Organisation for Economic Co-operation and Development

DAF/COMP/GF(2018)4

Unclassified **English - Or. English**

6 November 2018

DIRECTORATE FOR FINANCIAL AND ENTERPRISE AFFAIRS
COMPETITION COMMITTEE

Global Forum on Competition

COMPETITION POLICY AND GENDER

Paper by Estefania Santacreu-Vasut and Chris Pike

29 November 2018

This paper by Estefania Santacreu-Vasut and Chris Pike was submitted as background material for Session II at the 17th Global Forum on Competition on 29-30 November 2018.

The opinions expressed and arguments employed herein do not necessarily reflect the official views of the Organisation or of the governments of its member countries.

More documentation related to this discussion can be found at: oe.cd/gnc.

Please contact Mr. Chris Pike [E-mail: Chris.Pike@oecd.org] and Ms. Lynn Robertson [E-mail: Lynn.Robertson@oecd.org],if you have any questions regarding this document.

JT03438938

Table of contents

Tables

Figures

Boxes

Competition Policy and Gender

- Paper by Estefania Santacreu-Vasut and Chris Pike* -

This paper calls attention to the opportunity for competition authorities to contribute to the fight for gender equality, the fifth of the UN's sustainable development goals. It argues that this can be done without compromising on the consumer welfare focus of many authorities, and indeed that adopting a gender lens can be helpful for those authorities in achieving their efficiency-based objectives. We also discuss the options for those authorities that do not focus on protecting consumer welfare and instead consider broader public interests when making decisions. We conclude by providing a menu of options regarding how competition authorities may integrate a gender perspective into competition policy practice and by identifying the scope for further work.

Keywords: Competition Policy, Efficiency, Equity, Gender, Antitrust

* This paper was written by Estefania Santacreu-Vasut, Associate Professor in Economics, ESSEC Business School and THEMA ; and Chris Pike, Competition Expert, OECD Competition Division.

1. Motivation

1. Recently, the competition policy community has started paying attention to the gender divide that permeates society, its institutions and markets. Hubbard (2017) has pointed to the connection between monopolies and gender inequality. She argues that, "the glass ceiling is just another cartel". Pike (2018) points at several reasons why gender may play a role in competition policy. He suggests that restrictions or discriminatory biases against women's economic participation might be interpreted as anti-competitive regulations. Competition policy may therefore have a natural role to play in addressing those issues and in building open, fair and efficient markets, levelling the playing field for women and men alike.

The harm caused by gender inequality

2. Today women still participate less in the labour market than men, and when they do participate, they get worse outcomes, earning lower wages per hour and being twice as likely to be in involuntary part-time work and in the informal sector (OECD, 2018 and ILO, 2017). Recent estimates (Wodon and de la Brière, 2018) suggest that these disparities result in an estimated per capita loss across a lifetime of USD 24 000. Meanwhile at an economy wide level, gender inequality has been shown to restrict GDP growth, thereby reducing everyone's standard of living at a cost of USD 12 trillion, or 16% of global income (Klasen and Lamanna, 2009; Elborgh-Woytek et al., 2013; Ferrant and Kolev, 2016).

3. The Report of the Secretary-General on Progress towards the Sustainable Development Goals (E/2017/66) and its data on 87 countries from 2005 to 2016 reveals that women hold inferior positions not only in the labour market but also in the domestic sphere. For example, almost one in five women aged between 15 and 49 years are still victims of violence, often sexually related. Marriage before adulthood is still high, even if declining especially in Southern Asia, and girls suffer from the practice of sexual mutilation in around 30 countries. At the institutional level, women also lag behind men in their political participation, with a presence in national parliaments that reached almost 25% in 2017, from only 15 % in 2000. In the corporate world, the UN survey of 67 countries from 2009 to 2015 shows that less than one in three senior and middle manager positions are held by women.

4. Among the reasons for such unequal outcomes in both domestic and public spheres, and at economic and political levels, lies the unequal access to education and to capital. Generally speaking, access to capital (human, financial or social) complements participation in markets and, without it, women face limited opportunities. For instance, lower educational attainment for girls translates into worst female labour market engagement (Thévenon, 2013). In addition, women face formal barriers, such as legal restrictions, that constrain them in the jobs they can do (World Bank, 2018). They also face informal barriers that originate in behavioural and cultural factors (Fernández, 2007; Alesina et al., 2013), often rooted in history, that influence expectations about their role in society.

5. Existing barriers also mean that women are more likely to participate in the informal economy, particularly in low-income and lower-middle income countries (ILO, 2018). For example, informal employment represents almost 90 % of total employment for women in Africa. Informality is costly because it limits access to social safety nets and restricts the employee's growth potential. As research shows (La Porta and Shleifer, 2014) informal firms tend to be smaller and less productive. Insofar as women are more likely to

work in the informal sector either as employees or business owners, doing so puts a bound on their current and future earnings.

6. Informal employment can however constitute a valuable default option when access to formal markets is restricted. Informality may also give women more flexible options in serving other social commitments such as household labour and unpaid caring activities (Perry et al., 2007). Indeed, gender norms of behaviour tend to ascribe women to reproductive and unpaid work within the household. This negatively influences their labour force participation (Field et al., 2016). Time use studies have documented that women do significantly more housework and are the main providers of child and elder (unpaid) care services within the household, even among women that work full-time in the labour market. This has been documented throughout the world, both in high and low-income countries (Krantz-Kent, 2009 and Hicks et al., 2015).

7. Despite the substantive evidence documenting the economic cost of gender inequality, and the potential benefits from eradicating it, progress in the fight against gender inequality is slow. Persistence of gender inequality may stem from structural factors that impede women from accessing certain resources that constrain their market participation, leading to a poverty trap associated with gender. Yet, removing existing barriers may not suffice. This is the case because individual preferences and cultural norms play an important role. At the individual level, gender identity (Akerlof and Kranton, 2000) makes it costly for women to deviate from prescribed social expectations associated with their gender. Furthermore, individual preferences may not only shape one's own sense of identity but also the costs and benefits associated with interacting with individuals with distinct social identity. For instance, taste-based discrimination, as described by Becker (1957), takes place when an individual is willing to pay in order to avoid interacting with certain groups or minorities, for instance women. One of the behavioural explanations for such taste is that individual preferences may exhibit homophily (McPherson et al. 2001). Homophily is the preference to interact with members of one's own group. Last but not least, beliefs and preferences about gender roles are part of a society's culture (Fernández, 2008) and are often rooted in history (Alesina et al. 2013). Because cultural values are transmitted purposefully from parents to children (Bisin and Verdier, 2001), unconsciously through language (Gay et al. 2016 among others) and through behavioural factors (Niederle and Vesterlund, 2011, among others) they have persisting influence.

8. As a consequence of these biases, preferences, and norms, markets operate with a gender divide that mirrors the broader organization of society along gender lines. The consequences of this divide affect particular markets to different degrees, reflecting the extent to which women are over or under-represented as sellers or buyers, or both. Gender, therefore, shapes the allocation of resources in the economy. It does so by influencing talent allocation in the labour market influencing the extent to which women supply labour and occupational segregation (Goldin, 2014). It also shapes the distribution of activity across formal and informal markets and unpaid labour within the household with consequences for the aggregate size and productivity of the economy. Last but not least, gender can also shape goods and services markets where product lines in retail industries are often structured around gender identity, raising concerns of price discrimination (New York Consumer Bureau, 2015).

9. This paper develops a conceptual framework in order to propose ways for competition policy to integrate gender considerations. Doing so is in line with *gender mainstreaming*, defined by the UN Economic and Social Council as "the process of assessing the implications for women and men of any planned action, including legislation, policies or programs in all areas and at all levels." In the case of competition policy, it may be that even a gender-blind application of competitive principles will help to fight gender inequality. This is the case because as Becker's (1957) seminal contribution pointed out, and as recent research has shown empirically (Cooke, Fernandes and Ferreira, 2018), increased market competition may be particularly beneficial for achieving gender equality. However, as discussed, progress has been extremely slow, and at the present rate, we may not achieve equality for 217 years (World Economic Forum, 2017). This leads us to argue that assessing the implications of the practice and prioritization of competition policy on gender inequality offers an opportunity for competition authorities to contribute to the fight against gender inequality (and the achievement of the benefits), without changing their focus on consumer welfare. Meanwhile we argue that those authorities that take a broader view of the public interest should integrate gender inequality as one of the components of that public interest.

10. The paper is structured as follows. Section 2 proposes a conceptual framework for thinking about the relation between competition policy and gender. First, we discuss how competition policy may contribute to the promotion of gender equality. In particular, competition policy may influence markets that are particularly vital for women, may help eradicate taste-based discrimination, and may shape the evolution of informal markets. Second, we discuss how gender influences markets, organizations and transaction costs. This will have consequences both for the way that competition policy can be used to help address inequality and for identifying ways in which using a gender lens can help competition agencies in their merger control and enforcement activities. Section 3 provides four concrete applications of our conceptual framework. In the first application, we discuss how considering gender may influence product market definition. In the second application, we discuss gender and compliance with competition law. In the third application, we discuss prioritization decisions of competition agencies by presenting two market studies. In particular, we present the case of a market study of the childcare sector in Japan, and of a market study of the elder care sector in the UK. In the fourth application, we discuss the consequences of increased competition in the micro-finance industry. Section 4 provides a discussion of how competition authorities may take gender into account in their practice. We propose a menu of options for how this may be done in practice, depending on the mandate of competition authorities. Section 5 provides a summary of the paper and concludes.

