

Project #2

Gender considerations in the analysis of market definition and competitive effects: A practical framework and illustrative example

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1. Introduction

The potential impact of gender³ on antitrust analysis is gaining interest among enforcers and policymakers as part of a broader discussion about the role of competition policy in addressing equity issues. Over the past few years, leading individuals at competition authorities around the globe have highlighted the role competition agencies could play in combating structural economic inequalities. For example, in her keynote address to the Organisation for Economic Co-operation and Development (“OECD”) at the 17th Global Forum on Competition, then-Commissioner for Competition of the European Commission Margrethe Vestager discussed the need for a gender-inclusive perspective to competition policy.⁴ Similarly, in her remarks at a 2020 Global Competition Review event, the U.S. Federal Trade Commission (“FTC”) Commissioner Rebecca Kelly Slaughter encouraged the antitrust community to begin to “think strategically about using antitrust as a tool” for promoting diversity, equity, and inclusion.⁵ Commissioner Slaughter observed that value-based priorities underpin all areas of law enforcement, and, as such, antitrust enforcement decisions have the potential to reinforce or combat existing structural inequities.⁶ In Canada, the government has asked all of its federal agencies, including the Competition Bureau, to incorporate a Gender-based Analysis Plus (“GBA+”) framework into their review of policies and consider how government policies and initiatives might affect different people and identity groups, including by gender.^{7, 8}

³ In this article, we use the terms “women/female” and “men/male” to refer to people who identify as female or male, respectively, as illustrative examples of how gender could be incorporated into antitrust analysis. However, as noted by the Canadian Institutes of Health Research, “Gender refers to the socially constructed roles, behaviours, expressions and identities of girls, women, boys, men, and gender diverse people. It influences how people perceive themselves and each other, how they act and interact, and the distribution of power and resources in society. Gender identity is not confined to a binary (girl/woman, boy/man) nor is it static; it exists along a continuum and can change over time. There is considerable diversity in how individuals and groups understand, experience and express gender through the roles they take on, the expectations placed on them, relations with others and the complex ways that gender is institutionalized in society.” See Canadian Institutes of Health Research. “What is Gender? What is Sex?” <https://cihr-irsc.gc.ca/e/48642.html>.

⁴ Vestager, Margrethe. (2018, November 29). “Keynote Address.” OECD: 17th Global Forum on Competition, Paris. https://www.oecd.org/competition/globalforum/GFC2018-Keynote_Address_Vestager.pdf.

⁵ Slaughter, Rebecca Kelly. (2020, November 17). “Antitrust at a Precipice.” U.S. Federal Trade Commission. Prepared Remarks, GCR Interactive: Women in Antitrust. https://www.ftc.gov/system/files/documents/public_statements/1583714/slaughter_remarks_at_gcr_interactive_women_in_antitrust.pdf.

⁶ *Ibid.*

⁷ The GBA+ approach takes into consideration factors beyond gender, including ethnicity, race, religion, age, and mental and physical disability, and how the interaction among these factors can also be impacted by government policies. See Government of Canada. (2021, April 14). “What is Gender-based Analysis Plus.” <https://women-gender-equality.canada.ca/en/gender-based-analysis-plus/what-gender-based-analysis-plus.html>.

⁸ This policy has translated directly to the activities of the Canadian Competition Bureau, who recently identified in a study of competition in the broadband industry that women were more likely to fit a certain consumer profile than others. See Vassos, Nadia and Ellen Creighton. (2021, April 26). “The Competition Bureau’s Journey Towards Inclusive Competition.” Competition Policy International. <https://www.competitionpolicyinternational.com/the-competition-bureaus-journey-towards-inclusive-competition/>.

In this paper, we seek to contribute to the ongoing conversation to demonstrate how traditional antitrust analyses of market definition and potential competitive effects could incorporate gender considerations more consistently and how one might apply a gender lens to data collection efforts to enable such considerations where they are relevant. Motivated by the growing interest in understanding the role and the impact of competition policy in tackling issues of diversity, equity, and inclusion, the OECD and the Canadian Competition Bureau recently launched a project called “Gender Inclusive Competition Policy.” This paper is one of several proposals selected by the OECD to generate new research exploring “whether a gender lens might in fact help deliver a more effective competition policy by identifying additional relevant features of the market, and of the behaviour of consumers and firms, as well as whether a more effective competition policy can help address gender inequality.”⁹

The need to evaluate consumer heterogeneity in preferences and demand substitution in defining relevant markets and analysing competitive effects is not a new concept. Recent merger evaluations, as well as academic research, have highlighted different ways in which gender and/or other identity factors might influence demand and substitution patterns. For example, in the merger of Unilever and Sara Lee, the European Commission considered the degree of competitive constraint between male and non-male deodorants, ultimately finding that they represented two distinct relevant product markets.¹⁰ Gender-based market factors in personal care products have also been considered by the FTC. For example, in Procter & Gamble’s acquisition of Gillette, the FTC required the divestiture of Gillette Right Guard men’s antiperspirant and deodorant after finding that the market for men’s antiperspirant and deodorant was highly concentrated, and that the acquisition would result in reduced competition.¹¹ Outside of personal care products, separate markets for women, men, and children have also been evaluated in cases related to clothing and apparel.¹²

⁹ OECD. (2021). “Gender Inclusive Competition Policy.” <https://www.oecd.org/competition/gender-inclusive-competition-policy.htm>.

¹⁰ “Separate markets result from absence of demand-side and supply-side substitutability [and not marketing differences alone]. However, marketing/branding of branded goods like deodorants is an important factor in both the consumer choice and the suppliers’ abilities to successfully put their products on the market.” *Case No COMP/M.5658 – UNILEVER/SARA LEE*. European Commission. (2010). https://ec.europa.eu/competition/mergers/cases/decisions/m5658_20101117_20600_2193231_EN.pdf pp. 10 & 13.

¹¹ See U.S. Federal Trade Commission. “Analysis of Agreement Containing Consent Orders to Aid Public Comments *In the Matter of Procter & Gamble Company and the Gillette Company*.” <https://www.ftc.gov/sites/default/files/documents/cases/2005/09/050930ana0510115.pdf>. p. 4.

¹² In the *Brown Shoe Co. v. United States* merger decision, the U.S. Supreme Court held that the U.S. District Court identified men’s, women’s, and children’s shoes as the relevant product markets, and, notably, established that “[t]he outer boundaries of a product market are determined by the reasonable interchangeability of use or the cross-elasticity of demand between the product itself and substitutes for it.” *Brown Shoe Co. Inc., v. United States*. U.S. Supreme Court. (1961). <https://tile.loc.gov/storage-services/service/ll/usrep/usrep370/usrep370294/usrep370294.pdf>. (See also *United States v. Brown Shoe Company*. U.S. District Court for the Eastern District of Missouri. (1959)). <https://law.justia.com/cases/federal/district-courts/FSupp/179/721/1522705/>; Skitol, Robert A. and Kenneth M. Vorrasi. (2012). “The Remarkable 50-year Legacy of *Brown Shoe Co. v. United States*.” *Antitrust*, Vol. 26, Issue 2. <https://heinonline.org/HOL/LandingPage?handle=hein.journals/antitruma26&div=32&id=&page=>).

Although economists and competition agencies recognise that men and women, as well as other identity groups, may have different preferences, price sensitivities, or propensities to switch among products, these differences may not always be readily observable in how data are collected and how products are marketed. Historically, gender has not been a consistent lens through which antitrust investigations and merger reviews are conducted, particularly in cases where demographic data on consumers may not be readily available and/or products are not clearly recognised to be “gendered.”

In this paper, we propose a practical framework for how gender-based considerations could be investigated in the early stages of market definition analysis and evaluation of competitive effects. We outline supply- and demand-side factors that could be considered as initial tests of the potential relevance of gender-based considerations in competition analysis. We then present potential sources of data and other evidence from which one or more of these factors could be assessed. To the extent that one or more supply- or demand-side factors suggest the potential impact of gender-based considerations in competition analysis, a more systematic, in-depth analysis may be warranted.

We motivate this framework by offering an illustrative example of a hypothetical merger analysis using publicly available data collected from an online retailer, and show how considerations of gender in practice could affect the outcomes of a merger analysis. This example—although highly stylised and focused on consumer products with a clearly gendered dimension in appearance and marketing—illustrates how initial investigations of the potential impact of gender-based considerations could be carried out in the early stages of market definition analysis and evaluation of competitive effects.

