of certain tungsten shot on April 1, 2025.¹³³ Elmet is a producer of tungsten and molybdenum products and primarily produces ***.¹³⁴ While Elmet ***, it only produced a ***.¹³⁵ GTP is a producer of tungsten and tungsten

¹²⁶ CR/PR at 2.9.

¹²⁷ CR/PR at 2.10.

¹²⁸ TPW Postconference Br. at 12.

¹²⁹ CR/PR at Table 2.5. U.S. producers reported that demand steadily increased since January 1, 2021. Three importers reported demand steadily increased, one importer reported demand fluctuated up, two importers reported that demand did not change or fluctuated down, and one reported demand steadily decreased since January 1, 2021. Two purchasers reported that demand steadily increased, two reported demand fluctuated up, two reported demand did not change, and one reported demand steadily decreased since January 1, 2021. *Id.*

¹³⁰ CR/PR at 2.10.

¹³¹ CR/PR at Table 4.5. As discussed above, these data may understate subject import U.S. shipments.

¹³² CR/PR at 1.19.

¹³³ CR/PR at 1.19.

¹³⁴ CR/PR at 1.18.

¹³⁵ CR/PR at 1.18.

carbide powders for the aerospace and defense industry, and similarly ***. GTP produced a ***.¹³⁶

The domestic industry's practical capacity for certain tungsten shot increased from *** pounds in 2022 to *** pounds in 2023 and *** pounds in 2024; it was slightly higher in interim 2025, at *** pounds, than in interim 2024, at *** pounds.¹³⁷ However, much of the industry's capacity was unused during this time; its capacity utilization rate decreased from *** percent in 2022 to *** percent in 2023 and then increased to *** percent in 2024, for an overall decrease of *** percentage points. Its capacity utilization rate was *** percent in interim 2025 and *** percent in interim 2024.¹³⁸ The domestic industry's market share increased from *** percent in 2022 to *** percent in 2023 and *** percent in 2024; it was higher in interim 2025, at *** percent, than in interim 2024, at *** percent.¹³⁹

Subject imports were the primary source of certain tungsten shot in the United States; their share of apparent U.S. consumption decreased from *** percent in 2022 to *** percent in 2023 and *** percent in 2024; it was lower in interim 2025, at *** percent than in interim 2024, at *** percent.¹⁴⁰

The record indicates that nonsubject imports were *** during the POI, accounting for at most *** percent of apparent U.S. consumption during the POI.¹⁴¹

3. Substitutability and Other Conditions

Based on the record, we find that there is at least a moderate-to-high degree of substitutability between the domestic like product and subject imports.¹⁴² Factors contributing to this degree of substitutability include market participants' responses that domestically produced certain tungsten shot is always or frequently interchangeable and that they are comparable across most purchasing factors. In particular, TPW reported that domestically produced certain tungsten shot was *** interchangeable with subject imports, and a majority of importers and all purchasers reported them to be always or frequently interchangeable.¹⁴³ When asked for a country-by-country comparison with respect to 15 factors that influence purchasing decisions, majorities or pluralities of responding purchasers reported that domestically produced certain tungsten shot and subject imports were comparable with

¹³⁶ CR/PR at 1.19.

¹³⁷ CR/PR at Table 3.5.

¹³⁸ CR/PR at Table 3.5.

¹³⁹ CR/PR at Tables 4.5, C.1.

¹⁴⁰ CR/PR at Tables 4.5, C.1.

¹⁴¹ CR/PR at Tables 4.5, C.1.

¹⁴² See CR/PR at 2.11.

¹⁴³ CR/PR at Table 2.12.

respect to 13 of the 15 listed purchasing factors. While these data indicate that domestically produced tungsten shot and subject imports are generally interchangeable, the availability of domestically produced certain tungsten shot as the domestic industry attempted to establish itself through the initiation of commercial production in the second year of the POI and its ramping up of production over the POI in a stop and start fashion may have been limited at times. For example, two of the three responding purchasers reported the domestic like product was inferior with respect to delivery time and reliability of supply.¹⁴⁴

We also find that price is an important factor in purchasing decisions, among other important factors. The three most important factors that firms considered in their purchasing decisions for certain tungsten shot were price (7 firms), quality (6 firms), and lead time (5 firms).¹⁴⁵ Price was also cited by 6 of 7 purchasers as being very important to their purchasing decisions.¹⁴⁶ TPW reported that differences other than price are *** significant, while a majority of responding importers and purchasers responses reported that such differences were *** significant.¹⁴⁷

Domestically produced certain tungsten shot was sold almost exclusively to ammunition manufacturers from 2023 through interim 2025 (in 2022, it was sold almost exclusively to other end users).¹⁴⁸ Responding importers reported selling certain tungsten shot mainly to ammunition manufacturers but also reported a small number of sales to other end users, including ***,¹⁴⁹ ***,¹⁵⁰

The domestic industry sold *** percent of its certain tungsten shot *** in 2024, with the remainder ***.¹⁵¹ Responding importers reported selling 47.8 percent of the subject

¹⁴⁴ CR/PR at Table 2.11. An equal number of responding purchasers reported that domestically produced certain tungsten shot is superior, comparable, and inferior to subject imports with respect to availability, price, product consistency, product range, quality meets industry standards, quality exceeds industry standards, and technical support or service. *Id.* The only purchasing factors for which no responding purchasers reported that domestically produced tungsten shot and subject imports comparable were delivery time and reliability of supply. *Id.* Two responding purchasers reported that domestically produced certain tungsten shot is inferior to subject imports, and one reported that domestically produced tungsten shot are superior with respect to delivery time and reliability of supply. *Id.*

¹⁴⁵ CR/PR at Table 2.7.

¹⁴⁶ CR/PR at Table 2.8.

¹⁴⁷ CR/PR at Table 2.13.

¹⁴⁸ CR/PR at 2.3, Table 2.2.

¹⁴⁹ ***. CR/PR at Figure 1.1.

¹⁵⁰ CR/PR at 2.3, Table 2.2.

¹⁵¹ CR/PR at Table 5.3.

merchandise pursuant to long-term contracts, with the remaining 37.3 percent of sales pursuant to short-term contracts, and 15.0 percent as spot sales.¹⁵²

As described above in Section II, certain tungsten shot has a tungsten content of at least 92.6 percent by weight. Accordingly, the raw materials used in the production of certain tungsten shot are a mixture of loose metal powders consisting mainly of tungsten and a metallic powder binder such as nickel, or iron.¹⁵³ U.S. producer TPW states that it adds minor amounts of proprietary additional components during the production process.¹⁵⁴ Two U.S. producers and half of responding importers (6 of 12) reported that raw material prices have increased (either steadily or with fluctuations) since 2021.¹⁵⁵ According to business proprietary data, the price of raw tungsten was relatively constant from the beginning of 2022 through the end of 2024, but prices increased sharply in March 2025.¹⁵⁶

Effective September 1, 2018, certain tungsten shot produced in China and imported under Harmonized Tariff Schedule (“HTS”) subheading 9306.29.00 became subject to an additional 15 percent *ad valorem* duty under section 301 of the Trade Act of 1974.¹⁵⁷ This duty was reduced to 7 percent *ad valorem* effective February 14, 2020.¹⁵⁸

Effective February 4, 2025, certain tungsten shot originating in China became subject to an additional 10 percent *ad valorem* duty under the International Emergency Economic Powers Act (“IEEPA”), and this duty was increased to 20 percent *ad valorem* effective March 4, 2025.¹⁵⁹

Effective April 5, 2025, tungsten shot originating in China became subject to an additional 10 percent *ad valorem* “reciprocal” duty under IEEPA, which rose to 84 percent *ad valorem* effective April 9, 2025, and then to 125 percent *ad valorem* effective April 10, 2025.¹⁶⁰ This “reciprocal” duty on certain tungsten shot originating in China was reduced to 10 percent *ad valorem* effective May 14, 2025.¹⁶¹ All told, as of publication of the staff report in these investigations on July 24, 2025, the total additional *ad valorem* duty rate on tungsten shot from China was 37.5 percent.¹⁶²

¹⁵² CR/PR at Table 5.3.

¹⁵³ CR/PR at 5.1.

¹⁵⁴ CR/PR at 5.1.

¹⁵⁵ CR/PR at 5.1.

¹⁵⁶ CR/PR at 5.1.

¹⁵⁷ CR/PR at 1.7.

¹⁵⁸ CR/PR at 1.7.

¹⁵⁹ CR/PR at 1.8.

¹⁶⁰ CR/PR at 1.8.

¹⁶¹ CR/PR at 1.8.

¹⁶² CR/PR at Table 1.4.

C. Material Retardation by Reason of Subject Imports from China

As discussed above, in evaluating whether subject imports have retarded the establishment of the domestic industry, we look to many of the same factors used to evaluate material injury by reason of subject imports. Section 771(7)(C) of the Tariff Act provides that in making a determination regarding material injury, 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.”¹⁶³

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.”¹⁶⁴

Subject imports were the dominant source of certain tungsten shot in the U.S. market throughout the POI. The volume of subject imports was *** pounds in 2022, *** pounds in 2023, and *** pounds in 2024; it was *** pounds in interim 2025 and *** pounds in interim 2024.¹⁶⁵ Subject imports accounted for the great majority of apparent U.S. consumption throughout the POI although that share declined; their share was *** percent in 2022, *** percent in 2023, and *** percent in 2024; it was *** percent in interim 2024 and *** percent in interim 2025.¹⁶⁶ The ratio of subject imports to U.S. production decreased but remained at least several multiples of U.S. production throughout.¹⁶⁷

Accordingly, we find that the volume of subject imports is significant in absolute terms as well as relative to apparent U.S. consumption and domestic production.

2. Price Effects of Subject Imports

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

¹⁶³ 19 U.S.C. § 1677(7)(C).

¹⁶⁴ 19 U.S.C. § 1677(7)(C)(i).

¹⁶⁵ CR/PR at Table 4.2.

¹⁶⁶ CR/PR at Tables 4.5, C.1.

¹⁶⁷ CR/PR at Table 4.2.

- (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.¹⁶⁸

As noted above, section 771(7)(C)(ii) applies to material retardation cases; however, this requirement (as well as those with respect to volume and impact) may not be “viewed in the same light” as in a material injury case given the different circumstances of a material retardation analysis. In particular, in a material retardation case, an industry is attempting to establish itself in the face of a market dominated by other market participants. In these investigations, the domestic industry started production in 2022 in a market that was entirely supplied by subject imports. TPW argues that because of this, and the context of a material retardation case, the analysis of the price effects of subject imports should differ from that in a material injury case by placing less emphasis on underselling and price trends and more emphasis on what the established price is, who sets that price, and the role that price plays in the domestic industry’s efforts to establish itself. We consider TPW’s argument in our analysis below.

In accordance with section 771(7)(C)(ii), we consider the record evidence relevant to the degree of subject import underselling and any effect of subject imports in depressing or suppressing domestic producer prices, cognizant that this evidence may warrant consideration in a different light than it would in a material injury case.

As an initial matter, as discussed in section V.B.3 above, we find that there is at least a moderate-to-high degree of substitutability between subject imports and the domestic like product, and that price is an important factor in purchasing decisions, among other important factors. While availability of domestically produced tungsten shot may have moderated the overall degree of substitutability, and we therefore found at least a moderate-to-high degree of substitutability, market participants indicated that subject imports are always or frequently interchangeable and comparable across the vast majority of purchasing factors.

¹⁶⁸ 19 U.S.C. § 1677(7)(C)(ii).

The Commission collected quarterly quantity and f.o.b. pricing data on sales of five pricing products shipped to unrelated U.S. customers during the POI.¹⁶⁹ One U.S. producer, ***, and four importers provided usable pricing data, although not all firms reported pricing for all products for all quarters.¹⁷⁰ Pricing data reported by these firms accounted for *** pounds, or *** percent, of U.S. producers' U.S. shipments and *** pounds, or *** percent, of importers' U.S. shipments of subject merchandise from China in 2024.¹⁷¹ Subject imports oversold the domestic like product in all 7 quarterly comparisons, corresponding to *** pounds of reported subject import sales, with overselling margins ranging from *** to *** percent and averaging *** percent.¹⁷²

The Commission also collected import purchase cost data for the same five pricing products from firms that directly imported these products from subject sources for retail sale.¹⁷³ Purchase cost data were reported by four firms, accounting for *** pounds or *** percent of subject imports in 2024.¹⁷⁴ Based on the import purchase cost data obtained by the Commission, landed duty-paid ("LDP") costs for subject imports were below the sales price for the domestic like product in two of four quarterly comparisons, corresponding to *** percent of reported subject import purchases (***) pounds), at a price-cost differentials ranging from *** percent and averaging *** percent.¹⁷⁵ The LDP costs for subject imports were above the

¹⁶⁹ The five pricing products are as follows:

- Product 1.** – Tungsten Class 3 shot, #7 Dia 2.5mm;
- Product 2.** – Tungsten Class 3 shot, #7.5 Dia 2.41mm;
- Product 3.** – Tungsten Class 3 shot, #8.5 Dia 2.16mm;
- Product 4.** – Tungsten Class 3 shot, #9 Dia 2.03mm; and
- Product 5.** – Tungsten Class 3 shot, #10 Dia 1.8mm. CR/PR at 5.5.

¹⁷⁰ CR/PR at 5.6. Importer *** reported selling low volumes of tungsten shot for scientific and industrial applications at significantly higher prices than other importers for pricing products ***, as a result these imports were not included in the pricing product data. CR/PR at 5.6.

¹⁷¹ CR/PR at 5.6, Table 5.9.

¹⁷² CR/PR at Table 5.10.

¹⁷³ CR/PR at 5.6.

¹⁷⁴ CR/PR at 5.6, Table 5.9. *** reported purchase cost data, but indicated it was unable to separate the data by pricing products and therefore provided only aggregate purchase cost data. CR/PR at E.2. We have not included this data in our analysis of purchase cost data above but do consider this additional information below in footnote 174. Additionally, importer *** reported that it imported only one shipment via air freight of *** to meet demand in the period. As the price on this transaction was not representative of the market price it is not included in the purchase cost data. CR/PR at 5.8.

¹⁷⁵ CR/PR at Table 5.12. Aggregating purchase-cost data across all pricing products, including the data from ***, indicate that LDP costs for subject imports were below the sales price for the domestic like product in three of five quarterly comparisons, corresponding to *** percent of reported subject import purchases (***) pounds), at price-cost differentials ranging from *** percent and averaging *** (Continued...)

sales price for the domestic like product in the remaining two quarterly comparisons, corresponding to *** percent of reported subject import purchases (*** pounds), at price-cost differentials ranging from *** percent and averaging *** percent.¹⁷⁶ We recognize that the import purchase cost data may not reflect the total cost of importing and therefore requested that importers for retail sale provide additional information regarding the costs and benefits of directly importing certain tungsten shot. Two of five responding firm providing import purchase cost data reported that they incurred additional costs beyond the LDP costs associated with importing certain tungsten shot, estimating that such costs ranged from *** to *** percent compared to LDP value.¹⁷⁷ Three importers estimated that they saved between *** percent of the purchase price by importing tungsten shot rather than purchasing from a U.S. importer and saving between *** percent compared to purchasing the product from a U.S. producer.¹⁷⁸

We have also considered purchaser responses to the lost sales allegations. Of the six responding purchasers that reported purchasing subject imports instead of the domestic like product, four reported that subject imports were priced lower, and three indicated that the decision to purchase subject imports was based on price.¹⁷⁹ One purchaser estimated that it purchased *** pounds of subject imports instead of the domestic like product due to price, equivalent to *** percent of U.S. shipments of subject imports and *** percent of U.S. shipments by the domestic industry during the POI.¹⁸⁰

Between January 2022 and March 2025, the domestic industry's sales prices for certain tungsten shot increased for all pricing products except pricing product 4, the domestic industry's highest volume product in the pricing data.¹⁸¹ Subject import prices decreased over

percent. These data indicate that LDP costs for subject imports were above the sales price for the domestic like product in the remaining two quarterly comparisons, corresponding to *** percent of reported subject import purchases (*** pounds), at price-cost differentials ranging from *** percent and averaging *** percent. CR/PR at Table E.3. *** reported that it incurred additional costs beyond the LDP costs associated with importing certain tungsten shot, but did not estimate the costs. *** Importer Questionnaire Response at Question III-3d-iii. We note that these data are not separated by pricing product and therefore do not allow for an apples-to-apples comparison; we therefore afford less weight to these data.

¹⁷⁶ CR/PR at Table 5.12.

¹⁷⁷ CR/PR at 5.7.

¹⁷⁸ CR/PR at 5.7-5.8.

¹⁷⁹ CR/PR at Table 5.15.

¹⁸⁰ CR/PR at Table 5.15.

¹⁸¹ CR/PR at Table 5.9. Between January 2022 and March 2025, domestic prices increased overall by *** percent for product 1, *** percent for product 2, *** percent for product 3, and *** percent for product 5, and decreased by *** percent for product 4. *Id.*

the POI for pricing products 1, 2, and 5, and their prices increased for pricing products 3 and 4.¹⁸²

The domestic industry's ratio of cost of goods sold ("COGS") to net sales increased from *** percent in 2022 to *** percent in 2023, and decreased to *** percent in 2024, for an overall increase of *** percentage points. The industry's ratio of COGS to net sales was *** percentage points lower, at *** percent, in interim 2025, compared with *** percent in interim 2024.¹⁸³ As a result, the domestic industry experienced negative operating and net income margins for most of the POI.

As noted earlier, TPW argues that the traditional analysis the Commission conducts in a material injury case is less probative of adverse price effects in a material retardation case.¹⁸⁴ We agree that in these investigations, where subject imports controlled the entirety of the U.S. market at the start of the POI and TPW is attempting to establish a domestic industry, that merely examining the degree of subject import underselling and its role in depressing or suppressing domestic producer prices may obscure the adverse effect of subject import pricing on domestic industry prices. This is particularly so in view of evidence that subject imports and domestically produced tungsten shot are generally interchangeable and that domestic producers' efforts to garner sales have been unsuccessful unless they are able to meet or beat subject import pricing.¹⁸⁵ The latter fact is borne out in the Commission's pricing data, showing that where the domestic industry made sales it undersold subject imports in all available price comparisons. This is in contrast to the lost sales data, showing that in over half the instances where purchasers purchased subject imports instead of domestically produced tungsten shot (*i.e.*, where domestic producers lost sales), they did so primarily because subject imports were priced lower than the domestic like product. Only one of the three purchasers that purchase subject imports instead of the domestic product primarily due to price estimated the volume so

¹⁸² CR/PR at Table 5.9. Between January 2022 and March 2025, subject import prices decreased by *** percent for product 1, *** percent for product 2, and *** percent for product 5. Subject import prices increased over the POI by *** percent for product 3 and *** percent for product 4. *Id.*

¹⁸³ CR/PR at Tables 6.1-6.2, C.1.

¹⁸⁴ As noted above, no respondent interested party has participated in these investigations to contest TPW's position or provide evidence tending to undermine TPW's claims.

¹⁸⁵ Hearing Tr. at 47 (Holden) ("It is apples and apples. I can't come up with a better mouse trap. It's just we're limited by metallurgy. We have the same exact product that our counterparts overseas are trying to jump into the United States market.") As discussed in section V.B.3 above, we have found at least a moderate-to-high degree of substitutability. However, this finding reflects that availability of domestically produced tungsten shot may have been limited at times due to the start-up nature of TPW's production; the majority of responding producers, purchasers, and importers reported that domestically produced tungsten shot and subject imports are interchangeable.

purchased, but that volume alone was equivalent to *** percent of U.S. shipments by the domestic industry in 2024.¹⁸⁶

TPW asserts that the price of subject imports in the U.S. market effectively established a price that the domestic industry had to meet or beat to obtain sales, and that at this “market price” it had no choice but to make sales at or below its cost of production.¹⁸⁷ We find it appropriate to consider the relationship of subject import prices to the domestic industry’s costs, in order to assess the industry’s ability to price tungsten shot at a level that would enable it to recover its costs. The domestic industry’s total unit cost of production per pound, consisting of unit COGS and SG&A, was \$*** in 2022, \$*** in 2023, and \$*** in 2024.¹⁸⁸ Subject imports’ U.S. shipment AUVs were overwhelmingly lower throughout the period – \$*** in 2022 (*** percent lower), \$*** in 2023 (*** percent lower), and \$*** in 2024 (*** percent lower).¹⁸⁹ Even when excluding SG&A costs, subject imports’ U.S. shipment AUVs were below the domestic industry’s unit COGS by *** percent in 2022, *** percent in 2023, and *** percent in 2024.¹⁹⁰

These data show that subject import pricing was below the domestic industry’s production costs, preventing it from recovering its costs and making a profit. Although a startup might expect to encounter heightened operational costs at the outset of its activities as fixed costs are spread over lower production volumes, TPW testified that that phenomenon is less applicable for certain tungsten shot where the technology is well-understood and the majority of costs are raw material costs that do not change on a unit basis based on the volume produced.¹⁹¹ Moreover, even excluding other factory costs, subject imports’ U.S. shipment AUVs were below the domestic industry’s combined unit raw material and labor costs.¹⁹² Thus,

¹⁸⁶ CR/PR at Tables

¹⁸⁷ Hearing Tr. at 9 (Holden) (“We have shipped modest lots to large American customers but only by accepting prices that do not cover our costs.”), at 11 (Holden) (“We incur operating losses on every single commercial shot sale . . .”), at 43 (Holden) (“{A}gain, the only way we are able to get a meaningful foothold in this market is by selling deeply, deeply below our costs.”).

¹⁸⁸ CR/PR at Tables 6.1 and C.1. In light of seasonal variations in demand and in TPW’s production, we did not consider interim period data, which cover only one quarter, in these comparisons.

¹⁸⁹ CR/PR at Tables 6.1 and C.1. For purposes of comparison to U.S. producers’ costs in these investigations, subject import U.S. shipment AUVs provide the most probative measure of prevailing import prices in the U.S. market given that reported pricing data and purchase cost data accounted for a small share of U.S. imports, *** and *** percent, respectively. CR/PR at 5.6-5.7.

¹⁹⁰ CR/PR at Tables 6.1 and C.1.

¹⁹¹ Hearing Tr. at 56-58.

¹⁹² The domestic industry’s unit raw material plus labor costs per pound were *** in 2022, *** in 2023, and *** in 2024, still below subject imports’ U.S. shipments AUVs. Indeed, subject imports’ U.S. (Continued...)

consistent with TPW’s testimony, meeting or beating subject import pricing required the domestic industry to price at a level that prevented the domestic industry from covering costs of production,¹⁹³ let alone making a profit that could be used to reinvest in the growth of the industry. Consequently, we find that subject imports and their low prices had significant price effects on the domestic industry.

3. Impact of Subject Imports¹⁹⁴

Section 771(7)(C)(iii) of the Tariff Act provides that in examining the impact of subject imports, the Commission “shall evaluate all relevant economic factors which have a bearing on the state of the industry.”¹⁹⁵ 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 debts, research and development, and factors affecting domestic prices. No single

shipment AUVs were near or even below the domestic industry’s unit raw material costs per pound of \$*** in 2022 and \$*** in 2024. CR/PR at Tables 6.1 and C.1.

¹⁹³ The break-even analysis applied in past cases as part of the Commission’s analysis of industry establishment shows on this record a break-even point of *** pounds at prevailing prices. Reaching this level would require the domestic industry to nearly double its 2024 production, which would more than triple its 2024 net sales and increase its market share by *** percentage points, to *** percent. See CR/PR at Tables 6.3 and C.1. As discussed, such an increase in volume is not possible at the prevailing prices set by subject imports without the industry operating at a huge loss. The break-even analysis also indicates that at current production volumes, an AUV of \$*** would be required for break-even, well in excess of the prevailing market prices set by subject imports. The break-even analysis is static, limited to the 2024 cost structure only, and tends to support our broader analysis of price effects on this record. See CR/PR at 6.17, Tables 6.3-6.4, and Fig. 6.2.

¹⁹⁴ The statute instructs the Commission to consider the “magnitude of the dumping margin” in an antidumping proceeding as part of its consideration of the impact of imports. 19 U.S.C. § 1677(7)(C)(iii)(V). In its final determination, Commerce found a dumping margin of 201.32 percent. CR/PR at Table 1.3; *Certain Tungsten Shot From the People’s Republic of China: Final Affirmative Determination of Sales at Less Than Fair Value*, 90 Fed. Reg. 30849 (July 11, 2025).

We have considered the above dumping margin. In addition to this consideration, our impact analysis has considered other factors affecting domestic prices. Our analysis of the significant price effects of subject imports, described in both the price effects discussion and below, is particularly probative to an assessment of the impact of the subject imports on the establishment of the domestic industry.

¹⁹⁵ 19 U.S.C. § 1677(7)(C)(iii); see also SAA at 851 and 885 (“the Commission considers, in addition to imports, other factors that may be contributing to overall injury. While these factors, in some cases, may account for the injury to the domestic industry, they also may demonstrate that an industry is facing difficulties from a variety of sources and is vulnerable to dumped or subsidized imports”).

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.”¹⁹⁶

In considering whether the establishment of an industry is materially retarded by reason of the subject imports, we consider the size of the domestic industry and the market in which it is competing to determine whether subject imports are adversely affecting its performance. For a start-up business in an unestablished industry, we would expect it to be able to improve its performance by increasing its production and sales, while realizing efficiencies and thereby lowering its average unit costs. Therefore, the fact that the domestic industry experienced improvements in its production indicia (through increases in production, capacity, and U.S. shipments) over the POI does not alone indicate that subject imports did not adversely affect its performance.¹⁹⁷ At the same time, we also take into consideration in our analysis that it is not unexpected for a start-up company to incur upfront costs that it is unable to recoup in the first few years of production or to experience high per-unit fixed costs as it initially spreads those costs over smaller production and sales volumes. These circumstances can contribute to losses for a number of years before a startup company is able to break-even and begin earning a profit.

The domestic industry’s production increased massively from 2022 to 2024 from *** pounds in 2022 to *** pounds in 2023 and *** pounds in 2024. The industry’s production was *** percent higher in interim 2025, at *** pounds, compared with *** pounds in interim 2024.¹⁹⁸ The domestic industry’s capacity also increased massively, from *** pounds in 2022 to *** pounds in 2023 and *** pounds in 2024.¹⁹⁹ The industry’s capacity was *** percent higher in interim 2025, at *** pounds, compared with *** pounds in interim 2024.²⁰⁰ Given that TPW was bringing on capacity at the same time it was ramping up production, the industry’s capacity utilization decreased from *** percent in 2022 to *** percent in 2023 then increased to *** percent in 2024, for an overall decrease of *** percentage points from 2022 to 2024. The industry’s capacity utilization was *** percentage points higher in interim 2025, at *** percent, than in interim 2024, at *** percent.²⁰¹

The domestic industry’s U.S. shipments increased massively from 2022 to 2024, from *** pounds in 2022 to *** pounds in 2023 and *** pounds in 2024. The industry’s U.S. shipments were *** percent higher in interim 2025, at *** pounds, compared with *** pounds

¹⁹⁶ 19 U.S.C. § 1677(7)(C)(iii).

¹⁹⁷ CR/PR at Tables 3.5, 3.9, C.1.

¹⁹⁸ CR/PR at Tables 3.5, C.1.

¹⁹⁹ CR/PR at Tables 3.5, C.1.

²⁰⁰ CR/PR at Tables 3.5, C.1.

²⁰¹ CR/PR at Tables 3.5, C.1.

in interim 2024.²⁰² The domestic industry's share of apparent U.S. consumption increased from *** percent in 2022 to *** percent in 2023 and *** percent in 2024, for an overall increase of *** percentage points; its share was *** percentage points higher in interim 2025, at *** percent, than in interim 2024, at *** percent.²⁰³

The domestic industry's end-of-period inventories increased from *** pounds in 2022 to *** pounds in 2023 and *** pounds in 2024; they were higher in interim 2025, at *** pounds, than in interim 2024, at *** pounds.²⁰⁴ As a share of total shipments, inventories decreased from *** percent in 2023 to *** percent in 2024; they were lower in interim 2025, at *** percent, than in interim 2024, at *** percent.²⁰⁵

The domestic industry's employment-related indicators generally increased from 2022 to 2024 and were higher in interim 2025 than interim 2024. The number of production and related workers ("PRWs") increased from *** in 2022 to *** in 2023 and *** in 2024; its *** PRWs in interim 2025 was greater than its *** in interim 2024.²⁰⁶ The industry's hours worked increased from *** hours in 2022 to *** hours in 2023 and *** hours in 2024; its hours worked were higher in interim 2025, at *** hours, compared to *** hours in interim 2024.²⁰⁷ The industry's wages paid increased from \$*** in 2022 to \$*** in 2023 and \$*** in 2024; they were higher in interim 2025, at \$***, than in interim 2024, at \$***.²⁰⁸ The industry's productivity increased from *** pounds per hour in 2022 to *** pounds per hour in 2023 and *** pounds per hour in 2024; it was lower in interim 2025, at *** pounds per hour, compared with *** pounds per hour in interim 2024.²⁰⁹

Although the industry's net sales quantity and value increased consistently, the domestic industry's financial performance deteriorated over the POI. Net sales revenue increased greatly from \$*** in 2022 to \$*** in 2023 and \$*** in 2024; it was much higher in interim 2025, at \$***, than in interim 2024, at \$***.²¹⁰ However, the industry's gross profits decreased from \$*** in 2022 to *** in 2023 and *** in 2024; gross profits were worse in interim 2025, at ***, than in interim 2024, at ***.²¹¹ The industry's operating income decreased from \$*** in 2022 to *** in 2023 and *** in 2024; it was worse in interim 2025, at

²⁰² CR/PR at Tables 3.9, C.1.