2. Conceptual framework

11. In section 2.1 we start by discussing existing evidence on the positive effect of increased market competition on the reduction of discrimination against women, a dynamic implication of Becker (1957). We also discuss reasons why competition may have a negative effect and contribute to exacerbate existing inequalities. In section 2.2 we discuss concrete ways (related to specific markets and to the informal economy) in which competition policy may contribute to level the playing field for women in the formal economy. Section 2.3 discusses how gender influences market entry and market outcomes and, as a consequence, the functioning of markets in a way that is relevant for competition authorities. In particular, we discuss existing restrictions on participation in markets

steaming from legal barriers but also behavioral factors related to the gender gap in the taste for competition. We also discuss gender differences in outcomes for female either as consumers or as entrepreneurs and employees, such as price differentials (which might lead to market studies helping consumers to overcome price differentials), the gender pay gap, and differences in transaction costs.

2.1. Market competition and discrimination

On the upside, promoting competition can contribute to reduce gender discrimination by driving participants that exhibit taste-based discrimination against women out of the market. On the downside, competition can contribute to increase gender discrimination by leading firms to cater to prejudiced consumers.

12. Becker (1957) introduced taste-based discrimination in economics conceptualizing it as a preference of certain individuals for not interacting with members of minorities or certain social groups, such as women. As a result, individuals with such taste may act as if they are willing to forego profits to satisfy their preference (pay a premium for interacting with their preferred social groups). Because of its cost, discrimination is not sustainable for an efficient firm in a competitive market as prejudiced firms are outcompeted by non-prejudiced ones.[1] Accordingly, more competitive markets support less gender inequality at the static level and changes in market competition lead to changes in discrimination at the dynamic level., For instance if markets become less competitive they would allow for prejudiced firms to thrive. In this sense, where competition agencies are effective in protecting the competition process they help to protect consumers from being discriminated against by prejudiced firms. Is evidence supportive of this argument? And if so, what are the implications for the role of competition policy in supporting gender equality?

13. Various fields of research have taken Becker's theoretical prediction to the data. Research in trade (Black and Brainerd, 2004; Chinhui et al., 2014; Yahmed, 2017) has examined whether openness to trade and the associated increase in foreign competition is associated with a reduction in the gender wage gap. For example, Black and Brainerd (2004) study the impact of trade on the gender wage gap in manufacturing industries in the US as a function of the degree of concentration of the industry. They find that increased competition from trade had a stronger effect on the gender wage gap in more concentrated industries. These industries are the ones most likely to have been able to sustain discrimination prior to the increase in competition. Chinhui et al. (2014) study the impact of tariff reductions caused by NAFTA on the gender wage gap. They do so by taking into account how tariff reduction influences firms' technological choices, which in turn impacts the productivity of female workers.[2] Another interesting study is Yahmed (2017), who discusses two potential channels through which trade liberalization may influence a firm's ability to discriminate. A selection effect, through which discriminatory firms are driven

[1] Unless consumers themselves are willing to pay a premium for discriminatory services, in which case firms would compete to cater to this prejudice (Holzer and Ihlanfeldt, 1998). Furthermore, this result does not hold if the reason why certain minorities or groups are discriminated steams from statistical discrimination (Phelps,1972; Arrow,1973; Aigner and Cain,1977). Statistical discrimination arises when employers have imperfect information about individual productivity and use group observable characteristics such as gender or race to form their expectations about productivity. It is not clear why it may persist over time.

[2] In their theoretical framework they assume that new technologies replace physical tasks and that female employment in blue collar jobs complements such technologies.

out of the market by foreign competitors. A market size effect, through which discriminatory firms may be able to export more and sustain discriminatory practices under some conditions (in particular, that the number of competitors is small enough). She uses data from Uruguay and finds evidence of both effects.

14. Competition economics and labor economics research have studied the link between competition and discrimination in the labor market (Baert et al., 2015 and Hirsch et al., 2014). For instance, Hirsch et al. (2014) study west-Germany plant-level panel data to investigate how changes in product market competition influence the gender wage gap. The main finding is that increases in product market competition reduce the gender wage gap but only in firms where the industrial relations regime does not impede short run wage adjustments.[3]

15. Other studies have focused on changes to product market competition in industries or markets that have witnessed regulatory changes, such as the banking industry (Black and Strahan, 2001). In particular, Black and Strahan (2001) exploit a deregulation episode in the middle of the 1970s at the state level in the US. They argue that deregulation acted as a shock to the degree of competition in the industry, and that it decreased the ability of banks to share rents with its employees, and to discriminate across employees. Their empirical findings are consistent with this claim. In particular, they find that deregulation led to a decline in the wages of male employees that was four time as big as the decline in female wages. This supports the claim that prior to deregulation, rents where shared mostly with male employees. Interestingly, they also find that the share of female managers employed in banks increased after the deregulation.

16. Recently, Cooke, Fernandes and Ferreira (2018) have exploited the program "On the Spot Firm" implemented in Portugal and that drastically decreases the cost of registering new firms. They use employee-employer matched data in an almost quasi-natural experiment setting thanks to the sequential program implementation across municipalities. Their findings are consistent with Becker (1957). In particular, they find that following the reform the gender wage gap decreased, except at the extremes of the skill distribution. That is, it decreased for high and medium skill workers and for executives but neither for low-skill employees nor for CEOs. They also find that the reform led to an increase in the share of female employment.

17. Heyman et al. (2013) study the firm takeover market. They assume that new owners are likely to run the acquired firm more efficiently. As a consequence they predict that takeovers increase the share of female employees especially in cases where ex-ante product market competition was low.[4] They find evidence consistent with this prediction, even if the effect is quantitatively small and does not hold for the share of female employed in occupations at the top of the hierarchy such as managers and CEOs.

18. Overall, these findings support the view that by promoting competition, competition authorities already contribute to reducing gender inequality, and that even a gender-blind application of competitive principles can help to fight gender inequality.

19. An important exception arises when consumers themselves are willing to pay a premium for discriminatory services, in which case firms would compete to cater to this prejudice (Holzer and Ihlanfeldt, 1998). Such prejudice has been documented in a variety

[3] This is not found for firms where collective agreements (or a work council) governs industrial relations.

[4] Interestingly, Heyman et al (2013) also discuss the fact that the relation between statistical discrimination and competition is not clear, as competition may improve screening process.

of settings. In the art market*,* Adams et al. (2017) show evidence of a price discount for female art. They exploit the secondary market to isolate the role of demand and supply factors in the price of art and show that buyers cannot determine (without knowing the name of the artist) whether a painting is done by a male or a female artist. Therefore, female art sells at a discount *because* it is made by women. In the financial market existing studies have documented that stock markets react negatively to the nomination of a female CEO (Lee and James, 2007) a finding that is potentially consistent with sexists views. Experimental evidence (Longin and Santacreu-Vasut, 2018) suggests that this result reflects (mostly male) traders homophily towards CEOs of their own gender.[5] Gender discrimination manifested in buyers preferences and hence in market demand may mean that competition can have a detrimental effect. In particular, it can exacerbate inequality by incentivizing the provision of goods that satisfy consumer's demand and consumer sovereignty. This may be particularly problematic if a group of consumers exhibits racist or sexist preferences. Such preferences may inherited from a past where female access to markets was restricted. We come back to this point in section 4.

20. In short, existing theory and evidence suggest that competition agencies can increase their impact on gender equality by devoting more resources to pro-active advocacy and rigorous enforcement, since the costs of not doing so are not only higher prices, but also less inclusive growth (except when competition may lead firms to cater to prejudiced consumers). However, as we discuss next, we argue that assessing the implications of the practice and prioritization of competition policy in specific markets particularly critical for women may offer an opportunity for competition authorities to contribute to the fight against gender inequality (and the achievement of the benefits), without changing their focus on consumer welfare.[6]

2.2. Levelling the playing for women in specific markets

The efficient and competitive functioning of markets that provide substitute services to those traditionally supplied by women within the household is vital for women economic engagement.

21. Household production is an important contributor to economic activity (Stiglitz et al., 2009) and involves activities related to housework such as food and cleaning services and activities related to care services for children, the elder, the disabled and the ill.[7] Miranda (2011) reveals that, on average, women surveyed in 26 OECD countries and 3 emerging economies do almost twice as many hours of unpaid work per day than men. Studies find a strong and negative correlation between female labour force participation and average work time in unpaid activities (Freeman and Schettkat, 2005).[8] Empirically,

[5] Evidence of gender homophily has been recently documented in group formation settings (see Gompers and Wang, 2017).

[6] We also discuss the case of how authorities that take a broader (public interest) should integrate gender inequality as one of the components of that public interest in section 4.

[7] The key factor defining unpaid work and distinguishing it from leisure activities is that a third person could be paid for undertaking such work (Ironmonger, 1996).

[8] Historically, one of the factors behind the increase in female labour force participation witnessed after WWII in the US, coined as the "quiet revolution" by Goldin (2006), has been the creation of market substitutes including household technologies and durable goods such as the washing machine

unpaid, informal and also part-time work are found to be a substitute for full-time paid formal work.

22. Theoretically, female labour force participation is determined by the relative value of market participation versus non-market participation. That is, by the difference between the market wage and the reservation wage (Winkler, 2016). The reservation wage is the wage at which women are willing to enter the market.[9] The availability and affordability of market substitutes for the services that women produce in the household may be an important factor influencing the reservation wage, especially in countries where such services are not publicly subsidised. Ensuring that such markets deliver high quality and affordable services is key to create the right incentives for women's labour market participation.[10]

23. Time use survey data is regularly collected in various countries[11] and can help competition policy authorities of specific countries to identify the markets in which women supply the biggest share of unpaid work. This can guide authorities in prioritizing markets where more competition could be particularly beneficial in releasing women to work in the formal labour market. This would also allow women to specialize in their area of comparative advantage and hence drive more inclusive growth. In general, such sectors include those related to the provision of care services: the child-care industry, elderly care industry, the healthcare industry, although there can be differences across countries.