The remainder of this paper is organised as follows. In Section 2. , we present a potential framework for applying a gender lens to market definition analysis and evaluation of competitive effects. We discuss the four categories of data sources and evidence that may be useful in applying a gender lens to these analyses. In Section 3. , we provide an illustrative example of how a gender lens could be applied to market definition analysis and an evaluation

Similarly, in the Otto and Primondo merger, the European Commission also identified separate markets for women’s, men’s, and children’s clothing. The Commission noted that these products “cannot be considered as substitutes to products from any other category,” and that “the competitive conditions in these segments differ significantly given that there are a large number of market players that are specialised in one or some of the various product categories.” See *Case No COMP/M.5721 - OTTO/PRIMONDO ASSETS*. European Commission. (2010). https://ec.europa.eu/competition/mergers/cases/decisions/m5721_20100216_20212_en.pdf. pp. 5 & 24.

In mergers between luxury brands such as LVMH and Bulgari, the European Commission found that luxury products have a low degree of substitutability within segments of the same sector, and considered possible market definitions split by gender in categories such as luxury ready-to-wear clothes, leather goods, jewellery, and perfumes. The question was ultimately left open in a number of cases, since the mergers did not create competitive concerns within any market definition.

See, e.g., *Case No IV/M.1533 – ARTEMIS / SANOFI BEAUTE*. European Commission. (1999). https://ec.europa.eu/competition/mergers/cases/decisions/m1533_en.pdf; *Case No COMP/M.1780 – LVMH / PRADA / FENDI*. European Commission. (2000). https://ec.europa.eu/competition/mergers/cases/decisions/m1780_en.pdf; *Case No COMP/M.6212 - LVMH/ BULGARI*. European Commission. (2011). https://ec.europa.eu/competition/mergers/cases/decisions/m6212_461_2.pdf.

of potential competitive effects of a merger by analysing data on disposable razors. We conclude and offer recommendations for future work in Section 4. .

2. A potential framework for incorporating a gender lens into analyses of competition

2.1. Potential effects of gender on demand- and supply-side substitution

Gender, like other consumer attributes, can influence preferences, demand sensitivity to price changes, and propensities to switch among products. This implies that gender can affect the degree to which certain products can be considered complements or substitutes. To the extent that gender is a key driver of preferences and own- and/or cross-price elasticities of demand (*i.e.*, how demand responds to changes in the price of a good or service and to changes in the price of other goods or services, respectively), these differences may lead to gender-segmented relevant markets. In these circumstances, companies may set (or have the ability to set under different competitive conditions) different prices for slightly differentiated versions of the same product that appeal to different gender groups—a common practice economists refer to as “price discrimination.” From an economics perspective, price discrimination may increase or decrease consumer welfare depending on market conditions, including the nature and the extent of competition.¹³ While many jurisdictions include some restrictions on a firm’s ability to exploit market power and price discriminate under certain circumstances, in most competition regimes, including those in the U.S. and Europe, price discrimination on its own is not considered to be a violation of antitrust laws unless it is exclusionary or distortionary. Regardless, in some circumstances, a firm’s ability to price discriminate may signal certain competitive conditions and demand elasticities that may be relevant to merger reviews.

Recent research has shown that price discrimination along gender lines occurs across a range of products. For example, a 2015 report by the New York City Department of Consumer Affairs found that, on average, women’s (or girls’) products cost 7% more than similar products targeting men (or boys), including toys, clothing, personal care products, and senior/home health care products.¹⁴ In all but five of the 35 different product categories analysed, products targeting women were priced higher on average than those targeting men.¹⁵ Researchers have also observed price discrimination along gender lines for services such as dry cleaning and haircuts, and that differences in labour costs, if any, could only partially explain the observed price differences. Some researchers and policymakers have labelled higher prices for women resulting from price discrimination as a so-called “pink tax.”¹⁶

¹³ Carlton, Dennis W. and Mark Israel. (2009). “Should Competition Policy Prohibit Price Discrimination?” *The Handbook of Competition Economics*, pp. 10-14.

¹⁴ de Blasio, Bill and Julie Menin. (2015). “From Cradle to Cane: The Cost of Being a Female Consumer.” New York City Department of Consumer Affairs. <https://www1.nyc.gov/assets/dca/downloads/pdf/partners/Study-of-Gender-Pricing-in-NYC.pdf>.

¹⁵ *Ibid.*

¹⁶ *Ibid.* In April 2019, California U.S. Representative Jackie Speier introduced the Pink Tax Repeal Act, seeking to prohibit pricing differences for products deemed to be “substantially similar,” such as those only differing in colour or target gender. See “Pink Tax Repeal Act of 2019, H.R.2048, 116th Congress.” <https://www.congress.gov/bill/116th-congress/house-bill/2048/text?r=8&s=1>.

Gender can also affect the prices of products that may not be explicitly differentiated or marketed towards a certain group. For example, in many jurisdictions, automobile insurance providers can use gender as a factor to determine an individual's risk profile and, in turn, the pricing of insurance products.¹⁷ Financial products and services are another relevant example. Economic research shows that women and men tend to differ not only in their risk tolerance but also in their propensity to use different banking services, such as online banking for bill payments and loan applications.¹⁸ In addition, the application of a gender lens to market definition analysis may be particularly relevant when assessing goods or services that are more likely to be affected by ingrained gender stereotypes (e.g., toys, clothing).

Evidence the European Commission considered in its review of the Unilever/Sara Lee merger provides some guidance on market features that regulatory agencies may consider in evaluating the relevance of gender in a market definition analysis. To support its conclusion that there was little demand-side substitution between male and non-male deodorant products, the Commission observed the following:¹⁹

- Retailers distinguishing between two categories of deodorants and “present[ing] them separately in retail outlets”;
- Marketing targeted towards a specific gender, which affected consumers' purchasing decisions;
- Significant differences in average prices and price movements of male and non-male deodorants;
- Differences in the growth rates of male and non-male deodorant markets; and
- Low rates of cross-gender usage of deodorants.

The Commission also found little supply-side substitution between the male and non-male deodorants, meaning that suppliers were generally not able to switch production from one product category to the other and market them effectively in the short term. Instead, the Commission observed that substantial costs over one to three years were required to launch a new product variant successfully.²⁰

¹⁷ See, e.g., Povich, Elaine S. (2019, February 11). “What? Women Pay More Than Men for Auto Insurance? (Yup.)” The Pew Charitable Trusts: *Stateline*. <https://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2019/02/11/what-women-pay-more-than-men-for-auto-insurance>; Tchir, Jason. (2020, June 14). “Clearing the air: How does your gender factor into your car insurance?” *The Globe and Mail*. <https://www.theglobeandmail.com/drive/mobility/article-clearing-the-air-how-does-your-gender-factor-into-your-car-insurance/>.

¹⁸ See, e.g., Srinivas, Val. (2019, January 23). “Are there gender differences in banking behavior?” Deloitte: *Perspectives*. <https://www2.deloitte.com/us/en/pages/financial-services/articles/gender-differences-banking-behavior.html>.

¹⁹ “Separate markets result from absence of demand-side and supply-side substitutability [and not marketing differences alone]. However, marketing/branding of branded goods like deodorants is an important factor in both the consumer choice and the suppliers' abilities to successfully put their products on the market.” See *Case No COMP/M.5658 – UNILEVER/SARA LEE*. European Commission. (2010). https://ec.europa.eu/competition/mergers/cases/decisions/m5658_20101117_20600_2193231_EN.pdf.

²⁰ *Case No COMP/M.5658 – UNILEVER/SARA LEE*. European Commission. (2010). https://ec.europa.eu/competition/mergers/cases/decisions/m5658_20101117_20600_2193231_EN.pdf f. pp. 26-27.

2.2. Factors that may be considered in the application of a gender lens

Economic theory and past research on gender differences in preferences and purchasing patterns indicate that both supply- and demand-side factors can influence the degree to which gender might affect findings from analyses of competition. Although some may view the application of a gender lens to all competition analyses as a worthwhile exercise, meaning that gender would be considered in each and every case, such a uniform application may not be feasible from a resource or data perspective, particularly as competition agencies begin to give gender-based considerations possibly greater weight in policymaking. Below we outline several supply- and demand-side factors that could point to the importance of gender-based considerations in market definition and analyses of competitive effects. There are also certain factors that may render gender-based considerations more feasible from a data collection or availability standpoint.