²⁰³ CR/PR at Tables 4.5, C.1.

²⁰⁴ CR/PR at Tables 3.10, C.1.

²⁰⁵ CR/PR at Tables 3.10, C.1.

²⁰⁶ CR/PR at Tables 3.11, C.1.

²⁰⁷ CR/PR at Tables 3.11, C.1.

²⁰⁸ CR/PR at Tables 3.11, C.1.

²⁰⁹ CR/PR at Tables 3.11, C.1.

²¹⁰ CR/PR at Tables 6.1, C.1.

²¹¹ CR/PR at Tables 6.1, C.1.

***, than in interim 2024, at ***.²¹² As a ratio to net sales, the industry's operating income decreased overall, decreasing from *** percent in 2022 to *** percent in 2023 and increasing to *** percent in 2024; it was *** percent in interim 2024 and *** percent in interim 2025.²¹³ As a ratio to net sales, the industry's net income decreased overall, decreasing from *** percent in 2022 to *** percent and increasing to *** percent in 2024; it was *** percent in interim 2024 and *** percent in interim 2025.²¹⁴

The domestic industry's capital expenditures decreased from \$*** in 2023 to \$*** in 2024; they were higher, at \$***, in interim 2024, compared with \$*** in interim 2025.²¹⁵ R&D expenses increased from \$*** in 2022 to \$*** in 2023 and \$*** in 2024; they were higher in interim 2025, at \$***, compared to interim 2024, at \$***.²¹⁶ The industry's return on assets decreased from *** percent in 2022 to *** percent in 2023 and *** percent in 2024.²¹⁷ The domestic industry also reported negative effects on investment and on growth and development due to subject imports and anticipated continued negative effects of imports.²¹⁸

After the data collection period, TPW indicated that it halted production of certain tungsten shot due to low-priced subject imports that prevented it from selling at a profitable level.²¹⁹ TPW indicated that it ***.²²⁰ However, TPW indicated it remained committed to restarting production if it received trade relief and prices increased.²²¹

The domestic industry's financial indicators worsened substantially over the POI as the industry greatly increased its production and shipments in an effort to establish its presence in the U.S. market. As discussed in section V.C.2, the record indicates that subject imports were the dominant supply of tungsten shot to the U.S. market in 2022, the first year of the POI, and were sold at levels below the domestic industry's unit costs throughout the period, both in 2023 when TPW began commercial production and shipments and in 2024 when its nascent presence in the U.S. market peaked before its shutdown in April 2025. In fact, subject imports' average unit values were below not only the domestic industry's total unit costs but also below

²¹² CR/PR at Tables 6.1, C.1.

²¹³ CR/PR at Tables 6.1, C.1.

²¹⁴ CR/PR at Tables 6.1, C.1.

²¹⁵ CR/PR at Tables 6.8, C.1. The domestic industry reported *** capital expenditures in 2022.

Id.

²¹⁶ CR/PR at Tables 6.10, C.1.

²¹⁷ CR/PR at Table 6.13.

²¹⁸ CR/PR at Table 6.15.

²¹⁹ CR/PR at Table 3.3; TPW Final Comments at 2

²²⁰ CR/PR at 3.11.

²²¹ *See, e.g.*, CR/PR at Table 6.8; TPW Final Comments at 14; TPW Posthearing Br. at 1 ("With the arrival of a new CEO at TPW, a decision was made to stop producing and selling tungsten shot until and unless trade relief was obtained.").

the domestic industry's combined unit raw material and labor costs (*i.e.*, exclusive of other factory costs), and even close to the industry's unit raw material costs alone, such that there was no reasonable prospect of it recovering its costs, much less reaching profitable pricing levels, at the prices that subject imports established in the market.²²² Consequently, after incurring sustained and substantial operating and net losses, TPW was compelled to cease production, and prevalent U.S. market prices dissuaded other potential producers from going beyond test production.²²³ We therefore find that subject imports had an adverse impact and materially retarded the establishment of the domestic industry.²²⁴

Finally, we have considered whether there are other factors that may have had an impact on the domestic industry during the POI to ensure that we are not attributing injury from such other factors to subject merchandise. Nonsubject imports were minimal and decreasing throughout the POI, as their share of apparent U.S. consumption did not exceed *** percent during the POI.²²⁵ Accordingly, nonsubject imports cannot explain the material retardation of the domestic industry during the POI. Most market participants reported that demand was either steadily increasing or fluctuating up.²²⁶ While the record data for apparent domestic consumption show a decline in apparent consumption from 2022 to 2024, most of that decline was in 2023, and the data show a substantial increase in apparent consumption in

²²² Although initial losses are not necessarily unexpected in the case of a start-up company, this consideration does not appear to account for the adverse impact to the domestic industry. As discussed above, subject imports' average unit values were well below the industry's raw material and labor costs, which would be exclusive of most start-up costs. Indeed, by 2024, when the industry sustained its greatest losses notwithstanding its expanded market share, other factory costs as a share of total COGS were only *** percent, consistent with TPW's testimony regarding raw material costs as a component of COGS. CR/PR at Table 6.1; Hearing Tr. at 58-59 (Holden) (“{O}ur machinery costs are relatively trivial when you look at the giant plug that is the cost of buying this raw material. It is just trivial, ma’am.”).

²²³ CR/PR at 1.18-1.19, 6.8. *See also* Hearing Tr. at 9-10 (Holden) (“Our commercial business line sits idle not because of mechanical limits but because Chinese import volumes suppress the market price, strip away margin, and tank the economics in the commercial tungsten shot industry. Cash flow from commercial shot remains negative and as of today has completed halted. Capital earmarked for additional equipment and new jobs are now frozen, and without immediate and expedient relief, we are forced to shut down our commercial production operations, surrendering the market entirely.”); *** U.S. Producer Questionnaire Response at I-2b (“***.”); *** U.S. Producer Questionnaire Response at III-17 (reporting negative effects due to imports of tungsten shot from China as “***”).

²²⁴ We note that the record indicates the nascent domestic industry would be viable but for the effects of subject imports. In particular, TPW has shown an ability to produce certain tungsten shot and sell meaningful volumes commercially, capturing *** percent of apparent domestic consumption in 2024. CR/PR at Table C.1. Moreover, all three domestic producers have experience with producing tungsten products, including out-of-scope class 2 tungsten shot. CR/PR at 1.18-1.19.

²²⁵ CR/PR at Tables 4.5-17, C.1.

²²⁶ CR/PR at Table 2.5.

interim 2025 compared to interim 2024.²²⁷ Thus, the record evidence does not indicate that a systemic decline in demand was responsible for the domestic industry's problems; to the contrary, while the domestic industry has substantial excess capacity, its share of apparent consumption never exceeded *** percent.²²⁸ Thus, there was substantial demand in the U.S. market that the domestic industry could serve but for the effects of subject imports.

In sum, based on the record of the final phase of these investigations, we conclude that subject imports had a significant adverse impact on the domestic industry.

VI. Conclusion

For the reasons stated above, we determine that an industry in the United States is materially retarded by reason of subject imports of certain tungsten shot from China that have been found by Commerce to be sold in the United States at LTFV and subsidized by the government of China.

²²⁷ CR/PR at Table 4.5.

²²⁸ CR/PR at Table 3.5.

Part 1: Introduction

Background

These investigations result from petitions filed on July 10, 2024, with the U.S. Department of Commerce (“Commerce”) and the U.S. International Trade Commission (“USITC” or “Commission”) by Tungsten Parts Wyoming, Inc. (“TPW” or “Petitioner”), Laramie, Wyoming, alleging that the establishment of a domestic industry is materially retarded and that an industry in the United States is materially injured and threatened with material injury by reason of subsidized and less-than-fair-value (“LTFV”) imports of certain tungsten shot (“tungsten shot”)¹ from China. Table 1.1 presents information relating to the background of these investigations.^{2 3}

Table 1.1 Tungsten shot: Information relating to the background and schedule of this proceeding

Effective date	Action
July 10, 2024	Petitions filed with Commerce and the Commission; institution of the Commission's investigations (89 FR 57941, July 16, 2024)
August 6, 2024	Commerce's notices of initiation (89 FR 65856 (AD) and 65852 (CVD), August 13, 2024)
August 26, 2024	Commission's preliminary determinations (89 FR 70666, August 30, 2024)
December 20, 2024	Commerce's preliminary CVD determinations (89 FR 104083, December 20, 2024)
February 19, 2025	Commerce's preliminary AD determinations (90 FR 9890, February 19, 2025); scheduling of final phase of Commission investigations (90 FR 10941, February 28, 2025)
July 9, 2025	Commission's hearing
July 11, 2025	Commerce's final determinations (90 FR 30849 (AD) and 30869 (CVD), July 11, 2025)
August 6, 2025	Commission's vote
August 20, 2025	Commission's views

¹ See the section entitled “The subject merchandise” in Part 1 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 Appendix B presents the witnesses who appeared at the Commission's hearing.

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. . . 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.

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

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.

Organization of report

Part 1 of this report presents information on the subject merchandise, subsidy rates/dumping margins, and domestic like product. Part 2 of this report presents information on conditions of competition and other relevant economic factors. Part 3 presents information on the condition of the U.S. industry, including data on capacity, production, shipments, inventories, and employment. Parts 4 and 5 present the volume of subject imports and pricing of domestic and imported products, respectively. Part 6 presents information on the financial experience of U.S. producers. Part 7 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. Appendix D presents U.S. producers’ responses regarding material retardation.

Market summary

A tungsten shot is a small sphere or ball made from a high-density tungsten alloy. Tungsten shot is largely sold to ammunition manufacturers which use it to produce certain types of shotgun shells. The leading U.S. producer of tungsten shot is TPW, while a leading producer of tungsten shot in China is ***.⁶ The leading U.S. importers of tungsten shot from China are ***. *** was the sole U.S. importer that reported tungsten shot from nonsubject

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

⁶ While no Chinese producers or exporters of tungsten shot submitted a questionnaire response during the final phase of this proceeding, two firms, Zhuzhou KJ Super Materials Co., Ltd. and Luoyang Combat Tungsten & Molybdenum Material Co., Ltd. submitted foreign producer questionnaires during the preliminary phase, and *** production was *** larger than ***. Tungsten Shot from China (Preliminary), Confidential Report, INV-WW-097, August 19, 2024, as revised in INV-WW-098, August 21, 2024 (“Preliminary confidential report”), table 7.1.

sources (***) . U.S. purchasers of tungsten shot are mostly ammunition manufacturers; leading purchasers include ***.

Apparent U.S. consumption of tungsten shot totaled approximately *** pounds (\$***) in 2024. Currently, three firms are known to have produced tungsten shot in the United States during the data collection period. U.S. producers' U.S. shipments of tungsten shot totaled *** pounds (\$***) in 2024 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from subject sources totaled *** pounds (\$***) in 2024 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from nonsubject sources totaled *** pounds (\$***) in 2024 and accounted for *** percent of apparent U.S. consumption by quantity and value.

Summary data and data sources

A summary of data collected in these investigations is presented in appendix C, table C.1. The Commission's questionnaires collected data for the years 2022 to 2024 and interim periods January through March of 2024 ("interim 2024") and January through March of 2025 ("interim 2025"). Except as noted, U.S. industry data are based on questionnaire responses of three firms that accounted for all known U.S. production of tungsten shot during 2024. U.S. imports are based on the questionnaire responses of 13 U.S. importers that staff believe account for the vast majority of subject imports of tungsten shot in 2024 under HTS subheadings 8101.99.80 and 9306.29.00 and supplemental data using proprietary, Census-edited Customs' import records for HTS subheadings 8101.99.80 and 9306.29.00.

Previous and related investigations

Tungsten shot has not been the subject of any prior related antidumping or countervailing duty investigations in the United States.⁷

⁷ The Commission, however, has conducted several previous import injury investigations on merchandise containing tungsten. See Ammonium Paratungstate and Tungstic Acid from China, Inv. No. TA-406-11, USITC Publication 1982 (June 1987); and Tungsten Ore Concentrates from China, Inv. No. 731-TA-497 (Final), USITC Publication 2447 (November 1991).

Nature and extent of subsidies and sales at LTFV

Subsidies

Commerce published notices in the Federal Register of its preliminary determination on December 20, 2024, and its final determination on July 11, 2025, of countervailable subsidies for producers and exporters of tungsten shot from China.⁸ Table 1.2 presents Commerce's findings of subsidization of tungsten shot in China.

Table 1.2 Tungsten shot: Commerce's subsidy determination with respect to imports from China

Entity	Preliminary countervailable subsidy rate (percent)	Final countervailable subsidy margin (percent)
Luoyang Combat Tungsten & Molybdenum Materials Co., Ltd	352.20	292.84
Luoyang Hypersolid Metal Tech Co., Ltd	352.20	292.84
Mudanjiang North Alloy Tools Co., Ltd	352.20	292.84
Shaanxi Xinheng Rare Metal Co., Ltd	352.20	292.84
Xi'an Refractory & Precise Metals Co., Ltd	352.20	292.84
Zhuzhou KJ Super Materials Co., Ltd	73.75	55.64
Zhuzhou Oston Carbide Co., Ltd	352.20	292.84
Zhuzhou Tungsten Man Materials Co., Ltd	352.20	292.84
All others	73.75	55.64

Source: 89 FR 104083, December 20, 2024, and 90 FR 30869, July 11, 2025.

Note: For further information on programs determined to be countervailable, see Commerce's associated Issues and Decision Memorandum.

⁸ 89 FR 104083, December 20, 2024, and 90 FR 30869, July 11, 2025.

Sales at LTFV

Commerce published notices in the Federal Register of its preliminary determination on February 19, 2025, and its final determination on July 11, 2025, of sales at LTFV with respect to imports from China.⁹ Table 1.3 presents Commerce's dumping margins with respect to imports of product from China.

Table 1.3 Tungsten shot: Commerce's weighted-average LTFV margins with respect to imports from China

Exporter	Producer	Preliminary dumping margin (percent)	Final dumping margin (percent)
Zhuzhou KJ Super Materials Co., Ltd	Zhuzhou KJ Super Materials Co., Ltd	183.31	201.32
All others (preliminary)/China-wide Entity (final)		201.32	201.32

Source: 90 FR 9890, February 19, 2025, and 90 FR 30849, July 11, 2025.

Note: While Zhuzhou KJ Super Materials Co., Ltd. was given a separate rate for Commerce's preliminary determination, Commerce applied facts otherwise available with an adverse inference (AFA) to Zhuzhou KJ Super Materials Co., Ltd. in its final determination, finding that it provided information that cannot be verified and thus is ineligible for a separate rate and part of the China-wide entity.

⁹ 90 FR 9890, February 19, 2025, and 90 FR 30849, July 11, 2025.

The subject merchandise

Commerce's scope

In the current proceeding, Commerce has defined the scope as follows:¹⁰

The merchandise covered by the investigation is certain tungsten spheres or balls, also known as shot, that are 92.6 percent or greater tungsten by weight, not including the weight of any additional coating. In scope shot have a diameter ranging from 1.5 millimeters (mm) to 10.0 mm. Subject shot can be referred to as "Tungsten Super Shot." Merchandise is covered regardless of the combination of compounds that comprise the non-tungsten material and whether or not the tungsten shot is additionally coated with another material, including but not limited to copper, nickel, iron, or metallic alloys.

Tariff treatment

Based upon the scope set forth by Commerce, information available to the Commission indicates that the merchandise subject to these investigations is imported under the following provision of the Harmonized Tariff Schedule of the United States ("HTS"): 9306.29.0000.¹¹ The 2025 general rate of duty is "Free" for HTS subheading 9306.29.00.¹² Decisions on the tariff classification and treatment of imported goods are within the authority of U.S. Customs and Border Protection.

Effective September 1, 2019, tungsten shot originating in China was subject to an additional 15 percent ad valorem duty under section 301 of the Trade Act of 1974, as amended. Effective February 14, 2020, the section 301 duty for tungsten shot was reduced to 7.5 percent ad valorem.¹³

¹⁰ 90 FR 30850, July 11, 2025.

¹¹ Merchandise may also be imported under HTS statistical reporting number 8101.99.8000. USITC, HTS (2025) Revision 16, Publication 5644, July 2025, p. 81.2.

¹² USITC, HTS (2025) Revision 16, Publication 5644, July 2025, p. 93.6.

¹³ 84 FR 45821, August 30, 2019; 85 FR 3741, January 22, 2020. See also HTS heading 9903.88.15 and U.S. notes 20(r) and 20(s) to subchapter III of chapter 99 and related tariff provisions for this duty treatment. USITC, HTS (2025) Revision 16, Publication 5644, July 2025, pp. 93.7, 99.3.111 to 99.3.112, 99.3.123, 99.3.278 to 99.3.279, 99.3.366, 99.3.368 to 99.3.372.

Effective February 4, 2025, tungsten shot originating in China was subject to an additional 10 percent ad valorem duty under the International Emergency Economic Powers Act (“IEEPA”), and on March 4, 2025, that additional duty increased to 20 percent ad valorem.¹⁴

Effective April 5, 2025, tungsten shot originating in China was subject to an additional 10 percent ad valorem reciprocal duty under IEEPA. That reciprocal duty rose to 84 percent ad valorem effective April 9, 2025, and rose again to 125 percent ad valorem effective April 10, 2025. However, effective May 14, 2025, the duty rate for reciprocal tariffs on tungsten shot originating in China was temporarily reduced to 10 percent ad valorem for 90 days.¹⁵

The additional tariffs on tungsten shot originating in China are summarized in table 1.4:

Table 1.4 Tungsten shot: Additional tariff treatment for China

Tariffs in percent ad valorem

Additional tariff	China
Section 301	7.5
IEEPA – effective March 4, 2025	20.0
IEEPA – effective May 14, 2025	10.0
Total additional ad valorem rate	37.5

Source: Federal Register notices and other sources cited in this section (Tariff treatment).

Note: Duty rates in the table reflect the duty rates as of the writing of this report. See the text above for historical changes to the additional tariffs.

¹⁴ 90 FR 9121, February 7, 2025; 90 FR 11426, March 6, 2025; 90 FR 11463, March 7, 2025. See also HTS heading 9903.01.20 and U.S. note 2(s), and HTS heading 9903.01.24 and U.S. note 2(u) to subchapter III of chapter 99 and related tariff provisions for this duty treatment. HTS (2025) Revision 16, Publication 5644, July 2025, pp. 99.3.3 to 99.3.4, 99.3.306 to 99.3.307.

¹⁵ The reciprocal duty is in addition to the 20 percent ad valorem duty under IEEPA that went into effect on March 4, 2025, for China. 90 FR 15041, April 7, 2025; 90 FR 15509, April 14, 2025; 90 FR 15625, April 15, 2025; 90 FR 21831, May 21, 2025. See also HTS headings 9903.01.25 and 9903.01.63 and U.S. note 2(v) to subchapter III of chapter 99 and related tariff provisions for this duty treatment. HTS (2025) Revision 16, Publication 5644, July 2025, pp. 99.3.4 to 99.3.6, 99.3.11 to 99.3.14, 99.3.307, 99.3.313.

The product

Description and applications¹⁶

Tungsten shot is a tungsten alloy material in the form of small pellets contained within shotgun shells (figure 1.1). Shotgun shells containing commercial grade tungsten shot are often referred to as containing “Tungsten Super Shot” (“TSS”) (figure 1.2).¹⁷ TSS has a density around 18 grams per cubic centimeter (“g/cc”)— two-thirds (64-percent) denser than traditional lead shot and over twice the density of steel shot (table 1.5).¹⁸ As shotgun shot, the denser tungsten metal provides greater range, tighter dispersal, and greater impact than either lead or steel shot.¹⁹ The U.S. shotgun shell market shifted to tungsten shot given its improved ballistic performance without posing the environmental toxicity of lead shot.²⁰ Tungsten shot does not readily decompose, and its compounds are generally inert, unlike lead shot which was banned by federal law in 1991 for waterfowl hunting on federal wetlands.²¹ Individual tungsten shot pellets are designated by size, type, dimensions, and weight (table 1.6). Sizes #11 through 0000

¹⁶ Unless noted otherwise, this section is compiled from the petitions, pp. 4, 9 to 10.

¹⁷ Petitioner’s postconference brief, pp. 1, 5, 9; conference transcript, pp. 15 (Gibbs), 44 to 45 (Pickard).

¹⁸ Bradley Kirkpatrick, “TSS and the Evolution of Shotgun Shells,” American Hunter, April 21, 2021, <https://www.americanhunter.org/content/tss-and-the-evolution-of-shotgun-shells>.

¹⁹ The higher density of tungsten shot allows for packing more pellets of smaller shot sizes in shotgun shells. Firing denser and smaller sized tungsten shot propels the pellets farther, with less deformation, less dispersal in flight, and greater impact force against the target. Hence, a higher density, smaller diameter tungsten shot pellet can be as effective as a lower density, larger diameter lead shot pellet. For example, a #7 or #8 TSS pellet is considered equivalent to a #4 lead shot pellet. Petitions, exh. 1.4: Matthew Breuer, “Tungsten Super Shot – The Evolution of TSS Shotgun Shells,” Project Upland, May 20, 2020, <https://projectupland.com/shotguns-and-shooting/shotguns/tungsten-super-shot-the-evolution-of-tss-shotgun-shells>; Bradley Kirkpatrick, “TSS and the Evolution of Shotgun Shells,” American Hunter, April 21, 2021, <https://www.americanhunter.org/content/tss-and-the-evolution-of-shotgun-shells>; Petitioner’s posthearing brief, exh. 4: Joseph Genzel, “The Secrets Behind the Killing Power of the TSS,” MeatEater Inc., February 5, 2024, <https://www.themeateater.com/hunt/firearm-hunting/the-secrets-behind-the-killing-power-of-tss>; Petitioner’s posthearing brief, exh. 5: Joseph Genzel, “Is TSS Really the Best Turkey Load?” MeatEater Inc., March 25, 2024, <https://www.themeateater.com/hunt/firearm-hunting/is-tss-really-the-best-turkey-load>.

²⁰ Petitions, exh. 1.4: Matthew Breuer, “Tungsten Super Shot – The Evolution of TSS Shotgun Shells,” Project Upland, May 20, 2020, <https://projectupland.com/shotguns-and-shooting/shotguns/tungsten-super-shot-the-evolution-of-tss-shotgun-shells>.

²¹ Bradley Kirkpatrick, “TSS and the Evolution of Shotgun Shells,” American Hunter, April 21, 2021, <https://www.americanhunter.org/content/tss-and-the-evolution-of-shotgun-shells>; A.J. DeRosa, “How Effective is Steel Shot?” Project Upland, June 14, 2023, <https://projectupland.com/shotguns-and-shooting/how-effective-is-steel-shot>.

meet or exceed the minimum diameter specified for subject products in Commerce’s scope.²² According to the petitioner, both shotgun shell manufacturers and reloaders in the United States purchase all pellet sizes, with the most common being sizes #7 and #8. Likewise, subject Chinese producers together sell all pellet sizes to the U.S. market, with the predominant sales volumes being sizes #7 and #8. The petitioner can produce ***.²³

Figure 1.1 Tungsten shot: Cutaway view of a shotgun shell showing the individual tungsten shot pellets



Components of a shotgun shell include the base, plastic casing, primer, gunpowder, wad (inner casing), and individual tungsten shot pellets.

Source: Conference transcript, pp. 34 to 35 (Omanoff); Bradley Fitzpatrick, “TSS and the Evolution of Shotgun Shells,” American Hunter, April 21, 2021, <https://www.americanhunter.org/content/tss-and-the-evolution-of-shotgun-shells>.

²² Size 0 is referred to as “single aught,” size 00 as “double aught,” size 000 as “triple aught,” and size 0000 as “quadruple aught” or “quad aught.”

²³ Petitioner’s posthearing brief, exh. 1: Answers to Commissioner Questions, IX. Questions from Staff, Domestic Tungsten Shot Offerings, p. 28.

Figure 1.2 Tungsten shot: TSS shotgun shell and individual tungsten shot pellets



Source: Bradley Fitzpatrick, “TSS and the Evolution of Shotgun Shells,” American Hunter, April 21, 2021, <https://www.americanhunter.org/content/tss-and-the-evolution-of-shotgun-shells>.

Table 1.5 Tungsten shot: Density comparisons with bismuth, steel, and lead shots for shotgun pellets and shells

Costs in dollars

Shot type	Density
Tungsten (TSS)	18.0 to 18.3
Bismuth	9.6 to 9.7
Steel	7.8 to 7.9
Lead	11.3

Source: Agescan International Inc., “Tungsten Super Shot (TSS),” ©2025, <https://www.agescantungsten.com/products/tungsten-super-shot-tss>, retrieved May 1, 2025; Jeffrey Chandler, “Is Tungsten Shot Worth the Price Compared to Bismuth or Steel Shot?” Chan Outdoors, April 24, 2025, https://chanoutdoors.substack.com/p/is-tungsten-shot-worth-the-price?utm_campaign=post&utm_medium=web; Bradley Kirkpatrick, “TSS and the Evolution of Shotgun Shells,” American Hunter, April 21, 2021, <https://www.americanhunter.org/content/tss-and-the-evolution-of-shotgun-shells>; Thomas Roster, “TSS: What It Is and Isn’t Based on Ballistics,” Shooting Sportsman, July/August 2020, <https://shootingsportsman.com/tss-shotshells>.

Table 1.6 Tungsten shot: TSS pellet sizes, types, dimensions, and weights

Size	Type	Diameter (millimeters)	Diameter (inch)	Radius (millimeters)	Weight (grams)
0000	Buck	9.7	0.38	4.85	8.597
000½	Buck	9.4	0.37	4.7	7.824
000	Buck	9.14	0.36	4.57	7.193
00½	Buck	8.6	0.34	4.3	5.992
00	Buck	8.38	0.33	4.19	5.543
0	Buck	8.13	0.32	4.065	5.062
#1½	Buck	7.9	0.31	3.95	4.644
#1	Buck	7.62	0.3	3.81	4.168
#2½	Buck	7.4	0.29	3.7	3.817
#2	Buck	6.86	0.27	3.43	3.041
#3½	Buck	6.6	0.26	3.3	2.708
#3	Buck	6.35	0.25	3.175	2.412
#4	Buck	6.09	0.24	3.045	2.128
FF	Waterfowl	5.84	0.23	2.92	1.876
F or TTT	Waterfowl	5.59	0.22	2.795	1.645
TT	Waterfowl	5.33	0.21	2.665	1.426
T	Waterfowl	5.08	0.2	2.54	1.235
BBB	Bird	4.82	0.19	2.41	1.055
BB	Bird	4.6	0.18	2.3	0.917
BB (air gun)	Bird	4.57	0.177	2.285	0.899
B	Bird	4.5	0.17	2.25	0.858
#1	Bird	4.1	0.16	2.05	0.649
#2	Bird	3.76	0.15	1.88	0.501
#3	Bird	3.6	0.14	1.8	0.439
#4	Bird	3.28	0.13	1.64	0.332
#4½	Bird	3.18	0.125	1.59	0.303
#5	Bird	3.05	0.12	1.525	0.267
#6	Bird	2.77	0.11	1.385	0.2
#7	Bird	2.54	0.1	1.27	0.154
#7½	Bird	2.39	0.095	1.195	0.129
#8	Bird	2.26	0.09	1.13	0.109
#8½	Bird	2.16	0.085	1.08	0.095
#9	Bird	2.03	0.08	1.015	0.079
#10	Pest	1.8	0.07	0.9	0.055
#11	Pest	1.5	0.06	0.75	0.032
#12	Pest	1.3	0.05	0.65	0.021
Dust	Pest	1	0.04	0.5	0.009

Source: Agescan International Inc., "Tungsten Super Shot (TSS)."

www.agescantungsten.com/products/tungsten-super-shot-tss. Accessed June 16, 2025.

Commercial grade tungsten shot is predominantly available as Class 3 tungsten alloys as defined by SAE International standard 7725F (table 1.7).²⁴ Other classes of tungsten alloys are not used for commercial tungsten shot.²⁵ Class 1 tungsten alloys are utilized in aerospace, automotive, medical engineering, and construction industries.²⁶ Military grade tungsten shot is predominantly available as Class 2 tungsten alloys.²⁷ Class 2 tungsten shot is preferred for military applications because its higher ductility will penetrate more targets without shattering than less-ductile Class 3 tungsten shot.²⁸ Class 3 tungsten would shatter on impact against a steel plate. Class 2 tungsten alloys are also utilized in medical engineering and aerospace applications. Class 4 tungsten alloys are utilized in the most demanding x-ray and radiation shielding applications.²⁹

Table 1.7 Tungsten heavy alloy shapes: Tungsten content, density, and hardness properties

Class	Nominal tungsten content (weight percent)	Density (grams per cubic centimeters)	Hardness (Rockwell Hardness scale, HRC maximum)	Ultimate tensile strength (megapascals)	Yield strength at 0.2 percent offset (megapascals)	Elongation at fracture (percent)
1	90	***	***	*** (type 1) *** (type 2)	***	*** (type 1) *** (type 2)
2	92.5	***	***	*** (type 1) *** (type 2)	***	*** (type 1) *** (type 2)
3	95	***	***	*** (type 1) *** (type 2)	***	*** (type 1) *** (type 2)
4	97	***	***	*** (type 2)	***	*** (type 2)

Source: Petitions, exh. 9: SAE International, "Aerospace Material Specification 7725, Revision F," November 2020.