24. Promoting competition in a sector that provides substitute services to those women provide in the household may achieve two goals. First, market efficiency and consumer surplus maximization. Second, boosting of female labour force engagement. Therefore, competition authorities that prioritize market studies and investigations in such markets may benefit from a *"double dividend"*. Reducing market distortions in a particular sector constitutes the *first dividend*. Improving women's ability to achieve work-life balance and participate in the labour market constitutes the *second dividend*. In section 3 we discuss the case two market studies related to the childcare sector (in Japan) and the elder care sector (in the UK) (see Application 4 in section 3).

The efficient and competitive functioning of markets that provide services that complement women's labour force participation, such as financial markets and infrastructure markets, is vital for women's economic engagement.

25. In addition to markets providing substitute services to those that women tend to provide in the household, there are specific markets whose good functioning complements female economic engagement. Promoting competition in such markets may also lead to achieving a double dividend. This is particularly the case of financial markets and of

or the vacuum cleaner freeing time for women in what has been called the "household revolution" (Greenwood et al. 2005).

[9] Policy measures may alter the relative return in a variety of ways. For example, within the realm of fiscal policy, subsidised child-care is used by governments to increase the relative return from entering the market.

[10] Affordability of market substitutes is especially important for women given the fact that either they suffer from a gender wage gap in the formal labour market, or they work in the informal market where wages tend to be lower.

[11] For example, time use surveys in Europe and the U.S. are collected by Eurostat, Bureau of Labor Statistics of the U.S.

infrastructure markets as they complement female labor force participation by providing the means to access other services (for example education and health services).[12]

The role of financial markets

26. Access to credit is a necessary condition for participation in economic life. It enables individuals to act as consumers and as producers in other markets, to invest in physical and human capital, to undertake business activities and, in fine, to develop their entrepreneurial potential. It also allows them to smooth consumption over their life cycle, and to insure themselves against income shocks, among others, influencing their propensity to take risks. A well-functioning financial market, therefore, complements female labour force participation and economic participation in important ways. Ensuring that both women and men have access to financial markets is important by itself but also to level the playing field in access to other markets.

27. Women financial inclusion lags behind in many countries (World Bank, 2018). Lack of universal financial inclusion is particularly prevalent in developing countries, according to the Global Findex Database. Furthermore, women face tighter credit conditions when they do get access either as entrepreneurs (Bellucci et al., 2010) or as female firm owners (Alesina et al., 2013). Legal restrictions explain part of female financial exclusion in certain countries. Some of these laws, such as those related to property rights or inheritance, prevent women from accumulating collateral.

28. In the traditional financial industry, asymmetric information between borrower and lender is eased by collateral requirements. This means that women, who tend to be poorer and lack asset ownership, do not have access to credit because they do not have collateral. In addition, Riding and Swift (1990) find evidence that collateral requirements are higher for women. Women may also lack access to credit or face tighter credit conditions because of other reasons related to discrimination (Murayev, et al. 2009, Moro et al. 2017). For example, Moro et al. (2017) shows evidence that in anticipation of discrimination firms managed by women are less likely to apply for a loan. Within start-up financing a gender-gap has been documented in various settings (Greenberg and Mollick, 2016; Breschi et al. 2018). Gosh and Vinod (2017) study financial constraints in India. They find that female-headed households are significantly less likely to access credit in the traditional financial sector, and that this is also the case, although to a lower extent, in accessing informal financing. They explain such constraints as the result of differences in education and earnings. Levelling the playing field, therefore, requires ensuring that women are not disadvantaged in their access to finance.

29. Women's financial exclusion triggered the micro-finance revolution (Yunus and Jolis, 1999). Microfinance proposes an innovative and alternative model to provide access to credit to those traditionally excluded from it that is based on social capital. The sector developed as a non-profit model that operates based on donations. It has recently evolved towards commercialization, with an increased focus on financial sustainability. This has also led to increased competition. A growing body of research has studied the consequences of such increased competition and its consequences for female financial inclusion. This provides an interesting setting to study how increased competition has impacted the much acclaimed first, and criticised after, micro-finance revolution. We discuss these issues in detail in Application 4.

[12] A comprehensive discussion of gender mainstreaming in infrastructure is beyond the scope of the paper. For an overview see United Nations (2002) and UN Women (2014).

The role of infrastructure markets

30. Existing evidence reveals that infrastructure is used differently across gender (Braeden et al. 2018). This is the case because women tend to combine income generating activities with caring and unpaid activities in the household. Consequently, they tend to make more local and repeated trips. This means that women's transport use differs in terms of transportation modes (more public transport, cycling and walking), utilization throughout the day (more off-peak time) and the need to save time due to their multiple activities (EIGE, 2016). Such differences have led public authorities in several countries, such as Sweden, to introduce gender mainstreaming in infrastructure policy.

31. In 2015, Stockholm modified its snow-clearing policy to change its priorities (favoring the clearing of pedestrian routes first). This made sense from a gender equality perspective but also from an efficiency one. It allowed the municipality to reduce healthcare costs due to reduced snow related injuries. Gender mainstreaming has also been applied to ambulance service management in Göteborg and to bus transport management at night in Kalmar, where night stops between planned stops have allowed women to use night transport more safely (Swedish Association of Local Authorities and Regions, 2013). Indeed, safety is important to encourage women to work out of the household and at night (World Bank, 2018). For example, lighting infrastructure may be essential to ensure women can travel at night. Water infrastructure development may be particularly relevant in developing countries where female tend to be responsible for water collection effort.

32. Yet private sector infrastructure management may fail to guarantee or foster gender equality. This is the case because women are rarely employed in the transport sector and as a consequence, they are absent in the planning and development of infrastructure projects (ILO, 2013).[13] Taking into account the different transport needs of men and women can lead to efficiency gains and has spillovers to other sectors of the economy. Lack of affordable transportation options for women may prevent them from participating in the labor market. It may also decrease the labor market mobility of women. Indeed, the literature on inter-firm mobility provides evidence of lower wage growth for women when moving across firms (Del Bono and Vuri, 2011, Loprest, 1992). Infrastructure options and transportation costs may partly explain this by influencing women choice across job opportunities in different locations.

33. Beyond physical infrastructure, recent data documents the persistence of a gender gap in the use of digital infrastructures (ITU, 2017). For example, the Inclusive Internet Index (The Economist Intelligence Unit, 2018) documents that on average across 86 countries, men are 33,5 percent more likely to have internet access. The gender digital divide has been explained through gender differences in education in STEM fields (science, technology, engineering and mathematics) and in digital skills as well as through gender differences in earnings (World Wide Web Foundation, 2016). The gender gap in internet inclusion is particularly acute in low-income countries. For instance, in 2017, the proportion of female internet users in least developed countries was 32 % lower than that of male. Internet inclusion depends on a variety of factors, as captured in the Inclusive Internet Index (The Economist Intelligence Unit, 2017) which is composed of four dimensions: availability, affordability, relevance and readiness. Affordability concerns both the cost of access (relative to income) and how concentrated the internet marketplace is. Promoting competition in the internet marketplace can also lead to a double dividend by

[13] This may also reflect the fact that in certain countries women cannot be employed in the transportation sector due to legal restrictions (World Bank, 2018).

increasing market efficiency and by reducing the cost of access which may be particularly important for women, who earn less then men.

Informality hurts both women and the competitive process. Tackling informality, competition authorities may be able to reach a double dividend if they take gender explicitly into account.

34. While at the world level the informal sector employs a larger share of men than women, this fact masks important regional disparities (ILO, 2018). For instance, in low and lower-middle income regions, women are more exposed to informality than men. In Africa, almost 90 % of employed women are employed in the informal sector, a number closer to 80 % for men. This situation contributes to perpetuate gender inequality because informality offers worse personal growth (e.g. training) and lower productivity gains. Informal firms tend to be smaller and less productive than formal ones (La Porta and Shleifer, 2014) and informal sector jobs held by women (compared to men) are more likely to be low-paying and associated with a vulnerable status. For example, in low-income countries women most prevalent status in the informal sector is that of "contributing family workers" while the most prevalent status for men is that of "employer" (ILO, 2018).

35. Informality has also potentially negative consequences on competition. This is due to the fact that informal firms do not comply with regulatory and tax obligations. As a result, they gain an "unfair" competitive advantage over formal ones in the sense that it is not grounded in productivity or innovation. This is particularly the case in sectors with small and inefficient firms that are credit constrained and that face low entry costs in the informal sector. At the same time, informality may be the consequence of a formal sector that is over-regulated and where barriers to entry are high. [14] Indeed, countries with high informality rates tend to rank poorly on doing business (OECD, 2018, World Bank, 2018). This means that remaining in the informal sector can be beneficial, especially for small firms, for whom excessive regulation would prevent their very existence in the formal market (Loayza, Serven and Suwagara, 2009).

36. The competition policy community has recently discussed how to address the consequences of informality for the competitive process (OECD 2009, 2018). Advocacy efforts to decrease barriers to entry in the formal sector are considered as the most suitable tool to address them. These can take the form of market studies, investigations and non-binding opinions, and may include for instance the use of the OECD Competition Assessment Toolkit to assess and address anti-competitive regulations.

37. When tackling informality, competition authorities influence its size and its impact on the competitive process and potentially, the relative position of women in the sector. For example, measures aiming at facilitating the transition of "own account workers" to the formal sector are likely to benefit women less because they are less likely to hold such status in the informal sector (both worldwide and at regional levels).