Figure 1

Potential Framework for Incorporating a Gender Lens to Analysis of Competition: Factors to Consider for the Application of a Gender Lens

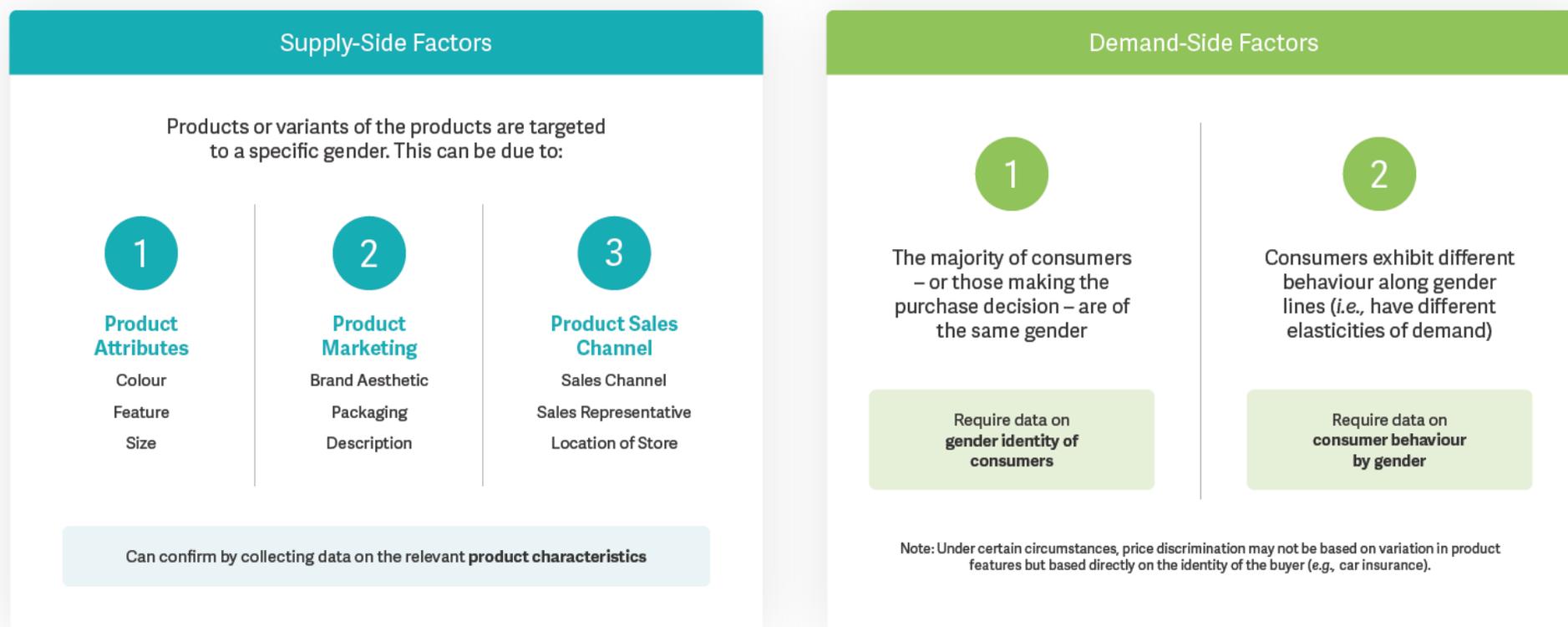


Figure 1 above summarises some of the supply- and demand-side factors that could be investigated in the early stages of market definition analysis and evaluations of competitive effects. The degree to which each factor is influenced by gender will likely affect the degree to which application of a gender lens might have a material impact on findings from analyses of competition.

On the supply side, gender-based considerations for analyses of competition could be particularly important when products or variants are targeted to a specific gender. Targeting a specific gender group could occur through variations in product attributes, marketing choices, or sales channels and/or location of stores. Relevant product attributes might include colour, specific features, size, or other characteristics, such as risk.²¹ Marketing efforts targeting one gender group may take the form of variations in packaging or product descriptions, or in the placement of advertisements (e.g., types of websites, print and digital media, and geographic locations). Firms may also target a particular gender group through different product sales and distribution channels, including (i) geographic locations of stores, or where the product or its different variants are positioned within stores, and (ii) how the products are sold, such as through sales representatives (e.g., Tupperware parties) or through online distributors.

On the demand side, gender-based consideration of competition analyses could be of particular importance when the majority of the consumers or those making the purchase decisions are of the same gender, or when consumers exhibit different purchasing behaviours along gender lines (e.g., different purchase locations, frequency of purchase, and brand loyalty).²²

The consideration of these demand- and supply-side factors, and the analysis of data that may inform on these factors, may help identify relevant features of a market that would have otherwise been overlooked, particularly in the early stages of market definition analysis and evaluation of competitive effects.

2.3. Data sources and evidence that may be considered for the application of a gender lens

In any given set of products or analyses, data on certain supply- or demand-side factors may be more readily available than others. Evaluation of whether gender influences supply-side factors will likely require data on relevant product characteristics, marketing, and/or sales and distribution channels. Evaluation of demand-side factors will likely require data on the gender identity of consumers that can be linked to their purchasing patterns. The availability and feasibility of collecting such relevant data will likely shape the direction and the focus of the analyses that would be part of applying a gender lens to assess competition. As described in **Figure 2** below, we outline four categories of data sources and evidence that could be considered in the application of a gender lens to competition analysis: (1) transaction-level data from parties, (2) other data and documents from parties, (3) data from online retailers, and (4) surveys. Depending on the product and/or the type of analysis to be conducted, a particular data source may be more useful than another. In many cases, a combination of data from differences sources would likely be most effective.

²¹ Economic research shows that there are gender differences in risk preferences, competitive preferences, and altruism. See Croson, Rachel and Uri Gneezy. (2009). "Gender Differences in Preferences." *Journal of Economic Literature*, Vol. 47, No. 2, pp. 448-474.

²² See Pike, Chris. (2018). "What's gender got to do with competition policy?" OECD. <https://oecdonthellevel.com/2018/03/02/whats-gender-got-to-do-with-competition-policy/>.

Figure 2

Potential Framework for Incorporating a Gender Lens to Analysis of Competition: Data Sources and Evidence to Consider for the Application of a Gender Lens

Relevant Product Characteristics	Customer Identity	Consumer Behaviour
<p>1 Transaction-level data: Data from merging parties on relevant product characteristics and sales location/channel information in any sales data</p>	<p>1 Transaction-level data: Data from merging parties on the gender of the purchaser or their given name (to infer the likely gender)</p>	<p>1 Transaction-level data: Historical information on changes in prices and changes in quantities purchased can be used to calculate demand elasticities</p>
<p>2 Other information from merging parties: Internal documents that can help inform potential gendered nature of the product</p>	<p>2 Other information from merging parties: Any market studies that may be informative of the breakdown of purchasers along gender lines</p>	<p>2 Other information from merging parties: Any documents that may be informative of the tactics used to sell the products</p>
<p>3 Data collected via websites: In addition to collecting current pricing data, relevant product characteristics could be extracted from product descriptions</p>	<p>3 Data collected via websites: User reviews may contain information on gender or names; non-public information on the account holder and/or other products purchased may also be obtained</p>	<p>3 Data collected via websites: Non-public information on other similar products viewed but not purchased may help determine the degree of substitutability across products</p>
<p>4 Survey data: Determine which product characteristics or sales locations/channels are preferred by consumers of each gender</p>	<p>4 Survey data: Surveys may be used to combine information on gender with other relevant information (e.g., product characteristics or aspects of consumer behaviour)</p>	<p>4 Survey data: Collect information on switching behaviour of consumers (i.e., frequency of changes in purchasing patterns due to changes in prices, features, or other factors)</p>

2.3.1. Transaction-Level Data from Parties

Transaction-level data—records of transactions, including the date of sale, number of units sold, sales price, and other information—are commonly provided by merging parties or parties to antitrust investigations. As such, transaction-level data are generally available and frequently used in market definition analyses and analyses of potential competitive effects. The usefulness of such data to the application of a gender lens to competition analysis will depend on the information available in these data. Relevant information could include: (i) the purchaser’s gender, (ii) the given name of the purchaser, from which the likely gender may be inferred,²³ (iii) product characteristics such as colour, size, and other features from which the target population could be inferred, and (iv) the location or sales/distribution channel associated with the purchase.²⁴

Although transaction-level data could be the best source for information on sales prices and sales quantities, they typically do not include information on competitors’ product offerings and prices. Moreover, transaction-level data often do not include names or demographic information on the customers from which gender can be identified or inferred. As such, these data will likely need to be combined with data and evidence from other sources to be useful for gender-based considerations.

2.3.2. Other Data and Documents from Parties

Prospective merging parties or parties to antitrust investigations may also have ordinary course of business documents or market studies that could provide information on whether and how the parties themselves view the product market(s). These documents and studies could also be helpful in determining how gender-based considerations may have influenced the production, marketing, and/or pricing of the products that are offered.

In addition, as part of their own competitiveness analyses, the parties may have information on the sales volumes or market shares of competitors, potentially broken out by customer type, sales channel, or location. This information could be combined with data from other sources to evaluate how the nature of competition may vary along gender lines.

2.3.3. Data from Online Retailers

Given the breadth and volume of data available online, data scraped from the Web could provide useful information for incorporating a gender lens into competition analysis. In particular, the collection of data from large online retailers can enable the creation of a dataset

²³ We note that attempting to identify gender based on given names may not necessarily be fully accurate, but researchers have made datasets publicly available to assist in classifying names with gender and ethnicity. See, e.g., Malmasi, Shervin and Mark Dras. (2014). “A Data-driven Approach to Studying Given Names and their Gender and Ethnicity Associations.” *Proceedings of the Australasian Language Technology Association Workshop*, pp. 145-149. These authors note that their dataset is “up to 90% accurate” for classifying gender using names.