Commercial grade tungsten shot (of Class 3 tungsten) is sold to TSS shotgun shell manufacturers, including "big box" sporting goods retailers and "boutique" (specialty) shooting stores, as well as individual "reloaders" who assemble rather than purchase shotgun shells.³⁰ Commercial grade tungsten shot (with a tungsten content of 95.0 percent and a density range

²⁴ Conference transcript, p. 53 (Gibbs).

²⁵ Petitioner's postconference brief, p. 5.

²⁶ Petitions, pp. 9 to 10. These applications take advantage of tungsten's nontoxicity, radiation shielding, and low coefficient of thermal expansion properties. Conference transcript, pp. 69 to 70 (Omanoff).

²⁷ Conference transcript, p. 53 (Gibbs).

²⁸ Petitioner's postconference brief, p. 5; conference transcript, p. 16 (Gibbs).

²⁹ Petitioner's postconference brief, p. 5; conference transcript, p. 16 (Gibbs).

³⁰ Petitioner's postconference brief, p. 6; conference transcript, pp. 34 to 35, 55, 62, 85 (Omanoff).

of *** grams per cubic centimeter) is produced exclusively in spherical form for shotgun shells, unlike military grade tungsten shot which is produced in different shapes for multiple applications.³¹ Commercial grade tungsten shot is not subject to the design, performance, testing, manufacture, traceability, and numerous other certification requirements for military grade tungsten shot sold to defense contractors.³² More specifically, according to a petitioner's hearing witness, defense contractors focus on kinetic energy performance and strict product quality assurance protocols, whereas commercial shotgun shell manufacturers focus on pattern density and retail price.³³

A shotgun cartridge consists of a primer at its base to ignite the propellant, which forces the plastic wad (inner casing) containing the shot load out the barrel of the shotgun. Cartridge manufacturers or reloaders adjust the size and number of pellets to attain a specific muzzle velocity and pellet spray. According to a petitioner's witness, tungsten shot represents about 90 percent of the cost of a TSS shotgun cartridge.³⁴

Manufacturing processes³⁵

The manufacturing process for in-scope tungsten shot is a powder metallurgy rather than a casting process³⁶ due to the high melting point of tungsten metal (at 3,422 ±15 degrees Centigrade or 6,192 degrees Fahrenheit).³⁷ The petitioner utilizes a 12-stage process to manufacture, certify, and ship tungsten shot (figure 1.3).

³¹ Conference transcript, pp. 10, 31, 52, 78 (Omanoff).

³² Petitioner's postconference brief, pp. 6, 9; conference transcript, p. 50 (Omanoff).

³³ Hearing transcript, pp. 11 to 12 (Holden).

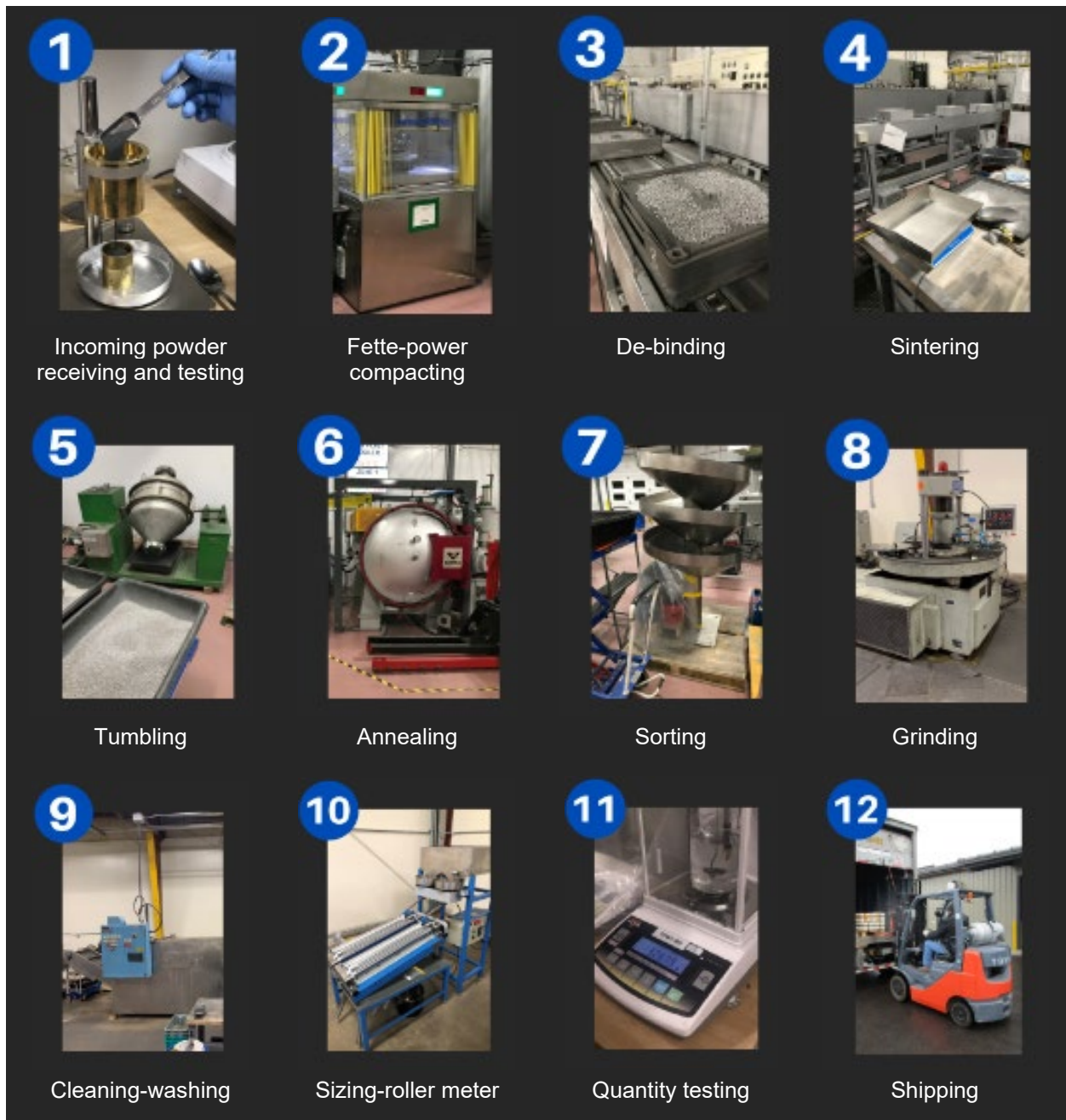
³⁴ Conference transcript, p. 9 (Omanoff).

³⁵ Unless noted otherwise, this section is compiled from the petitions, pp. 4 to 6, 10; conference transcript, pp. 14 to 15 (Gibbs); USITC Staff, Field Visit Notes, March 13, 2025.

³⁶ Conference transcript, p. 46 (Gibbs).

³⁷ The melting point of tungsten is the highest of any common metal. International Tungsten Industry Association ("ITIA"), "Properties of the Metal," ©2025, <https://www.itia.info/properties-intermediates>, retrieved July 10, 2025; and OnlineMetals.com, "Melting Point," June 6, 2024, https://www.onlinemetals.com/en/melting-points#full-list_of_all-metals_and_their_melting_temperatures.

Figure 1.3 Tungsten shot: Manufacturing process stages



Source: Compiled by USITC staff from TPW, "Tungsten Manufacturing Operations" webpage, ©2024, <https://tungstenparts.com/tungsten-manufacturing-operations>, retrieved July 8, 2024.

The manufacturing process begins with mixing of a ready-to-press (“RTP”) powder containing high-purity (99.9 percent) tungsten;³⁸ along with some nickel, iron, and other materials;³⁹ ⁴⁰ including a binding agent to keep the powder together during compaction.⁴¹ The powder undergoes tests to verify size, density, and flowability to be approved for the next production usage.

The verified powder undergoes compaction, typically in presses which cycle between the following steps: 1) powder filling of the compaction cavity; 2) pre-compression that expels the excess air from the cavity; 3) compression to form the powder into size and shape; and 4) ejection of compressed product from the press.

After the compaction, the product undergoes a series of furnace operations. In the first “debinding” operation, the product is baked at a temperature hot enough to emit the binding agent from the product. This is necessary because any remnant binding agent can damage the internal surfaces of the sintering furnace in the following stage.

Next, the product is sintered. Sintering temperatures are significantly higher than debinding temperatures. The sintering step melts the nickel, iron, and other metals, which bond with the non-melted tungsten particles. ***. ***. During this process, the pellets shrink, harden, and attain their full density and mechanical properties. The product is loaded into carriers with ceramic sand or other substances, to separate the product and prevent it from sintering together. The resulting product is shiny, smaller sized, and extremely strong.

After sintering, the product is sent through a tumbling process to remove the ceramic sand or other substances in the sintering stage from the product’s surface. Next, the product is sent through sorters to capture and remove shot that was combined during sintering.

After tumbling and sorting, the tungsten shot is heated in an annealing furnace to eliminate “hydrogen embrittlement,” a negative consequence resulting from sintering under a hydrogen atmosphere. Annealing removes trapped hydrogen from the product, thereby improving its overall strength and ductility. ***. ***.

At this stage, the product has its full mechanical properties, with only final sizing and cleaning needed to complete the production process. To achieve its final size, the shot is sent through grinding machines. Steel alloy grinding plates apply pressure and spin the shot, slowly

³⁸ Conference transcript, p. 86 (Gibbs).

³⁹ Conference transcript, pp. 59 and 60 (Gibbs).

Tungsten is the highest cost input material, followed by nickel. By contrast, iron is lower cost. Conference transcript, p. 77 (Omanoff).

⁴⁰ The petitioner certifies that its tungsten shot is cobalt free, in contrast to some subject product originating in China. Conference transcript, pp. 9, 11, 13, and 77 (Omanoff).

⁴¹ Conference transcript, p. 14 (Gibbs).

removing material and rounding it out, while imparting a shiny surface. The shot is ground until its size is measured to be within specifications.⁴²

The ground shot is subsequently washed and dried in a rotary-drum washer. The clean product is finally sent through roller meters to verify the size of each shot and to capture those that are over- or undersized. ***. After the tungsten shot is sized, it is checked by the quality team before packaging and shipping.

***. ***.

Although there are similarities, in-scope tungsten shot is manufactured by some different processes and equipment from those used for military grade tungsten shot. Production of commercial grade shot requires different powder mixing and compaction processes, along with some differences in processing steps and equipment, than for military grade shot due to the higher tungsten content of the former. Since commercial grade shot is smaller size and denser than military grade shot, smaller grinders are utilized for commercial shot.⁴³ More specifically, the petitioner utilizes *** to manufacture in-scope merchandise.⁴⁴ A hearing witness testified that the petitioner produces commercial versus military-grade tungsten shot on two distinct production lines. The witness further mentioned differences in manufacturing equipment, furnace heating profiles and temperatures, workforce training,

⁴² The recovered mixed tungsten-steel particles (referred to as “swarf”) is processed by a filtration system to produce it into a cake. The swarf is sent to a reclamation company that recovers and processes the tungsten. Conference transcript, pp. 81 to 82 (Omanoff).

⁴³ Petitioner’s postconference brief, exh. 1, p. 1; conference transcript, pp. 15 to 16 (Gibbs).

⁴⁴ Petitioner’s postconference brief, pp. 7 to 8.

product quality standards, and documentation requirements for traceability for the two grades of tungsten shot.⁴⁵

Subject producers in China produce commercial grade tungsten shot with nearly identical processes as does the petitioner. Likewise, petitioner’s witnesses testified to personally observing Chinese production standards as substantively identical to those for domestic production.⁴⁶ Although there may be some similarities in some equipment, they also produce military grade shot on different equipment than for producing commercial grade shot.⁴⁷

U.S. producers’ profiles

Elmet Technologies LLC (“Elmet”)⁴⁸

Elmet is a U.S. manufacturer of tungsten and molybdenum products with production operations in Lewiston, Maine.⁴⁹ Elmet is ***.⁵⁰ ***.

⁴⁵ Hearing transcript, pp. 74 to 75 (Holden).

⁴⁶ Petitioner’s postconference brief, pp. 11 to 12 (Omanoff), 28 (Gibbs).

⁴⁷ Conference transcript, p. 28 (Gibbs).

⁴⁸ Unless otherwise noted, information presented is from Elmet’s U.S. Producers’ Questionnaire response.

⁴⁹ Elmet Technologies, “About Elmet Technologies” webpage, <https://www.elmettechnologies.com/about-elmet-2/>, retrieved June 13, 2025.

⁵⁰ ***. *** U.S. Producers’ Questionnaire response, 1.8, and staff call with *** on April 11, 2025.

***.

Global Tungsten & Powders Corp. (“GTP”)⁵¹

GTP is a supplier of tungsten and tungsten carbide powders and also processes tungsten heavy alloy powders to finished components for the aerospace and defense industry, with production operations in Towanda, Pennsylvania.⁵² Like Elmet, GTP ***.⁵³

Tungsten Parts Wyoming (TPW)

Petitioner TPW began commercial production of in-scope tungsten shot in *** 2023. However, its Laramie, Wyoming, plant has been operational since 2019, producing military grade tungsten shot for sale to the U.S. defense industry.⁵⁴ Upon becoming TPW’s new CEO on April 1, 2025, Mr. Mark Holden decided to cease production of in-scope tungsten shot, explaining he was not willing to sell below TPW’s cost of production.⁵⁵

⁵¹ Unless otherwise noted, information presented is from GTP’s U.S. Producers’ Questionnaire response.

⁵² GTP, “About Us” webpage, ©2025, <https://www.globaltungsten.com/about-us/>, retrieved June 13, 2025.

⁵³ GTP’s U.S. Producer Questionnaire response, 5.13.c.

⁵⁴ GTP’s U.S. Producer Questionnaire response, 5.2; Petitioner’s postconference brief, p. 2 and exh. 1, p. 1; Conference transcript, pp. 8 and 78 (Omanoff).

⁵⁵ Hearing transcript, p. 8 and pp. 12 to 13 (Holden) and p. 31 (Pickard); Petitioner TPW’s posthearing brief, pp. 1-2, fn. 1.

Domestic like product issues

No issues with respect to domestic like product have been raised in these investigations. In the preliminary phase of these investigations, the Commission defined a single domestic like product, coextensive with the scope.⁵⁶ In the final phase of these investigations, no parties requested data or other information necessary for the analysis of the domestic like product.

⁵⁶ Although no party has argued to the contrary, during the preliminary phase of these investigations, the Commission considered whether clear dividing lines appear to exist between tungsten shot and lead and steel shot and found that clear dividing lines do exist. The Commission also considered whether clear dividing lines appear to exist between TPW's in-scope commercial-grade tungsten shot and military-grade tungsten shot and found that clear dividing lines do exist. Tungsten Shot from China, Inv. Nos. 701-TA-732 and 731-TA-1701 (Preliminary), USITC Publication 5542, August 2024 ("Preliminary publication"), pp. 8 to 12.

Part 2: Conditions of competition in the U.S. market

U.S. market characteristics

The United States is the largest market in the world for shotgun shells and the shot that fills these shells can be made of several materials, one of which is commercial tungsten shot often referred to as “Tungsten Super Shot” (“TSS”). The major purchasers in the United States’ domestic market of commercial tungsten shot are domestic shotgun shell manufacturers.¹ Tungsten shot is a popular choice for the production of shotgun shot, as it results in tighter patterns and greater range when used in ammunition compared to lighter metals. Tungsten shot does not decompose easily, and its compounds are generally inert, which makes it attractive for ammunition manufacturers and hunters as there is less environmental impact. Tungsten shot uses a nontoxic tungsten-composite.² Many states and the Federal Government have banned the use of lead shot for hunting on public land for its negative environmental impact and tungsten is an alternative metal with superior qualities (i.e., range and grouping) to both lead and the more common non-toxic steel shot.³

Two of four importers indicated that the market was subject to distinctive conditions of competition. Specifically, U.S. producer *** reported that China controls 80 percent of global tungsten mining thus they are able to manipulate raw material prices. Producer *** reported that China's dominance in tungsten has resulted in them setting the market price. Importer *** reported that the quality of tungsten shot in the U.S. market is very high and competitive with other shot material.

Apparent U.S. consumption of tungsten shot decreased *** percent from January 2022 to December 2024.

¹ Petitioner’s postconference brief, p. 11.

² Petition, p. 8.

³ Conference transcript, p. 17 (Gibbs).

U.S. purchasers

The Commission received eight usable questionnaire responses from firms that had purchased tungsten shot during January 2022 to March 2025.^{4 5 6} Four responding purchasers are ammunition manufacturers, one reported it offers reloading services, one is a partner which buys on behalf of its customer, and one reported that it purchased tungsten shot for a single project. In general, responding U.S. purchasers are located in the Midwest, Pacific Coast and Southeast. Large purchasers of tungsten shot include ***.

Impact of section 301 tariffs and new tariffs

U.S. producers and importers were asked to report the impact of section 301 tariffs on overall demand, supply, prices, or raw material costs. Two U.S. producers and four importers reported that the section 301 tariffs did not have an impact, while one U.S. producer and two importers reported that they did have an impact (table 2.1). Six importers reported that they did not know. Importer *** reported that section 301 tariffs had an impact, explaining that landed costs were higher, which resulted in price adjustments on its finished goods. U.S. producer *** reported that the section 301 tariffs did not make a big enough difference in raising imported prices. Purchaser *** reported that because of the 301 tariffs TSS that was sold to commercial clients seemed to be affected. However, small shipments directly to consumers disrupted the market; Alibaba and social media marketers from China bypassed normal commercial customers in the United States.

U.S. producers and importers were asked to report the impact of tariff announcements and tariff changes associated with Presidential executive orders since January 1, 2025 (e.g., changes in existing 301 tariffs, new “reciprocal” tariffs, or new China tariffs as imposed under the International Emergency Economic Powers Act (“IEEPA”)) on overall demand, supply, prices, or raw material costs. Two U.S. producers and three importers reported that the new tariffs had an impact, while one U.S. producer and one importer reported that there was no impact. Six importers reported that they did not know.

⁴ The following firms provided purchaser questionnaire responses: ***.

⁵ Of the eight responding purchasers, four purchased the domestic tungsten shot, seven purchased imports of the subject merchandise from China, and none purchased imports of tungsten shot from other sources.

⁶ Two purchasers indicated they had marketing/pricing knowledge of domestic product, five of Chinese product, and one of nonsubject countries.

U.S. producer *** reported that the recent 145 percent tariffs led to China restricting exports of tungsten shot because China views them as dual use (for both commercial and potentially for defense applications). U.S. producer *** reported that they are seeing a global increase in tungsten prices. Importer *** reported that quotes received in 2025 from Chinese sources have been higher priced, and that they are going to purchase from a U.S. producer moving forward. Importer *** reported that Chinese customs will not ship product. Importer *** reported that as long as the tariff stays above 20 percent, U.S. producer TPW “will absolutely dominate” the U.S. market and that ***. Purchaser *** reported that because of the recent tariff increases it seems all sales have frozen, and nobody is taking the next step. It reported that it tried to buy from ***, but this had proved to be “even more difficult” than any previous vendor.

Table 2.1 Tungsten shot: Count of firms' responses regarding if there was any impact from tariffs, by tariff type

Count in number of firms reporting

Firm type	Tariff type	Yes	No	Don't know
U.S. producers	301 tariff	1	2	0
Importers	301 tariff	2	4	6
Purchasers	301 tariff	2	1	4
U.S. producers	New / modified tariff	2	1	0
Importers	New / modified tariff	3	1	6
Purchasers	New / modified tariff	2	0	5

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

Channels of distribution

As shown in table 2.2, U.S. producers sold almost exclusively to ammunition manufacturers for the creation of Tungsten Super Shot.⁷ While importers sold mainly to ammunition manufacturers, with a small number of sales to other end uses which were reported as ***.

⁷ Petitioner's postconference brief, p. 6.

Table 2.2 Tungsten shot: Share of U.S. shipments by source, channel of distribution, and period

Shares in percent

Source	Channel	2022	2023	2024	Interim 2024	Interim 2025
United States	Ammunition manufacturers	***	***	***	***	***
United States	Others	***	***	***	***	***
China	Ammunition manufacturers	***	***	***	***	***
China	Others	***	***	***	***	***
Nonsubject	Ammunition manufacturers	***	***	***	***	***
Nonsubject	Others	***	***	***	***	***
All imports	Ammunition manufacturers	***	***	***	***	***
All imports	Others	***	***	***	***	***

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "---".

Geographic distribution

U.S. producers reported selling tungsten shot to *** (table 2.3). Importers reported selling to all regions of the United States. For U.S. producers, *** percent of sales were between 101 and 1,000 miles of its production facility and *** percent over 1,000 miles of its production facility. Importers sold *** percent within 100 miles of their U.S. point of shipment, *** percent between 101 and 1,000 miles, and *** percent over 1,000 miles.

Table 2.3 Tungsten shot: Count of U.S. producers' and U.S. importers' geographic markets

Count in number of firms reporting

Region	U.S. producers	China
Northeast	***	4
Midwest	***	5
Southeast	***	6
Central Southwest	***	4
Mountains	***	4
Pacific Coast	***	4
Other	***	2
All regions (except Other)	***	4
Reporting firms	2	7

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

Note: Other U.S. markets include AK, HI, PR, and VI.

Supply and demand considerations

U.S. supply

Table 2.4 provides a summary of the supply factors regarding tungsten shot from the U.S. producers and foreign producers in China. U.S. producers reported very high inventories as they ramped up production and searched for customers.

Table 2.4 Tungsten shot: Supply factors that affect the ability to increase shipments to the U.S. market, by country

Quantity in pounds; ratios and shares in percent; count in number of firms reporting

Factor	Measure	United States
Capacity 2022	Quantity	***
Capacity 2023	Quantity	***
Capacity 2024	Quantity	***
Capacity utilization 2022	Ratio	***
Capacity utilization 2023	Ratio	***
Capacity utilization 2024	Ratio	***
Inventories to total shipments 2022	Ratio	***
Inventories to total shipments 2023	Ratio	***
Inventories to total shipments 2024	Ratio	***
Home market shipments 2024	Share	***
Non-US export market shipments 2024	Share	***
Ability to shift production	Count	***

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

Domestic production

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

U.S. producers *** indicated that ***. These *** U.S. producers have ***. U.S. producer *** reported that ***. ***

***. U.S. producer *** reported that it would ***. U.S. producer *** reported that it ***. U.S. producer *** reported that ***.

U.S. producer TPW reported that it engaged in *** commercial production of subject merchandise around *** 2023, with the petitioner describing its manufacturing operations as both modest and episodic.⁸ Other products that reportedly can be partially produced on the same equipment as commercial tungsten shot are military grade tungsten shot. U.S. producer TPW testified that some equipment is similar between the production of Class 2 tungsten shot, which is typically used for out-of-scope military applications and in-scope Class 3 tungsten⁹ shot, which is used for commercial shot. Factors affecting the U.S. producer's ability to shift production include different steps in the manufacturing processes which require different tools, machines, setups, and components.¹⁰

Throughout the period of investigation, U.S. producer TPW stated that there were a series of starting and stopping of Class 3 production.¹¹ TPW stated that there are two main hunting seasons throughout the year, and generally it must swell production twice a year to support these two main hunting seasons. TPW stated that based on demand it started and stopped production of Class 3 commercial tungsten shot for the hunting industry.¹² In addition, TPW reported that production was ***.¹³

U.S. producer TPW halted all production of commercial tungsten shot by the second quarter of 2025. On April ***, 2025, Mr. Mark Holden became the new CEO of TPW. He made the decision that TPW was no longer going to sell commercial tungsten shot at below cost.

⁸ Petitioner's posthearing brief, exhibit 1, p. 21 and Petitioner's postconference brief, p. 19.

⁹ Class 2 tungsten is typically comprised of 92.5 percent tungsten and the rest a mixture of other metals such as nickel, iron, or copper. Class 3 tungsten is comprised of 92.6 percent or greater of tungsten; typically, around 95 percent tungsten. Petitioner's postconference brief, pp. 11, 139.

¹⁰ ***. Petitioner's postconference brief, p. 9.

¹¹ Hearing transcript, p. 62 (Pickard).

¹² Hearing transcript, pp. 62 to 63 (Holden).

¹³ Petitioner's posthearing brief, exhibit 1, p. 6

***.¹⁴ TPW stated that it had been operating at a loss throughout the period of investigation and that it had not reached a financial break-even point in its production of commercial tungsten shot. TPW made a decision to not continue with the production of commercial tungsten shot given that it is operating at a loss.¹⁵ With TPW no longer producing there is currently no active U.S. producer of commercial tungsten shot.

Subject imports from China

Importers were asked about the availability of shot sizes and whether they were able to import, or have the ability to import, all in-scope sizes of tungsten shot (i.e., between 1.5 and 10 mm) from China during January 2021 to March 2024. Ten importers reported that they were able to import all sizes. Importer *** reported that sizes above 7mm are too big for hunting.

Importer *** reported that their tungsten shot is made with a completely different process. The company *** which they claim sets their product apart from the petitioner's product. The importer reported that their proprietary process allows it to produce the same product at higher quality and lower cost. Importer *** stated that “comparing our products to petitioner's is like comparing a LED light to a fluorescent light. A fluorescent light producer should not be given the right to stop LED light producer making a more economic and superior light fixture.”

No foreign producers provided questionnaire responses in the final phase of the investigations.

Chinese producers in the preliminary phase producers of tungsten shot had the ability to respond to changes in demand with moderate-to-large changes in the quantity of shipments of tungsten shot to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the availability of unused capacity, and the partial ability to shift production to or from alternate products such as military grade tungsten shot. Factors mitigating responsiveness of supply include limited inventories, and limited ability to shift shipments to or from alternate markets.

¹⁴ Hearing transcript, pp. 115 to 116 (Pickard).

¹⁵ Hearing transcript, p. 18 (Heintz).

Imports from nonsubject sources

One U.S. importer *** reported nonsubject imports in *** from the ***. Nonsubject imports accounted for *** percent of total U.S. imports in 2022. *** nonsubject imports since January 1, 2023.

Supply constraints

Two of three U.S. producers, 10 of 12 importers, and five of seven responding purchasers reported that they had not experienced supply constraints since January 1, 2022.

Of the firms that reported they had experienced supply constraints, one importer and two purchasers reported that the constraints occurred during 2023, one importer and two purchasers reported during 2024, and one importer and one purchaser reported during 2025. Constraints reported by domestic U.S. producer *** included being inhibited by low-cost Chinese material. Importer *** reported that in 2025 it was constrained the whole time due to the antidumping petition. Purchaser *** reported that *** began operations in 2023 and that *** could not support commercial demand in 2023 and 2024; it reported that *** struggled with quality, timing and quantity of material and on time delivery, but it reported that these challenges were mitigated throughout the second half of 2024. Purchaser *** reported that in 2023 *** was delinquent on order deliveries up to 8 months; in 2024 *** was delinquent on orders for 2 to 3 months; and in 2025 *** was delinquent on orders for 3 to 4 months. It stated that these delinquencies were due to *** manufacturing schedule and their changing lead times. Importer *** reported that it experienced supply constraints in 2025 due to the antidumping petition.

Importer *** did not report supply constraints but reported that when it tried to purchase from *** they had a 6-to-8-week lead time on being able to produce the product and that the sample it received “was very poor quality.” Similarly, purchaser *** reported that it found out about *** in February 2025 and that it *** then tried to purchase, but *** “prices change weekly, and they have a 90-day lead time.”

When asked if there were any specific supply constraints related to the petitions, all three U.S. producers, five of six importers, and two of three reporting purchasers reported that they had not experienced supply constraints. Importer *** reported that since late 2024 the U.S. domestic producer *** has been selling in-scope product at lower prices than ***, and that it even sold tungsten shot at prices near the lowest priced imports by Chinese suppliers directly from China. The importer reported that its tungsten shot is made

using a proprietary process which produces the same product at higher quality and lower cost. The importer claimed that *** is lacking capacity and infrastructure but has begun to dominate the U.S. market by offering unrefined TSS, which is shot of lesser quality and lower cost to produce, because they have removed the three most expensive processes in making TSS shot (grinding, polishing, and sorting). Purchaser *** reported that it moved all its remaining order quantities to *** in response to the petition. Due to the sudden change, it discovered that *** ability to maintain its timeline was limited.

New suppliers

Five of eight purchasers indicated that new suppliers entered the U.S. market since January 1, 2022. Purchasers cited TPW as entering the market.

U.S. demand

Based on available information, the overall demand for tungsten shot is likely to experience moderate-to-high changes in response to changes in price. The main contributing factors are the somewhat limited range and ability of substitute products, and the large cost share of tungsten shot in its end-use products.