38. A final observation on informality is that unpaid household and care work is in itself part of the informal economy. As such, achieving allocative efficiency, that is, each person specializing in a role that reflects their comparative advantage, would require that households do not face a tax advantage from self-supplying the service. This suggests that

[14] It may also reflect poor enforcement.

these services should, where they are not provided as a public service, be tax-exempt.[15] This would allow households to decide whether or not self-supplying such services is in fact efficient or not. Furthermore, this work can require both flexibility and uncertain hours which can increase the cost of services. In other such markets, we have in recent years seen the emergence of digital platforms that reduce the cost by more efficiently matching supply and demand while reducing the informal market (e.g. for illegal taxis). It may be worthwhile for competition authorities to be proactive in exploring why similar market solutions have not emerged in household and care services, and whether there are particular features that are inhibiting the development of these markets. It may even be the case that following a market study, competition agencies find there is a need to facilitate the emergence of such markets, for instance through the provision of information, or the introduction of certification.

39. To sum up, competition policy may contribute to the fight against gender inequality by promoting competition in specific markets that can a) provide substitute services to those women supply for free in the household and/or b) provide services that complement women's labor supply, such as those related to finance and infrastructure. Furthermore, by reducing barriers to access the formal sector competition policy may reduce the scale of the informal economy on which women are overly dependent, especially in low-income countries. These are important issues for the promotion of gender equality because a substantial part of women contribution to the economy takes place outside of the formal labor market, either as paid work in the informal economy (OECD, 2018) or as unpaid work within the household with negative consequences for growth and productivity, as previously discussed.

2.3. Gender in markets: entry, transaction costs and outcomes

Gender influences both the propensity to enter markets and the outcomes experienced within markets, impacting efficiency in ways that are relevant for competition authorities.

40. In this section. We discuss how gender itself may influence the competitive process. The relation between gender and competition is, therefore, bi-directional, from competition to gender and from gender to competition.

41. We start the section discussing existing restrictions on female participation in markets steaming from legal barriers and from behavioral factors. We then discuss how gender influences market outcomes for consumers such as price differentials (which might lead to market studies helping consumers to overcome price differentials), and for entrepreneurs and employees such as the gender pay gap. We also discuss differences in how gender influences transaction costs associated with participation in markets. These considerations have both distributional and efficiency consequences for market functioning.

[15] Childcare at certain ages is in some countries provided as a public service. In these cases, it may not be advisable to provide tax exemptions to privately funded substitutes (see OECD background note on Designing Publicly Funded Healthcare Services, 2018).

Gender influences market entry of entrepreneurs (women face legal and regulatory barriers)

42. One of the reasons why women fail to enter a market is that they face legal barriers to entry. As the World Bank (2018) documents, in some countries women are legally banned from working in specific industries such as construction, transportation, or manufacturing, and face legal obstacles to acquiring property, which has negative consequences for the accumulation of collateral and business entrepreneurship. In a minority of cases, married women cannot register a business.[16] Also, the absence of sexual harassment laws, which poses safety issues, acts as a barrier and has been shown to correlate negatively with female business ownership.[17] Last but not least, in 18 countries husbands are legally entitled to restrict their wives from working, and opening businesses.

43. Barriers can also be informal. Notably McDevitt & Roberts (2014) identify that only 6% of urologist in the US are women, despite 30% of urology patients being women, and these female patients having strong preferences to be seen by a female urologist (and mortality rates for female patients with a female urologist are much lower than for those without one).[18] This imbalance means that group practices compete to recruit the small number of female urologists as partners in the business. However, despite competition sending the signal that a greater supply of partly female-owned firms is required (note that in this market consultants are owners as well as operators), the continued failure to train sufficient numbers of female urologists (90% of counties in the US lack one) suggests the market mechanism is not working well. One explanation might be the existence of informal barriers to women entering the profession. These can mean that the playing field is not a level one for women, making it difficult for them to enter markets, with corresponding negative consequences for both gender equality and potentially for market competition.

44. When entry by more efficient female entrepreneurs is restricted by formal (or informal), incumbent firms or less efficient male entrepreneurs may fill the gaps. However, these offer less value and hence a weaker competitive constraint on more efficient firms. The result may be that incumbent firms enjoy greater market power that allows them to maintain higher prices. The male owned firms that benefit from this protectionism will earn greater profits, while both male and female consumers who hold little or no stake in these firms are made poorer by these restrictions. These rules therefore exacerbate gender inequality but are also amongst the many types of anti-competitive regulations that can be identified by the OECD's Competition Assessment Toolkit.

45. If these laws and restrictions were removed, then competition advocacy that decreases barriers to entry for *everyone* (both men and women) would benefit both the competitive process and gender equality, by benefiting women more in relative terms given their unequal starting point in their historical conditions to market entry. Yet, if such laws

[16] According to the World Bank (2018) report, this is the case in Buthan, Guinea-Bissau, Pakistan and Suriname.

[17] According to the World Bank (2018) report, 59 countries do not have laws on sexual harassment in the workplace.

[18] **"**Urology also known as genitourinary surgery, is the branch of medicine that focuses on surgical and medical diseases of the male and female urinary-tract system and the male reproductive organs." Wikipedia.

remain in place and are enforced, this may explain why promoting competition alone may not suffice to decrease gender inequality.

46. Female participation in a market may also depend on their opportunity cost, as discussed in section 2.2 in detail. In short, women may choose not to participate in the formal market because of a lack of complementary infrastructure services, unaffordable substitute services to household labour such as childcare or elderly care services, and because of opportunities in the informal economy that may provide them with more flexible working conditions.[19]

Gender influences market entry due to behavioural, cultural and identity-related factors

47. Women may not enter markets because of behavioural, identity and cultural factors, which we discuss next. At the behaviour level, experimental research has studied differences across genders that may explain why women and men experience different labour market outcomes. Particularly relevant for competition authorities is the experimental research that points at differences in competitiveness across genders (see the review by Niederle and Vesterlund, 2011).[20][21] Niederle and Vesterlund (2007) find that gender impacts entry into tournaments. More precisely, they find that female participants are less likely to enter tournaments when given the choice, a result driven by them having less confidence than men and by different attitudes towards competition. If men and women have a different taste for competition, this may influence the functioning of the market. In particular, research shows that high-ability women are less likely to enter a tournament (avoiding competition) than low-ability men. As Niederle and Vesterlund (2011) point out, this has consequences for social welfare. Furthermore, if these results have external validity this means that the pool of entering entrepreneurs in a competitive environment may place weaker constraints on the incumbent players, deteriorating the benefits from competition.[22] This behavioural evidence may imply that levelling the playing field may require not only to decrease barriers to entry for women but also to introduce affirmative action measures, a proposal discussed in Niederle et al. (2012).

48. Whether such differences in the taste for competition are biological or cultural is a debate beyond the scope of this paper. Yet, an interesting study by Gneezy et al. (2009) finds evidence that gender preferences are culturally determined by showing that context (whether the experiment takes place in a patriarchal or matriarchal society) plays an important role (it reverses the result). Indeed, culture may play a role in influencing behaviour, partly through its impact on the formation of expectations and norms related to gender identity. Akerlof and Kranton (2000) have introduced gender identity into economic analysis, as we discuss next.

[19] We refer the reader to section 2.2 for a more detailed discussion of this point.

[20] Experimental economics literature has also shown evidence of gender differences in risk-aversion and altruism (Croson and Gneezy, 2008; Croson and Gneezy, 2009).

[21] The advantage of lab experiments lies in the ability to control for market and household factors that have been shown to influence female labour force participation.

[22] The external validity of these findings has been partly tested by undertaking studies in the field. While results do not support large gender differences in sports competition they are supported in educational competitions and in the labour market as discussed by Niederle and Vesterlund (2011).

Box 1. Incorporating gender identity into economic analysis

Akerlof and Kranton (2000) introduce insights from psychology and sociology to incorporate social categories when studying individual behaviour. These social categories are assigned by an individual to his or her own identity, as well as to others' identity. Own actions and the actions of others may influence an individual's payoff, leading to externalities related to following or failing to follow the prescribed behaviour associated with a given identity.

Formally, the utility of individual j is modelled as $U_j=U_j(a_j, a_{-j}; I_j)$ where a_j denotes the actions of individual j, a_{-j} denotes the actions of individuals other than j, and I_j denotes individual j self-image. Self-image depends on the mapping of social categories (C) to all individuals in society (including one's own), by individual j (C_j) and the associated prescriptions (P), as well as on individual characteristics (ε_j). Akerlof and Kranton (2000) apply this framework to explain gender discrimination in the workplace, or the household division of labour, among others.

49. Gender identity, therefore, may create invisible barriers in access to certain markets (or certain occupations) when such occupations are not prescribed for a given social category, even when objectively, competitive conditions are satisfied.

Gender influences the return to market participation as employees (the gender wage gap)

50. The gender wage gap is a common feature of labour markets around the world, albeit to varying extent, (OECD Employment Outlook 2018). According to the OECD Employment Outlook, on average women in OECD countries earned 39% less than their male counterparts in 2015.[23] Among the factors identified behind such gap lies the lower inter-firm mobility of women, as previously discussed in this paper, together with what is known as a "motherhood penalty" (Sigle-Rushton and Waldfogel, 2007).