²⁴ Creative uses of geographic location data could include combining these with geolocation data that track the location of cell phone signals, which could possibly assist in identifying the likely gender (or proportion of men and women) visiting a certain geographic location (e.g., the same cell phone may be traced to a hair salon as opposed to a barber shop, a women’s as opposed to men’s clothing store or other retail or other locations that could allow one to infer gender).

with information on current pricing, detailed product information, and proxies for relative sales volume for a large number of suppliers. Recent research has found that, at least for products sold in large multi-channel retailers, online prices can be reasonable proxies for offline prices, although there is variation at the country, sector, and retailer level.²⁵

There are several advantages of using data from online retailers. First, product listings on a website may provide information on product characteristics that are not available in transaction-level data. User reviews can provide information on the customer's gender and their other purchases, and could also serve as a proxy for sales quantities relative to other products.^{26, 27} Second, data from online retailers provide information on the end-consumer, where gender considerations may be more relevant. For certain products, transaction-level data from parties may only contain information on direct purchasers of products, such as downstream firms that use the products as inputs to manufacture finished goods, wholesale distributors, or retailers.

Although data from online retailers may have a number of benefits, these data also have several shortcomings. One drawback of data collected from online retailers is that they may not be representative of all suppliers, products, or customers, or reflect the complete market dynamics at play. For example, online retailer prices may differ materially from prices of the same products sold in brick-and-mortar retail outlets. Large online retailers may also not sell products from all relevant market players, some of which may rely exclusively on direct-to-consumer sales channels or sales at brick-and-mortar stores. Comparing the data collected from online retailers to market share data from other sources will inform whether the products offered by large online retailers are representative of the broader competitive dynamics.

Another drawback of data collected from online retailers is the lack of information on sales quantities. One possible solution to this problem is to use the number of reviews of each product as a proxy for the quantity sold. Although the use of online reviews as a proxy for estimating sales quantities may not be appropriate in certain instances, economic literature has shown that the number of online reviews and sales are positively correlated in many product categories.²⁸ In addition, although the number of user reviews might provide a reasonable approximation of the *relative* shares of sales at a given online retailer, combining data from multiple websites may present challenges under different conditions. For example,

²⁵ See, e.g., Cavallo, Alberto. (2017). "Are Online and Offline Prices Similar? Evidence from Large Multi-Channel Retailers." *American Economic Review*, Vol. 107, No.1, pp. 283-303. Cavallo finds that "online and offline price levels are identical about 72 percent of the time, with significant heterogeneity at the country, sector, and retailer level" and "price changes have similar frequencies and sizes in the online and offline data."

²⁶ It may also be possible to use natural language processing to extract relevant factors for applying a gender lens (e.g., based on certain types of comments or language).

²⁷ See below for a discussion of the use of user reviews as proxies for sales quantities.

²⁸ In this illustrative example, we log transform the number of reviews as estimates of "quantity sold" to smooth out the dispersion in the number of reviews across different products. See Li, Kunlin, Yuhan Chen, and Liji Zhang. (2020). "Exploring the influence of online reviews and motivating factors on sales: A meta-analytic study and the moderating role of product category." *Journal of Retailing and Consumer Services*, Vol. 55, Issue C. For an examination on how the quantity and content of online reviews may impact sales, see Chevalier, Judith and Divya Mayzlin. (2006). "The Effect of Word of Mouth on Sales: Online Book Reviews." *Journal of Marketing Research*, Vol. 43, No. 3, pp. 345-354.

to the extent that certain types of customers, including different gender groups, are more likely to submit reviews compared to another group, the number of reviews, without appropriate adjustments, may provide a biased estimate of the true relative market shares.

An obvious solution to the problem of missing quantity data is to obtain these data directly from online retailers. In addition to sales quantities, these data might contain other information about the purchaser, such as basic demographic characteristics and information on other products the customer may have viewed or purchased. Such data may provide useful information about the degree of substitutability across different products, and how it might vary across different customer types. However, obtaining such data from online retailers that are not parties to the merger or the antitrust investigation would likely not be feasible.

2.3.4. Surveys

The use of consumer surveys is becoming increasingly common in many antitrust investigations and analyses of competition, including in the evaluation of mergers.²⁹ In the application of a gender lens to competition analysis, surveys may be particularly useful in understanding which product characteristics, location or sales channels, or marketing strategies may be more relevant for the purchasing decisions of one gender versus another. In some instances, surveys may be useful for determining the demographic information for the most likely purchaser of a given product (or the purchase decision maker). In addition, surveys can provide useful information on consumers' switching behaviour in response to changes in prices or product features, which can be particularly helpful in estimating diversion ratios or demand elasticities. A recent working paper by Oxera (2021)—another research proposal selected by the OECD as part of its “Gender Inclusive Competition Policy” project—provides an analytical framework for the use of surveys in understanding gender differences in consumer behaviour and substitution patterns and offers several case studies on the use of survey data.³⁰

3. Illustrative example using data from a large online retailer to apply gender considerations to early stages of a merger investigation

To demonstrate an application of the framework outlined in the previous section, we provide an illustrative example of the potential effect of applying a gender lens to early stages of a merger investigation using data on disposable razors sold by a large online retailer. Such data are publicly available and easily collected. Disposable razor products were chosen as an example for two main reasons. First, disposable razors are an example of a product that generally has a clearly gendered dimension in appearance, branding, and marketing, but is otherwise similar in form and function. Second, the structure of the disposable razor industry offers an interesting setting in which to explore the application of gender-based considerations, given the presence of larger and smaller specialty manufacturers and variations in the relative shares of products targeting men and women across these manufacturers.

²⁹ See, e.g., Kirk Fair, Rebecca, Rene Befurt, and Emily Cotton. “The Tyranny of Market Shares: Incorporating Survey-Based Evidence into Merger Analysis.” *Corporate Disputes Magazine*. (2018). https://www.analysisgroup.com/globalassets/content/insights/publishing/the_tyranny_of_market_shares_analysis_group_2018.pdf

³⁰ See Oxera. (2021). *Gender-inclusive competition policy: gender differences in surveys for market definition and merger analysis*. Working paper.

In addition, two proposed mergers in the disposable razor industry were recently challenged by the FTC, in which the distinction between products targeting men and women was noted. In the proposed merger between Edgewell Personal Care Company (“Edgewell”) and Harry’s Inc. (“Harry’s”), the FTC alleged that the loss of Harry’s as an independent competitor would remove “a particularly disruptive rival from the marketplace” that was continuing to expand both its men’s and women’s product offerings.³¹ The FTC’s complaint also highlighted that “current market shares” might “understate the competitive significance of Harry’s in markets that include sales of women’s razors,” given the recent launch of a product targeting women.³² In the proposed merger between Procter & Gamble Company (“P&G”) and Billie, Inc. (“Billie”), the FTC challenged the proposed acquisition that would allow P&G, the market-leading supplier of both women’s and men’s wet shave razors, to buy Billie, a newer but expanding maker of women’s razors that positioned itself as an “anti-Venus” razor company “fighting the practice of charging women a ‘pink tax.’”³³ In both cases, the parties ultimately abandoned the mergers.³⁴

3.1. Data Collection and Processing

Our illustrative example is based on data for all products in the “Shaving Razors & Blades” department from a large online retailer on January 13, 2021. The product pages include a variety of information about the product, including the price, product description, and user-generated content. For each “Shaving Razors & Blades” product sold by the online retailer, we collected data on the per-unit price (*i.e.*, per razor; some razors were part of a multi-pack), brand name (*i.e.*, manufacturer), associated target gender (“women,” “men,” or “unisex”), product description, number of blades, and number of online reviews.

For each product, we assigned a product category using product information: disposable razors, cartridges, razor systems, straight razors, safety razors, and razors with soap bars. We focus our analysis only on products categorised as disposable razors. To identify the gender targeted by the product, we used information in the “target gender” field assigned to each product by the online retailer when available, and the department information associated with that product on the product page (“women,” “men,” or “unisex”) when the “target gender” field was not available.³⁵ If the product page did not explicitly note the associated department, we examined the product description to identify the gender category associated with the product.

³¹ *In the Matter of Edgewell Personal Care Company and Harry’s Inc.* U.S. Federal Trade Commission. (2020, February 2). Docket No. 9390. https://www.ftc.gov/system/files/documents/cases/public_p3_complaint_-_edgewell-harrys.pdf.

³² *Ibid.*

³³ *In the Matter of Procter & Gamble Co. and Billie, Inc.* U.S. Federal Trade Commission. (2020, December 8). Docket No. 9400. https://www.ftc.gov/system/files/documents/cases/d09400_administrative_part_3_complaintpublic600214.pdf.