One of the key drivers of the shotgun shell market is the widespread popularity of shotguns themselves. As a result, there is a consistent seasonal demand for shotgun shells across different segments of the market with many specialty ammunitions designed for specific purposes. The market has seen increased demand for premium shotgun shells, often targeted at “discerning shooters willing to pay a premium for superior performance”.¹⁶

End uses and cost share

U.S. demand for tungsten shot depends on the demand for U.S.-produced downstream products. Reported end uses include shot shell ammunition, and more niche end uses reported were warhead payloads, scuba weights, aviation ballast weights (using the small balls to fill irregular areas to add weight), and radiation shielding (the small tungsten balls could fill irregular voids for specific protection against radiation). Tungsten shot accounts for a large share of the cost of the end-use products in which it is used. Reported cost shares for shot shell ammunition ranged from 70 and 92 percent while cost shares for warhead payloads were reported at 100 percent, scuba weights and aviation weights were reported at 95 percent and 98 percent, respectively.

¹⁶ Petitioner’s postconference brief, exh. 19, p. 199.

Business cycles

*** U.S. producers, 4 of 12 importers, and 6 of 8 purchasers indicated that the market was subject to business cycles. Importers *** reported that there are increased sales in the fall and spring due to hunting seasons. *** reported that sales of tungsten shot follow annual defense budget cycles.

Demand trends

According to petitioner, the U.S. tungsten shot market tracks demand for tungsten Super Shot ammunition, which has seen increasing domestic demand due to the widespread popularity of hunting and clay shooting.¹⁷ Most firms reported an increase in U.S. demand for tungsten shot since January 1, 2021 (table 2.5). U.S. producer *** reported that demand for tungsten shot was increasing because of the improved end product performance when compared to steel substitutes. Importer *** reported demand has been steadily increasing, adding that it has seen more customers hand-loading their own shotgun shells. Importer *** reported that its answer will differ from most of the market, as its tungsten shot, while meeting the purity requirements, does not have the density of TSS and has steadily decreased to the point of irrelevance for the past decade or better. No U.S. producer nor importer provided a narrative response discussing foreign demand.

Table 2.5 Tungsten shot: Count of firms' responses regarding overall domestic and foreign demand, by firm type

Market	Firm type	Steadily Increase	Fluctuate Up	No change	Fluctuate Down	Steadily Decrease
Domestic demand	U.S. producers	***	***	***	***	***
Domestic demand	Importers	3	1	2	2	1
Domestic demand	Purchasers	2	2	2	0	1
Foreign demand	U.S. producers	***	***	***	***	***
Foreign demand	Importers	0	1	2	1	1
Foreign demand	Purchasers	0	1	2	0	0
Demand for end use products	Purchasers	1	1	0	1	2

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

Substitute products

All U.S. producers and importers reported that there were no substitutes. Importer *** reported that bismuth shot can be used in shotgun shells where non-toxic ammunition is required. Tungsten shot is denser than lead or steel shot leading to different

¹⁷ Petitioner's postconference brief, p. 1.

ballistic characteristics. This leads to tighter patterns with smaller pellets, which are less affected by wind, leading to greater accuracy, especially at longer distances.¹⁸ Lead is also prohibited under several laws involving hunting on federal land. Tungsten shot is higher performance than both steel shot and lead shot but is also more expensive than those products.¹⁹

Substitutability issues

This section assesses the degree to which U.S.-produced tungsten shot and imports of tungsten shot from the subject country can be substituted for one another by examining the importance of certain purchasing factors and the comparability of tungsten shot from domestic and imported source based on those factors. Based on available data, staff believes that there is a moderate-to-high degree of substitutability between domestically produced tungsten shot and tungsten shot imported from China.²⁰ Factors contributing to this level of substitutability include, interchangeability between domestic and subject source and little preference for country of origin or producers. Factors reducing substitutability include limited domestic availability, reported order delinquencies, and longer lead times than imported tungsten shot.

Factors affecting purchasing decisions

Purchaser decisions based on source

As shown in table 2.6 most purchasers and their customers never make purchasing decisions based on the producer or country of origin. Of the three purchasers that reported that they or their customers usually make decisions based the manufacturer, purchaser *** cited regulatory rules, and purchaser *** cited price, quality, and ability to supply.

¹⁸ Conference transcript, pp. 67 to 69 (Omanoff).

¹⁹ Conference transcript, pp. 17 to 18 (Gibbs).

²⁰ The degree of substitution between domestic and imported tungsten shot depends upon the extent of product differentiation between the domestic and imported products and reflects how easily purchasers can switch from domestically produced tungsten shot to the tungsten shot imported from subject source (or vice versa) when prices change. The degree of substitution may include such factors as quality differences (e.g., grade standards, defect rates, etc.), and differences in sales conditions (e.g., lead times between order and delivery dates, reliability of supply, product services, etc.).

Table 2.6 Tungsten shot: Count of purchasing decisions by purchaser or their customer, based on producer and country of origin

Firm making decision	Decision based on	Always	Usually	Sometimes	Never
Purchaser	Producer	0	3	0	4
Customer	Producer	0	2	1	2
Purchaser	Country	0	2	1	3
Customer	Country	0	1	1	2

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

Importance of purchasing domestic product

All four responding purchasers reported that all their purchases did not require purchasing U.S.-produced product.

Most important purchase factors

The major purchasing factors identified by firms include product quality, price, delivery lead time, availability of supply, and legality of the product. The most often cited factors that firms consider in their purchasing decisions for tungsten shot were price (seven firms), quality (6 firms), and lead time (5 firms) as shown in table 2.7. Price was also the most frequently reported second-most important factor (four firms) followed by quality (three firms). Delivery lead time and price were the most frequently reported third-most important factor (three firms each).

The majority of purchasers (three of seven) reported that they only sometimes purchase the lowest-priced product.

Table 2.7 Tungsten shot: Count of ranking of factors used in purchasing decisions as reported by U.S. purchasers, by factor

Factor	First	Second	Third	Total
Price / Cost	0	4	3	7
Quality	3	3	0	6
Availability / Supply	1	0	1	2
Lead time	2	0	3	5
All other factors	1	0	0	NA

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

Importance of specified purchase factors

Purchasers were asked to rate the importance of 15 factors in their purchasing decisions (table 2.8). The factors rated as very important by more than one-half of responding purchasers were availability and quality meets industry standards (seven firms each); delivery terms, delivery time, price, and product consistency (six firms each); discounts offered and reliability of supply (four firms each).

Table 2.8 Tungsten shot: Count of importance of purchase factors, as reported by U.S. purchasers, by factor

Factor	Very important	Somewhat important	Not important
Availability	7	0	0
Delivery terms	6	1	0
Delivery time	6	1	0
Discounts offered	4	2	0
Minimum quantity requirements	0	6	1
Packaging	0	4	3
Payment terms	3	3	1
Price	6	1	0
Product consistency	6	1	0
Product range	0	3	4
Quality meets industry standards	7	0	0
Quality exceeds industry standards	2	2	3
Reliability of supply	4	3	0
Technical support/service	1	3	3
U.S. transportation costs	2	2	3

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

Lead times

Tungsten shot is primarily produced-to-order for U.S. producers and sold from U.S. inventories for importers. U.S. producers reported that *** percent of their commercial shipments were produced-to-order, with lead times averaging *** days. The remaining *** percent of their commercial shipments came from inventories, with lead times averaging *** days. Importers reported that *** percent of their commercial shipments were from U.S. inventories, with lead times averaging *** days. The remaining *** percent were made to order with lead times averaging ***.

Supplier certification

Four of seven responding purchasers require their suppliers to become certified or qualified to sell tungsten shot to their firm. Purchasers reported that the time to qualify a new supplier ranged from 5 to 30 days. Purchaser *** reported that it requires material certification forms along with samples which are tested for density, surface quality, as well as size and weight consistency. No purchasers reported that a supplier had failed in its attempt to qualify tungsten shot or had lost its approved status since 2022.

Minimum quality specifications

As can be seen from table 2.9, one responding purchaser reported that domestically produced product always met minimum quality specifications, one purchaser reported usually and two reported sometimes. Five responding purchasers reported that the tungsten shot imported from China always met minimum quality specifications and one purchaser reported usually. All responding purchasers reported that they tested samples for density and spherical/surface quality, size (diameter), and weight consistency.

Table 2.9 Tungsten shot: Count of U.S. purchasers' responses regarding suppliers' ability to meet minimum quality specifications, by source

Source of purchases	Always	Usually	Sometimes	Rarely or never	Don't Know
United States	1	1	2	0	3
China	5	1	0	0	1
Nonsubject sources	0	0	0	0	4

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

Note: Purchasers were asked how often domestically produced or imported tungsten shot meets minimum quality specifications for their own or their customers' uses.

Changes in purchasing patterns

Four purchasers reported that they had changed suppliers since January 1, 2022, while three reported that they had not. Specifically, firms dropped or reduced purchases from China because of the emergence of U.S. supply. Firms added or increased purchases from U.S. domestic sources, specifically two purchasers reported beginning to purchase from *** because of superior lead times and personal contact at trade shows.

Purchasers were also asked about changes in their purchasing patterns from different countries since January 1, 2022 (table 2.10). Purchasers reported increased purchases of U.S.-produced product because of new availability of domestic product. Purchasers reported decreased purchases of product from China because of challenges in importing the product and claims of lower demand overall. Five purchasers reported decreasing or entirely stopping their purchases of Chinese product in favor of domestically produced tungsten shot.

Purchasers were asked if they had been contacted by U.S. producers regarding the availability of U.S. produced tungsten shot. Five purchasers reported they had been contacted by ***.

Table 2.10 Tungsten shot: Count of changes in purchase patterns from U.S., China, and nonsubject countries

Source of purchases	Steadily Increase	Fluctuate Up	No change	Fluctuate Down	Steadily Decrease	Did not purchase
United States	0	3	0	1	0	3
China	0	1	1	2	3	0
All other sources	0	0	0	0	0	4
Sources unknown	0	0	0	0	0	4

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

Purchase factor comparisons of domestic products, subject imports, and nonsubject imports

Purchasers were asked a number of questions comparing tungsten shot produced in the United States, subject countries, and nonsubject countries. First, purchasers were asked for a country-by-country comparison on the same 15 factors (table 2.11) for which they were asked to rate the importance.

Most purchasers reported that U.S.-produced tungsten shot and tungsten shot imported from China were comparable on delivery terms, discounts offered, minimum quantity requirements, packaging, payment terms, and U.S. transportation costs. Purchasers were split with one response each on availability, price, product consistency, product range, quality meets industry standards, quality exceeds industry standards, and technical support/service. Most purchasers reported that U.S.-produced tungsten shot was inferior on delivery time and reliability of supply.

Purchaser *** reported that it prefers a domestic supplier because of ease of physical access, shortened length of lead-time in supply chain resulting in need to carry less inventory, eliminated risk of tariffs, lower shipping costs, and generally smoother logistics.

Table 2.11 Tungsten shot: Count of U.S. purchasers' responses comparing U.S.-produced and imported product, by factor and country pair

Factor	Country pair	Superior	Comparable	Inferior
Availability	U.S. vs China	1	1	1
Delivery terms	U.S. vs China	1	2	0
Delivery time	U.S. vs China	1	0	2
Discounts offered	U.S. vs China	1	2	0
Minimum quantity requirements	U.S. vs China	1	2	0
Packaging	U.S. vs China	1	2	0
Payment terms	U.S. vs China	1	2	0
Price	U.S. vs China	1	1	1
Product consistency	U.S. vs China	1	1	1
Product range	U.S. vs China	1	1	1
Quality meets industry standards	U.S. vs China	1	1	1
Quality exceeds industry standards	U.S. vs China	1	1	1
Reliability of supply	U.S. vs China	1	0	2
Technical support/service	U.S. vs China	1	1	1
U.S. transportation costs	U.S. vs China	1	2	0

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

Note: With respect to cost/price factors, a rating of superior means that the cost/price for the first source in the country pair is generally lower. For example, if a firm reported "U.S. superior," it meant that the U.S. product was generally priced lower than the imported product.

Comparison of U.S.-produced and imported tungsten shot

In order to determine whether U.S.-produced tungsten shot can generally be used in the same applications as imports from China, U.S. producers, importers, and purchasers were asked whether the products can always, frequently, sometimes, or never be used interchangeably. As shown in table 2.12, *** U.S. producer reported that products from the United States were *** interchangeable with tungsten shot from China, while importers' responses were varied with three firms each reporting that the products were frequently or sometimes interchangeable.

Importer *** reported that it found China always seemed to have stock available and that the product is of the highest quality. Importer *** reported that U.S. producer *** began "offering TSS shot blanks (unground, unpolished, up sorted TSS shot)." Purchaser *** reported that it tested the unground/banded product from ***, and that the product appeared to be interchangeable. However, it reported that the visual quality of the product is inferior to other TSS products on the market. U.S. producer ***,²¹

²¹ Petitioner's posthearing brief, exhibit 1, p. 27

Table 2.12 Tungsten shot: Count of firms reporting interchangeability between product produced in the United States and in other countries reported, by country pair and firm type

Country pair	Firm type	Always	Frequently	Sometimes	Never
United States vs. China	U.S. producers	***	***	***	***
United States vs. Other	U.S. producers	***	***	***	***
China vs. Other	U.S. producers	***	***	***	***
United States vs. China	Importers	2	3	3	0
United States vs. Other	Importers	1	1	1	0
China vs. Other	Importers	1	1	1	0
United States vs. China	Purchasers	0	5	1	0
United States vs. Other	Purchasers	0	1	0	0
China vs. Other	Purchasers	0	1	0	0

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

In addition, U.S. producers, importers, and purchasers were asked to assess how often differences other than price were significant in sales of tungsten shot from the United States, subject, and nonsubject countries. As shown in table 2.13, *** U.S. producer reported that differences other than price were *** significant. Four importers reported that differences other than price were sometimes significant, two reported that differences were always significant, and one importer reported that the differences were frequently significant. Importer *** reported that availability and consistent quality are key factors in purchasing decisions.

Table 2.13 Tungsten shot: Count of U.S. producers reporting the significance of differences other than price between product produced in the United States and in other countries reported, by country pair and firm type

Country pair	Firm type	Always	Frequently	Sometimes	Never
United States vs. China	U.S. producers	***	***	***	***
United States vs. Other	U.S. producers	***	***	***	***
China vs. Other	U.S. producers	***	***	***	***
United States vs. China	Importers	2	1	4	0
United States vs. Other	Importers	0	1	2	0
China vs. Other	Importers	0	1	2	0
United States vs. China	Purchasers	1	1	4	0
United States vs. Other	Purchasers	0	0	1	0
China vs. Other	Purchasers	0	0	1	0

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

Elasticity estimates

This section discusses elasticity estimates.

U.S. supply elasticity

The domestic supply elasticity for tungsten shot measures the sensitivity of the quantity supplied by U.S. producers to changes in the U.S. market price of tungsten shot. The elasticity of domestic supply depends on several factors including the level of excess capacity, the ease with which producers can alter capacity, producers' ability to shift to production of other products, the existence of inventories, and the availability of alternate markets for U.S.-produced tungsten shot. Analysis of these factors above indicates that the U.S. industry has the ability to greatly increase or decrease shipments to the U.S. market; an estimate in the range of 4 to 8 is suggested.

U.S. demand elasticity

The U.S. demand elasticity for tungsten shot measures the sensitivity of the overall quantity demanded to a change in the U.S. market price of tungsten shot. This estimate depends on factors discussed above such as the existence, availability, and commercial viability of substitute products, as well as the component share of the tungsten shot in the production of any downstream products. Based on the available information, the aggregate demand for tungsten shot is likely to be small to moderately inelastic; a range of -0.25 to -0.75 is suggested.

Substitution elasticity

The elasticity of substitution depends upon the extent of product differentiation between the domestic and imported products.²² Product differentiation, in turn, depends upon such factors as quality (e.g., chemistry, appearance, etc.) and conditions of sale (e.g., availability, sales terms/discounts/promotions, etc.). Based on available information, the elasticity of substitution between U.S.-produced tungsten shot and imported tungsten shot is likely moderate-to-high and to be in the range of 3 to 6. Factors contributing to this level of substitutability include interchangeability between domestic and subject source and little preference for country of origin or producers. Factors reducing substitutability include limited

²² The substitution elasticity measures the responsiveness of the relative U.S. consumption levels of the subject imports and the domestic like products to changes in their relative prices. This reflects how easily purchasers switch from the U.S. product to the subject products (or vice versa) when prices change.

domestic availability, reported order delinquencies, and longer lead times than imported tungsten shot.

Part 3: 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 subsidies and dumping margins was presented in Part 1 of this report and information on the volume and pricing of imports of the subject merchandise is presented in Part 4 and Part 5. Information on the other factors specified is presented in this section and/or Part 6 and (except as noted) is based on the questionnaire responses of three firms that accounted for all known U.S. production of tungsten shot during 2024.

U.S. producers

The Commission issued a U.S. producer questionnaire to four firms based on information contained in the petitions, staff research, and additional information ***.¹ Three firms provided usable data on their operations.²

Table 3.1 lists U.S. producers of tungsten shot, their production locations, positions on the petitions, and shares of total production. As shown, TPW accounts for the *** of U.S. production of tungsten shot throughout the data collection period.

Table 3.1 Tungsten shot: U.S. producers, their positions on the petitions, production locations, and shares of reported production, January 2022 through March 2025

Shares in percent

Firm	Position on petitions	Production location(s)	Share of production
Elmet	***	Lewiston, Maine	***
GTP	***	Towanda, PA West Hartford, CT	***
TPW	Petitioner	Laramie, WY	***
All firms	Various	Various	100.0

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

¹ Petitioner alleged in its postconference brief that it is the sole U.S. producer of tungsten shot. Petitioner’s postconference brief, exh. 1, p. 4. During these final phase investigations, staff asked the petitioner to identify all known U.S. producers of Class 2 tungsten shot, which typically consists of 92.5 percent tungsten by weight and is therefore out-of-scope. The petitioner identified ***Elmet Technologies LLC, Global Tungsten & Powders LLC, and itself, TPW. All three firms produced in-scope merchandise during the data collection period and therefore completed a U.S. Producers’ Questionnaire. See the section titled “U.S. Producers’ Profiles” in Part 1 for an overview of each U.S. producer. A questionnaire was also sent to ***, which certified it had not produced any class of tungsten shot since January 1, 2022.

² ***.

Table 3.2 presents information on U.S. producers' ownership, related and/or affiliated firms.

Table 3.2 Tungsten shot: U.S. producers' ownership, related and/or affiliated firms

Reporting firm	Relationship type and related firm	Details of relationship
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***

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

As indicated in table 3.2, no U.S. producers are related to foreign producers of the subject merchandise or are related to U.S. importers of the subject merchandise. In addition, no U.S. producers directly import or purchase the subject merchandise from U.S. importers.

Table 3.3 presents events in the U.S. industry since January 1, 2022.

Table 3.3 Tungsten shot: Important industry events since January 1, 2022

Item	Firm	Event
Initial production	TPW	2023— TPW, a producer of military grade tungsten shot, undertook test runs prior to commencing initial production of commercial grade tungsten shot at its facility in Laramie, Wyoming.
Corporate growth announcement	TPW	February 2024— TPW announced exceptional growth across all measures since the fourth quarter of 2023. During 2023, the firm’s backlogged orders exceeded \$100 million, employment rose five-fold, and production capacity expanded to 1.6 million kilograms (1,764 short tons) of tungsten fragments per year.
New product	TPW	Late-February to early-March 2024— At the Internationale Waffenausstellung (“IWA”) OutdoorClassics Exhibition for the European hunting and target sports industry, held in Nuremburg, Germany, TPW introduced its new “Made-in-America” line of Tungsten Super Shot that is claimed by the firm to provide superior weight retention, increased downrange velocity, and unmatched accuracy for hunters and recreational shooters. TPW’s Chief Executive Officer (“CEO”), Mr. Dennis Omanoff, also announced the firm’s forthcoming proprietary tungsten-copper blend for shot that is “...designed to be competitive not only in price but will outperform steel and lead while also being eco-friendly.”
Supply chain reliability commitment	GTP	December 2024— GTP posted a notice confirming its dedication to ensuring a reliable tungsten and molybdenum supplies within the United States following the imposition, in September 2024, of additional Section 301 tariffs on tungsten originating in China.
Raw materials supply agreement	Elmet	Late-2024— Elmet reached a \$30-million, five-year tungsten concentrates supply agreement with Australia-based EQ Resources Ltd. to boost U.S. tungsten sourcing and pursue government funding opportunities.
Cessation of production	TPW	April 2025— TPW appointed a new CEO, Mr. Mark Holden. Mr. Holden decided to cease production of in-scope tungsten shot, explaining he was not willing to sell at a price below TPW’s cost of production.

Source: Conference transcript, pp. 10 (Omanoff), 17 (Gibbs), 20 (Pickard); petitioner’s posthearing brief, p. 23, exh. 1, pp. 1, 12; Zhuzhou’s postconference brief, exh. 1: TPW, “Tungsten Parts Wyoming Announces Substantial Gains in 2023,” February 8, 2024, <https://tungstenparts.com/tungsten-parts-wyoming-announces-substantial-gains-in-2023>;

TPW, “Tungsten Parts Wyoming Unloads ‘Made in America’ Tungsten Super Shot Line at IWA ‘24, Hints at New Tungsten Copper Blend,” February 22, 2024, <https://tungstenparts.com/tungsten-parts-wyoming-unloads-made-in-america-tungsten-super-shot-line-at-iwa-24-hints-at-new-tungsten-copper-blend>;

IWA, “A Wealth of Highlights at the Anniversary Edition: The IWA OutdoorClassics 2024 Supporting Programme,” Press Release, January 26, 2024, <https://www.iwa.info/en/press/press-releases/2024/highlights-at-the-anniversary-edition>;

GPT, “GTP Commits to Stable Tungsten Supply Amid New Section 301 Tariff Increase with Sustainable Sourcing and Reliable Partnerships,” December 9, 2024, <http://www.globaltungsten.com/gtp-commits-to-stable-tungsten-supply-amid-new-section-301-tariff-increase-with-sustainable-sourcing-and-reliable-partnerships>;

Tungsten Metals Group, “EQ Resources Enters Five-Year Deal with Elmet Technologies,” January 8, 2025, <http://www.tungstenmetalsgroup.com/blog-blog/eq-resources-secures-five-year-deal-with-elmet-technologies>; Hearing transcript, p. 8 and pp. 12 to 13 (Holden) and p. 31 (Pickard); Petitioner’s posthearing brief, pp. 1 to 2, fn. 1.

Producers in the United States were asked to report any change in the character of their operations or organization relating to the production of tungsten shot since 2022. Table 3.4 presents the changes identified by all three U.S. producers.

Table 3.4 Tungsten shot: U.S. producers’ reported changes in operations, since January 1, 2022

Item	Firm name and narrative response on changes in operations
Expansions	***
Expansions	***
Expansions	***
Acquisitions	***

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

U.S. production, capacity, and capacity utilization

Table 3.5 presents U.S. producers' installed and practical capacity and production on the same equipment. Installed overall capacity increased by *** percent from 2022 to 2024 due to *** and was *** during the interim periods. *** overall production increased steadily from 2022 to 2024 and were higher in interim 2025 than in interim 2024, while *** overall production decreased by *** percent from 2022 to 2023, then increased by *** percent from 2023 to 2024, and was *** percent lower in interim 2025 than in interim 2024. Practical overall capacity utilization increased irregularly by *** percentage points from 2022 to 2024 but was *** percentage points lower in interim 2025 than in interim 2024.³

Table 3.5 Tungsten shot: U.S. producers' installed and practical capacity, production, and utilization on the same equipment as in-scope production, by period

Capacity and production in pounds; utilization in percent; interim is January through March

Item	Measure	2022	2023	2024	Interim 2024	Interim 2025
Installed overall	Capacity	***	***	***	***	***
Installed overall	Production	***	***	***	***	***
Installed overall	Utilization	***	***	***	***	***
Practical overall	Capacity	***	***	***	***	***
Practical overall	Production	***	***	***	***	***
Practical overall	Utilization	***	***	***	***	***
Practical Tungsten shot	Capacity	***	***	***	***	***
Practical Tungsten shot	Production	***	***	***	***	***
Practical Tungsten shot	Utilization	***	***	***	***	***

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

³ TPW's overall capacity utilization ranged from *** percent in 2023 to *** percent. Staff asked ***. Email correspondence with *** on May 19, 2025, and May 30, 2025, and USITC Staff, Field Visit Notes, March 13, 2025.

Table 3.6 presents U.S. producers’ reported narratives regarding practical capacity constraints.

Table 3.6 Tungsten shot: U.S. producers’ reported constraints to practical overall capacity, since January 1, 2022

Item	Firm name and narrative response on constraints to practical overall capacity
Production bottlenecks	***
Production bottlenecks	***
Existing labor force	***
Supply of material inputs	***
Other constraints	***

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

Table 3.7 and figure 3.1 present U.S. producers’ production, capacity, and capacity utilization. Trends are largely driving by *** as it accounted for the *** of production during the data collection period, with *** only *** production of in-scope merchandise in *** and *** only producing *** of in-scope merchandise in ***. Practical capacity and production increased from 2022 to 2023 as TPW began producing tungsten shot in *** of 2023. Practical capacity and production increased again from 2023 to 2024, by *** and *** percent, respectively, as ***. Production was *** percent higher in interim 2025 than in interim 2024. Capacity utilization was low throughout the data collection period, ranging from *** percent in interim 2024 to *** percent in 2022. Capacity utilization increased by *** percentage points from 2023 to 2024 and was *** percentage points higher in interim 2025 than in interim 2024, as production increased more than capacity during these periods.

Table 3.7 Tungsten shot: U.S. producers' output, by firm and period

Practical capacity

Capacity in pounds; interim is January through March

Firm	2022	2023	2024	Interim 2024	Interim 2025
Elmet	***	***	***	***	***
GTP	***	***	***	***	***
TPW	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 3.7 (Continued) Tungsten shot: U.S. producers' output, by firm and period

Production

Production in pounds; interim is January through March

Firm	2022	2023	2024	Interim 2024	Interim 2025
Elmet	***	***	***	***	***
GTP	***	***	***	***	***
TPW	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 3.7 (Continued) Tungsten shot: U.S. producers' output, by firm and period

Capacity utilization

Capacity utilization in percent; interim is January through March

Firm	2022	2023	2024	Interim 2024	Interim 2025
Elmet	***	***	***	***	***
GTP	***	***	***	***	***
TPW	***	***	***	***	***
All firms	***	***	***	***	***

Note: Capacity utilization ratio represents the ratio of the U.S. producer's production to its production capacity.

Table continued.

Table 3.7 (Continued) Tungsten shot: U.S. producers' output, by firm and period

Share of production

Share in percent; interim is January through March

Firm	2022	2023	2024	Interim 2024	Interim 2025
Elmet	***	***	***	***	***
GTP	***	***	***	***	***
TPW	***	***	***	***	***
All firms	100.0	100.0	100.0	100.0	100.0

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

Note: Zeroes, null values, and undefined calculations are suppressed and shown as “—”.

Figure 3.1 Tungsten shot: U.S. producers' output, by period

* * * * *

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

Alternative products

As shown in table 3.8, between *** and *** percent of the products produced during the data collection period by U.S. producers was tungsten shot. Other high-density tungsten shot⁴ accounted for the majority (over ***) of production on machinery used to produce tungsten shot. Other products produced on the same machinery as tungsten shot include ***.

Table 3.8 Tungsten shot: U.S. producers' overall production on the same equipment as in-scope production, by period

Quantity in pounds; share in percent; interim is January through March

Product type	Measure	2022	2023	2024	Interim 2024	Interim 2025
Tungsten shot	Quantity	***	***	***	***	***
Other high-density tungsten shot	Quantity	***	***	***	***	***
Other products	Quantity	***	***	***	***	***
Out-of-scope products	Quantity	***	***	***	***	***
All products	Quantity	***	***	***	***	***
Tungsten shot	Share	***	***	***	***	***
Other high-density tungsten shot	Share	***	***	***	***	***
Other products	Share	***	***	***	***	***
Out-of-scope products	Share	***	***	***	***	***
All products	Share	100.0	100.0	100.0	100.0	100.0

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.

⁴ "Other high-density tungsten shot" was defined in Commission questionnaires as merchandise that would otherwise match the definition of tungsten shot, but with tungsten content by weight between 90 and 92.5 percent (inclusive). These tungsten alloys are often referred to as Class 1 or Class 2 tungsten. U.S. Producers' Questionnaire, II-3a.

U.S. producers’ U.S. shipments and exports

Table 3.9 presents U.S. producers’ U.S. shipments, export shipments, and total shipments. *** were reported, thus, *** shipments were U.S. commercial shipments. U.S. shipments increased by *** percent in quantity and *** percent in value from 2022 to 2023, as *** and TPW began producing and selling tungsten shot in 2023. U.S. shipments also increased by *** percent in quantity and *** percent in value from 2023 to 2024 as ***. U.S. shipments were *** percent higher in quantity and *** percent higher in value in interim 2025 than in interim 2024.

Unit values were highest in 2022, as *** reported *** in 2022, which is ***.⁵ Unit values decreased by *** percent from 2023 to 2024, but were *** percent higher in interim 2025 than in interim 2024.