51. Blau and Kahn (2017) provide a comprehensive and recent review of the literature on the gender wage gap. They start documenting how it has evolved in the last decades in the US. They discuss the existing explanations for its persistence despite a declining trend in the 1980s. They decompose the US gender wage gap into explained factors (human capital, industry and occupational sorting) and unexplained factors (suggestive of discrimination). They find that, as of 2010, human capital differences no longer contribute to explain the gap. This is the case because women have reversed their educational attainment gender gap, as well as their experience gap.[24] Instead sorting into specific occupations and industries plays the biggest role in accounting for the gender wage gap, explaining 51% of the 2011 gender wage gap. Part of this sorting is rooted in educational choices as girls are less likely to choose STEM related majors which lead to higher wages. Unexplained factors account for 38 % of the gender wage gap as of 2011.

52. Research has tried to understand what drives gender to influence sorting across occupations and industries. Goldin (2014) shows that women select into occupations that allow them to have temporal flexibility. Women move away from occupations and industries where long and specific hours of work are required. Blau and Kahn (2017) discuss evidence suggesting that the main motivation for part time work is to attend to

[23] The OECD defines the gender wage gap as the "difference between median earnings of men and women relative to median earnings of men".

[24] These reversals decrease the potential for statistical discrimination to play a role in explaining pay differences.

household related work (like the provision of childcare services among others). Last but not least, an intriguing finding is that the gender wage gap has declined more slowly at the top of the wage distribution both in the US (and in advanced economies). This has both distributional and efficiency consequences. They also discuss the role of behavioural factors associated with gender norms, and psychological and non-cognitive skills. For example, women sorting into occupations that provide more stable but lower expected earnings due to higher risk-aversion.

53. From the perspective of competition policy, these findings complement our argument that focusing on specific markets (childcare, infrastructure, finance) may lead to benefits that contribute to increase both market efficiency and market inclusion. This is even more important because of the lower market return women obtain from labour force engagement.

Gender influences the prices consumers pay (women pay higher prices for similar products)

54. The New York City Department of Consumer Affairs (DCA) provides evidence of gender pricing in NY across multiple industries. In particular, male and female consumers face price differences when buying the same type of items (with clear male and female versions). Women's product cost 7 percent more than similar products for men (up to 13 percent more for personal care products). The DCA argues that even if some differences may be legitimate, mostly they are imposed and leading to higher financial burden for women. They encouraged a campaign called #genderpricing on twitter. Some authors refer to the fact that female gender products are priced above the male versions as the "pink tax" (De Blasio and Menin 2015).

55. What explains such differences? One explanation is that women may value these products more and have a higher willingness to pay for them. Firms can then set different prices for versions of a product that differ only slightly in some way that appeals to a consumer's gender identity, and then let consumers self-select.[25] One interpretation is that the price differential is sustainable because individuals' choices depend on their perceived identity and that deviating from the choices prescribed by their identity is costly (Akerlof and Kranton, 2000).

56. For example, parents may choose to buy toys or clothes as a function of their child's gender even when their child's sense of identity is not yet developed. However, this may change over time. In 2015, the grocery store Target decided to stop separating girls and boys toys in different aisles, while certain fashion players have created gender neutral clothing lines (though this may also help identify more price sensitive consumers). On the opposite trend, the recent launching of products such as "Bic *for Her"* or "Brogurt" (yogurt for men) suggest that companies continue to find it profitable to introduce such products. This is the case despite consumers and the media pointing out the fact that there is nothing

[25] Such price discrimination can often improve the welfare of consumers by ensuring that more consumers are able to buy a product or service than would be the case if a single price were set (DAF/COMP(2016)15, OECD, 2016). We can therefore only be confident that discrimination is harmful for consumers as a whole when it is used to force the exit of a rival or to raise their costs. Nevertheless, under the competition laws of many OECD countries, price discrimination nevertheless remains an offence when it constitutes an abusive exploitation of market power.

inherently "gendered" about Bics or yogurts.[26] Overall, this suggests that the "gendered" characteristics of a product are not clearly delineated and that they should not be taken for granted because consumers in different societies, and at different times, may perceive them differently.

57. In short, consumer choices may be driven not only by the intrinsic characteristics of a product but also by the gender identity payoffs associated with consuming such a product, leading to a utility gain (loss) when such action is prescribed (or not) as corresponding to one's own gender.

Gender influences transaction costs associated with market participation

58. Transaction costs are the costs associated with participating in a market (Williamson, 1975). They include searching costs, information costs, bargaining costs, monitoring costs and enforcing costs. Table 1 summarizes research that provides evidence of gender differences in transaction costs related to searching costs, information costs and bargaining costs.[27] We briefly discuss those and how they relate to the previous discussion on gender differences in market outcomes.

Table 1. Transaction costs and gender

Transaction cost	Gender differences
Searching	Search costs in the labor market may be higher for women (due to expected discrimination but also to time constraints) leading to monopsony power of employers and consequently to lower wages (see Black, 1995).
Information	Psychology and economics research suggests women and men may process good and bad news differently and seek feedback at different rates (Roberts & Nolen-Hoeksema 1989, Eil and Rao 2011). Women and men may process information differently according to marketing and consumer research (see Meyers-Levy, 1989 and Kempf et al. 2006).
Bargaining	Experimental research and labor market research suggest that there exist gender differences in the propensity to bargain, with women exhibiting a lower propensity to bargain (see Bowles et al. 2005, 2007 and Card et al. 2016).

59. One of the explanations for the gender wage gap is that women, even if exhibiting a higher labour supply elasticity, are less reactive to changes in remuneration at the firm level (Blau and Kahn, 2017). This has been explained partly by higher search costs for women due to existing discrimination (Black 1995). We may add that search costs may be higher for women given their time investment in household tasks.

60. Participating in markets (as consumers, employees or potential entrepreneurs) requires costly information processing either about product quality, job demands or relative performance in competitive environments. Psychology and marketing research suggest that women and men may process information differently. In particular, marketing and consumer research have studied how gender influences information processing strategies (Bae and Lee, 2011; Darley and Smith 1995; Meyers-Levy,1989, Kempf et al., 2006). Meyers-Levy (1989) has posited the theory known as the "selectivity hypothesis" according to which women engage into more detailed and comprehensive information processing. Kempf et al. (2006)

[26] In an Amazon search as of August 28th, the product characteristics of Bic for Her are listed as follows: "Easy Glide Ink Technology, for beautifully smooth writing, Sleek pen silhouette and jeweled accents add style, Soft contoured grip for all day comfort, Medium Point (1.0 mm), Just For Her".

[27] The objective of the table is to suggest ways in which transaction costs differ by gender but not to provide a comprehensive research review of each these issues, which is beyond the scope of this paper.

find evidence consistent with this hypothesis in the context of processing advertisement and product trial. Consumer protection agencies may benefit from going deeper into this research. As Niederle and Vesterlund (2011) discuss, psychology and economics literature also finds evidence of gender differences in processing of positive and negative information and about how much feedback men and women seek about their performance (Roberts & Nolen-Hoeksema 1989, Eil and Rao 2011).

61. Last but not least, market outcomes may differ by gender because of a different propensity to bargain across genders. Indeed, experimental research suggests that when bargaining women obtain on average smaller surplus then men (Bowles et al. 2005, Bowles et al 2007, Stuhlmacher et al. 1999, Bertrand, 2011). Bargaining differences across genders mean that women may obtain different outcomes under similar competitive conditions. Card et al. (2016) explore this issue in a non-experimental setting and find evidence consistent with the experimental literature. In particular, Card et al. (2016) study the gender wage gap in Portugal (which is close to the OECD average wage gap) and analyse the role of two firm-specific effects: that women choose to work in firms with lower wages (sorting channel), and that women are worse at bargaining their wages (bargaining channel). Using matched employer-employee data together with firm-level financial information they find that the two channels operate. Together, they account for 20 % of the gender wage gap. One fourth of the effect is due to differences in bargaining as a consequence of which female employees obtain 90% of the wage premium earned by male employees. These findings complement the experimental evidence on the gender differences in propensity to bargain and its consequences.

62. The evidence discussed in this section suggests that differences in the transaction costs faced by female and male market participants may explain why women entrepreneurs, employees and consumers do not compete on an equal footing with other market players.

63. In cases where there are differences in outcomes for women, a competition agency undertaking a market study and identifying price differences may want to ask whether these differences reflect a well-functioning market, or whether they suggest that demand-side remedies might improve consumers' ability to drive competitive incentives and obtain better outcomes from the market. In testing the effectiveness of such remedies, agencies may find that differences in biases, bargaining approaches, or information processing strategies lead to certain types of remedy being more effective for women than for men. This might suggest the need for such remedies to combine different approaches and perhaps to target different approaches at different groups.[28]

64. Table 2 summarizes the discussion of the conceptual framework proposed throughout section 2 regarding of how gender influences market entry and market outcomes.

[28] See CMA/FCA report on consumer-facing remedies. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/744521/UKCN_consumer_remedies_project_-_lessons_learned_report.pdf

Table 2. Female economic participation: determinants for market entry and market outcomes

Female economic participation	*Female economic participation in formal markets may be impeded or reduced by*	**Barriers** (ex: legal, regulatory, lack of collateral) **Wrong incentives** (ex: unfit complementary infrastructure services, unaffordable substitute services to household labour such as caring services, opportunities in the informal economy) **Behavioural and cultural factors** (ex: taste for competition, gender norms and gender identity)
	When women participate in markets they may suffer from	**Discrimination** (ex: higher prices, gender wage gap) **Transaction costs** (ex: bargaining, information processing, etc) **Behavioural and organizational factors**: (ex: homophily risk-aversion, demand for flexibility)

3. Applications

65. Applications 1 and 2 are directly related to merger control and antitrust enforcement, the everyday duties of competition authorities. Applications 3 and 4 refer to market studies and competition authorities' broader advocacy role.