³⁴ Terlep, Sharon and Brent Kendall. (2020, February 10). “Schick Owner Abandons Takeover of Harry’s Following FTC Suit to Block It.” *The Wall Street Journal*. <https://www.wsj.com/articles/schick-owner-abandons-takeover-of-harrys-11581345469>; Reuters. (2021, January 5). “P&G, Billie terminate planned merger after U.S. FTC challenge.” <https://www.reuters.com/article/us-billie-m-a-p-g/pg-billie-terminate-planned-merger-after-u-s-ftc-challenge-idUSKBN29A1RA>.

³⁵ We note that, as of the date of writing this article, the “target gender” field appears to no longer be reported by the online retailer from which we collected these data.

Our data collection and processing resulted in a database containing 185 different disposable razor products, of which 12 were categorised as unisex products. These were removed from our analysis. The remaining 173 disposable razor products were grouped by their brand names. In the presentation of our findings, we rely on eight fictional brand names created for illustrative purposes: Amazing Apparel, Blazing Blades, Diamond Disposables, Extraordinary Edges, Gorgeous Groomers, Prolific Products, Super Shavers, and Tip Top Trimmers.

3.2. Summary Statistics – Market Shares and Prices

Of the 173 disposable razor products, 105 (61%) were identified as products targeting women and 68 (39%) were identified as products targeting men. **Figure 3** below illustrates the market shares of the eight brands, for all products and separately for women’s and men’s products. Market shares are calculated based on an estimation of total sales revenue for each brand. Estimated total sales revenue is calculated as the sum of the estimated revenue for each product under that brand, which is obtained by multiplying the per-unit price of each product by the log of the number of reviews (*i.e.*, our proxy for the quantity sold).

Figure 3

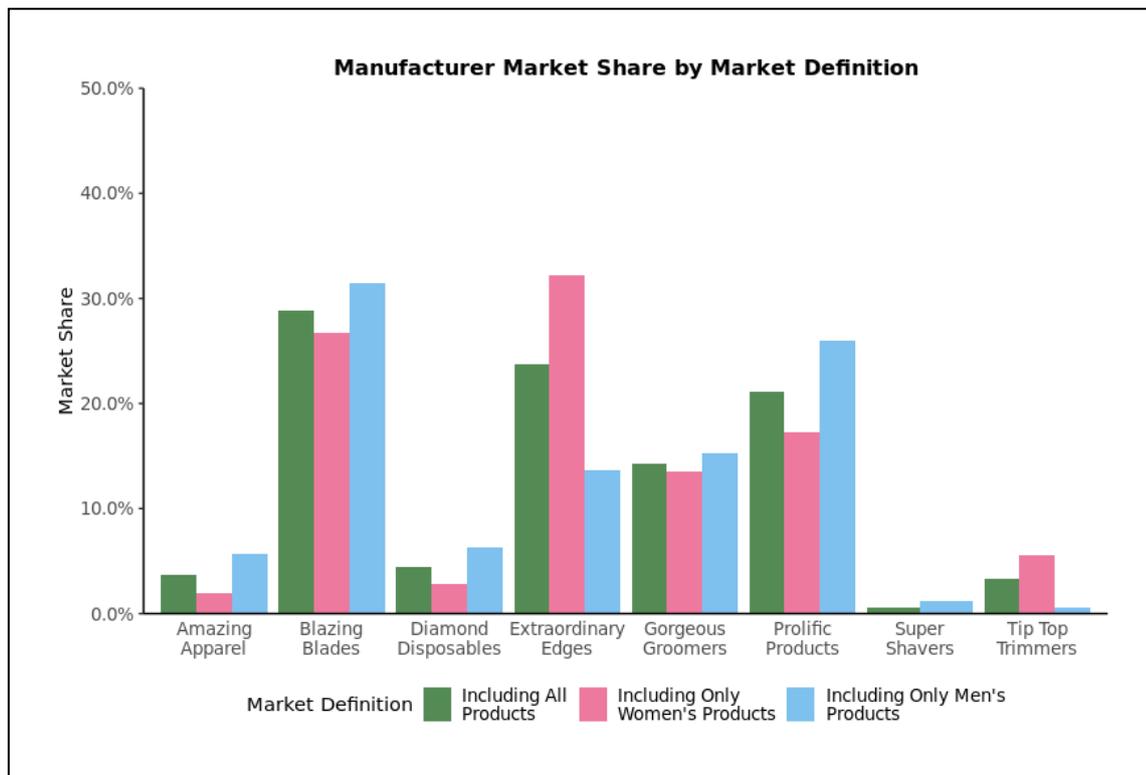


Figure 3 shows that there are four brands (Blazing Blades, Extraordinary Edges, Gorgeous Groomers, and Prolific Products) with a market share larger than 10% when all disposable razors are considered together (*i.e.*, both men’s and women’s products together). Each of the remaining four brands (Amazing Apparel, Diamond Disposables, Super Shavers, and Tip Top Trimmers) has a market share below 10%. The figure also shows that there are some notable differences in market shares of the eight brands when women’s and men’s products are considered together versus separately. For example, Extraordinary Edges accounts for close to 24% of the estimated total disposable razors sold; its market share for women’s products is higher, at 32%, and lower for men’s products, at 13%. Prolific Products accounts for 21% of

all disposable razors sold, but 26% for men’s products and 17% for women’s products. These variations in market shares suggest that the competitive dynamics for women’s disposable razors could be potentially different from those of men’s disposable razors and not be fully captured if all products are considered together.

Figure 4

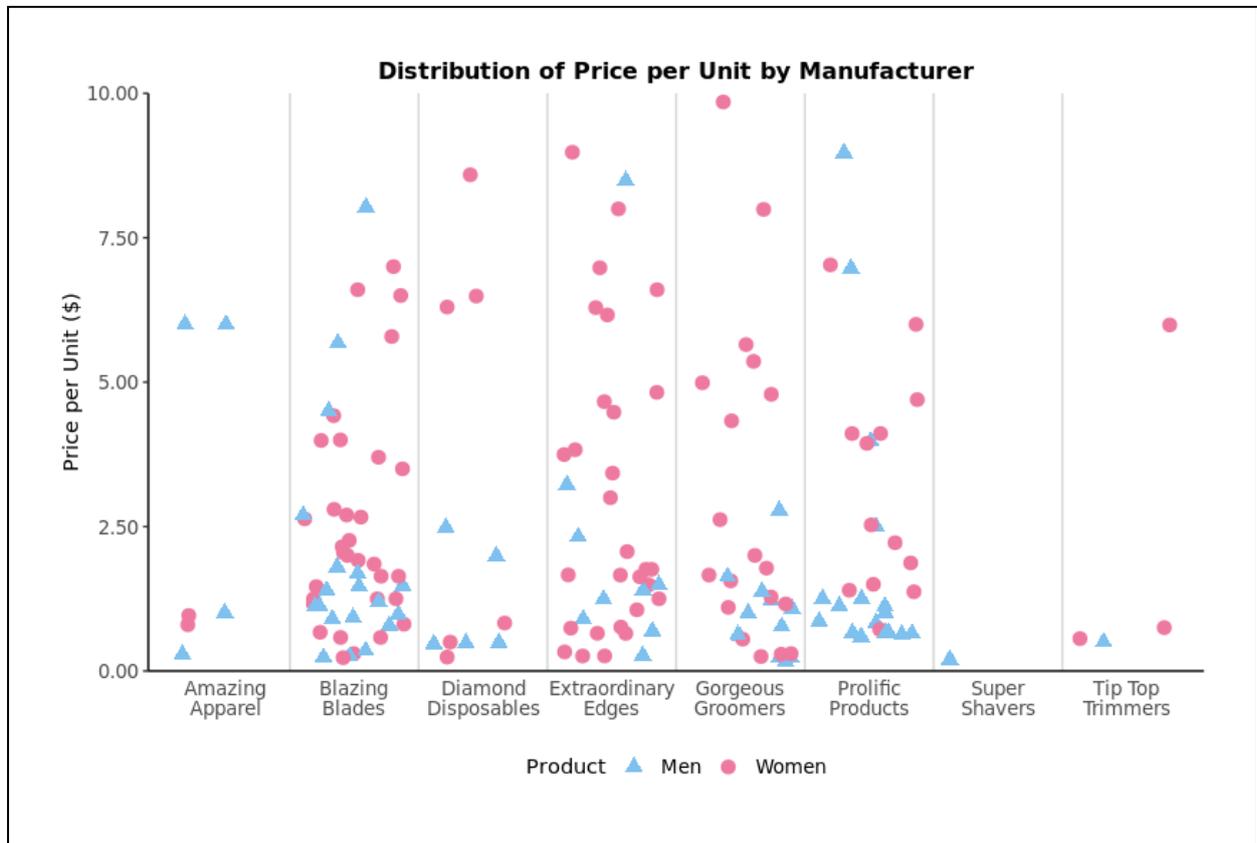


Figure 4 plots the per-unit prices of all 173 disposable razor products by brand and by the product’s target gender. The figure suggests there are different disposable razor product offerings for women and men. Disposable razors generally fall into two price categories: lower-cost disposable razors priced below \$2.50 per unit, and higher-cost (“premium”) disposable razors priced from \$2.50 to \$10.00 per unit.³⁶ A total of 58 of the 173 (34%) disposable razor products are premium products, of which 46 (79%) are products targeting women. Of the 68 men’s products, the vast majority are lower-priced, and only 12 (11%) are premium disposable razors. This pricing pattern can also be observed within each brand. For each of the brands with more than five different products sold by the online retailer, a higher proportion of premium products were offered for women than for men.