Table 3.9 Tungsten shot: U.S. producers’ shipments, by destination and period

Quantity in pounds; value in dollars; unit value in dollars per pound; shares in percent; interim is January through March

Item	Measure	2022	2023	2024	Interim 2024	Interim 2025
U.S. shipments	Quantity	***	***	***	***	***
Export shipments	Quantity	***	***	***	***	***
Total shipments	Quantity	***	***	***	***	***
U.S. shipments	Value	***	***	***	***	***
Export shipments	Value	***	***	***	***	***
Total shipments	Value	***	***	***	***	***
U.S. shipments	Unit value	***	***	***	***	***
Export shipments	Unit value	***	***	***	***	***
Total shipments	Unit value	***	***	***	***	***
U.S. shipments	Share of quantity	***	***	***	***	***
Export shipments	Share of quantity	***	***	***	***	***
Total shipments	Share of quantity	100.0	100.0	100.0	100.0	100.0
U.S. shipments	Share of value	***	***	***	***	***
Export shipments	Share of value	***	***	***	***	***
Total shipments	Share of value	100.0	100.0	100.0	100.0	100.0

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

Note: Zeroes, null values, and undefined calculations are suppressed and shown as “—”.

⁵ Postconference brief, p. 10.

U.S. producers' inventories

Table 3.10 presents U.S. producers' end-of-period inventories and the ratio of these inventories to U.S. producers' production, U.S. shipments, and total shipments.⁶ End-of-period inventories increased by *** percent from 2023 to 2024 and were *** percent higher in interim 2025 than in interim 2024. The inventory ratio to U.S. production decreased from 2023 to 2024 but was higher in interim 2025 than in interim 2024. Inventories were more than *** U.S. shipments in 2023 and were still *** U.S. shipments in 2024. By interim 2025, inventories were *** of U.S. shipments. As of April 2025, TPW has ceased production of in-scope tungsten shot and has ***.⁷

Table 3.10 Tungsten shot: U.S. producers' inventories and their ratio to select items, by period

Quantity in pounds; ratios in percent; interim is January through March

Item	2022	2023	2024	Interim 2024	Interim 2025
End-of-period inventory quantity	***	***	***	***	***
Inventory ratio to U.S. production	***	***	***	***	***
Inventory ratio to U.S. shipments	***	***	***	***	***
Inventory ratio to total shipments	***	***	***	***	***

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.

Zeroes, null values, and undefined calculations are suppressed and shown as "—".

⁶ ***.

⁷ Petitioner's posthearing brief, p. 2, fn. 1.

U.S. producers' imports from subject sources

No responding U.S. producer reported imports of tungsten shot from 2022 to 2024 and both interim periods.

U.S. producers' purchases of imports from subject sources

No responding U.S. producer reported purchases of tungsten shot from 2022 to 2024 and both interim periods.

U.S. employment, wages, and productivity

Table 3.11 shows U.S. producers' employment-related data. Employment indicators were *** in 2022, as only *** produced *** of in-scope merchandise in that year. The number of PRWs, total hours worked, hours worked per PRW, and wages paid all increased by ***, ***, ***, percent and *** percent, respectively, from 2023 to 2024, as TPW began producing tungsten shot in 2023 and *** during this time. The number of PRWs was *** percent higher, hours worked were *** percent higher, and wages paid were *** percent higher in interim 2025 than in interim 2024. Hourly wages increased by *** percent from 2022 to 2023, then decreased by *** percent from 2023 to 2024, and were *** percent higher in interim 2025 than in interim 2024. Productivity increased from 2023 to 2024 by *** pounds per hour and was relatively unchanged between the interim periods. Unit labor costs decreased by *** percent from 2023 to 2024 but were *** percent higher in interim 2025 than in interim 2024.

Table 3.11 Tungsten shot: U.S. producers' employment related information, by period

Interim is January through March

Item	2022	2023	2024	Interim 2024	Interim 2025
Production and related workers (PRWs) (number)	***	***	***	***	***
Total hours worked (hours)	***	***	***	***	***
Hours worked per PRW (hours)	***	***	***	***	***
Wages paid (dollars)	***	***	***	***	***
Hourly wages (dollars per hour)	***	***	***	***	***
Productivity (pounds per hour)	***	***	***	***	***
Unit labor costs (dollars per pound)	***	***	***	***	***

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

Part 4: U.S. imports, apparent U.S. consumption, and market shares

U.S. importers

The Commission issued importer questionnaires to 103 firms believed to be importers of tungsten shot, as well as to all U.S. producers of tungsten shot.¹ U.S. import data presented in Part 4 are based on the questionnaire responses of 13 U.S. importers that staff believe account for the vast majority of tungsten shot imports from China under HTS subheadings 8101.99.80 and 9306.29.00, both “basket” categories, and supplemental data using proprietary, Census-edited Customs’ import records for the aforementioned HTS subheadings.² The petitioner believes there are little to no imports of tungsten shot from nonsubject sources (one U.S. importer, ***, reported tungsten shot imports from nonsubject sources in ***).³

¹ The Commission issued questionnaires to those firms identified in the petitions; staff research; and proprietary, Census-edited Customs’ import records.

² Firms that submitted an importer questionnaire or certified that they had not imported tungsten shot into the U.S. since January 1, 2022, accounted for *** percent of 2022 imports, *** percent of 2023 imports, *** percent of 2024 imports, and *** percent of January to March 2025 imports under HTS subheadings 8101.99.80 and 9306.29.00, according to proprietary, Census-edited Customs’ import records.

Tables 4.1 through 4.6 and figures 4.1 through 4.3 present import data reported in Commission questionnaires, supplemented by imports of non-responsive firms that imported under HTS subheadings 8101.99.80 and 9306.29.00. The data presented in these tables might be overstated given that the supplemental imports likely include out-of-scope merchandise as the vast majority of merchandise imported under these two HTS subheadings during the data collection period were out-of-scope. The data presented in these tables might also be understated, as the petitioner has identified other HTS subheadings that they believe tungsten shot might also be imported under, including 8101.10.00, 8482.91.0020, and 8101.97. Staff have confirmed via questionnaire responses that *** percent of the merchandise imported under these HTS subheadings in 2024 are not in-scope merchandise. Assuming the other *** percent are in-scope merchandise would add an additional *** pounds to 2024 imports. Finally, the petitioner notes that Luoyang Combat Tungsten has likely exported tungsten shot to the U.S. under HTS subheading 9503.00 (games, sports, and playground toys). Luoyang Combat Tungsten reported in its preliminary foreign producer questionnaire response that it exported *** pounds of tungsten shot in 2022, *** pounds of tungsten shot in 2023, and *** pounds of tungsten shot from January to March 2024, and projected it would import *** pounds in the year 2024.

³ Petitioner’s postconference brief, p. 31.

Table 4.1 lists all responding U.S. importers of tungsten shot from China and other sources, their locations, and their shares of U.S. imports, in 2024.

Table 4.1 Tungsten shot: U.S. importers, their headquarters, and share of imports within each source, January 2022 through March 2025

Share in percent

Firm	Headquarters	China	Nonsubject sources	All import sources
Apex	Columbus, MS	***	***	***
Cyberlux	Research Triangle Park, NC	***	***	***
Federal Cartridge	Anoka, MN	***	***	***
Kent-Gamebore	Kearneysville, WV	***	***	***
Long Ammunition	Edgefield, SC	***	***	***
Midwest	Willowbrook, IL	***	***	***
MIGRA	Charleston, SC	***	***	***
Precision	Mitchel, SD	***	***	***
Spherical	Irvine, CA	***	***	***
T&D	Primos, PA	***	***	***
Triple B	Barry, IL	***	***	***
Tungco	Madisonville, KY	***	***	***
Tungsten Supply	Beech Grove, IN	***	***	***
All other firms	Various	***	***	***
All firms	Various	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires, and from proprietary, Census-edited Customs records under HTS statistical reporting number 9306.29.0000 and 8101.99.8000 accessed July 15, 2025. Proprietary, Census-edited Customs records were used to measure U.S. imports from sources in China not accounted for in data submitted in response to Commission questionnaires.

Note: Zeroes, null values, and undefined calculations are suppressed and shown as “—”.

U.S. imports

Table 4.2, figure 4.1, and table 4.3 present data for U.S. imports of tungsten shot from China and all other sources. The vast majority of imports reported were from China; only ***, reported imports from nonsubject sources in ***. Imports from China decreased by *** percent in quantity and *** percent in value from 2022 to 2024 but were *** percent higher in quantity and *** percent higher in value in interim 2025 than in interim 2024. Unit values of imports from China decreased by *** percent from 2022 to 2024 and were *** percent lower in interim 2025 than in interim 2024. The ratio of imports to U.S. production was very high in 2022, as TPW did not begin producing tungsten shot until 2023 and ***. The ratio of subject imports to U.S. production decreased by *** percentage points from 2023 to 2024 and was *** percentage points higher in interim 2025 than in interim 2024.

Table 4.2 Tungsten shot: U.S. imports by source and period

Quantity in pounds; value in dollars; unit value in dollars per pound; share and ratio in percent; interim is January through March

Source	Measure	2022	2023	2024	Interim 2024	Interim 2025
China: questionnaire data	Quantity	389,224	232,982	48,635	10,919	4,800
China: supplemental data	Quantity	***	***	***	***	***
China	Quantity	***	***	***	***	***
Nonsubject sources	Quantity	***	***	***	***	***
All import sources	Quantity	***	***	***	***	***
China: questionnaire data	Value	11,259,886	5,964,190	1,371,358	373,829	250,000
China: supplemental data	Value	***	***	***	***	***
China	Value	***	***	***	***	***
Nonsubject sources	Value	***	***	***	***	***
All import sources	Value	***	***	***	***	***
China: questionnaire data	Unit value	28.93	25.60	28.20	34.24	52.08
China: supplemental data	Unit value	***	***	***	***	***
China	Unit value	***	***	***	***	***
Nonsubject sources	Unit value	***	***	***	***	***
All import sources	Unit value	***	***	***	***	***
China: questionnaire data	Share of quantity	***	***	***	***	***
China: supplemental data	Share of quantity	***	***	***	***	***
China	Share of quantity	***	***	***	***	***
Nonsubject sources	Share of quantity	***	***	***	***	***
All import sources	Share of quantity	100.0	100.0	100.0	100.0	100.0
China: questionnaire data	Share of value	***	***	***	***	***
China: supplemental data	Share of value	***	***	***	***	***
China	Share of value	***	***	***	***	***
Nonsubject sources	Share of value	***	***	***	***	***
All import sources	Share of value	100.0	100.0	100.0	100.0	100.0
China: questionnaire data	Ratio	***	***	***	***	***
China: supplemental data	Ratio	***	***	***	***	***
China	Ratio	***	***	***	***	***
Nonsubject sources	Ratio	***	***	***	***	***
All import sources	Ratio	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires, and from proprietary, Census-edited Customs records under HTS statistical reporting numbers 9306.29.0000 and 8101.99.8000 accessed July 15, 2025. Proprietary, Census-edited Customs records were used to measure U.S. imports from sources in China not accounted for in data submitted in response to Commission questionnaires.

Note: Share of quantity is the share of U.S. imports by quantity; share of value is the share of U.S.

imports by value; ratio are U.S. imports to production. Zeroes, null values, and undefined calculations are suppressed and shown as “—”.

Figure 4.1 Tungsten shot: U.S. import quantities and average unit values, by source and period

* * * * *

Source: Compiled from data submitted in response to Commission questionnaires, and from proprietary, Census-edited Customs records under HTS statistical reporting numbers 9306.29.0000 and 8101.99.8000 accessed July 15, 2025. Proprietary, Census-edited Customs records were used to measure U.S. imports from sources in China not accounted for in data submitted in response to Commission questionnaires.

Table 4.3 Tungsten shot: Changes in U.S. imports, by source and period

Changes (Δ) in percent (%) or percentage point (ppt)

Source	Measure	2022 to 2024	2022 to 2023	2023 to 2024	Interim 2024 to 2025
China	% Δ Quantity	▼***	▼***	▼***	▲***
Nonsubject sources	% Δ Quantity	▼***	▼***	***	***
All import sources	% Δ Quantity	▼***	▼***	▼***	▲***
China	% Δ Value	▼***	▼***	▼***	▲***
Nonsubject sources	% Δ Value	▼***	▼***	***	***
All import sources	% Δ Value	▼***	▼***	▼***	▲***
China	% Δ Unit value	▼***	▼***	▼***	▼***
Nonsubject sources	% Δ Unit value	▼***	▼***	***	***
All import sources	% Δ Unit value	▼***	▼***	▼***	▼***
China	ppt Δ Quantity	▲***	▲***	***	***
Nonsubject sources	ppt Δ Quantity	▼***	▼***	***	***
All import sources	ppt Δ Quantity	***	***	***	***
China	ppt Δ Value	▲***	▲***	***	***
Nonsubject sources	ppt Δ Value	▼***	▼***	***	***
All import sources	ppt Δ Value	***	***	***	***
China	ppt Δ Ratio	▼***	▼***	▼***	▲***
Nonsubject sources	ppt Δ Ratio	▼***	▼***	***	***
All import sources	ppt Δ Ratio	▼***	▼***	▼***	▲***

Source: Compiled from data submitted in response to Commission questionnaires, and from proprietary, Census-edited Customs records under HTS statistical reporting numbers 9306.29.0000 and 8101.99.8000 accessed July 15, 2025. Proprietary, Census-edited Customs records were used to measure U.S. imports from sources in China not accounted for in data submitted in response to Commission questionnaires.

Note: 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.

Negligibility

The statute requires that an investigation be terminated without an injury determination if imports of the subject merchandise are found to be negligible.⁴ 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.⁵ Imports from China accounted for *** percent of total imports of tungsten shot by quantity from July 2023 through June 2024 (table 4.4).

Table 4.4 Tungsten shot: U.S. imports in the twelve-month period preceding the filing of the petitions, July 2023 through June 2024

Quantity in pounds; share of quantity in percent

Source of imports	Quantity	Share of quantity
China	***	***
Nonsubject sources	***	***
All import sources	***	100.0

Source: Compiled from data submitted in response to Commission questionnaires, and from proprietary, Census-edited Customs records under HTS statistical reporting numbers 9306.29.0000 and 8101.99.8000 accessed July 15, 2025. Proprietary, Census-edited Customs records were used to measure U.S. imports from sources in China not accounted for in data submitted in response to Commission questionnaires.

Note: Zeroes, null values, and undefined calculations are suppressed and shown as “—”.

⁴ 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)).

⁵ Section 771 (24) of the Act (19 U.S.C § 1677(24)).

Apparent U.S. consumption and market shares

Quantity

Table 4.5 and figure 4.2 present data on apparent U.S. consumption and U.S. market shares by quantity for tungsten shot. Apparent U.S. consumption by quantity for tungsten shot decreased by *** percent from 2022 to 2024 but was *** percent higher in interim 2025 than in interim 2024. U.S. producers' U.S. shipments increased by *** percent from 2022 to 2024, while U.S. shipments of imports from China decreased by *** percent, such that U.S. producers' market share increased by *** percentage points, while the market share of import shipments from China decreased by *** percentage points. U.S. producers' U.S. shipments were *** percent higher in interim 2025 than in interim 2024, while U.S. shipments of imports from China were *** percent higher, such that U.S. producers' market share was *** percentage points higher and the market share of import shipments from China was *** percentage points lower in interim 2025 than in interim 2024.

Table 4.5 Tungsten shot: Apparent U.S. consumption and market shares based on quantity, by source and period

Quantity in pounds; shares in percent; interim is January through March

Source	Measure	2022	2023	2024	Interim 2024	Interim 2025
U.S. producers	Quantity	***	***	***	***	***
China	Quantity	***	***	***	***	***
Nonsubject sources	Quantity	***	***	***	***	***
All import sources	Quantity	***	***	***	***	***
All sources	Quantity	***	***	***	***	***
U.S. producers	Share	***	***	***	***	***
China	Share	***	***	***	***	***
Nonsubject sources	Share	***	***	***	***	***
All import sources	Share	***	***	***	***	***
All sources	Share	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires, and from proprietary, Census-edited Customs records under HTS statistical reporting numbers 9306.29.0000 and 8101.99.8000 accessed July 15, 2025. Proprietary, Census-edited Customs records were used to measure U.S. imports from sources in China not accounted for in data submitted in response to Commission questionnaires.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "—".

Figure 4.2 Tungsten shot: Apparent U.S. consumption based on quantity, by source and period

* * * * *

Source: Compiled from data submitted in response to Commission questionnaires, and from proprietary, Census-edited Customs records under HTS statistical reporting number 9306.29.0000 and 8101.99.8000 accessed July 15, 2025. Proprietary, Census-edited Customs records were used to measure U.S. imports from sources in China not accounted for in data submitted in response to Commission questionnaires.

Value

Table 4.6 and figure 4.3 present data on apparent U.S. consumption and U.S. market shares by value for tungsten shot. Apparent U.S. consumption by value for tungsten shot decreased by *** percent from 2022 to 2024 but was *** percent higher in interim 2025 than in interim 2024. U.S. producers' U.S. shipments increased by *** percent from 2022 to 2024, while U.S. shipments of imports from China decreased by *** percent, such that U.S. producers' market share increased by *** percentage points, while market share of import shipments from China decreased by *** percentage points. U.S. producers' U.S. shipments were *** percent higher in interim 2025 than in interim 2024, while U.S. shipments of imports from China were *** percent lower, such that U.S. producers' market share was *** percentage points higher and the market share of import shipments from China was *** percentage points lower in interim 2025 than in interim 2024.

Table 4.6 Tungsten shot: Apparent U.S. consumption and market shares based on value, by source and period

Value in 1,000 dollars; shares in percent; interim is January through March

Source	Measure	2022	2023	2024	Interim 2024	Interim 2025
U.S. producers	Value	***	***	***	***	***
China	Value	***	***	***	***	***
Nonsubject sources	Value	***	***	***	***	***
All import sources	Value	***	***	***	***	***
All sources	Value	***	***	***	***	***
U.S. producers	Share	***	***	***	***	***
China	Share	***	***	***	***	***
Nonsubject sources	Share	***	***	***	***	***
All import sources	Share	***	***	***	***	***
All sources	Share	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires, and from proprietary, Census-edited Customs records under HTS statistical reporting number 9306.29.0000 and 8101.99.8000 accessed July 15, 2025. Proprietary, Census-edited Customs records were used to measure U.S. imports from sources in China not accounted for in data submitted in response to Commission questionnaires.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "—".

Figure 4.3 Tungsten shot: Apparent U.S. consumption based on value, by source and period

* * * * *

Source: Compiled from data submitted in response to Commission questionnaires, and from proprietary, Census-edited Customs records under HTS statistical reporting number 9306.29.0000 and 8101.99.8000 accessed July 15, 2025. Proprietary, Census-edited Customs records were used to measure U.S. imports from sources in China not accounted for in data submitted in response to Commission questionnaires.

Alternate apparent U.S. consumption and market shares

Tables 4.7 and 4.8 and figures 4.4 and 4.5 present alternate apparent U.S. consumption and market shares based on only questionnaire data (i.e., the supplemental data using proprietary, Census-edited Customs' import records for HTS subheadings 8101.99.80 and 9306.29.00 that were included in the previous tables 4.5 and 4.6 having been removed).

Quantity

Table 4.7 and figure 4.4 present data on apparent U.S. consumption and U.S. market shares by quantity for tungsten shot. Apparent U.S. consumption by quantity for tungsten shot decreased by *** percent from 2022 to 2024 but was *** percent lower in interim 2025 than in interim 2024. U.S. producers' U.S. shipments increased by *** percent from 2022 to 2024, while U.S. shipments of imports from China decreased by 52.8 percent, such that U.S. producers' market share increased by *** percentage points, while the market share of import shipments from China decreased by *** percentage points. U.S. producers' U.S. shipments were *** percent higher in interim 2025 than in interim 2024, while U.S. shipments of imports from China were 49.6 percent lower, such that U.S. producers' market share was *** percentage points higher and the market share of import shipments from China was *** percentage points lower in interim 2025 than in interim 2024.

Table 4.7 Tungsten shot: Alternate apparent U.S. consumption and market shares based on quantity data, by source and period

Quantity in pounds; shares in percent; interim is January through March

Source	Measure	2022	2023	2024	Interim 2024	Interim 2025
U.S. producers	Quantity	***	***	***	***	***
China	Quantity	298,087	247,530	140,663	78,677	39,640
Nonsubject sources	Quantity	***	***	***	***	***
All import sources	Quantity	***	***	***	***	***
All sources	Quantity	***	***	***	***	***
U.S. producers	Share	***	***	***	***	***
China	Share	***	***	***	***	***
Nonsubject sources	Share	***	***	***	***	***
All import sources	Share	***	***	***	***	***
All sources	Share	100.0	100.0	100.0	100.0	100.0

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "—".

Figure 4.4 Tungsten shot: Alternate apparent U.S. consumption and market shares based on quantity data, by source and period

* * * * *

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

Value

Table 4.6 and figure 4.5 present data on apparent U.S. consumption and U.S. market shares by value for tungsten shot. Apparent U.S. consumption by value for tungsten shot decreased by *** percent from 2022 to 2024 but was *** percent higher in interim 2025 than in interim 2024. U.S. producers' U.S. shipments increased by *** percent from 2022 to 2024, while U.S. shipments of imports from China decreased by 54.9 percent, such that U.S. producers' market share increased by *** percentage points, while market share of import shipments from China decreased by *** percentage points. U.S. producers' U.S. shipments were *** percent higher in interim 2025 than in interim 2024, while U.S. shipments of imports from China were 45.2 percent lower, such that U.S. producers' market share was *** percentage points higher and the market share of import shipments from China was *** percentage points lower in interim 2025 than in interim 2024.

Table 4.8 Tungsten shot: Alternate apparent U.S. consumption and market shares based on value data, by source and period

Value in 1,000 dollars; shares in percent; interim is January through March

Source	Measure	2022	2023	2024	Interim 2024	Interim 2025
U.S. producers	Value	***	***	***	***	***
China	Value	10,178,121	8,460,738	4,593,350	2,715,574	1,488,617
Nonsubject sources	Value	***	***	***	***	***
All import sources	Value	***	***	***	***	***
All sources	Value	***	***	***	***	***
U.S. producers	Share	***	***	***	***	***
China	Share	***	***	***	***	***
Nonsubject sources	Share	***	***	***	***	***
All import sources	Share	***	***	***	***	***
All sources	Share	100.0	100.0	100.0	100.0	100.0

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "—".

Figure 4.5 Tungsten shot: Alternate apparent U.S. consumption based on value data, by source and period

* * * * *

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

Part 5: Pricing data

Factors affecting prices

Raw material costs

The raw materials for tungsten shot are a mixture of loose metal powders consisting mainly of tungsten along with nickel, iron, and other materials, including a metallic powder binder.¹ Due to tungsten's high melting point (3,422 ±15 degrees Centigrade), it is chemically extracted from its ores as ammonium paratungstate ("APT"). In turn, APT is the common intermediate material for the subsequent production of downstream tungsten products including the tungsten alloy powder for tungsten shot.² U.S. producer TPW reported that minor amounts of proprietary additional components are also added during the production process of tungsten shot.³ The in-scope tungsten shot for these investigations must be at least 92.6 percent tungsten by weight. U.S. producer *** reported that China controls 80 percent of the global tungsten mining, thus they are able to manipulate raw material prices.

Raw materials, as a share of U.S. producers' cost of goods sold ("COGS"), decreased from *** percent in 2022 to *** percent in 2024, and were *** percent in January to March 2025. U.S. producer TPW reported that it receives ready-to-press powder containing tungsten, nickel, iron, small amounts of other metals, and a binding agent that helps the powder to stay together during compaction.⁴

Two U.S. producers and 6 of 12 importers reported that raw material prices have increased (either steadily or with fluctuations) since 2021; 5 importers reported no change, and one reported a downward fluctuation. According to business proprietary data of monthly prices of APT (table 5.1 and figure 5.1), tungsten powder imports were priced at approximately *** dollars per pound at the beginning of 2022, ***

Purchaser ***.

¹ Conference transcript, pp. 86 (Gibbs) and 77 (Omanoff).

² Group 6 Metals Ltd., "The Market," 2025, <https://g6m.com.au/tungsten/the-market>, retrieved July 10, 2025; International Tungsten Industry Association ("ITIA"), "Properties of the Metal," 2025, <https://www.itia.info/properties-intermediates>, retrieved July 10, 2025.

³ Conference transcript, p. 60 (Gibbs).

⁴ Petition, p. 4.

Table 5.1 Tungsten shot: Raw material: global price of ammonium paratungstate ("APT") powder; unit landed duty-paid value, by month

Unit value in dollars per pound

Month	2022	2023	2024	2025
January	***	***	***	***
February	***	***	***	***
March	***	***	***	***
April	***	***	***	***
May	***	***	***	***
June	***	***	***	***
July	***	***	***	NA
August	***	***	***	NA
September	***	***	***	NA
October	***	***	***	NA
November	***	***	***	NA
December	***	***	***	NA

Source: *** accessed July 10, 2025.

Figure 5.1 Tungsten shot: Raw material: global price of ammonium paratungstate ("APT") powder; unit landed duty-paid value, by month

* * * * *

Source: *** accessed July 10, 2025.

Transportation costs to the U.S. market

Transportation costs for tungsten shot shipped from China to the United States averaged 8.9 percent during 2024 for products imported under HTS statistical reporting number 9306.29.0000. These estimates were derived from official import data and represent the transportation and other charges on imports.⁵

U.S. inland transportation costs

Two of three U.S. producers and six of eight importers reported that they typically arrange transportation to their customers. Most U.S. producers reported that their U.S. inland

⁵ Official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 9306.29.0000, accessed April 22, 2025. Imports area based on the imports for consumption data series.

transportation costs ranged from 2.5 to 5.0 percent while most importers reported costs of 1.0 to 5.0 percent with one firm reporting *** percent.

Pricing practices

Pricing methods

*** U.S. producers and 4 of 10 importers reported setting prices using transaction-by-transaction negotiations, while four importers reported using price lists and one used contracts (table 5.2). One importer reported setting prices by ***.

Table 5.2 Tungsten shot: Count of U.S. producers' and importers' reported price setting methods

Count in number of firms reporting

Method	U.S. producers	U.S. importers
Transaction-by-transaction	***	4
Contract	***	1
Set price list	***	4
Other	***	2
Responding firms	3	10

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

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.

U.S. producers reported selling the *** of their tungsten shot in *** (table 5.3). Importers reported selling most of their tungsten shot either under short- or long-term contracts.

Table 5.3 Tungsten shot: U.S. producers' and subject U.S. importers' shares of commercial U.S. shipments by type of sale, 2024

Share in percent

Sale type	U.S. producers	Subject U.S. importers
Long-term contracts	***	47.8
Annual contract	***	—
Short-term contracts	***	37.3
Spot sales	***	15.0
All sales types	100.0	100.0

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

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

One purchaser reported that they purchase product monthly, one purchases quarterly, two purchase annually, one reported that they purchase as demanded by customers. Five of

seven responding purchasers reported that their purchasing frequency had not changed since 2022 with one firm having halted purchases after 2022 and one reporting that they purchase more frequently to suit the needs of its manufacturing schedule. Most (six of seven) purchasers contact 1 to 5 suppliers before making a purchase.

Sales terms and discounts

*** U.S. producers typically quoted prices on an f.o.b. basis, while five of nine importers reported quoting prices on an f.o.b. basis. *** U.S. producers and 6 of 10 importers did not offer a discount policy. Three importers and *** offered a quantity discount, and one importer (***) reported that they do not sell tungsten shot on its own.

Price leadership

Five purchasers reported that there are price leaders in the tungsten shot market, while two reported they were not aware of price leaders in the market. All responding purchasers reported different price leaders, however all reported price leaders sold subject merchandise. Purchasers indicating the presence of price leaders indicated that these price leaders led by price and quality.

Price and purchase cost 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 tungsten shot products shipped to unrelated U.S. customers during January 2022 to March 2025. Firms that imported these products from China for their own use or retail sale were requested to provide import purchase cost data.

Product 1.-- Tungsten Class 3 shot, #7 Dia 2.5mm

Product 2.-- Tungsten Class 3 shot, #7.5 Dia 2.41mm

Product 3.-- Tungsten Class 3 shot, #8.5 Dia 2.16mm

Product 4.-- Tungsten Class 3 shot, #9 Dia 2.03mm

Product 5.-- Tungsten Class 3 shot, #10 Dia 1.8mm

Price data

One U.S. producer (***) and five importers provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.⁶ Pricing data reported by these firms accounted for approximately *** percent of U.S. producers' U.S. shipments of tungsten shot, *** percent of subject imports from China in 2024.⁷ Price data for products 1 to 5 are presented in tables 5.4 to 5.8 and figures 5.2 to 5.6.

Importer *** sells tungsten shot for scientific and industrial applications⁸ and does not sell tungsten shot for use in ammunition. The price data it reported for products *** were significantly higher than all other importers and U.S. producers but it did report relatively low quantities.⁹ Staff have removed the prices reported by importer *** from the tables and graphs in part 5 to better compare average prices in the market.

Import purchase cost data

Four importers reported useable import purchase cost data for products 1 through 5. Importer *** provided aggregated purchase cost data for tungsten shot of various sizes. Appendix E presents the aggregated pricing and purchase cost data for all U.S. producers and importers in order to include *** aggregated purchase cost data in an overall comparison.

Purchase cost data reported by these firms (excluding ***) accounted for *** percent of subject imports from China in 2024. Landed duty-paid purchase cost data for

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 Pricing coverage is based on imports reported in questionnaires, which represent a small share of total imports.