3.1. Application 1. Product market definition and gender

66. A standard approach to measuring market power is to first define a relevant market. Defining the relevant product market is therefore a key and often highly contested aspect of the analysis of anti-competitive behaviour (Massey, 2000). It allows competition authorities to set the boundaries within which the nature and/or lack of competition is assessed (Commission Notice 97/C 372/03). The European Commission provides guidance to community competition lawmakers in defining markets along two dimensions: product and geography. Regarding the product dimension, which is more relevant for our discussion in this section, the Commission defines the product market as "all those products and/or services which are regarded as interchangeable or substitutable by the consumer, by reason of the products' characteristics, their prices and their intended use." This dimension is combined with the geographical one to define the relevant market. The Commission recalls that there are three factors that may discipline market players to avoid anti-competitive behaviour including "demand substitutability, supply substitutability and potential competition".

67. Accepted best practice when defining a market is to use the hypothetical monopolist test, which asks whether a hypothetical monopolist could profitably make a small but significant non-transitory increase in price above competitive levels (hence this is also known as the SSNIP test). This requires the use of cross-price elasticities of demand. The challenge of using such an approach is that competitive prices may not be directly observable, especially when authorities suspect that an abuse of market power is taking place. In this event, a price increase may lead to substitution precisely because the firm is already choosing the highest possible price before other products become actual substitutes (the so called "cellophane trap"). An alternative method involves focusing on the intrinsic characteristics and use of the product, though this is a more subjective method.

68. Critics of the market definition approach such as Kaplow (2015)[29] and Katsoulacos (2016)[30] have attacked the lack of correlation between market shares and market power, and derided it as unnecessary and often counterproductive. Indeed over the last decade there has been a move towards methods of directly assessing market power that are not based on market shares. For instance the upward pricing pressure test, the gross upward pricing pressure index, illustrative price rise test, critical loss analysis, event studies and merger simulation. This move away from market definition has been more pronounced in products where a definition is particularly difficult; multi-sided markets, innovative products, and markets for differentiated products.

69. However, many courts continue to rely on market shares and predicted changes to market shares, and so often require authorities to continue to define the relevant market in order to measure market shares.

70. While the hypothetical monopolist test is of course 'hypothetical', there may in some cases be observable evidence that a small price increase over competitive levels would be and has been profitable for such a firm. This might for example be evident in market data that shows sustained differences in prices set by non-monopolists for near identical products.[31]

71. This is why the US horizontal merger guidelines advise that the agencies may identify 'price discrimination markets' in cases where suppliers have information about customers that would allow a hypothetical monopolist to identify customers that are likely to pay a higher price for the relevant product (see box # 2). In these price discrimination markets it is not necessary to further consider supply-side substitution since, to the extent that it occurs, it is already reflected in sales made in light of the prevailing price difference.

Box 2. US Horizontal Merger Guidelines[32]:

Price discrimination markets are described in the US horizontal merger guidelines as follows:

"If a hypothetical monopolist could profitably target a subset of customers for price increases, the Agencies may identify relevant markets defined around those targeted customers, to whom a hypothetical monopolist would profitably and separately impose at least a SSNIP. Markets to serve targeted customers are also known as price discrimination markets. In practice, the Agencies identify price discrimination markets only where they believe there is a realistic prospect of an adverse competitive effect on a group of targeted customers.

[29] Kaplow: "the best market is that in which our market power inference is most reliable, that is the closest to whatever is the truth of the matter about market power… but it is impossible to determine which market definition is superior without already formulating one's best estimate of market power, rendering the exercise pointless"

[30] Katsoulacos: "market shares are a particularly meaningless indicator for inferring market power and competitive harm in markets with differentiated products." Issues in Market Definition and Assessment of Market Power, November 2016.

[31] Where the same price is set this might not tell us whether a monopolist would be able to set differential prices, however where even a firm with little market power is able to do so, it follows that a monopolist would certainly find it profitable to do so.

[32] https://www.justice.gov/atr/horizontal-merger-guidelines-08192010#4.

Example 11: Glass containers have many uses. In response to a price increase for glass containers, some users would substitute substantially to plastic or metal containers, but baby food manufacturers would not. If a hypothetical monopolist could price separately and limit arbitrage, baby food manufacturers would be vulnerable to a targeted increase in the price of glass containers. The Agencies could define a distinct market for glass containers used to package baby food.

The Agencies also often consider markets for targeted customers when prices are individually negotiated and suppliers have information about customers that would allow a hypothetical monopolist to identify customers that are likely to pay a higher price for the relevant product. If prices are negotiated individually with customers, the hypothetical monopolist test may suggest relevant markets that are as narrow as individual customers (see also Section 6.2 on bargaining and auctions). Nonetheless, the Agencies often define markets for groups of targeted customers, i.e., by type of customer, rather than by individual customer. By so doing, the Agencies are able to rely on aggregated market shares that can be more helpful in predicting the competitive effects of the merger."

72. It may be that in some cases the only information that a hypothetical monopolist needs in order to identify those that would pay a higher price, is market research that identifies a greater willingness to pay amongst women.[33] As noted in section 2.3, having that information might in turn lead a hypothetical monopolist to produce products that are near identical in their characteristics (and therefore in their cost and their competitive price) but that are marketed to consumers as a function of gender (by changing colour or even their location in shopping aisles or website for example). Where consumers then identify themselves by selecting the product targeted at their gender, they reveal their willingness to pay and allow themselves to be targeted with a higher price.

73. In fact as we have noted, evidence suggests that a wide range of products such as disposable razors, children's toys, energy drinks or even yogurt and laundry products are differentiated by the gender of the targeted consumer, and priced differently, even when arguably they are not intrinsically related to gender (DCA, 2016, Tuttle, 2016). The "pink tax" (De Blasio and Menin, 2015), or price differential across genders that are unfavourable to women, appears to be sustainable because individuals' choices depend on their perceived identity and deviating from the choices their identity drives them to make is costly (Akerlof and Kranton 2000). Understanding how gender may influence demand substitutability, and hence allow the targeting of female consumers, may therefore be an important factor for competition authorities to consider when defining markets.

74. In the case of gendered consumer products, this requires an understanding that certain products characteristics are not only physical but also symbolic. This suggests that a characteristics based-approach to market definition is not advisable in relation to such products. The path breaking work of Akerlof and Kranton (2000) on the role of identity in economics and economic theory, including identity in utility functions may provide a relevant framework to help ensure a gendered perspective in competition policy practice.

[33] As an aside it is worth noting that in digital markets firms have a great deal more information on consumers and their willingness to pay, which allows them to personalize prices, raising the prospect that the relevant market for products sold online might be as narrow as individual consumers (rendering market definition meaningless).

Box 3. Examples of the role of gender in product market definition

One example of a case where considering gender might have been of value is the European Commission's review of the Warner-Lambert/Gillette merger.[34] Particularly in the context of significant price differences between wet-shaving products targeted at women and those targeted at men.

The case decision explains the market definition adopted as follows: "The market concerned is the wet-shaving market consisting of razors and razor blades. Dry-shaving are not considered by most wet shavers to be sufficiently close substitutes for wet-shaving products to form part of the same market. Also excluded from this market are other hair removal products such as hair-removing creams and lotions, and wax and electric depilators, which are not close substitutes for wet or dry shaving products and therefore form a separate market.

The share of total sales of wet-shaving products accounted for by each of the three product types referred to in recital 5 varies between Member States. Sales of traditional double-edged blades have been declining in the Community as consumers have switched to system blades or disposable razors. Because of price differences between the types of blades the division of the market between the three types of blades is different when considered by value and by volume. In the Community as a whole the segmentation by value shows that double-edged blades accounted for 12 % of the market in 1989, system blades or cartridges accounted for 52 % and disposable razors for the remaining 36 %. By volume the corresponding figures are 16 % for double-edged blades, 36 % for system blades and 49 % for disposable razors. The profit margin achievable on shaving products also varies between the three product types. Disposable razors achieve the lowest margin; double-edged blades are a high-margin product but system blades achieve the highest margin. There is little continued real growth in blade usage in the Community and market value growth has generally come from manufacturers' investment in the innovative and higher-margin systems segment. There are four major producers of shaving products in the Community (which are also the four largest producers in the world): Gillette, Wilkinson Sword (now the trademark of Eemland), Schick (the trade mark of Warner-Lambert) and BIC. It has been acknowledged by Eemland that Gillette is the price leader in the Community as a result of its strong market position. This lessens the extent of price competition in this market."

More recently however, in its investigation of the merger of Unilever and Sara Lee the Commission looked at the sale of branded deodorants in a number of different EU countries. Unilever brands included Axe (Lynx in the UK), Rexona (Sure in the UK), Dove, Vaseline and Impulse, while Sara Lee operated primarily under the Sanex brand. In determining whether the merger of the parties' branded products would lead to a significant impediment to effective competition, the Commission considered the degree of competitive constraint between male deodorants (where the overlap between the parties was limited but Unilever had a strong presence) and non-male (female and unisex) deodorants. See RBB (2012)[35] who advised one of the parties.

Similarly, in the merger of Otto and Primondo[36] the Commission identified market segments for women's, men's and children's clothing but not separate segments for girls and boy's children's clothing. This led to a finding of an effect on Women's apparel amongst other home-shopping products.

[34] Commission Decision No. 93/252/EEC, O.J. L 116/21 (1993) [1993] 5 C.M.L.R. 559 (Warner-Lambert/Gillette).

[35] https://www.rbbecon.com/downloads/2012/11/RBB_B39_COL.pdf.

[36] http://ec.europa.eu/competition/mergers/cases/decisions/m5721_20100216_20212_en.pdf.