³⁶ The \$2.50 threshold was identified based on the distribution of prices in the data, and is not based on a specific criteria.

Figure 5

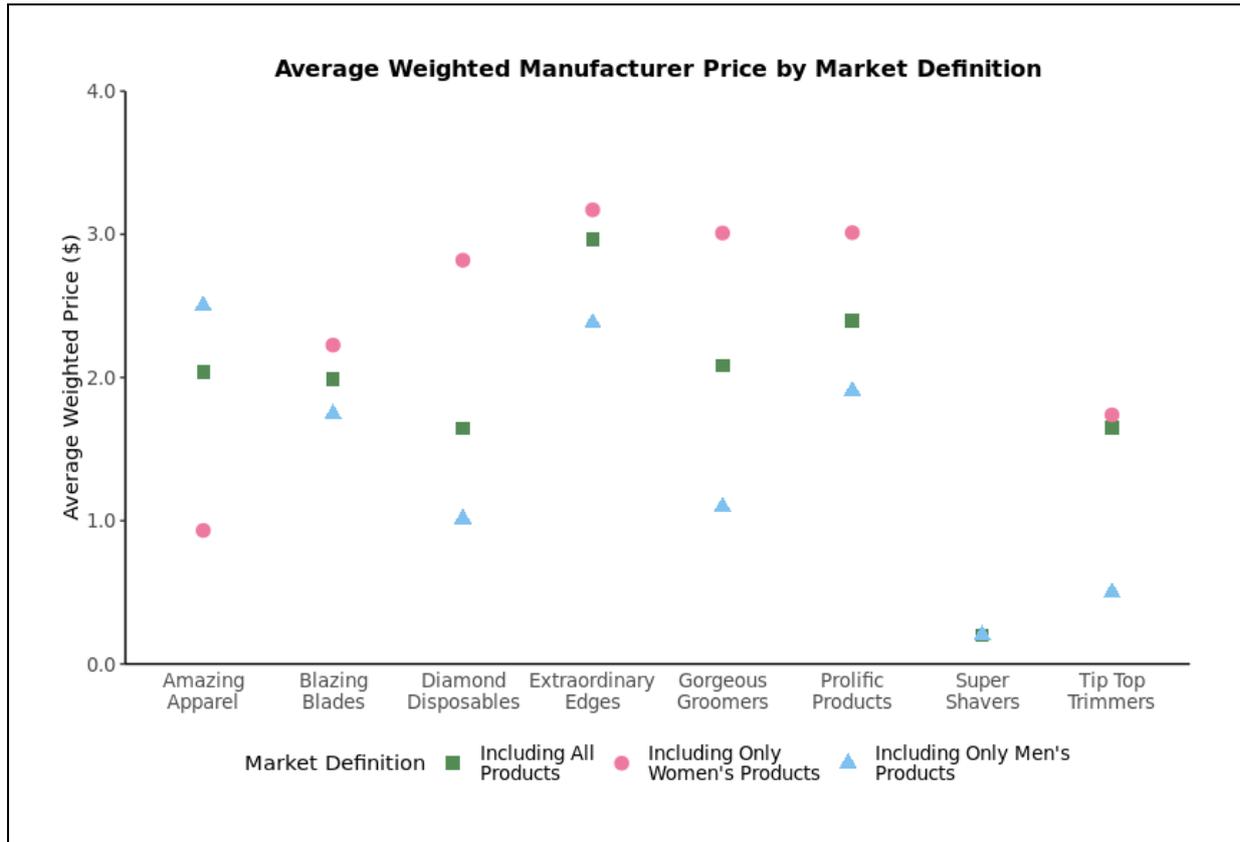


Figure 5 shows the average weighted per-unit price (weighted by log of the number of reviews) of disposable razors offered by the different brands. These prices are calculated under three separate market definitions: an aggregate (or overall) market including both men and women’s products and two markets separated by the target gender. **Figure 5** shows there are differences in the average price of disposable razors purchased by men and women. The magnitude of difference in average prices of women’s and men’s products varies across the different brands. However, for the majority of brands, the average price of women’s disposable razors is higher than men’s, sometimes by close to \$2 (or over 170% higher than the average price for men’s products). We observe similar patterns in unweighted average per-unit prices. A multivariate linear regression of price differences between men’s and women’s products controlling for the number of units sold in a pack, number of blades, and brand fixed effects also indicates that women’s disposable razors are priced higher than men’s products, on average.

Overall, the observed differences in market shares, product offerings, and average prices along gender lines in data collected from an online retailer suggest that gender could be an important dimension in market definition analysis and that gender-based considerations could affect the analysis of competitive effects in this industry.

3.3. An Illustrative Example of a Simple Merger Simulation

To provide an illustrative example of how accessible, publicly available data from a large online retailer could be used to conduct a preliminary investigation of potential competitive effects in early stages of a merger investigation, we conducted a simple simulation of a hypothetical merger between two disposable razor manufacturers. In this example, we focus on evaluating differences, if any, in the outcomes of merger simulations when all disposable razors are considered to be in one market and when they are in separate markets for men's and women's products.

We rely on the Proportionally-Calibrated Almost Ideal Demand System ("PCAIDS") model developed by economists Roy Epstein and Daniel Rubinfeld for this illustrative exercise.³⁷ We note that there are alternative methods available for merger simulations, including logit models.³⁸ One advantage of the PCAIDS model is that it can be implemented using limited data, with the only required inputs being market shares and market- and own-price elasticities. As described by Epstein and Rubinfeld:

Calibrated-demand simulation models offer an alternative to models that rely on econometric estimation of demand. Because they reduce the number of required demand parameters, these models are especially valuable when there are data limitations or estimation problems, or when a rapid and less costly analysis is required. [...] PCAIDS requires neither scanner data nor data on premerger prices. It requires information only on market shares, the industry price elasticity, and the price elasticity for one brand in the market. The logic of PCAIDS is simple. The share lost as a result of a price increase is allocated to the other firms in the relevant market in proportion to their respective shares. In effect, the market shares define probabilities of making incremental sales for each of the competitors.

This means that, in the model, market shares represent the relative appeal of the different brands to the consumers. The market elasticity in the model is assumed to be smaller than any single brand's own-price elasticity because brand substitution (e.g., switching from Blazing Blades to Extraordinary Edges) is easier than market/industry substitution (e.g., switching from disposable blades to electric shavers).

One limitation of our merger simulation example is that data collected from product postings of an online retailer are not sufficient to estimate market or own-price elasticities. We start with elasticity estimates from the academic literature (market elasticity of -2.00 and own-price elasticity of -1.00) as our base case scenario for our merger simulation, and then evaluate the impact of different assumptions about price elasticities on the simulation results.³⁹

³⁷ Epstein, Roy J. and Daniel Rubinfeld. (2002). "Merger Simulation: A Simplified Approach with New Applications." *Antitrust Law Journal*, Vol. 69, No. 3, pp. 883-919.

³⁸ See, e.g., Werden, Gregory J. and Luke M. Froeb. (1994). "The Effects of Mergers in Differentiated Products Industries: Logit Demand and Merger Policy." *The Journal of Law, Economics & Organization*, Vol. 10, pp. 407-426.

³⁹ See Hartmann, Wesley R. and Harikesh S. Nair. (2009). "Retail Competition and the Dynamics of Demand for Tied Goods." *Marketing Science*, Vol. 29, No. 2, pp. 366-386. We note that these authors find significant differences in the estimated own-price elasticities, especially as they relate to the distribution channel.

3.4. Results

We consider a hypothetical merger between a larger manufacturer (Extraordinary Edges) with a market share of 24% for all disposable razors and a smaller manufacturer (Tip Top Trimmers) with a market share of 3.3% for all disposable razors. **Figure 6** below reports results from our merger simulation. The left half of the figure shows the pre-merger prices and market shares for the overall disposable razors market and for men's and women's product markets separately. The right half of the figure shows these statistics after the merger. Under each market definition, we report the pre- and post-merger Herfindahl-Hirschman Index ("HHI") and the estimated industry price change.