⁸ Importer *** reported the tungsten shot it sells as being used by its customers for radiation shielding applications, where the small tungsten balls enabled customers to fill hard or irregular voids for specific protection against radiation. It also reported tungsten shot used for ballast weight where customers used it in industrial applications for screw making as well as using the small balls to fill irregular areas to add weight.

⁹ For product 1 importer *** reported ***. Over the POI ***. For product 4 importer *** reported ***. For product 5 importer ***.

subject imports from China are presented in tables 5.4 to 5.8 and figures 5.2 to 5.6, along with U.S. producers' sales prices.¹⁰

Importers reporting import purchase cost data were asked to provide additional information regarding the costs and benefits of importing tungsten shot themselves.

Two of five importers reported that they incurred additional costs beyond landed duty-paid costs by importing tungsten shot themselves rather than purchasing from a U.S. producer or U.S. importer. Of these, one importer (***) estimated the total additional cost incurred; the estimate was *** percent compared to the landed duty-paid value. Reported costs estimated by importer *** included *** percent compared to the landed duty paid value, citing airfreight costs. Importer *** reported *** percent for logistical or supply chain costs, *** percent for warehousing costs, *** percent for additional insurance costs, *** percent for currency conversion costs, *** percent for tariffs, and *** percent for interest.

Firms were also asked to describe how these additional costs incurred by importing tungsten shot themselves compare with additional costs incurred when purchasing from a U.S. producer or U.S. importer. Importer *** stated that its firm's additional costs by importing tungsten shot directly were *** percent less when compared with the additional costs incurred when purchasing from a U.S. producer or U.S. importer. Importer *** reported that it varies based on transport method and that there is no direct comparison because it was unaware of the existence of a U.S. producer.

Three of seven importers reported that they compare costs of importing to the cost of purchasing from a U.S. producer in determining whether to import tungsten shot, one importer compare costs to purchasing from a U.S. importer, and three importers do not compare costs of purchasing from either U.S. producers or importers.

Seven importers identified benefits from importing tungsten shot themselves instead of purchasing from U.S. producers or importers, including lower cost, large consistency in lead times, as well as accuracy and quality of finished goods.

Firms were also asked whether the import costs (both excluding and including additional costs) of tungsten shot they imported are lower than the price of purchasing tungsten shot from a U.S. producer or importer.

Three importers estimated that they saved between *** percent of the purchase price by importing tungsten shot rather than purchasing from a U.S. importer and

¹⁰ LDP import value does not include any potential additional costs that a purchaser may incur by importing rather than purchasing from another importer or U.S. producer. Price-cost differences are based on LDP import values whereas margins of underselling/overselling are based on importer sales prices.

saving between *** percent compared to purchasing the product from a U.S. producer.¹¹

A single shipment reported by importer *** is not included in the purchase cost tables, graphs or comparisons. Importer *** reported normally purchasing tungsten shot from other importing firms and later from U.S. producer ***, but it imported only one shipment *** via airfreight during the period of investigation to meet demand in that period and paid a high price for the quick turnaround.¹² The data for the single shipment was not included as it was not representative of the market price.¹³ Removing ***.

¹¹ Three firms reported that they based their estimates on previous company transactions, three reported basing their estimates on market research, and two reported other bases for their estimates, citing cost quotes they had received.

¹² ***.

¹³ ***.

Table 5.4 Tungsten shot: Weighted-average f.o.b. prices, unit landed duty paid value, and quantities of domestic and imported product 1, and margins of underselling/(overselling) and price-cost differentials, by source and quarter

Quantity in pounds; Prices and unit LDP values in dollars per pound; Margins and price-cost differentials in percent

Period	U.S. price	U.S. quantity	China price	China quantity	China margin	China unit LDP value	China cost quantity	China cost differential
2022 Q1	***	***	***	***	***	***	***	***
2022 Q2	***	***	***	***	***	***	***	***
2022 Q3	***	***	***	***	***	***	***	***
2022 Q4	***	***	***	***	***	***	***	***
2023 Q1	***	***	***	***	***	***	***	***
2023 Q2	***	***	***	***	***	***	***	***
2023 Q3	***	***	***	***	***	***	***	***
2023 Q4	***	***	***	***	***	***	***	***
2024 Q1	***	***	***	***	***	***	***	***
2024 Q2	***	***	***	***	***	***	***	***
2024 Q3	***	***	***	***	***	***	***	***
2024 Q4	***	***	***	***	***	***	***	***
2025 Q1	***	***	***	***	***	***	***	***

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

Note: Product 1: Tungsten Class 3 shot, #7 Dia 2.5mm.

Figure 5.2 Tungsten shot: Weighted-average f.o.b. prices, unit landed duty paid value, and quantities of domestic and imported product 1, by source and quarter

Price of product 1

* * * * *

Volume of product 1

* * * * *

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

Note: Product 1: Tungsten Class 3 shot, #7 Dia 2.5mm.

Table 5.5 Tungsten shot: Weighted-average f.o.b. prices, unit landed duty paid value, and quantities of domestic and imported product 2, and margins of underselling/(overselling) and price-cost differentials, by source and quarter

Quantity in pounds; Prices and unit LDP values in dollars per pound; Margins and price-cost differentials in percent

Period	U.S. price	U.S. quantity	China price	China quantity	China margin	China unit LDP value	China cost quantity	China cost differential
2022 Q1	***	***	***	***	***	***	***	***
2022 Q2	***	***	***	***	***	***	***	***
2022 Q3	***	***	***	***	***	***	***	***
2022 Q4	***	***	***	***	***	***	***	***
2023 Q1	***	***	***	***	***	***	***	***
2023 Q2	***	***	***	***	***	***	***	***
2023 Q3	***	***	***	***	***	***	***	***
2023 Q4	***	***	***	***	***	***	***	***
2024 Q1	***	***	***	***	***	***	***	***
2024 Q2	***	***	***	***	***	***	***	***
2024 Q3	***	***	***	***	***	***	***	***
2024 Q4	***	***	***	***	***	***	***	***
2025 Q1	***	***	***	***	***	***	***	***

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

Note: Product 2: Tungsten Class 3 shot, #7.5 Dia 2.41mm.

Figure 5.3 Tungsten shot: Weighted-average f.o.b. prices, unit landed duty paid value, and quantities of domestic and imported product 2, by source and quarter

Price of product 2

* * * * *

Volume of product 2

* * * * *

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

Note: Product 2: Tungsten Class 3 shot, #7.5 Dia 2.41mm.

Table 5.6 Tungsten shot: Weighted-average f.o.b. prices, unit landed duty paid value, and quantities of domestic and imported product 3, and margins of underselling/(overselling) and price-cost differentials, by source and quarter

Quantity in pounds; Prices and unit LDP values in dollars per pound; Margins and price-cost differentials in percent

Period	U.S. price	U.S. quantity	China price	China quantity	China margin	China unit LDP value	China cost quantity	China cost differential
2022 Q1	***	***	***	***	***	***	***	***
2022 Q2	***	***	***	***	***	***	***	***
2022 Q3	***	***	***	***	***	***	***	***
2022 Q4	***	***	***	***	***	***	***	***
2023 Q1	***	***	***	***	***	***	***	***
2023 Q2	***	***	***	***	***	***	***	***
2023 Q3	***	***	***	***	***	***	***	***
2023 Q4	***	***	***	***	***	***	***	***
2024 Q1	***	***	***	***	***	***	***	***
2024 Q2	***	***	***	***	***	***	***	***
2024 Q3	***	***	***	***	***	***	***	***
2024 Q4	***	***	***	***	***	***	***	***
2025 Q1	***	***	***	***	***	***	***	***

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

Note: Product 3: Tungsten Class 3 shot, #8.5 Dia 2.16mm.

Figure 5.4 Tungsten shot: Weighted-average f.o.b. prices, unit landed duty paid value, and quantities of domestic and imported product 3, by source and quarter

Price of product 3

* * * * *

Volume of product 3

* * * * *

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

Note: Product 3: Tungsten Class 3 shot, #8.5 Dia 2.16mm.

Table 5.7 Tungsten shot: Weighted-average f.o.b. prices, unit landed duty paid value, and quantities of domestic and imported product 4, and margins of underselling/(overselling) and price-cost differentials, by source and quarter

Quantity in pounds; Prices and unit LDP values in dollars per pound; Margins and price-cost differentials in percent

Period	U.S. price	U.S. quantity	China price	China quantity	China margin	China unit LDP value	China cost quantity	China cost differential
2022 Q1	***	***	***	***	***	***	***	***
2022 Q2	***	***	***	***	***	***	***	***
2022 Q3	***	***	***	***	***	***	***	***
2022 Q4	***	***	***	***	***	***	***	***
2023 Q1	***	***	***	***	***	***	***	***
2023 Q2	***	***	***	***	***	***	***	***
2023 Q3	***	***	***	***	***	***	***	***
2023 Q4	***	***	***	***	***	***	***	***
2024 Q1	***	***	***	***	***	***	***	***
2024 Q2	***	***	***	***	***	***	***	***
2024 Q3	***	***	***	***	***	***	***	***
2024 Q4	***	***	***	***	***	***	***	***
2025 Q1	***	***	***	***	***	***	***	***

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

Note: Product 4: Tungsten Class 3 shot, #9 Dia 2.03mm.

Figure 5.5 Tungsten shot: Weighted-average f.o.b. prices, unit landed duty paid value, and quantities of domestic and imported product 4, by source and quarter

Price of product 4

* * * * *

Volume of product 4

* * * * *

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

Note: Product 4: Tungsten Class 3 shot, #9 Dia 2.03mm.

Table 5.8 Tungsten shot: Weighted-average f.o.b. prices, unit landed duty paid value, and quantities of domestic and imported product 5, and margins of underselling/(overselling) and price-cost differentials, by source and quarter

Quantity in pounds; Prices and unit LDP values in dollars per pound; Margins and price-cost differentials in percent

Period	U.S. price	U.S. quantity	China price	China quantity	China margin	China unit LDP value	China cost quantity	China cost differential
2022 Q1	***	***	***	***	***	***	***	***
2022 Q2	***	***	***	***	***	***	***	***
2022 Q3	***	***	***	***	***	***	***	***
2022 Q4	***	***	***	***	***	***	***	***
2023 Q1	***	***	***	***	***	***	***	***
2023 Q2	***	***	***	***	***	***	***	***
2023 Q3	***	***	***	***	***	***	***	***
2023 Q4	***	***	***	***	***	***	***	***
2024 Q1	***	***	***	***	***	***	***	***
2024 Q2	***	***	***	***	***	***	***	***
2024 Q3	***	***	***	***	***	***	***	***
2024 Q4	***	***	***	***	***	***	***	***
2025 Q1	***	***	***	***	***	***	***	***

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

Note: Product 5: Tungsten Class 3 shot, #10 Dia 1.8mm.

Figure 5.6 Tungsten shot: Weighted-average f.o.b. prices, unit landed duty paid value, and quantities of domestic and imported product 5, by source and quarter

Price of product 5

* * * * *

Volume of product 5

* * * * *

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

Note: Product 5: Tungsten Class 3 shot, #10 Dia 1.8mm.

Price and purchase cost trends

In general, prices for Chinese subject products stayed largely consistent. Domestic subject products 1, 2, 3, and 5 saw an increase from when domestic producers began production since 2022 to March 2025. Table 5.9 summarizes the price trends, by country and by product. As shown in the table, domestic price increases ranged from *** percent with *** from 2022 through March 2025. For imports there were price decreases for *** which ranged from *** percent with increases of *** percent for ***.

Table 5.9 Tungsten shot: Summary of price and purchase cost data, by product and source, January 2022 through March 2025

Prices and unit LDP values in dollars per pound; Quantity in pounds; Change in percent

Product	Source	Number of quarters	Quantity	Low price/unit LDP value	High price/unit LDP value	First quarter price/unit LDP value	Last quarter price/unit LDP value	Quarterly change
Product 1	United States	2	***	***	***	***	***	***
Product 1	China price	10	***	***	***	***	***	***
Product 1	China cost	6	***	***	***	***	***	***
Product 2	United States	6	***	***	***	***	***	***
Product 2	China price	10	***	***	***	***	***	***
Product 2	China cost	1	***	***	***	***	***	***
Product 3	United States	4	***	***	***	***	***	***
Product 3	China price	6	***	***	***	***	***	***
Product 3	China cost	—	***	***	***	***	***	***
Product 4	United States	5	***	***	***	***	***	***
Product 4	China price	10	***	***	***	***	***	***
Product 4	China cost	5	***	***	***	***	***	***
Product 5	United States	2	***	***	***	***	***	***
Product 5	China price	9	***	***	***	***	***	***
Product 5	China cost	2	***	***	***	***	***	***

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

Note: Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Percent change is the change from the first quarter to the last quarter of the data collection period.

Price and purchase cost comparisons

Price comparisons

As shown in tables 5.10 and 5.11, prices for product imported from China were above those for U.S.-produced product in seven of seven instances (***) ; prices for product from China were between *** percent above prices for the domestic product.¹⁴

Table 5.10 Tungsten shot: Instances and quantities of underselling/overselling and the range and average of margins, by product

Quantity in pounds; margin in percent

Products	Type	Number of instances	Quantity	Average margin	Min margin	Max margin
Product 1	Underselling	—	***	***	***	***
Product 2	Underselling	—	***	***	***	***
Product 3	Underselling	—	***	***	***	***
Product 4	Underselling	—	***	***	***	***
Product 5	Underselling	—	***	***	***	***
All products	Underselling	—	***	***	***	***
Product 1	Overselling	—	***	***	***	***
Product 2	Overselling	4	***	***	***	***
Product 3	Overselling	—	***	***	***	***
Product 4	Overselling	3	***	***	***	***
Product 5	Overselling	—	***	***	***	***
All products	Overselling	7	***	***	***	***

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

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

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Table 5.11 Tungsten shot: Instances and quantities of underselling/overselling and the range and average of margins, by period

Quantity in pounds; margin in percent

Period	Type	Number of instances	Quantity	Average margin	Min margin	Max margin
2022	Underselling	—	***	***	***	***
2023	Underselling	—	***	***	***	***
2024	Underselling	—	***	***	***	***
January through March 2025	Underselling	—	***	***	***	***
All periods	Underselling	—	***	***	***	***
2022	Overselling	—	***	***	***	***
2023	Overselling	3	***	***	***	***
2024	Overselling	4	***	***	***	***
January through March 2025	Overselling	—	***	***	***	***
All periods	Overselling	7	***	***	***	***

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

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

Price-cost comparisons

As shown in table 5.12 and 5.13, landed duty-paid costs for tungsten shot imported from China were below the sales price for U.S.-produced product in two of four instances (** pounds); price-cost differentials ranged from ** percent. In the remaining two instances (** pounds), landed duty-paid costs for tungsten shot from China were between ** percent above sales prices for the domestic product.

**. As discussed in the Import purchase cost data section, this **. ¹⁵

¹⁵ **.

Table 5.12 Tungsten shot: Instances and quantities of lower/(Higher) average unit purchase costs compared to U.S. prices and the range and average of price/cost differentials, by product

Quantity in pounds; Differentials in percent

Products	Type	Number of instances	Quantity	Average differential	Min differential	Max differential
Product 1	Lower than US	1	***	***	***	***
Product 2	Lower than US	—	***	***	***	***
Product 3	Lower than US	—	***	***	***	***
Product 4	Lower than US	1	***	***	***	***
Product 5	Lower than US	—	***	***	***	***
All products	Lower than US	2	***	***	***	***
Product 1	Higher than US	1	***	***	***	***
Product 2	Higher than US	—	***	***	***	***
Product 3	Higher than US	—	***	***	***	***
Product 4	Higher than US	1	***	***	***	***
Product 5	Higher than US	—	***	***	***	***
All products	Higher than US	2	***	***	***	***

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

Note: Instances represent the number of valid comparisons included where there was both a domestic price and subject import purchase cost comparison reported by the specified criteria. Quantity represents the quantity for the subject purchase cost data included in the specified comparisons. Differentials represent the percent differences between subject purchase cost data and domestic pricing product, with positive differentials indicating subject purchase cost data were below domestic pricing data and negative differentials indicating subject purchase cost data were above domestic pricing data in the specified comparisons. Differentials shown as “0.0” percent represent non-zero values less than “0.05” percent (if positive, lower than the U.S. price) and greater than “(0.05)” percent (if negative, higher than the U.S. price). Zeroes, null values, and undefined calculations are suppressed and shown as “—”.

Table 5.13 Tungsten shot: Instances and quantities of lower/(Higher) average unit purchase costs compared to U.S. prices and the range and average of price/cost differentials, by product

Quantity in pounds; Differentials in percent

Period	Type	Number of instances	Quantity	Average differential	Min differential	Max differential
2022	Lower than US	—	***	***	***	***
2023	Lower than US	1	***	***	***	***
2024	Lower than US	—	***	***	***	***
January through March 2025	Lower than US	1	***	***	***	***
All periods	Lower than US	2	***	***	***	***
2022	Higher than US	—	***	***	***	***
2023	Higher than US	—	***	***	***	***
2024	Higher than US	1	***	***	***	***
January through March 2025	Higher than US	1	***	***	***	***
All periods	Higher than US	2	***	***	***	***

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

Note: Instances represent the number of valid comparisons included where there was both a domestic price and subject import purchase cost comparison reported by the specified criteria. Quantity represents the quantity for the subject purchase cost data included in the specified comparisons. Differentials represent the percent differences between subject purchase cost data and domestic pricing product, with positive differentials indicating subject purchase cost data were below domestic pricing data and negative differentials indicating subject purchase cost data were above domestic pricing data in the specified comparisons. Differentials shown as “0.0” percent represent non-zero values less than “0.05” percent (if positive, lower than the U.S. price) and greater than “(0.05)” percent (if negative, higher than the U.S. price). Zeroes, null values, and undefined calculations are suppressed and shown as “—”.

Lost sales and lost revenue

In the preliminary phase of the investigations, the Commission requested that U.S. producers of tungsten shot report purchasers with which they experienced instances of lost sales or revenue due to competition from imports of tungsten shot from China during January 2021 through March 2024. One U.S. producer submitted lost sales and lost revenue allegations. The single responding U.S. producer identified *** firms with which they lost sales or revenue (***). All instances of lost sales and revenue events were reported to have occurred in 2023. Staff contacted four purchasers and received responses from two purchasers. Responding purchasers reported purchasing and importing *** pounds of tungsten shot during January 2021 through March 2024. Neither purchaser reported purchases from domestic producers nor imports from nonsubject countries.

In the final phase of the investigations, of the three responding U.S. producers, one (***) reported that they had to reduce prices, one (***) reported that they had to roll back announced price increases, and three firms reported that they had lost sales.

Staff contacted 49 purchasers and received responses from eight purchasers. Responding purchasers reported purchasing *** pounds of tungsten shot during January 2022 to March 2025 (table 5.14).

Of the seven responding purchasers, six reported that, since 2022, they had purchased imported tungsten shot from China instead of U.S.-produced product. Four of these purchasers reported that subject import prices were lower than U.S.-produced product, and four of these purchasers reported that price was a primary reason for the decision to purchase imported product rather than U.S.-produced product. One purchaser estimated the quantity of tungsten shot from China purchased instead of domestic product at *** pounds (table 5.15). Purchasers identified availability and consistent quality as non-price reasons for purchasing imported rather than U.S.-produced product.

Of the seven responding purchasers, two reported that U.S. producers had not reduced prices in order to compete with lower-priced imports from China; while five reported that they did not know.

Table 5.14 Tungsten shot: U.S. purchasers' reported purchases and imports, by firm and source

Quantity in pounds; Change in shares in percentage points

Firm	Domestic quantity	Subject quantity	All other quantity	Change in domestic share	Change in subject share	Change in all other share
***	***	***	***	***	***	***
***	***	***	***	***	***	***
***	***	***	***	***	***	***
***	***	***	***	***	***	***
***	***	***	***	***	***	***
***	***	***	***	***	***	***
***	***	***	***	***	***	***
***	***	***	***	***	***	***
***	***	***	***	***	***	***
All firms	***	***	***	***	***	***

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

Note: All other includes all other sources and unknown sources. Change is the percentage point change in the share of the firm's total purchases of domestic and/or subject country imports between first and last years.

Table 5.15 Tungsten shot: U.S. purchasers' responses to purchasing subject imports instead of domestic product, by firm

Quantity in pounds

Firm	Purchased subject imports instead of domestic	Imports priced lower	Choice based on price	Quantity	Narrative on reasons for purchasing imports
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
All firms	Yes: 6; No: 1	Yes: 4; No: 1	Yes: 4; No: 1	***	N/A

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

In responding to the lost sales lost revenue survey, some purchasers provided additional information on purchases and market dynamics.

Purchaser *** reported that it was unaware of a domestic supplier of TSS until spring of 2024, when petitioner reached out to solicit sales. ***.

Part 6: Financial experience of U.S. producers

Background¹

TPW and GTP provided usable financial results on their tungsten shot operations.² Both U.S. producers reported financial data based on a calendar year and in accordance with GAAP.³

The industry's net sales are composed of commercial sales.⁴ During the period examined (January 1, 2022, through March 31, 2025) commercial sales represented *** percent of total net sales quantity. TPW began commercial production of in-scope tungsten shot at its Laramie, Wyoming plant in 2023 and made up *** the U.S. net sales of tungsten

¹ The following abbreviations are used in the tables and/or text of this section: generally accepted accounting principles ("GAAP"), fiscal year ("FY"), net sales ("NS"), cost of goods sold ("COGS"), selling, general, and administrative expenses ("SG&A expenses"), average unit values ("AUVs"), research and development expenses ("R&D expenses"), and return on assets ("ROA").

² The trade and financial sections reconciled for the two U.S. producers. A third U.S. producer, ***. *** U.S. producer questionnaire response, section 3.9a.

³ ***. U.S. producer questionnaire responses, section 3.2. Staff verified the results of TPW with its corporate records and all adjustments were incorporated into this report. TPW's U.S. producer questionnaire response was revised as follows: ***. Staff verification report, TPW, July 25, 2025.

⁴ ***. U.S. producers' questionnaire responses, section 3.9a.

shot in 2024.⁵ ⁶ Figure 6.1 presents TPW and GTP’s share of the total reported net sales quantity in 2024.

Figure 6.1 Tungsten shot: U.S. producers’ share of net sales quantity in 2024, by firm

* * * * *

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

⁵ TPW commissioned its factory in 2019 for the production of out-of-scope products and began commercial production of in-scope tungsten shot at its Laramie, Wyoming plant in 2023. Out-of-scope products include the production of tungsten cubes that are primarily for the U.S. Department of Defense (“DoD”) and utilized in shooting down drones. Conference transcript, pp. 8, 10, 78 (Omanoff); p. 17 (Gibbs). Additionally, for out-of-scope products, TPW is one of the largest producers for the precision strike missile program and the Guided Multiple Launch Rocket System that goes to Northrop Grumman and Lockheed Martin for DoD-specified military-grade material. Conference transcript, p. 31 (Omanoff).

TPW currently produces in-scope tungsten shot, which accounted for *** percent of the share of its net sales in 2024. It also produces tungsten cubes and other out-of-scope tungsten shot products, which accounted for *** percent of net sales in 2024. U.S. producers’ questionnaire responses to question 3.4; Conference transcript, p. 31 (Omanoff).

⁶ GTP produced in-scope tungsten shot that accounted for *** of its net sales in 2024, while ***. *** U.S. producer’s questionnaire response to question 3.4.

Operations on tungsten shot

Table 6.1 presents data on the U.S. producers' total operations in relation to tungsten shot, while table 6.2 presents variable and fixed costs. Table 6.3 presents breakeven analysis and table 6.4 presents breakeven analysis at varying AUVs. Table 6.5 presents changes in AUVs for actual operations. Table 6.6 presents selected company-specific financial data.

Table 6.1 Tungsten shot: U.S. producers' results of operations, by item and period

Quantity in pounds; value in dollars; ratios in percent; interim is January through March

Item	Measure	2022	2023	2024	Interim 2024	Interim 2025
Total net sales	Quantity	***	***	***	***	***
Total net sales	Value	***	***	***	***	***
COGS: Raw materials	Value	***	***	***	***	***
COGS: Direct labor	Value	***	***	***	***	***
COGS: Other factory	Value	***	***	***	***	***
COGS: Total	Value	***	***	***	***	***
Gross profit or (loss)	Value	***	***	***	***	***
SG&A expenses	Value	***	***	***	***	***
Operating income or (loss)	Value	***	***	***	***	***
Interest expense	Value	***	***	***	***	***
All other expenses	Value	***	***	***	***	***
All other income	Value	***	***	***	***	***
Net income or (loss)	Value	***	***	***	***	***
Depreciation/amortization	Value	***	***	***	***	***
Cash flow	Value	***	***	***	***	***
COGS: Raw materials	Ratio to NS	***	***	***	***	***
COGS: Direct labor	Ratio to NS	***	***	***	***	***
COGS: Other factory	Ratio to NS	***	***	***	***	***
COGS: Total	Ratio to NS	***	***	***	***	***
Gross profit	Ratio to NS	***	***	***	***	***
SG&A expense	Ratio to NS	***	***	***	***	***
Operating income or (loss)	Ratio to NS	***	***	***	***	***
Net income or (loss)	Ratio to NS	***	***	***	***	***

Table continued.

Table 6.1 (Continued) Tungsten shot: U.S. producers' results of operations, by item and period

Shares in percent; unit values in dollars per pound; count in number of firms reporting; interim is January through March

Item	Measure	2022	2023	2024	Interim 2024	Interim 2025
COGS: Raw materials	Share	***	***	***	***	***
COGS: Direct labor	Share	***	***	***	***	***
COGS: Other factory	Share	***	***	***	***	***
COGS: Total	Share	100.0	100.0	100.0	100.0	100.0
Total net sales	Unit value	***	***	***	***	***
COGS: Raw materials	Unit value	***	***	***	***	***
COGS: Direct labor	Unit value	***	***	***	***	***
COGS: Other factory	Unit value	***	***	***	***	***
COGS: Total	Unit value	***	***	***	***	***
Gross profit or (loss)	Unit value	***	***	***	***	***
SG&A expenses	Unit value	***	***	***	***	***
Operating income or (loss)	Unit value	***	***	***	***	***
Net income or (loss)	Unit value	***	***	***	***	***
Operating losses	Count	***	***	***	***	***
Net losses	Count	***	***	***	***	***
Data	Count	***	***	***	***	***

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

Note: Share represents the share of COGS.

Table 6.2 Tungsten shot: U.S. producer' variable and fixed costs in 2024, by type and classification

Value in dollars; ratio in percent

Item	Measure	COGS	SG&A	Operating expenses
Variable costs	Value	***	***	***
Fixed costs	Value	***	***	***
Variable and fixed costs	Value	***	***	***
Variable costs	Share	***	***	***
Fixed costs	Share	***	***	***
Variable and fixed costs	Share	100.0	100.0	100.0

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

Table 6.3 Tungsten shot: U.S. producers' breakeven analysis based on actual experience in 2024, by firm

Quantity in pounds, unit value in dollars per pound

Item	TPW	GTP	All firms
Quantity, actual	***	***	***
AUVs, actual	***	***	***
Per unit variable operating costs	***	***	***
Per unit fixed operating costs	***	***	***
Per unit variable and fixed operating costs	***	***	***
Total fixed costs	***	***	***
Per unit sales AUV minus per unit variable costs	***	***	***
Breakeven point	***	***	***

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

Table 6.4 Tungsten shot: U.S. producers' break even analysis based on 2024 cost structure and alternative net sales AUVs, by price level

Quantity in pounds: unit value in dollars per pound

Item	At reported AUVs	At \$26 AUVs	At \$28 AUVs	At \$30 AUVs	At \$32 AUVs	At \$34 AUVs	At \$36 AUVs
Quantity, actual	***	***	***	***	***	***	***
AUVs, actual	***	***	***	***	***	***	***
Per unit variable operating costs	***	***	***	***	***	***	***
Per unit fixed operating costs	***	***	***	***	***	***	***
Per unit variable and fixed operating costs	***	***	***	***	***	***	***
Total fixed costs	***	***	***	***	***	***	***
Per unit sales AUV minus per unit variable costs	***	***	***	***	***	***	***
Breakeven point (pounds)	***	***	***	***	***	***	***

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

Figure 6.2 Tungsten shot: U.S. producers' breakeven analysis based on 2024 cost structure and alternative net sales AUVs

* * * * *

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

Note: BEP = breakeven point. U.S. producers' actual net sales quantity for 2024 was *** pounds (shown by the green line).

Table 6.5 Tungsten shot: Changes in AUVs between comparison periods

Changes in percent; interim is January through March

Item	2022-24	2022-23	2023-24	Interim 2024-25
Total net sales	▼***	▼***	▼***	▲***
COGS: Raw materials	▼***	▼***	▼***	▲***
COGS: Direct labor	▲***	▲***	▼***	▲***
COGS: Other factory	▲***	▲***	▼***	▲***
COGS: Total	▼***	▲***	▼***	▲***

Table continued.

Table 6.5 (Continued) Tungsten shot: Changes in AUVs between comparison periods

Changes in dollars per pound; interim is January through March

Item	2022-24	2022-23	2023-24	Interim 2024-25
Total net sales	▼***	▼***	▼***	▲***
COGS: Raw materials	▼***	▼***	▼***	▲***
COGS: Direct labor	▲***	▲***	▼***	▲***
COGS: Other factory	▲***	▲***	▼***	▲***
COGS: Total	▼***	▲***	▼***	▲***
Gross profit or (loss)	▼***	▼***	▲***	▼***
SG&A expense	▼***	▼***	▼***	▼***
Operating income or (loss)	▼***	▼***	▲***	▲***
Net income or (loss)	▼***	▼***	▲***	▲***

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

Note: Period changes preceded by a “▲” represent an increase, while period changes preceded by a “▼” represent a decrease.