75. Another important issue to take into account comes from the fact that gender norms and gender identity may vary across countries, leading to the definition of a product market to be dependent, in some instances, on the underlying cultural norms. Also, gender norms and identity are not static but rather evolve over time, meaning that practitioners may not be able to rely on past definitions. For competition agencies that have a supranational character it may be important to be aware of such differences in a subtle way. Importantly, they cannot simply consider a "gendered" product as inherently gendered but rather they must study to what extent consumers of one gender would switch and consume an equivalent product targeted to the other gender at a lower price. No ex-ante rule, therefore, may allow a competition authority to stipulate that gendered versions of a product are *always (or never)* belonging to distinct markets.

76. Interestingly, the European Commission mentions the role of "language, culture and lifestyle" as a potentially relevant constraint for competition at the geographical level. This is also the case in terms of the scope of the product market as well and so the gendered attributes of a product might merit inclusion alongside "language, culture and lifestyle".

77. Taken together this means that if competition authorities limit themselves to looking at how 'consumers' as a whole switch between different products, they may risk overlooking preferences based on gender (or other aspects of) identity. In some circumstance these aspects may be strong enough to require the definition of a separate market for gendered products. The potential consequence of mis-defining such markets is that mergers that reduce competition for gendered products might not be challenged, potentially leading to increased price differentials, or that exclusionary practices are permitted on the basis of illusionary competitive constraints from producers of "other-gender" products.

3.2. Application 2: Gender and compliance with competition law

78. One hypothesis that has been put forward is that adopting a gender lens might help to understand firms' compliance or lack of compliance with competition law (Pike, 2018). If gender were to make a difference in the degree to which firms comply with competition law there might be two important implications.

79. Firstly, policies that encourage or require gender balance on boards and senior leadership positions might have pro-competitive effects. Cost-benefit analysis of these policies typically consider the impact on the performance of firms, and on opportunities for women (both currently and in the future as role models), and perhaps men. However, they do not, as far as we are aware, include the potential impact on consumers.

80. Second, recognizing these differences might help policymakers to design policies that are more effective in inducing compliance with competition law. For instance, it might affect the optimal incentive to set for individuals to whistle-blow, or for firms to request leniency, as well as the nature and level of punishment for individuals and firms that are found to have engaged in anti-competitive acts or agreements.

81. A full investigation of the differences that gender makes to compliance with competition law is beyond the scope of this paper. However, there are two pieces of evidence that we can use to draw some preliminary conclusions. The first on gender differences in whistleblowing, and the second on gender differences in involvement in discovered cartels.

Gender and Whistleblowing

82. Firstly, research has found that women are more likely to whistle-blow to law enforcement on corporate misconduct or financial fraud, as well as on environmental misconduct (Feldman and Lobel, 2010).[37] This is therefore particularly relevant to whistleblowing to competition agencies on cartels. The evidence on whistleblowing to those within the firm is less clear. Some research suggest women are less likely to whistle-blow to an internal source (such as to a company hotline or a manager). This may be related to the finding that female whistle-blowers suffer more retaliation than men (Rehg et al. 2008), and that they care more about the social context (Feldman & Lobel, 2010).

83. The reasons for this are not yet clear. Some argue that it is based on different moral and ethical positions than men (Brabeck 1983 and 1984; Miethe & Rothschild 1994). Women may be more altruistic (Croson and Gneezy, 2008) and inequity averse (Fehr et al. 2006) then men. Others suggest that women tend to be more risk averse (Croson and Gneezy, 2009) and therefore focus more on the potential penalties for misconduct[38]. Last but not least, differences in negotiation styles (Bowles et al. 2005, 2007; Croson and Gneezy 2009) and in taste for competition (Niederle and Vesterlund, 2007) may also influence their attitude towards corporate fraud. Another suggestion is that the smaller representation of women within the corporate world and means that they may tend to be outsiders to the clubs and informal networks which help generate, or at least militate against the reporting of, collusive behaviour.

84. If substantiated, each of these explanations might lead to their own implications for designing whistleblowing programs. For example, strengthening and emphasizing sanctions against individuals to increase the perceived risk of colluding, increasing the proportion of women in board and senior leadership positions, and/or increasing the diversity of representation in board and senior leadership positions. However, what the evidence already shows is that women's propensity to whistle-blow is disproportionally affected by the inclusion of anti-retaliation provisions and confidentiality assurances in whistleblowing policies, and the establishment of a duty to report (which introduces sanctions for failing to report). In contrast, men are less responsive to those factors and more responsive to financial incentives to report. For example, Feldman & Lobel (2010) presented women participants with misconduct and a duty to report but no reward. On average, women said they would blow the whistle at a higher rate than when they were presented with a low reward for doing so. The results were directly inverse for the men. Men were less likely to report when presented with a duty than with a low reward.

85. Regardless of the gender differences, this research suggests financial misconduct is the type of conduct where financial incentives can be effective.[39] This is because the moral response to this type of conduct is weaker (for example in contrast to reporting of medical or safety issues). The size of the financial incentive also increases the deterrence effect, and this can be magnified since evidence suggests that we expect financial incentives to play a

[37] It is not possible to study whistleblowing in the field. Therefore researchers use experimental studies in which they give large numbers of participants different scenarios and ask what their response would be to the observed behaviour, given the existence of different whistleblowing policies.

[38] See http://fortune.com/2014/09/30/women-whistleblowers/.

[39] Spagnolo (2005) recommends this option in relation to cartels.

key role in other peoples choices (whether or not they do, and bearing in mind that we tend to under-estimate the importance of financial incentives in our own decision-making).

86. This is borne out by experience with the Dodd-Frank Act in the US, which illustrates the effectiveness of these financial incentives. As Tilton (2018) explains, “The Insider Trading and Securities Fraud Enforcement Act of 1988, which applied to insider trading only (as opposed to the broader range of finance-related conduct that the federal Dodd-Frank Act covers), had a ten percent award cap for whistle-blowers. The law resulted in only seven payments to five claimants over two decades. The Dodd-Frank Act, the provisions of which allow for a greater recovery relative to the penalty that comes out of the whistleblowing, has seen much stronger activity under its whistle-blower provisions. Eight whistle-blowers received awards totalling millions of dollars in 2011 alone under Dodd-Frank.”[40] Nor was 2011 unusual, eight whistle-blowers were also rewarded in 2015 and the SEC received 116 whistle-blower tips between 2011 and 2018.

87. However, while financial incentives have proved successful, and are therefore worth introducing in antitrust, the use of a gender lens suggests that whistleblowing policies should *in addition* include tools that would help to increase the propensity for women to blow the whistle on cartel behaviour.

Gender composition of cartels

88. Analysis of the Connor database of private international cartels provides some support for the hypotheses. In particular, we find that less than 5 percent of the executives prosecuted for involvement in international cartels between 2010 and 2016 were women. Moreover, these were drawn almost exclusively from Canada and the US. In other countries, less than one percent were female. However, this needs to be put in context since women are also under-represented in positions in which they would have had the opportunity and responsibility to be able to engage in cartel agreements. For instance across the OECD at the time the average female share of seats on the boards of the largest publicly listed companies was approximately 16 percent (or 14-15 percent in the US and Canada). It may of course be the case that competition agencies have been systematically less successful at identifying cartels involving women. However, since we expect that the involvement of women in discovered cartels is broadly representative of their involvement in all cartels, and that board composition is indicative of the percentage of women that had the opportunity to collude, we might nevertheless conclude that the evidence available suggests that women are less likely to collude than men are.

89. To gain a fuller understanding of this issue it might be useful to undertake both qualitative case studies of discovered cartels, and to undertake behavioural experiments/simulations to explore gender differences in the propensity to collude, to whistle-blow on collusion, and the factors that affect each of them. This would allow testing of the ways in which competition agencies might increase compliance with competition law by recognizing which incentives matter most for men and women.

[40] Tilton (2018) notes that the incentive structure cannot be isolated from its other features, including: (1) the certainty of the award, (2) the clarity of the whistle-blower procedures, and (3) the degree of control that the whistle-blower has over the case.

3.3. Application 3: Prioritization decisions of competition agencies

90. This section presents two market studies that are relevant from the viewpoint of our discussion about the potential role that certain markets may play in fostering or hampering female labour force participation. In particular, we present a market study of the childcare industry in Japan, and a market study of the elderly care service market in the UK.

Box 4. Japanese Fair Trade Commission market study on the childcare market

The growth plan of Prime Minister Shinzo Abe, also known as Abenomics, recognised gender equality as an important goal of its supply-side reforms. In particular, the plan recognised the need to introduce labor market reforms that spur female labor market engagement as a lever to increase growth. To achieve this, enhancing work-life balance is considered a priority and it is indeed part of the concrete objectives of the "Fourth Basic Plan for Gender Equality" that was approved in 2015.

The Japanese female labor force participation rate is slightly higher than the OECD average in 2016 (OECD,2017), representing 66.1 % while the OECD average equals 59.4 %. For comparison, Iceland has the highest rate, with 83.4 %, followed by Switzerland, Norway, and Sweden. Lagging behind, Turkey has slightly more than 30 %, followed by Greece, Mexico and Italy. Interestingly, compared to other developed countries, female labor force participation in Japan is still exhibiting an "M" shape, with a decline in participation in the 30-34 and 35-39 age brackets. For example, in the 30-34 age bracket, female labor force participation in Japan was 73.2 % while it was 14 percentage points higher in Sweden at 87.5 %. Compared to the Swedish counterparts, Japanese women are not only less likely to participate in the labor market, but when they do, they are therefore more likely to do so as part-time workers. In 2016, only 44 % of women were employed full-time while full-time employment represented almost 78% of total employment for men (GoJ, 2018). Garcia-Herrero (2016) points towards surveys which refer to flexibility as a key reason for why Japanese women choose to work part-time. Furthermore, female ordinary full-time workers earn 73 % of male earnings, consistent with the gender wage gap documented throughout the world. Last but not least, in 2016, 2.74 million women out of the labor force declared being willing to join (GoJ, 2018). That is, they are "wishing to work" but not working or actively looking for a job. Interestingly, the gap between the actual labor force and the potential labor force for female is highest around the 30-39 age bracket. In short, Japanese women are less likely to be engaged (or if they are with lower intensity) in the labor market, especially during childbearing ages.