Prior to the merger, the HHI measure of industry concentration for the industry overall is 2,095 based on our data. This is above the HHI threshold that the U.S. Department of Justice and FTC would consider to be "highly concentrated."⁴⁰ Thus, according to the U.S. Horizontal Merger Guidelines, a proposed merger that involves an increase in the HHI of between 100 and 200 points "potentially raise[s] significant competitive concerns and often warrant[s] scrutiny," and a proposed merger that involves an increase in the HHI by more than 200 points will be "presumed to [...] likely enhance market power."⁴¹ The pre-merger HHI in a market comprising only men's (2,155) or women's (2,270) disposable razors is higher than the overall industry value.

Pre-merger market shares show that the merger parties' relative strength is in the women's market (Extraordinary Edges with a 32.2% market share among women's products versus a 13.7% market share among men's products, and Tip Top Trimmers with a 5.6% market share among women's products versus 0.5% among men's products). These market shares suggest that the hypothetical merger between the two manufacturers may result in a larger price change for women's disposable razors versus men's.

The merger simulation shows that when the market includes all products (men's and women's disposable razors), the merger would result in an HHI change of 156 points and an industry price change of 1.1%. The average price of Extraordinary Edge's razors is estimated to increase from \$2.96 to \$3.02 (an increase of 2.0%), and the average price of Tip Top Trimmers' razors is estimated to increase from \$1.65 to \$1.82 (an increase of 9.3%). The merging parties' combined increase in the average price is estimated to be 2.9% given their market shares.

⁴⁰ U.S. Department of Justice and U.S. Federal Trade Commission. (2010). "Horizontal Merger Guidelines." See Section 5.3 "Market Concentration." <https://www.justice.gov/atr/horizontal-merger-guidelines-08192010>.

⁴¹ U.S. Department of Justice and U.S. Federal Trade Commission. (2010). "Horizontal Merger Guidelines." See Section 5.3 "Market Concentration." <https://www.justice.gov/atr/horizontal-merger-guidelines-08192010>.

Figure 6

Summary of Hypothetical Merger between Extraordinary Edges and Tip Top Trimmers				
PCAIDS Model				
Disposable Razors Bought on Amazon				
Including All Products				
Pre-Merger HHI	2095	Industry Price Change	1.1%	
Post-Merger HHI	2252	HHI Change	156	
	Pre-Merger		Post-Merger	
	Price (\$)	Market Share (%)	Price (\$)	Market Share (%)
Amazing Apparel	2.04	3.6	2.04	3.7
Blazing Blades	1.99	28.9	2.00	29.1
Diamond Disposables	1.65	4.4	1.65	4.4
Extraordinary Edges	2.96	23.8	3.02	23.6
Gorgeous Groomers	2.08	14.3	2.09	14.4
Prolific Products	2.40	21.2	2.40	21.3
Super Shavers	0.20	0.6	0.20	0.6
Tip Top Trimmers	1.65	3.3	1.82	3.0
Including Only Men's Products				
Pre-Merger HHI	2155	Industry Price Change	0.1%	
Post-Merger HHI	2170	HHI Change	15	
	Pre-Merger		Post-Merger	
	Price (\$)	Market Share (%)	Price (\$)	Market Share (%)
Amazing Apparel	2.50	5.6	2.50	5.6
Blazing Blades	1.74	31.5	1.75	31.5
Diamond Disposables	1.01	6.3	1.01	6.3
Extraordinary Edges	2.38	13.7	2.38	13.7
Gorgeous Groomers	1.10	15.2	1.10	15.2
Prolific Products	1.90	25.9	1.91	25.9
Super Shavers	0.20	1.2	0.20	1.2
Tip Top Trimmers	0.50	0.5	0.53	0.5
Including Only Women's Products				
Pre-Merger HHI	2270	Industry Price Change	2.8%	
Post-Merger HHI	2589	HHI Change	318	
	Pre-Merger		Post-Merger	
	Price (\$)	Market Share (%)	Price (\$)	Market Share (%)
Amazing Apparel	0.93	2.0	0.94	2.0
Blazing Blades	2.23	26.7	2.25	27.2
Diamond Disposables	2.82	2.8	2.85	2.9
Extraordinary Edges	3.17	32.2	3.31	31.7
Gorgeous Groomers	3.01	13.5	3.04	13.8
Prolific Products	3.01	17.2	3.04	17.5
Super Shavers	0.00	0.0	0.00	0.0
Tip Top Trimmers	1.74	5.6	2.04	4.8
Assuming own-price elasticity of -2.00 and market elasticity of -1.00.				
Post-merger HHI are calculated as the sum of pre-merger market share, assuming that both merging parties form a single entity.				

When men's and women's products are considered to be in separate markets, our hypothetical merger simulation shows that industry price changes would be larger in the market including only women's products. In the women's disposable razor market, the industry price would increase by 2.8% and the HHI would change by more than 300 points. On the other hand, the estimated price change in the men's product market is minimal (0.1%). Our simple simulation model estimates that the industry price change from the hypothetical merger would be more

than double in the women’s disposable razors market than the estimated change when gender is not considered in the market definition. According to the U.S. Horizontal Merger Guidelines, an HHI change of 156 points in the overall market would potentially raise competitive concerns; an HHI change of 318 points in the women’s product market—more than twice the change estimated for the combined product market—would be “presumed to [...] likely enhance market power.”⁴² In the women’s disposable razors product market, the merger simulation model estimates that Extraordinary Edges razors’ average price would increase from \$3.17 to \$3.31 (an increase of 4.2%) and Tip Top Trimmers razors’ average price would increase from \$1.74 to \$2.04 (an increase of 14.7%). Given their market shares, the merging parties’ combined average price increase would be 6.0%, substantially higher than the estimated price increase when gender was not considered to be part of the market definition and competitive effects were not considered separately for men and women.⁴³

Figures 7 and **8** report results from a series of sensitivity analyses under a range of assumptions about market and own-price elasticities. **Figure 7** reports the estimated industry price changes, and **Figure 8** reports the merging parties’ combined average price changes. The three panels in each figure represent results from a particular market definition: all (*i.e.*, men’s and women’s combined), men’s, and women’s disposable razors. Each cell in these figures represents results from a merger simulation under a specific combination of market and own-price elasticities.

⁴² U.S. Department of Justice and U.S. Federal Trade Commission. (2010). “Horizontal Merger Guidelines.” See Section 5.3 “Market Concentration.” <https://www.justice.gov/atr/horizontal-merger-guidelines-08192010>.

⁴³ Note that this price increase of 6% is above the commonly applied threshold of 5% from a Small but Significant and Non-transitory Increase in Price (“SSNIP”) test. The SSNIP test, or hypothetical monopolist test, is often used in the determination of the relevant antitrust market. See, *e.g.*, U.S. Department of Justice. “Operationalizing the Hypothetical Monopolist Test.” <https://www.justice.gov/atr/operationalizing-hypothetical-monopolist-test>. Although related, a merger simulation, of which we present one example here, is used to predict the likely price effects of a merger. Both can be adjusted to incorporate a gender lens through the set of products considered, as we have done here in the case of men’s and women’s razors.