Table 6.6 Tungsten shot: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Net sales quantity

Quantity in pounds; interim is January through March

Firm	2022	2023	2024	Interim 2024	Interim 2025
GTP	***	***	***	***	***
TPW	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.6 (Continued) Tungsten shot: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Net sales value

Value in dollars; interim is January through March

Firm	2022	2023	2024	Interim 2024	Interim 2025
GTP	***	***	***	***	***
TPW	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.6 (Continued) Tungsten shot: U.S. producers' sales, costs/expenses, and profitability, by firm and period

COGS

Value in dollars; interim is January through March

Firm	2022	2023	2024	Interim 2024	Interim 2025
GTP	***	***	***	***	***
TPW	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.6 (Continued) Tungsten shot: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Gross profit or (loss)

Value in dollars; interim is January through March

Firm	2022	2023	2024	Interim 2024	Interim 2025
GTP	***	***	***	***	***
TPW	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.6 (Continued) Tungsten shot: U.S. producers' sales, costs/expenses, and profitability, by firm and period

SG&A expenses

Value in dollars; interim is January through March

Firm	2022	2023	2024	Interim 2024	Interim 2025
GTP	***	***	***	***	***
TPW	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.6 (Continued) Tungsten shot: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Operating income or (loss)

Value in dollars; interim is January through March

Firm	2022	2023	2024	Interim 2024	Interim 2025
GTP	***	***	***	***	***
TPW	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.6 (Continued) Tungsten shot: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Net income or (loss)

Value in dollars; interim is January through March

Firm	2022	2023	2024	Interim 2024	Interim 2025
GTP	***	***	***	***	***
TPW	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.6 (Continued) Tungsten shot: U.S. producers' sales, costs/expenses, and profitability, by firm and period

COGS to net sales ratio

Ratio in percent; interim is January through March

Firm	2022	2023	2024	Interim 2024	Interim 2025
GTP	***	***	***	***	***
TPW	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.6 (Continued) Tungsten shot: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Gross profit or (loss) to net sales ratio

Ratio in percent; interim is January through March

Firm	2022	2023	2024	Interim 2024	Interim 2025
GTP	***	***	***	***	***
TPW	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.6 (Continued) Tungsten shot: U.S. producers' sales, costs/expenses, and profitability, by firm and period

SG&A expenses to net sales ratio

Ratio in percent; interim is January through March

Firm	2022	2023	2024	Interim 2024	Interim 2025
GTP	***	***	***	***	***
TPW	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.6 (Continued) Tungsten shot: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Operating income or (loss) to net sales ratio

Ratio in percent; interim is January through March

Firm	2022	2023	2024	Interim 2024	Interim 2025
GTP	***	***	***	***	***
TPW	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.6 (Continued) Tungsten shot: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Net income or (loss) to net sales ratio

Ratio in percent; interim is January through March

Firm	2022	2023	2024	Interim 2024	Interim 2025
GTP	***	***	***	***	***
TPW	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.6 (Continued) Tungsten shot: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit net sales value

Unit values in dollars per pound; interim is January through March

Firm	2022	2023	2024	Interim 2024	Interim 2025
GTP	***	***	***	***	***
TPW	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.6 (Continued) Tungsten shot: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit raw material costs

Unit values in dollars per pound; interim is January through March

Firm	2022	2023	2024	Interim 2024	Interim 2025
GTP	***	***	***	***	***
TPW	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.6 (Continued) Tungsten shot: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit direct labor costs

Unit values in dollars per pound; interim is January through March

Firm	2022	2023	2024	Interim 2024	Interim 2025
GTP	***	***	***	***	***
TPW	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.6 (Continued) Tungsten shot: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit other factory costs

Unit values in dollars per pound; interim is January through March

Firm	2022	2023	2024	Interim 2024	Interim 2025
GTP	***	***	***	***	***
TPW	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.6 (Continued) Tungsten shot: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit COGS

Unit values in dollars per pound; interim is January through March

Firm	2022	2023	2024	Interim 2024	Interim 2025
GTP	***	***	***	***	***
TPW	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.6 (Continued) Tungsten shot: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit gross profit or (loss)

Unit values in dollars per pound; interim is January through March

Firm	2022	2023	2024	Interim 2024	Interim 2025
GTP	***	***	***	***	***
TPW	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.6 (Continued) Tungsten shot: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit SG&A expenses

Unit values in dollars per pound; interim is January through March

Firm	2022	2023	2024	Interim 2024	Interim 2025
GTP	***	***	***	***	***
TPW	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.6 (Continued) Tungsten shot: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit operating income or (loss)

Unit values in dollars per pound; interim is January through March

Firm	2022	2023	2024	Interim 2024	Interim 2025
GTP	***	***	***	***	***
TPW	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.6 (Continued) Tungsten shot: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit net income or (loss)

Unit values in dollars per pound; interim is January through March

Firm	2022	2023	2024	Interim 2024	Interim 2025
GTP	***	***	***	***	***
TPW	***	***	***	***	***
All firms	***	***	***	***	***

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

Note: Shares represent the share of COGS.

Net sales

As shown in table 6.1, the industry's total net sales quantity and value increased consistently between 2022 and 2024 and was higher in the quarter from January to March 2025 ("interim 2025") than January to March 2024 ("interim 2024"). Net sales quantity and value increased by *** percent and *** percent, respectively, between 2022 and 2024, and were much higher in interim 2025 than in interim 2024. ***. The industry's total net sales AUVs decreased consistently from \$*** per unit in 2022 to \$*** per unit in 2024, and were higher in interim 2025, at \$*** than in interim 2024 \$***. ***.

Cost of goods sold and gross profit or loss

Table 6.1 shows that raw material costs, direct labor, and other factory costs accounted for ***, ***, and *** percent of total market COGS, respectively, in 2024. Total raw material costs were the largest component of COGS from 2022 to 2024 and the interim periods, accounting for *** percent in 2022, *** percent in 2024, and *** percent in interim 2025. On a per-pound basis, raw material costs decreased from \$*** in 2022 to \$*** in 2024 and were higher in interim 2025 at \$*** than interim 2024 at \$***. As a ratio to total net sales, raw material costs increased from *** percent in 2022 to *** percent in 2024 and were lower in interim 2025, *** percent, than in interim 2024, *** percent.

Of the raw materials, tungsten is the highest cost, followed by nickel.⁷ Also utilized are iron, which is of lower cost, and a binding agent that is proprietary.⁸ Table 6.7 presents raw material costs in 2024, by type. Tungsten is the largest of raw material inputs (accounting for *** percent of cost, followed by nickel, iron, and other metals (which accounted for *** percent of cost), followed by binding agent (which accounted for *** percent of cost) in 2023.

Tungsten shot is typically comprised of 95 percent tungsten, and the leading source of the tungsten raw material globally is China.⁹ TPW states that China controls tungsten cost and it controls 85 percent of the global supply of tungsten.¹⁰ Additionally, there is no production in the United States, which makes raw material sourcing even more challenging.¹¹ TPW has sources of tungsten from Austria and Bolivia.¹²

In the process of making tungsten shot, there is a small amount of byproduct of a mixture of steel and tungsten produced that is made into a cake called “swarf.”¹³ It is sold in the commercial market.¹⁴ A ceramic media is also used in the production of tungsten shot that is sold as a sand-blasting media.¹⁵ In 2023, the recycled swarf and sand represented less than *** percent of sales values.¹⁶

⁷ Conference transcript, p. 77 (Omanoff).

⁸ Conference transcript, p. 77 (Omanoff).

⁹ Conference transcript, p. 83 (Omanoff).

¹⁰ Conference transcript, pp. 76, 83 (Omanoff). TPW states that China dominates the market and has established a price level that is below raw material costs. Conference transcript, p. 11 (Omanoff).

¹¹ Conference transcript, pp. 75-76, 83 (Omanoff).

¹² Conference transcript, p. 83 (Omanoff).

¹³ Conference transcript, pp. 81, 88 (Omanoff); 87 (Gibbs).

¹⁴ Conference transcript, p. 88 (Omanoff).

¹⁵ Conference transcript, p. 89 (Gibbs).

¹⁶ Petitioner’s postconference brief, exh. 1, p. 18.

Table 6.7 Tungsten shot: U.S. producers' raw material costs in 2024, by major material inputs

Value in dollars; unit values in dollars per pound; share of value in percent

Item	Value	Unit value	Share of value
Tungsten	***	***	***
Nickel, iron, and other metals	***	***	***
Binding agent	***	***	***
Other material inputs	***	***	***
All raw materials	***	***	100.0

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

The second largest component of COGS, other factory costs, increased irregularly from *** percent of COGS in 2022 to *** percent in 2024 and were higher in interim 2025 at *** percent of COGS than in interim 2024 at *** percent. On a per-pound basis, other factory costs increased from \$*** in 2022 to \$*** in 2024 and were higher in interim 2025 at \$*** than in interim 2024 at \$***. As a ratio to total net sales, other factory costs were *** percent in 2022 and *** percent in 2024 and were higher in interim 2025 at *** percent than in interim 2024 at *** percent. ***.¹⁷ For TPW, factory maintenance includes heating a furnace to 5,000 degrees using hydrogen and nitrogen gases, and the equipment heated to such high temperatures needs to be repaired and maintained. Additionally, plates used in grinding operations wear out and must be re-sharpened.¹⁸

The smallest component of COGS, direct labor, increased irregularly from *** percent as a share of COGS in 2022 to *** percent in 2024 and was higher in interim 2025 at *** percent than in interim 2024 at *** percent. As a ratio to total net sales, direct labor increased from *** percent in 2022 to *** percent in 2023 and was higher in interim 2025, at *** percent, than in interim 2024, at *** percent. On a per-pound basis, direct labor costs increased irregularly from \$*** in 2023 to \$*** in 2024 and were higher in interim 2025 at \$*** than in interim 2024 at \$***. ***.

Total COGS values increased from \$*** in 2022 to \$*** in 2024 and were higher in interim 2025 at \$*** than in interim 2024 at \$***. ***.

¹⁷ ***. *** U.S. producer's questionnaire responses to questions 3.10 and 3.11.

¹⁸ Conference transcript, p. 90 (Omanoff).

Total COGS unit values irregularly decreased from \$*** in 2022 to \$*** in 2024 and were higher in interim 2025 at \$*** than in interim 2024 at \$***. As a ratio to net sales, COGS irregularly increased from *** percent in 2022 to *** percent in 2024 and was lower in interim 2025 at *** percent than in interim 2024 at *** percent. Total COGS had a value of \$*** in 2024, and table 6.2 presents U.S. producers' percentages of COGS fixed and variables costs, of which *** percent was variable and *** percent was fixed.¹⁹

As shown in table 6.1, the industry reported a decrease in gross profit from 2022 to 2024, ***. Gross profit was lower in interim 2025 *** than in interim 2024 ***. As a ratio to net sales, gross profit irregularly decreased from *** percent in 2022 to *** percent in 2024. ***.

¹⁹ ***. U.S. producers' questionnaire responses to question 3.9b.

Breakeven point

TPW characterizes tungsten shot as a high fixed cost and capital-intensive industry,²⁰ which is pertinent to its ability to generate a profit. The firm stated that it has not yet reached a reasonable breakeven point and consistently lost money due to ***.²¹ For the year 2024, TPW and GTP would have had to produce *** pounds of tungsten shot, based on the standard breakeven formula.²² The quantity it would have had to produce was within its production capability, as U.S. producers' practical tungsten shot capacity for 2024 was *** pounds.²³

The breakeven formula was determined using the actual price that U.S. producers were able to attain for their products. In 2024, U.S. producers sold product at \$*** per pound. In a scenario to determine the price point at which the industry would have broken even, the industry's actual price per pound was compared with different potential prices, as presented in table 6.4. In 2024, U.S. producers would have achieved the breakeven point at \$*** per pound, as presented in figure 6.2.²⁴

²⁰ Conference transcript, pp. 47, 90 (Omanoff).

²¹ Petitions, pp. 16-18; U.S. producer questionnaire response to question 5.12 and petitioner's postconference brief, pp. 20-22.

²² The calculation made by staff was based on the per-unit fixed and variable operating costs presented in table 6.2 and represents the standard breakeven formula used in cost accounting. The total fixed costs were divided by the per-unit sales value minus the per-unit variable costs. The costs are based on actual costs and actual quantities sold for 2024.

As presented in table 6.3, the breakeven point for TPW was *** pounds while the breakeven point for GTP was *** pounds.

²³ In 2024, TPW and GTP actually commercially produced *** pounds. ***. See table 3.7

²⁴ The U.S. producers' 2024 cost structure was held constant while the AUVs were varied. Of note for figure 6.2 is that if the sales prices are higher, then the breakeven point will be achieved faster and at lower net sales quantities.

SG&A expenses and operating income or loss

Table 6.1 shows that U.S. producers' SG&A expenses increased consistently from \$*** in 2022 to \$*** in 2024 and were higher in interim 2025 at \$*** than in 2024, at \$***. ***. The SG&A expense ratio (SG&A expenses as a share of sales) increased irregularly from *** percent in 2022 to *** percent in 2024 and were lower in interim 2025 at *** percent than in interim 2024 at *** percent. Table 6.2 presents fixed and variables costs, and for SG&A expenses, *** percent were fixed and *** percent were variable in 2024.²⁵

Operating income decreased consistently from \$*** in 2022 to *** in 2024 and were lower in interim 2025 at *** than in interim 2024 at ***. ***. U.S. producers' operating margin (operating income as a ratio to net sales) decreased irregularly from *** percent in 2022 to *** percent in 2024 and were lower in interim 2025, at *** percent, than in interim 2024 at *** percent.

²⁵ ***. U.S. producers' questionnaire responses to question 3.9b.

All other expenses and net income or loss

Classified below the total market operating income level are interest expense, other expense, and other income, which are listed in table 6.1. Interest expenses increased irregularly from \$*** in 2022 to \$*** in 2024 and were higher in interim 2025 (\$***) than in interim 2024 (\$***). All other expenses increased from \$*** in 2022 to \$*** in 2024 and were higher in interim 2025 (\$***) than in interim 2024 (\$***). All other income increased from \$*** in 2022 to \$*** in 2024 and was higher in interim 2025 (\$***) than in interim 2024 (\$***).

Net income decreased overall from \$*** in 2022 to *** in 2024 and was lower in interim 2025 (\$***) than in interim 2024 (\$***).²⁶

²⁶ A variance analysis is not presented due to ***.

Capital expenditures and research and development expenses

Table 6.8 presents capital expenditures, by firm, and table 6.10 presents R&D expenses, by firm. Tables 6.9 and 6.11 present the firms' narrative explanations of the nature, focus, and significance of their capital expenditures and R&D expenses, respectively. For capital expenditures, there was *** of *** percent for the industry from 2023 to 2024 and was *** percent lower in interim 2025 than in interim 2024. For R&D expenses, there was *** of *** percent from 2022 to 2024, and expenses were *** by *** percent in interim 2025 than in interim 2024.

Table 6.8 Tungsten shot: U.S. producers' capital expenditures, by firm and period

Value in 1,000 dollars

Firm	2022	2023	2024	Interim 2024	Interim 2025
GTP	***	***	***	***	***
TPW	***	***	***	***	***
All firms	***	***	***	***	***

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

Table 6.9 Tungsten shot: U.S. producers' narrative descriptions of their capital expenditures, by firm

Firm	Narrative on capital expenditures
GTP	***
TPW	***

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

Table 6.10 Tungsten shot: U.S. producers' R&D expenses, by firm and period

Value in 1,000 dollars

Firm	2022	2023	2024	Interim 2024	Interim 2025
GTP	***	***	***	***	***
TPW	***	***	***	***	***
All firms	***	***	***	***	***

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

Table 6.11 Tungsten shot: U.S. producers' narrative descriptions of their R&D expenses, by firm

Firm	Narrative on R&D expenses
GTP	***
TPW	***

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

Assets and return on assets

Table 6.12 presents data on the U.S. producers' total assets while table 6.13 presents their operating ROA.²⁷ Table 6.14 presents U.S. producers' narrative responses explaining their major asset categories and any significant changes in asset levels over time. For assets in the industry, there was *** of *** percent from 2022 to 2024.

Table 6.12 Tungsten shot: U.S. producers' total net assets, by firm and period

Value in 1,000 dollars

Firm	2022	2023	2024
GTP	***	***	***
TPW	***	***	***
All firms	***	***	***

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

²⁷ The operating ROA is calculated as operating income divided by total assets. With respect to a firm's overall operations, the total asset value reflects an aggregation of a number of assets which are generally not product specific. Thus, high-level allocations are generally required in order to report a total asset value on a product-specific basis. If a firm had no revenue in a particular year, its assets were not included.

Table 6.13 Tungsten shot: U.S. producers' ROA, by firm and period

Ratio in percent

Firm	2022	2023	2024
GTP	***	***	***
TPW	***	***	***
All firms	***	***	***

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

Table 6.14 Tungsten shot: U.S. producers' narrative descriptions of their total net assets, by firm

Firm	Narrative on assets
GTP	***
TPW	***

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

Capital and investment

The Commission requested U.S. producers of tungsten shot to describe any actual or potential negative effects of imports of tungsten shot from China on their firms' growth, investment, ability to raise capital, development and production efforts, or the scale of capital investments. Table 6.15 presents the number of firms reporting an impact in each category and table 6.16 provides the U.S. producers' narrative responses (***)).

Table 6.15 Tungsten shot: Count of firms indicating actual and anticipated negative effects of imports from subject sources on investment, growth, and development since January 1, 2022, by effect

Number of firms reporting

Effect	Category	Count
Cancellation, postponement, or rejection of expansion projects	Investment	***
Denial or rejection of investment proposal	Investment	***
Reduction in the size of capital investments	Investment	***
Return on specific investments negatively impacted	Investment	***
Other investment effects	Investment	***
Any negative effects on investment	Investment	***
Rejection of bank loans	Growth	***
Lowering of credit rating	Growth	***
Problem related to the issue of stocks or bonds	Growth	***
Ability to service debt	Growth	***
Other growth and development effects	Growth	***
Any negative effects on growth and development	Growth	***
Anticipated negative effects of imports	Future	***

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

Table 6.16 Tungsten shot: U.S. producers' narratives relating to actual and anticipated negative effects of imports on investment, growth, and development, since January 1, 2022, by firm and effect

Item	Firm name and narrative on impact of imports
Reduction in the size of capital investments	***
Return on specific investments negatively impacted	***
Other negative effects on investments	***
Ability to service debt	***
Other effects on growth and development	***
Other effects on growth and development	***
Other effects on growth and development	***
Anticipated effects of imports	***
Anticipated effects of imports	***
Anticipated effects of imports	***

Part 7: 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 factors¹⁻⁻

- (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 nature of the subsidies was presented earlier in this report; information on the volume and pricing of imports of the subject merchandise is presented in Parts 4 and 5; and information on the effects of imports of the subject merchandise on U.S. producers' existing development and production efforts is presented in Part 6. 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 China

The Commission issued foreign producers’ or exporters’ questionnaires to 11 firms believed to produce and/or export tungsten shot from China.³ No responses were received, but two firms submitted usable responses to the Commission’s questionnaire during the preliminary phase: Luoyang Combat Tungsten & Molybdenum Material Co., Ltd. (“Luoyang”) and Zhuzhou KJ Super Materials Co., Ltd. (“Zhuzhou”). According to estimates provided by these firms, they accounted for approximately *** percent of exports of tungsten shot from China to the United States and *** percent of tungsten shot production in China, in 2023.⁴

Table 7.1 presents events in the industry in China since January 1, 2022.

Table 7.1 Tungsten shot: Important industry events in China since 2022

Item	Event
New corporate entity	Luoyang Combat and Kangbo Yangquan (March and August 2022)— Luoyang Combat Tungsten & Molybdenum Materials Co. Ltd. (“Luoyang Combat”) registered (in March) and established (in August) Kangbo Yangquan New Materials Co. Ltd. (“Kangbo Yangquan”), a new corporate entity for its the Kangbo Yangquan Project located in Yangquan City, Shanxi Province. The stated purpose for this project is to integrate and expand Luoyang Combat’s industrial production and trade (supply chain) capabilities.
New plant construction initiated	Kangbo Yangquan (November 2022)— Construction commenced on Phase I of the Kangbo Yangquan Project. The main products for this new facility will include molybdenum (4,000 metric tons (4,409 short tons) of annual output capacity) and tungsten (2,000 metric tons (2,205 short tons) of annual output capacity) powder metallurgy and metallic products.
New plant commissioning	Kangbo Yangquan (September 2023)— Phase I construction completed, with installation and commissioning of a 4,000 metric tons (4,409 short tons) per year molybdenum and molybdenum-alloy production line. Although construction was reportedly planned for completion in 2024, further information is not readily available about the planned Phase II production lines, including a tungsten and tungsten-alloy production line.
New export permitting requirements	Government of China (February 2025)— China’s Ministry of Commerce (“MOFCOM”) and General Administration of Customs (“GAC”) announced a new permitting requirement for exporting certain materials, specifications, and processing technologies for tungsten and other minor nonferrous base metals. The joint announcement cites safeguarding national security and fulfilling

³ These firms were identified through a review of information submitted in the petition and presented in third-party sources.

⁴ Preliminary confidential report, p. 7.3, fn. 4. Zhuzhou estimated it accounted for *** percent of Chinese production of tungsten shot and *** percent of tungsten shot exports from China to the U.S. Zhuzhou’s Foreign Producers’ Questionnaire response, 2.7a and 2.7b.

Item	Event
	international non-proliferation obligations for this new export permitting requirement, effective February 4, 2025. Designated forms of tungsten include ammonium paratungstate and tungsten oxide— the raw materials for producing the tungsten-alloy powder for tungsten shot— and solid tungsten metal, other than sinters and powders. Subject tungsten shot is not mentioned among the solid forms of tungsten nor meets the compositional and physical properties of the tungsten alloys specified in the announcement.

Source: Luoyang Combat, “Our History” webpage, ©2016, <https://www.moly-china.com/history>, retrieved May 19, 2025;

Luoyang Combat, “Development of Kangbo Yangquan Project,” News Release, November 19, 2022, <https://www.moly-china.com/news/Development-of-Kangbo-Yangquan-Project.html>;

Luoyang Combat, “Intelligent Production Helps the Development of Tungsten and Molybdenum New Material Industry,” News Release, August 22, 2023, <https://www.moly-china.com/news/Intelligent-Production-Helps-the-Development-of-Tungsten-and-Molybdenum-New-Material-Industry.html>;

Luoyang Combat, “Warm Congratulations on the Successful Trial Run of the First Phase Project (“2000 Tons of Molybdenum and Molybdenum Alloy Project”) of Combat Yangquan New Materials Co. Ltd.!” News Release, September 6, 2023, <https://www.moly-china.com/news/Warm-congratulations-on-the-successful-trial-run-of-the-first-phase-project-2000-tons-of-molybdenum-and-molybdenum-alloy-project-of-Combat-Yangquan-New-Materials-Co-Ltd.html>;

Luoyang Combat, “The Installation and Commissioning of the 4000 Ton Molybdenum Powder Production Line for Combat Yangquan New Materials Co. Ltd. Phase I Project Have Been Completed,” News Release, September 15, 2023, <https://www.wmo-combat.com/The-installation-and-commissioning-of-the-4000-ton-molybdenum-powder-production-line-for-Combat-Yangquan-New-Materials-Co-Ltd-Phase-I-project-have-been-completed.html>;

Government of China, “Decision to Implement Export Control on Items Related to Tungsten, Tellurium, Bismuth, Molybdenum and Indium,” Announcement No. 10 of 2025, Ministry of Commerce and the General Administration of Customs, February 4, 2025, https://www.mofcom.gov.cn/zwgk/zcfb/art/2025/art_e623090907fc4e1092f0a4db72f57b95.html;

U.S. International Energy Agency, “Decision to Implement Export Controls on Tungsten, Tellurium, Bismuth, Molybdenum and Indium Related items, May 5, 2025, <https://www.iea.org/policies/26795-decision-to-implement-export-controls-on-tungsten-tellurium-bismuth-molybdenum-and-indium-related-items>;

Petitioner’s prehearing brief, exh. 2: Letter of February 14, 2025, from KJ Super to U.S. Acting Secretary of Commerce (Inv. No. A-570-178), attachment.

Changes in operations

During the preliminary phase investigations, *** Chinese producer reported a change in operations: *** reported that ***.⁵

⁵ Preliminary confidential report, table 7.2.

Installed and practical overall capacity

During the preliminary phase investigations, installed and practical overall capacity were unchanged during the 2021 to 2023 period and between the January to March 2023 and the January to March 2024 periods. Practical overall capacity was *** in full-year periods and *** in interim periods. Overall production and capacity utilization decreased during the 2021 to 2023 period and was lower in interim 2024 than in interim 2023.⁶

Constraints on capacity

During the preliminary phase investigations, ***.⁷

⁶ Preliminary confidential report, table 7.3.

⁷ Preliminary confidential report, table 7.4.

Operations on tungsten shot

During the preliminary investigations, tungsten shot production of the two responding foreign producers declined during the 2021 to 2023 period and was lower in interim 2024 than in interim 2023. End-of-period inventories decreased irregularly from 2021 to 2023 and were lower in interim 2024 than in interim 2023. Exports to the United States, which accounted for the majority of total shipments (***) , decreased irregularly from 2021 to 2023 and were lower in interim 2024 than in interim 2023.⁸

Alternative products

During the preliminary investigations, *** reported producing ***,⁹ *** on the same equipment and machinery used to produce tungsten shot. Out-of-scope production accounted for between *** and *** percent of total production on the same equipment as tungsten shot during 2021 to 2023.¹⁰

⁸ Preliminary confidential report, table 7.5.

⁹ ***.

¹⁰ Preliminary confidential report, table 7.6.

Exports

According to Global Trade Atlas (“GTA”), the leading export markets for air gun pellets and parts of shotgun cartridges, including certain tungsten shot, from China are the United States and Germany (table 7.2). In 2024, the United States was the top export market destination for product from China, accounting for 70.2 percent of China’s total exports by quantity. Germany was in second place, accounting for 8.5 percent of China’s total exports by quantity.

Table 7.2 Air gun pellets and parts of shotgun cartridges: Exports from China, by destination market and by period

Quantity in pounds; value in dollars

Destination market	Measure	2022	2023	2024
United States	Quantity	2,844,966	2,512,711	1,335,196
Germany	Quantity	121,039	148,308	160,678
Dominican Republic	Quantity	—	7,520	37,670
Chile	Quantity	20,752	9,766	33,827
Spain	Quantity	185	86	33,797
Netherlands	Quantity	30,655	6,819	27,084
India	Quantity	52,359	3,505	26,466
United Kingdom	Quantity	77,110	86,112	25,240
South Africa	Quantity	14,819	13,552	24,436
All other destination markets	Quantity	474,246	361,349	197,052
Non-U.S. destination markets	Quantity	791,165	637,017	566,250
All destination markets	Quantity	3,636,131	3,149,728	1,901,446
United States	Value	4,439,319	3,488,869	1,614,817
Germany	Value	479,212	967,487	782,686
Dominican Republic	Value	—	24,986	135,862
Chile	Value	66,454	34,752	134,140
Spain	Value	67	250	125,760
Netherlands	Value	95,977	22,204	106,373
India	Value	249,339	24,930	193,641
United Kingdom	Value	359,664	451,041	82,357
South Africa	Value	51,011	48,270	99,230
All other destination markets	Value	1,668,376	1,386,222	1,063,042
Non-U.S. destination markets	Value	2,970,100	2,960,142	2,723,091
All destination markets	Value	7,409,419	6,449,011	4,337,908

Table continued.

Table 7.2 (Continued) Air gun pellets and parts of shotgun cartridges: Exports from China, by destination market and by period

Unit values in dollars per pound; shares in percent

Destination market	Measure	2022	2023	2024
United States	Unit value	1.56	1.39	1.21
Germany	Unit value	3.96	6.52	4.87
Dominican Republic	Unit value	—	3.32	3.61
Chile	Unit value	3.20	3.56	3.97
Spain	Unit value	0.36	2.91	3.72
Netherlands	Unit value	3.13	3.26	3.93
India	Unit value	4.76	7.11	7.32
United Kingdom	Unit value	4.66	5.24	3.26
South Africa	Unit value	3.44	3.56	4.06
All other destination markets	Unit value	3.52	3.84	5.39
Non-U.S. destination markets	Unit value	3.75	4.65	4.81
All destination markets	Unit value	2.04	2.05	2.28
United States	Share of quantity	78.2	79.8	70.2
Germany	Share of quantity	3.3	4.7	8.5
Dominican Republic	Share of quantity	—	0.2	2.0
Chile	Share of quantity	0.6	0.3	1.8
Spain	Share of quantity	0.0	0.0	1.8
Netherlands	Share of quantity	0.8	0.2	1.4
India	Share of quantity	1.4	0.1	1.4
United Kingdom	Share of quantity	2.1	2.7	1.3
South Africa	Share of quantity	0.4	0.4	1.3
All other destination markets	Share of quantity	13.0	11.5	10.4
Non-U.S. destination markets	Share of quantity	21.8	20.2	29.8
All destination markets	Share of quantity	100.0	100.0	100.0

Source: Official exports statistics under HS subheading 9306.29 as reported by China Customs in the Global Trade Atlas database, accessed April 24, 2025.