Figure 7

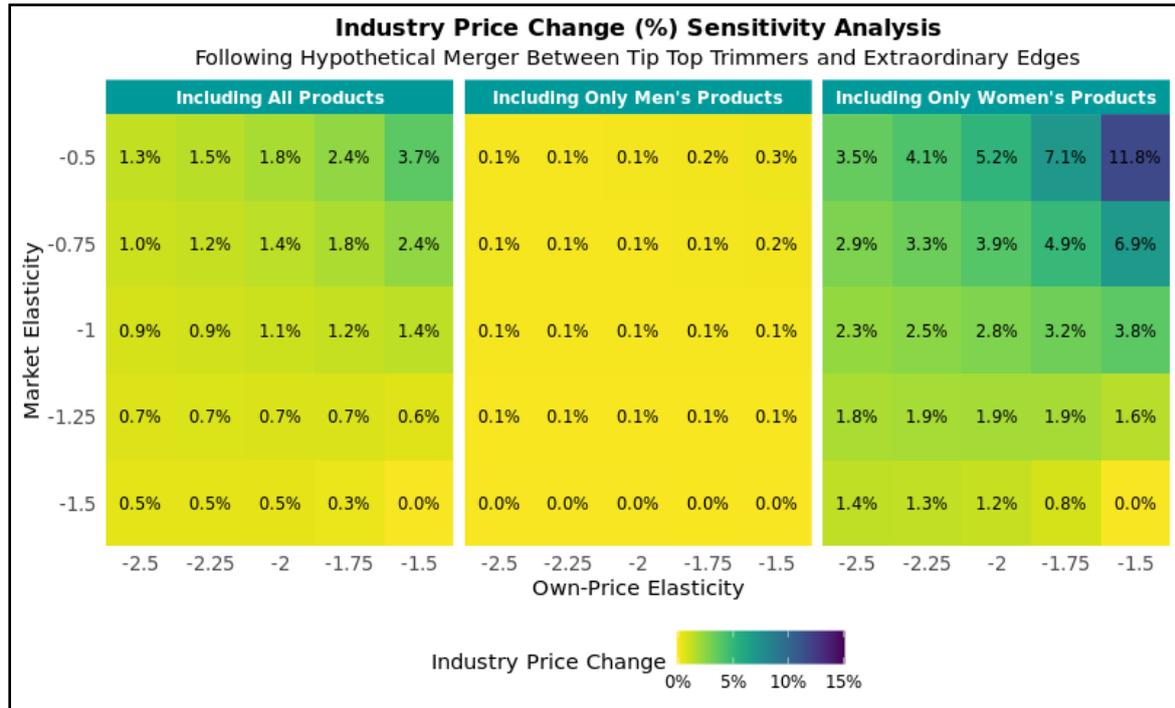
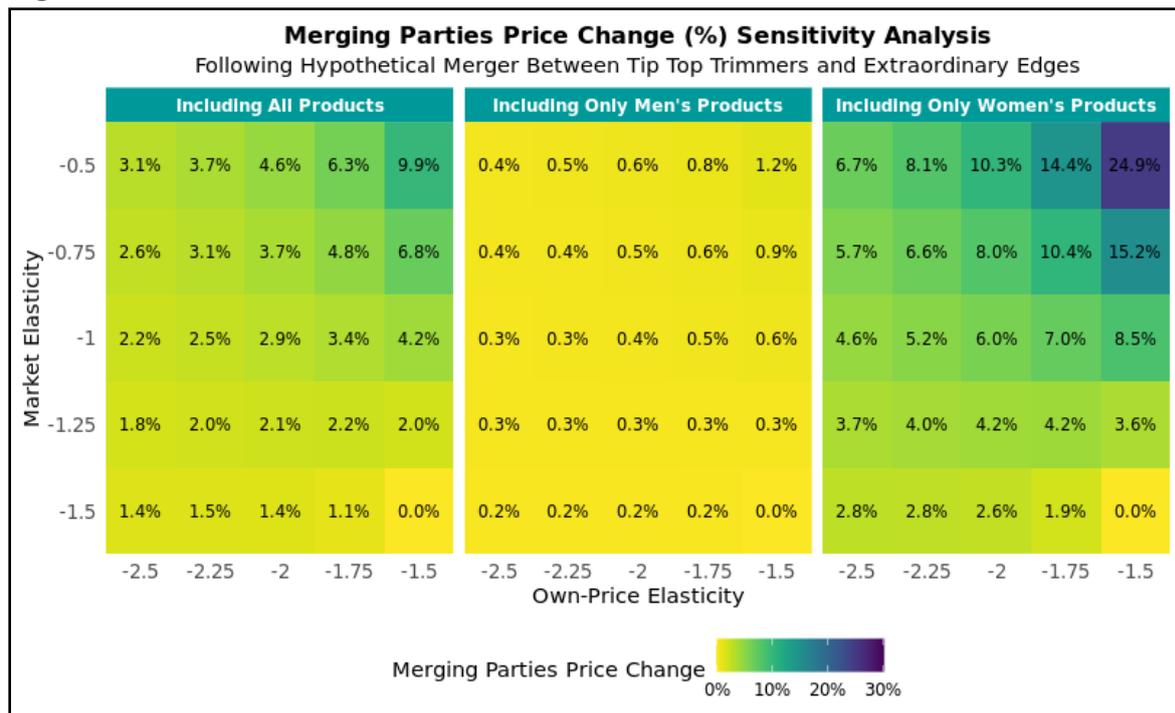


Figure 8



Under each market definition, the highest price changes are observed in the top right quadrant under the assumption of high brand loyalty (*i.e.*, small own-price elasticity) and limited willingness to switch from disposable razors to other products (*i.e.*, small market elasticity). This is an intuitive result.

Figure 7 shows that when gender considerations are not applied, industry price changes are never estimated to be more than 3.7%, even under the most extreme elasticities considered

in the model. When men's and women's disposable markets are considered separately, the estimated industry price increases for women's disposable razors reach up to 11.8%. For men's products, estimated industry price increases are never higher than 0.3% across the full range of market and own-price elasticities considered. **Figure 8** shows similar patterns for changes in the average price of the combined merging parties' products.

4. Discussion and recommendations for potential future work

The illustrative example above demonstrates how publicly available data from an online retailer could be used in early stages of a merger or antitrust investigation to conduct a preliminary evaluation of the potential impact of gender-based considerations. To the extent that such a preliminary analysis suggests that the nature of competition or potential competitive effects of a merger or conduct under investigation may vary along gender lines, more systematic and in-depth analyses may be warranted.

We recognise that the example above is highly stylised and focused on consumer products with a clearly gendered dimension in appearance and marketing. However, for many products, gender may not be a salient attribute in product characteristics or branding. In such cases, other supply-side considerations, such as variations in sales channels, may be relevant for initial investigations of the potential impact of gender-based consideration on competition. Data from other sources such as consumer surveys or internal data on customer segments could be particularly important in these cases. Particularly in the early stages of market definition analysis and evaluation of competitive effects, an analysis of data from one or more sources may inform on the demand- and supply-side factors outlined above and may help identify relevant features of a market that would have otherwise been overlooked.

Beyond product markets, the proposed framework for the application of a gender lens to competition analysis may be useful for other contexts, including the analysis of labour markets. Across many jurisdictions, there has been growing interest in evaluating how competition might affect labour market inequalities, both along gender and racial lines. Indeed, in her 2020 GCR remarks on antitrust as a tool for diversity, equity, and inclusion, Commissioner Slaughter highlighted the disproportionate impact that the COVID-19 pandemic has had on women in the workforce.⁴⁴ The supply- and demand-side factors in the product market that we outlined in Section 2. have natural counterparts in the labour market. For example, investigations of supply-side sales channels in the product market are analogous to recruiting or job application channels in the labour market.

Beyond merger analysis, the framework outlined in Section II could be applied to other antitrust analyses, such as the estimation of damages in cartel cases. Gender, to the extent that it

⁴⁴ Slaughter, Rebecca Kelly. (2020, November 17). "Antitrust at a Precipice." U.S. Federal Trade Commission. Prepared Remarks, GCR Interactive: Women in Antitrust. https://www.ftc.gov/system/files/documents/public_statements/1583714/slaughter_remarks_at_gcr_interactive_women_in_antitrust.pdf.

affects demand- and supply-side behaviours, may be a factor that leads to variations in injury and damages across a proposed class of consumers.⁴⁵

Finally, although this paper has focused on enforcement issues, competition agencies may also want to consider a gender lens in their advocacy and compliance activities. We expect that the framework outlined above should also be relevant to these types of activities.

Beyond gender, many aspects of our proposed framework could be extended to investigations of the impact of competition enforcement on any distinct consumer groups. To the extent that data related to gender can be collected, it may also be useful to collect and organise data on other key demographic features, such as (but not limited to) race, ethnicity, income level, and mental or physical disabilities, all of which could influence demand and supply patterns.⁴⁶ Although not all of these considerations may affect the definition of the relevant market for antitrust analysis, it may nevertheless be informative to consider whether an alleged anticompetitive practice or potential merger may disproportionately affect certain subgroups of consumers more than others.

We propose that future work in this area could explore whether and/or how current metrics and thresholds used to evaluate potential anticompetitive effects should be adjusted, if at all, in view of gender or other aspects of people's identity, which may affect market dynamics. In particular, if current metrics are used, changes to the degree of differences that may raise concerns might shift if greater weight is to be given to equity issues in competition policy. Alternatively, shifting policy in this area might involve the development of new or revised metrics that could help enforcement agencies with a better understanding of potential differential competitive effects along gender lines.

Recognising that competition authorities and other stakeholders rely heavily on evidence and data in their enforcement activities, we hope that the framework for empirical factors to consider and the illustrative example of its application could assist interested parties in determining how and when to apply a gender lens. Future developments may lead to the identification of additional pertinent features of supply- and demand-side behaviour, which could be incorporated into our proposed framework to further inform the application of more gender-inclusive analyses of competition.

⁴⁵ For a discussion of the complexities of establishing common impact, see Cremieux, Pierre, Ian Simmons, and Edward A. Snyder. (2009). "Proof of Common Impact in Antitrust Litigation: The Value of Regression Analysis." *George Mason Law Review*, Vol. 17, pp. 939-967.

⁴⁶ See, e.g., Baker, Stacey Menzel, James W. Gentry, and Terry L. Rittenberg. (2005). "Building Understanding of the Domain of Consumer Vulnerability." *Journal of Macromarketing*, Vol. 25, No. 2, pp. 128-139.

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