Note: Shares and ratios shown as “0.0” represent values greater than zero, but less than “0.05” percent. Zeroes, null values, and undefined calculations are suppressed and shown as “—.” United States is shown at the top followed by the top destination markets in descending order of 2024 data.

U.S. inventories of imported merchandise

Table 7.3 presents data on U.S. importers' reported inventories of tungsten shot.¹¹ U.S. importers' inventories of tungsten shot from China decreased by *** percent from 2022 to 2024 and were *** percent lower in interim 2025 than in interim 2024. The ratio of inventories to imports, to U.S. shipments of imports, and to total shipments of imports all decreased from 2022 to 2024 and were lower in interim 2025 than in interim 2024.

Table 7.3 Tungsten shot: U.S. importers' inventories and their ratio to select items, by source and period

Quantity in pounds; ratio in percent, interim is January to March

Measure	Source	2022	2023	2024	Interim 2024	Interim 2025
Inventories quantity	China	***	***	***	***	***
Ratio to imports	China	***	***	***	***	***
Ratio to U.S. shipments of imports	China	***	***	***	***	***
Ratio to total shipments of imports	China	***	***	***	***	***
Inventories quantity	Nonsubject sources	***	***	***	***	***
Ratio to imports	Nonsubject sources	***	***	***	***	***
Ratio to U.S. shipments of imports	Nonsubject sources	***	***	***	***	***
Ratio to total shipments of imports	Nonsubject sources	***	***	***	***	***
Inventories quantity	All import sources	***	***	***	***	***
Ratio to imports	All import sources	***	***	***	***	***
Ratio to U.S. shipments of imports	All import sources	***	***	***	***	***
Ratio to total shipments of imports	All import sources	***	***	***	***	***

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

Note: Zeroes, null values, and undefined calculations are suppressed and shown as “—”.

¹¹ Inventories are understated, as ***. *** U.S. Importer questionnaire response, II-5a.

U.S. importers' outstanding orders

The Commission requested importers to indicate whether they imported or arranged for the importation of tungsten shot from China and nonsubject sources after March 31, 2025. As shown in table 7.4, arranged imports were reported for the ***, by ***.

Table 7.4 Tungsten shot: U.S. importers' arranged imports, by source and period

Quantity in pounds

Source	Q2 2025	Q3 2025	Q4 2025	Q1 2026	Total
China	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

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

Third-country trade actions

According to the petitioner, there are no known trade remedy actions on tungsten shot from China in third-country markets. Likewise, no importer or foreign producer identified any third-country trade actions in their questionnaire responses. Moreover, industry research failed to reveal any such actions.

Information on nonsubject countries

According to GTA, the leading exporters of air gun pellets and parts of shot gun cartridge, including certain tungsten shot, are predominantly Western European countries (table 7.5). During 2024, France was the top exporter, accounting for 17.3 percent of the total global export value, followed by Italy (17.2 percent), Turkey (16.8 percent), and Spain (9.9 percent).

Table 7.5 Air gun pellets and parts of shotgun cartridges: Global exports by reporting country and by period

Value in dollars; shares in percent

Exporting country	Measure	2022	2023	2024
United States	Value	16,278,737	20,573,422	5,854,377
China	Value	7,409,419	6,449,011	4,337,908
France	Value	42,109,918	52,940,169	43,726,695
Italy	Value	51,360,098	59,340,148	43,325,825
Turkey	Value	45,193,152	46,989,715	42,437,811
Spain	Value	20,284,685	25,385,876	24,902,660
Germany	Value	19,371,986	19,585,048	17,210,432
Serbia	Value	74,500	3,533,036	14,568,836
Pakistan	Value	—	41,682	14,087,021
Greece	Value	12,105,769	10,894,228	10,807,243
Czech Republic	Value	13,382,305	14,457,645	10,009,022
Peru	Value	5,811,290	5,165,474	5,703,163
All other exporters	Value	48,805,980	18,686,910	15,253,771
All reporting exporters	Value	282,187,839	284,042,364	252,224,764
United States	Share of value	5.8	7.2	2.3
China	Share of value	2.6	2.3	1.7
France	Share of value	14.9	18.6	17.3
Italy	Share of value	18.2	20.9	17.2
Turkey	Share of value	16.0	16.5	16.8
Spain	Share of value	7.2	8.9	9.9
Germany	Share of value	6.9	6.9	6.8
Serbia	Share of value	0.0	1.2	5.8
Pakistan	Share of value	—	0.0	5.6
Greece	Share of value	4.3	3.8	4.3
Czech Republic	Share of value	4.7	5.1	4.0
Peru	Share of value	2.1	1.8	2.3
All other exporters	Share of value	17.3	6.6	6.0
All reporting exporters	Share of value	100.0	100.0	100.0

Source: Official export statistics under HS subheading 9306.29, as reported by various national statistical authorities in the Global Trade Atlas (“GTA”) database, accessed April 24, 2025.

Note: Export quantities are not reported due to differences among the quantity units reported by exporters in the GTA database.

Note: Shares and ratios shown as “0.0” represent values greater than zero, but less than “0.05” percent. Zeroes, null values, and undefined calculations are suppressed and shown as “—.” United States is shown at the top followed by the countries under investigation, all remaining top exporting countries in descending order of 2024 data.

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
89 FR 57941, July 16, 2024	Tungsten Shot From China; Institution of Antidumping and Countervailing Duty Investigations and Scheduling of Preliminary Phase Investigations	https://www.govinfo.gov/content/pkg/FR-2024-07-16/pdf/2024-15530.pdf
89 FR 65852, August 13, 2024	Certain Tungsten Shot From the People’s Republic of China: Initiation of Countervailing Duty Investigation	https://www.govinfo.gov/content/pkg/FR-2024-08-13/pdf/2024-18009.pdf
89 FR 65856, August 13, 2024	Certain Tungsten Shot From the People’s Republic of China: Initiation of Less-Than-Fair-Value Investigation	https://www.govinfo.gov/content/pkg/FR-2024-08-13/pdf/2024-18008.pdf
89 FR 70666, August 30, 2024	Tungsten Shot From China; Preliminary Determinations	https://www.govinfo.gov/content/pkg/FR-2024-08-30/pdf/2024-19511.pdf
89 FR 90265, November 15, 2024	Certain Tungsten Shot From the People’s Republic of China: Postponement of Preliminary Determination in the Less-Than-Fair Value Investigation	https://www.govinfo.gov/content/pkg/FR-2024-11-15/pdf/2024-26640.pdf
89 FR 104083, December 20, 2024	Certain Tungsten Shot From the People’s Republic of China: Preliminary Affirmative Countervailing Duty Determination and Alignment of Final Determination With Final Antidumping Duty Determination	https://www.govinfo.gov/content/pkg/FR-2024-12-20/pdf/2024-30478.pdf
90 FR 9890, February 19, 2025	Certain Tungsten Shot From the People’s Republic of China: Preliminary Affirmative Determination of Sales at Less Than Fair Value and Postponement of Final Determination and Extension of Provisional Measures	https://www.govinfo.gov/content/pkg/FR-2025-02-19/pdf/2025-02800.pdf
90 FR 10941, February 28, 2025	Tungsten Shot From China; Scheduling of the Final Phase of Countervailing Duty and Antidumping Duty Investigations	https://www.govinfo.gov/content/pkg/FR-2025-02-28/pdf/2025-03298.pdf
90 FR 30849, July 11, 2025	Certain Tungsten Shot From the People’s Republic of China: Final Affirmative Determination of Sales at Less Than Fair Value	https://www.govinfo.gov/content/pkg/FR-2025-07-11/pdf/2025-12975.pdf
90 FR 30869, July 11, 2025	Certain Tungsten Shot From the People’s Republic of China: Final Affirmative Countervailing Duty Determination	https://www.govinfo.gov/content/pkg/FR-2025-07-11/pdf/2025-12966.pdf

APPENDIX B

LIST OF HEARING WITNESSES

CALENDAR OF PUBLIC HEARING

Those listed below appeared in the United States International Trade Commission’s hearing:

Subject: Tungsten Shot from China
Inv. Nos.: 701-TA-732 and 731-TA-1701 (Final)
Date and Time: July 9, 2025 - 9:30 a.m.

Sessions were held in connection with these investigations in the Main Hearing Room (Room 101), 500 E Street, SW., Washington, DC.

OPENING REMARKS:

In Support of Imposition (**Daniel B. Pickard**, Buchanan Ingersoll & Rooney PC)

SESSION 1: SUPPORT DIRECT PRESENTATION and COMMISSIONERS’ Q&A (Open to Public)

**In Support of the Imposition of the
Antidumping and Countervailing Duty Orders:**

Buchanan Ingersoll & Rooney PC
Washington, DC
on behalf of

Tungsten Parts Wyoming, Inc. (“TPW”)

Mark Holden, Chief Executive Officer, TPW

Lee Heintz (remote witness), Chief Financial Officer, TPW

Daniel B. Pickard)
) – OF COUNSEL
Amanda L. Wetzel)

SESSION 2: IN CAMERA COMMISSIONERS’ Q&A (Closed to Public)

CLOSING REMARKS:

In Support of Imposition (**Daniel B. Pickard**, Buchanan Ingersoll & Rooney PC)

APPENDIX C
SUMMARY DATA

Table C.1

Tungsten shot: Summary data concerning the U.S. market, by item and period

Quantity=pounds; Value in dollars; Unit values, unit labor costs, and unit expenses=dollars per pound; Period changes=percent--exceptions noted; Interim period is January through March

Item	Reported data					Period change comparisons			
	2022	Calendar year 2023	2024	Interim 2024	2025	2022-24	Calendar year 2022-23	2023-24	Interim 2024-25
U.S. consumption quantity:									
Amount.....	***	***	***	***	***	▼***	▼***	▼***	▲***
Producers' share (fn1).....	***	***	***	***	***	▲***	▲***	▲***	▲***
Importers' share (fn1):									
China.....	***	***	***	***	***	▼***	▼***	▼***	▼***
Nonsubject sources.....	***	***	***	***	***	▼***	▼***	▼***	***
All import sources.....	***	***	***	***	***	▼***	▼***	▼***	▼***
U.S. consumption value:									
Amount.....	***	***	***	***	***	▼***	▼***	▼***	▲***
Producers' share (fn1).....	***	***	***	***	***	▲***	▲***	▲***	▲***
Importers' share (fn1):									
China.....	***	***	***	***	***	▼***	▼***	▼***	▼***
Nonsubject sources.....	***	***	***	***	***	▼***	▼***	▼***	***
All import sources.....	***	***	***	***	***	▼***	▼***	▼***	▼***
U.S. importers' U.S. shipments of imports from (fn2):									
China:									
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.....	***	***	***	***	***	▼***	▼***	▼***	▼***
U.S. producers':									
Practical 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.....	***	***	***	***	***	▲***	▲***	▲***	▲***
Wages paid (dollars).....	***	***	***	***	***	▲***	▲***	▲***	▲***
Hourly wages (dollars per hour).....	***	***	***	***	***	▲***	▲***	▼***	▲***
Productivity (pounds per hour).....	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit labor costs (dollars per pound).....	***	***	***	***	***	▼***	▼***	▼***	▲***

Table continued.

Table C.1 Continued

Tungsten shot: Summary data concerning the U.S. market, by item and period

Quantity=pounds; Value in dollars; Unit values, unit labor costs, and unit expenses=dollars per pound; Period changes=percent--exceptions noted; Interim period is January through March

Item	Reported data					Period change comparisons			
	2022	2023	2024	2024	2025	2022-24	2022-23	2023-24	2024-25
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).....	***	***	***	***	***	▼***	▼***	▼***	▼***
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).....	***	***	***	***	***	▼***	▼***	▲***	▲***
Capital expenditures.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Research and development expenses.....	***	***	***	***	***	▲***	▲***	▲***	▲***
Total assets.....	***	***	***	***	***	▲***	▲***	▲***	***

Source: Compiled from data submitted in response to Commission questionnaires, and from proprietary, Census-edited Customs records under HTS statistical reporting numbers 9306.29.0000 and 8101.99.8000 accessed July 15, 2025. Proprietary, Census-edited Customs records were used to measure U.S. imports from sources in China not accounted for in data submitted in response to Commission questionnaires. 508-compliant tables for these data are contained in parts 3, 4, 6, and 7 of this report.

fn1.--Reported data are in percent and period changes are in percentage points.

fn2.--As discussed in part 4, additional data was added into the import dataset using proprietary, Census-edited Customs entry summary records. These additional supplemental volumes added into the China lines are based on import timing and valuations. See part 4 for a detailed discussion of the methodology and data caveats.

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.

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.

APPENDIX D

U.S. PRODUCERS' RESPONSES REGARDING MATERIAL RETARDATION

Tables D.1 and D.2 present whether U.S. producers have commenced trial production (table D.1) or commercial production (table D.2) of tungsten shot. TPW indicated that it ***,¹ so *** in table D.2. For TPW production throughout the data collection period, see table 3.7.² While Elmet reported that ***³ and GTP reported that ***, both Elmet and GTP reported *** (see table 3.7).

Table D.1 Tungsten shot: U.S. producers’ trial production commencement since January 1, 2022, by firm

Quantity in pounds; count in number of firms reporting; N/A is not applicable

Firm	Commenced trial production	Date commenced	Quantity
Elmet	***	***	***
GTP	***	***	***
TPW	***	***	***
All firms	Yes: *** No: ***	N/A	***

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

Note: Zeroes, null values, and undefined calculations are suppressed and shown as “—”.

Table D.2 Tungsten shot: U.S. producers’ commercial production commencement since January 1, 2022, by firm

Quantity in pounds; count in number of firms reporting; N/A is not applicable

Firm	Commenced commercial production	Date commenced	Quantity
Elmet	***	***	***
GTP	***	***	***
TPW	***	***	***
All firms	Yes: ***; No: ***	N/A	***

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

¹ *** U.S. Producers’ Questionnaire, II-3g.

² Email from ***, May 20, 2025.

³ ***, *** U.S. Producers’ Questionnaire response, II-3g.

Table D.3 presents whether firms that have started commercial operations of tungsten shot have had to suspend or cease production at any time after January 1, 2022. Given that *** that reported suspension or cessation of commercial production. TPW ceased production after the period for which data were collected, in April 2025.

Table D.3 Tungsten shot: U.S. producers' commercial production, suspension, or cessation, by firm

Count in number of firms reporting; N/A is not applicable

Firm	Suspended or ceased production	Date non-production	Recommencement
Elmet	***	***	***
GTP	***	***	***
TPW	***	***	***
All firms	Yes: ***, No:***	N/A	N/A

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

As shown in table D.4, *** reported that it has produced tungsten shot prior to January 1, 2022.

Table D.4 Tungsten shot: U.S. producers' previous production before January 1, 2022, by firm

Count in number of firms reporting

Firm	Previously produced
Elmet	***
GTP	***
TPW	***
All firms	Yes: ***, No: ***

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

As indicated in table D.5, *** produced other products at its facility prior to producing tungsten shot.

Table D.5 Tungsten shot: U.S. producers' production of other products prior to producing tungsten shot, by firm

Count in number of firms reporting; N/A is not applicable

Firm	Previously produced other products	Narrative response regarding other products
Elmet	***	***
GTP	***	***
TPW	***	***
All firms	Yes: ***; No: ***	N/A

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

U.S. producers were asked to describe the machinery required to produce in-scope tungsten shot and the extent to which that machinery overlaps with machinery required to produce other tungsten shot and/or other products. Table D.6 presents their narrative responses.

Table D.6 Tungsten shot: U.S. producers' narrative responses regarding machinery required to produce tungsten shot, by firm

Quantity in pounds; count in number of firms reporting;

Firm	Narrative responses regarding machinery required to produce tungsten shot
Elmet	***
GTP	***
TPW	***

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

Table D.7 presents U.S. producers' responses to whether the technical specifications and/or designs of their tungsten shot is derived, at least in part, from the technical specifications and/or designs of other products.

Table D.7 Tungsten shot: U.S. producers' technical specifications and designs derived from other products, by firm

Count in number of firms reporting; N/A is not applicable

Firm	Technical specifications and/or designs derived from other products	Narrative response regarding Tungsten technical specifications and designs
Elmet	***	***
GTP	***	***
TPW	***	***
All firms	Yes: ***; No: ***	N/A

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

Table D.8 presents U.S. producers' responses to whether their production of tungsten shot was added to an existing facility that previously produced other products, and if so, U.S. producers were asked to detail the efforts to convert that part of the existing facility from the production of other products to tungsten shot. *** responded *** and *** responded ***. Their narrative responses are presented below.

Table D.8 Tungsten shot: U.S. producers' narrative description of production operations, by firm

Firm	Nature of production operations
Elmet	***
GTP	***
TPW	***

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

Table D.9 presents U.S. producers' methods used to market tungsten shot, including the names of firms that were contacted.

Table D.9 Tungsten shot: U.S. producers' narrative responses regarding marketing strategy, by firm

Firm	Narrative regarding marketing strategy
Elmet	***
GTP	***
TPW	***

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

Table D.10 presents whether U.S. producers prepared or commissioned studies, business plans, cost or sales projections, engineering test results, or correspondence concerning the feasibility, cost, and/or desirability of manufacturing tungsten shot and descriptions of such activities.

Table D.10 Tungsten shot: U.S. producers' business plans, by firm

Count in number of firms reporting; N/A is not applicable

Firm	Business plans developed	Narrative response regarding business plans
Elmet	***	***
GTP	***	***
TPW	***	***
All firms	Yes: ***; No: ***	N/A

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

Table D.11 presents U.S. producers’ responses to whether they reached a financial breakeven point for their sales of tungsten shot in 2024 and 2025. See part 6 for U.S. producers’ breakeven analyses based on actual experience in 2024 (table 6.3) and 2024 cost structure and alternative net sales AUVs, by price level (table 6.4).

Table D.11 Tungsten shot: U.S. producers’ narrative response regarding reaching a financial breakeven

Reporting firm	Narrative regarding reaching a financial breakeven point
Elmet	***
GTP	***
TPW	***

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

Table D.12 presents U.S. producers' responses to the necessary production, price, and financing/investment levels necessary to commence and sustain commercial production of tungsten shot.

Table D.12 Tungsten shot: U.S. producers' narrative response regarding commercial operations

Firm	Operation	Narratives regarding commercial operations
Elmet	Production	***
GTP	Production	***
TPW	Production	***
Elmet	Price	***
GTP	Price	***
TPW	Price	***
Elmet	Finance / Investment	***
GTP	Finance / Investment	***
TPW	Finance / Investment	***

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

U.S. producers were asked whether they have knowledge of the typical cost structure of established tungsten shot producers in developed economies similar to that of producers in the United States. *** had knowledge for related producers and *** had knowledge for unrelated producers, as presented in table D.13.

Table D.13 Tungsten shot: U.S. producers' knowledge of unrelated producers' cost structure, by firm

Count in number of firms reporting; N/A is not applicable

Firm	Knowledge of unrelated producers' cost structure	Narrative response
Elmet	***	***
GTP	***	***
TPW	***	***
All firms	Yes: ***; No: ***	N/A

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

Table D.14 presents U.S. producers’ actual and projected practical tungsten shot capacity and production. Of note, *** only reported projections for 2025 and not 2026. *** projected a *** of practical tungsten shot capacity between 2025 and 2026, while *** reported *** projections. *** projected a *** percent increase in commercial production from 2025 to 2026, while *** only provided a projection of *** pounds for 2025. ***.

Table D.14 Tungsten shot: U.S. producers’ projected practical capacity and production, by period

Quantity in pounds; share and ratios in percent

Item	Measure	2022	2023	2024	Projection 2025	Projection 2026
Practical Tungsten shot capacity	Quantity	***	***	***	***	***
Trial production	Quantity	***	***	***	***	***
Commercial production	Quantity	***	***	***	***	***
All production	Quantity	***	***	***	***	***
Practical capacity utilization	Ratio	***	***	***	***	***
Trial production	Share	***	***	***	***	***
Commercial production	Share	***	***	***	***	***
All production	Share	100.0	100.0	100.0	100.0	100.0

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

Note: Zeroes, null values, and undefined calculations are suppressed and shown as “—”.

Table D.15 presents U.S. producers' extent to which they could use existing resources used to produce out-of-scope tungsten shot to begin producing in-scope tungsten shot, by resource type.

Table D.15 Tungsten shot: Narratives regarding the existence of resources to produce in-scope tungsten shot, by firm and resource type

Firm	Resource type	Narratives regarding the existence of resources to produce in-scope tungsten shot
Elmet	Customer contacts	***
GTP	Customer contacts	***
TPW	Customer contacts	***
Elmet	Distribution infrastructure	***
GTP	Distribution infrastructure	***
TPW	Distribution infrastructure	***
Elmet	Equipment	***
GTP	Equipment	***
TPW	Equipment	***
Elmet	Employees	***
GTP	Employees	***
TPW	Employees	***
Elmet	Technical expertise	***
GTP	Technical expertise	***
TPW	Technical expertise	***
Elmet	Technical expertise	***
GTP	Technical expertise	***
TPW	Technical expertise	***

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

Table D.16 presents the additional equipment and market dynamics needed for U.S. producers to produce tungsten shot.

Table D.16 Tungsten shot: Narratives regarding additional equipment needed to produce tungsten shot and market factor considerations for starting in-scope production, by firm and needs

Firm	Equipment needs / Market factors	Narratives regarding additional equipment needed and market factor consideration
Elmet	Additional equipment needed	***
GTP	Additional equipment needed	***
TPW	Additional equipment needed	***
Elmet	Additional factors to enter market	***
GTP	Additional factors to enter market	***
TPW	Additional factors to enter market	***

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

APPENDIX E

PRICE AND PURCHASE COST DATA: AGGREGATED PRICING PRODUCTS

Importer *** submitted purchase cost data which ***. Its purchase cost data can be compared to domestic prices *** (table E.1). Importer *** provided only aggregated purchase cost data not separated by pricing product. It stated in its questionnaire response: ***. It is likely that the data provided by *** likely includes sizes outside the scope of the five pricing products. Prices between the five pricing products, as reported by U.S. domestic producers, do not vary substantially, indicating that the inclusion of multiple sizes in the aggregated data is unlikely to materially affect the analysis.

Table E.1 presents the U.S. producers aggregated prices, U.S. importers aggregated purchase costs, the aggregated purchase cost data reported by importer ***, and purchase costs combining both *** and all other U.S. importers.

Tables E.2 to E.4 and figure E.1 presents the aggregated pricing and purchase cost data for all U.S. producers and importers in order to include *** aggregated purchase cost data in an overall comparison.

Table E.1 Tungsten shot: Weighted average U.S. producer prices and subject U.S. importer purchase costs for aggregated pricing products 1 to 5 combined, importer * aggregated purchase costs, by source and quarter**

Quantity in pounds; unit LDP values in dollars per pound; price-cost differentials in percent

Period	U.S. price	U.S. quantity	China unit LDP value (part 5 of report)	China cost quantity (part 5 of report)	*** unit LDP value	*** cost quantity	Combined China unit LDP value	Combined China cost quantity	Combined China cost differential
2022 Q1	***	***	***	***	***	***	***	***	***
2022 Q2	***	***	***	***	***	***	***	***	***
2022 Q3	***	***	***	***	***	***	***	***	***
2022 Q4	***	***	***	***	***	***	***	***	***
2023 Q1	***	***	***	***	***	***	***	***	***
2023 Q2	***	***	***	***	***	***	***	***	***
2023 Q3	***	***	***	***	***	***	***	***	***
2023 Q4	***	***	***	***	***	***	***	***	***
2024 Q1	***	***	***	***	***	***	***	***	***
2024 Q2	***	***	***	***	***	***	***	***	***
2024 Q3	***	***	***	***	***	***	***	***	***
2024 Q4	***	***	***	***	***	***	***	***	***
2025 Q1	***	***	***	***	***	***	***	***	***

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "—".

Note: Staff have removed the single purchase cost import reported by ***. See part 5 for further discussion on the removal of this purchase cost data. Removing ***. Retaining *** would instead present as:

Period	U.S. price	U.S. quantity	China unit LDP value (part 5 of report)	China cost quantity (part 5 of report)	*** unit LDP value	*** cost quantity	Combined China unit LDP value	Combined China cost quantity	Combined China cost differential
2024 Q1	***	***	***	***	***	***	***	***	***

Table E.2 Tungsten shot: Weighted average U.S. producer prices, subject U.S. importer prices, subject U.S. importer purchase costs, by quarter

Quantity in pounds; Prices and unit LDP values in dollars per pound; Margins and price-cost differentials in percent

Period	U.S. price	U.S. quantity	China price	China quantity	China margin	Combined China unit LDP value	Combined China cost quantity	Combined China cost differential
2022 Q1	***	***	***	***	***	***	***	***
2022 Q2	***	***	***	***	***	***	***	***
2022 Q3	***	***	***	***	***	***	***	***
2022 Q4	***	***	***	***	***	***	***	***
2023 Q1	***	***	***	***	***	***	***	***
2023 Q2	***	***	***	***	***	***	***	***
2023 Q3	***	***	***	***	***	***	***	***
2023 Q4	***	***	***	***	***	***	***	***
2024 Q1	***	***	***	***	***	***	***	***
2024 Q2	***	***	***	***	***	***	***	***
2024 Q3	***	***	***	***	***	***	***	***
2024 Q4	***	***	***	***	***	***	***	***
2025 Q1	***	***	***	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "—".

Note: aggregated prices for China are unaffected by the inclusion of importer *** purchase cost data.

Note: Staff have removed the single purchase cost import reported by ***. See part 5 for further discussion on the removal of this purchase cost data. Removing ***. Retaining *** would instead present as:

Period	U.S. price	U.S. quantity	China price	China quantity	China margin	Combined China unit LDP value	Combined China cost quantity	Combined China cost differential
2024 Q1	***	***	***	***	***	***	***	***

Figure E.1 Tungsten shot: Weighted-average f.o.b. prices, unit landed duty paid value, and quantities of domestic and imported product 3, by source and quarter

Price and purchase cost of aggregated pricing products 1 to 5

* * * * *

Volume of aggregated pricing products 1 to 5

* * * * *

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

Price and purchase cost comparisons

Price comparisons

Inclusion of the data provided by importer *** would not affect the price comparison tables in part 5. See tables 5.10 and 5.11.

Price-cost comparisons

As shown in table 5.12 and 5.13, landed duty-paid costs for tungsten shot imported from China were above the sales price for U.S.-produced product in three of five instances (*** pounds), landed duty-paid costs for tungsten shot from China were between *** percent above sales prices for the domestic product. In the remaining two instances (*** pounds); price-cost differentials ranged from *** percent.

Table E.3 Tungsten shot: Instances and quantities of lower/(Higher) average unit purchase costs compared to U.S. prices and the range and average of price/cost differentials, by product

Quantity in pounds; Differentials in percent

Products	Type	Number of instances	Quantity	Average differential	Min differential	Max differential
All products	Lower than US	3	***	***	***	***
All products	Higher than US	2	***	***	***	***

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

Note: Instances represent the number of valid comparisons included where there was both a domestic price and subject import purchase cost comparison reported by the specified criteria. Quantity represents the quantity for the subject purchase cost data included in the specified comparisons. Differentials represent the percent differences between subject purchase cost data and domestic pricing product, with positive differentials indicating subject purchase cost data were below domestic pricing data and negative differentials indicating subject purchase cost data were above domestic pricing data in the specified comparisons. Differentials shown as "0.0" percent represent non-zero values less than "0.05" percent (if positive, lower than the U.S. price) and greater than "(0.05)" percent (if negative, higher than the U.S. price). Zeroes, null values, and undefined calculations are suppressed and shown as "—".

Table E.4 Tungsten shot: Instances and quantities of lower/(Higher) average unit purchase costs compared to U.S. prices and the range and average of price/cost differentials, by product

Quantity in pounds; Differentials in percent

Period	Type	Number of instances	Quantity	Average differential	Min differential	Max differential
2022	Lower than US	—	***	***	***	***
2023	Lower than US	2	***	***	***	***
2024	Lower than US	1	***	***	***	***
January through March 2025	Lower than US	—	***	***	***	***
All periods	Lower than US	3	***	***	***	***
2022	Higher than US	—	***	***	***	***
2023	Higher than US	—	***	***	***	***
2024	Higher than US	1	***	***	***	***
January through March 2025	Higher than US	1	***	***	***	***
All periods	Higher than US	2	***	***	***	***

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

Note: Instances represent the number of valid comparisons included where there was both a domestic price and subject import purchase cost comparison reported by the specified criteria. Quantity represents the quantity for the subject purchase cost data included in the specified comparisons. Differentials represent the percent differences between subject purchase cost data and domestic pricing product, with positive differentials indicating subject purchase cost data were below domestic pricing data and negative differentials indicating subject purchase cost data were above domestic pricing data in the specified comparisons. Differentials shown as “0.0” percent represent non-zero values less than “0.05” percent (if positive, lower than the U.S. price) and greater than “(0.05)” percent (if negative, higher than the U.S. price). Zeroes, null values, and undefined calculations are suppressed and shown as “—”.