In line with the theoretical arguments and empirical findings previously discussed, data shows that mirroring their relatively low paid work, Japanese women are significantly more likely to be engaged in unpaid work within the household, compared to men. In particular, Japanese women in married couples with at least one child spend 7,34 hours a day on housework, out of which 3,45 hours are spent on childcare (GoJ, 2018). By contrast, Japanese men spend 1,23 hours a day on housework out of which 0,49 hours is spent on childcare. This gender gap in housework is also documented in other countries such as the US, UK, France, Germany, Sweden and Norway but it is narrower. Data shows, therefore, that in Japan childcare is mostly done by women. Also, for couples where both partners are employed, data reveals an important gender gap in the extent to which men and women go on childcare leave. In 2016, it reached almost 90 % for women but only 3.16 % for men.

The reasons behind such unequal distribution of housework are multiple and include tax incentives at the household level but also stereotypes about gender roles inherited from the past. While such stereotypes ("husband should work outside the home, and the wife in the domestic sphere") were widely held in the 1970s, opinion pools reveal that these stereotypes are evolving in Japan (GoJ, 2018). Data also shows, nevertheless, that as of 2016 both men and women agree with the statement that "men are being given preferential treatment" in the economy (GoJ, 2018).

From the competition policy perspective, an important reason for the unequal distribution of housework might be a lack of competition in service markets such as the childcare service market that influence women's reservation wage. Certainly a scarcity of supply exacerbates the difficulty that women face in balancing their childcare and work responsibilities. For instance, in the last quarter of 2016, 23,553 children were on waiting lists for childcare services. Furthermore, the potential shortage of childcare services may surpass the actual shortages as reflected in the waiting lists, since supply scarcity may inhibit certain women from seeking to work, therefore constituting a "hidden" demand for service. In coherence with the broader policy orientation of placing women at the center of Abenomics, and also reflecting this situation, in April 2013 the Prime Minister Shinzo Abe launched the "Zero Childcare Waiting List Acceleration Project".

Within this context, and as part of its advocacy role, the Japan Fair Trade Commission undertook a market study on the childcare sector in Japan, publishing a report in 2014. It surveyed users to identify the reasons for the lack of supply and the key issues for competition policy. It concluded that facilitating competition would be critical to improving the quality and availability of services. Specifically it recommended that this could be achieved by removing regulations that restrict entry of for-profit corporations and by changing the subsidy and tax policy on different type of providers. This reflected the finding that barriers to entry for different type of providers were one of the reasons for the scarce supply.

This example illustrates how promoting competition in a sector that provides services that can substitute for unpaid work in the household may contribute both to market efficiency and consumer surplus maximization, and to boost female labor force participation. Other competition authorities may wish to prioritise market studies and investigations in such markets in order to obtain a "double dividend".

Box 5. UK Competition & Market Authority market study on residential and nursing care homes for the elder.

Global life expectancy is forecasted to rise in the coming decades (Foreman et al., 2018). In the UK, life expectancy is predicted to increase from 80.8 years in 2016 to 83.3 years in 2040. These demographic trends mean that the demand and need for care provision is bound to increase in the coming decades. As women are the main providers of unpaid elderly care services within the household and in the informal sector, these demographic trends imply that elderly care needs may place a bigger burden on women, with potential negative consequences for female labor force participation, as discussed in detail in section 2.2. This burden may be eased by the evolution of gender norms, and/or by the efficient functioning of elderly care service markets.

In addition, OECD (2018) data shows that in the UK life expectancy at birth as of 2017 was of 79.4 years for men and of 83 years for women. That is, women's life expectancy is higher than men's life expectancy, both in the UK and in other OECD countries. This means that the quality and affordability of elderly care will be more critical for female consumers. Furthermore, women tend to earn less during their lifetime, due to the gender wage gap, to own less assets, and to receive smaller pensions (*the gender pension gap*). Affordability of care may be, again, particularly important for women. Indeed, the gender pension gap in the UK (average pre-tax pension income) was equal to 38 % among the over 65s population (European Commission, 2017).

Within this broad context, in December 2016, the CMA announced the launch of a market study of UK care and nursing homes for the elderly (CMA, 2016). This sector is considered as particularly important because individuals in need of elderly care are often making choices in a highly vulnerable situation and because of expected increases in life expectancy, as acknowledged in the report. Furthermore, these choices often involve third parties such as family members or informal care providers, often women, within the home.

In the UK, the market for elderly care involves a mixture of self-funder institutions and local authority funding. Regarding competition, the report documents that competition between care homes is affected by geography, and is lower in rural areas. The report also documents how the nature of funding influences the nature of competition. Care homes that are financed by local authorities are found to focus more on price, while those that are self-funder clients are found to focus more on quality.

91. Despite the role of women as both informal care providers, and as recipients of care due to their higher life expectancy then men, the market study does not take gender into account. Interestingly, while the Competition and Markets Authority's (CMA) statutory duty is to promote competition for the benefit of consumers, in its Annual plan 2018/19, it does set its priorities to help vulnerable consumers and promote trust in markets, emphasizing its role vis-à-vis the wider society. Among the justifications for such focus is that market malfunctioning hurts vulnerable consumers relatively more. In addition, the CMA points to the need for research on how circumstances linked to vulnerability affect market participation. Last but not least, the CMA defines vulnerability along personal circumstances but gender is not included as a factor.

92. These two examples show that prioritization can be responsive to the broader policy context without compromising the focus on consumer welfare. They also show that gender considerations are not always explicitly integrated in the analysis. While a gender lens may not have ultimately changed any of the findings in the CMA study, it may be that recognizing the role of gender in this market might have led to the discovery of potentially relevant information. For example, the choices made by elderly women might differ in some way from those of elderly men in regards to the substitutability of different types of care home, the preference for domiciliary care, or there might have been a greater reliance on local authority funding as opposed to self-funding. Similarly, it would be interesting to know what impact, if any, the working status of those with unpaid caring responsibilities had, and whether local market prices had an impact on labor force participation in different areas.

93. Other potentially relevant market studies where gender may play a role are those related to banking finance, which are very numerous. Indeed, the next application discusses the impact of increased competition in the micro-finance industry and its consequences for female financial inclusion.

3.4. Application 4. Competition and outreach to women in the micro-finance industry

A financial innovation to serve the unbanked poor, often women

94. Access to financial services is key for participation in economic life (Collins et al. 2009). Yet as of 2015, 2 billion adults were still unbanked (Demirgüg-Kunt et al. (2015). The Microfinance industry developed in the late 1970s as a response to the lack of access to credit of the unbanked poor, mostly women. As of 2010, estimates suggest that microfinance institutions serve globally 200 million clients (Reed, 2015). The main innovation of microfinance was to develop joint liability lending. This allowed borrowers lacking financial collateral to rely on social capital as collateral (since group members are liable for each other). Research has shown evidence of the role that social capital plays in actual borrowing outcomes. For example, Karlan (2007) showed that when group members were socially close they had higher repayment rates.

An evolving industry with a rising share of for-profit players and rising competition

95. At inception, the industry was mainly composed of not-for-profit organizations that relied on donations to finance their lending activities, using joint liability lending methodologies. For example, in Bangladesh, where 90 % of clients of microfinance are women, the industry involved mostly small NGOs (Khandker and Koolwal 2013). During the 2000s the industry experienced an increase in the share of for-profit institutions. Globally, numbers mirror this trend. While in 1999 for-profit microfinance institutions represented less than one third of players, by 2009 they were close to 40%, with an increase in the average number of institutions per country (De Quidt et al, 2018). Furthermore, De Quidt et al. (2018) uses Mix Market data from 2008 to 2014 to show evidence of a decline in the use of joint liability lending methodology. Kar and Swain (2018) study of 568 microfinance institutions around the world also shows that competition increased (using a Boone indicator of competition).

The consequences of increased competition for microfinance performance and social mission

96. Traditionally, competition in financial market should benefit consumers and firms by decreasing loan prices and inducing competition in the quality of services provided. In the case of the increased competition in the microfinance industry, the theoretical implication is less clear. This is the case because in this industry not-for-profit and profit driven institutions coexist, together with the traditional financial sector which evolves alongside the microfinance sector.

97. Rising competition within the microfinance industry may impact product pricing, target markets and financial performance of microfinance institutions (Khandker and Koolwal, 2013). Competition may lead, on the one hand, to innovations that decrease transaction costs enlarging the scope to serve poorer clients. On the other hand, competition may have negative consequences by pushing microfinance institutions to drop poorer borrowers (Khandker and Koolwal, 2013). In the context of healthcare and education services, this is sometimes referred to as cream-skimming or cherry-picking (see Biggar & Fels, 2017, and OECD, 2018). This can reduce costs for those that are served, but lead to part of the market going unserved as the reduced scope for risk-pooling and cross-subsidization prevents microfinance institutions from covering the costs of serving poorer borrowers (McIntosh and Wydick, 2005). Because lack of access to finance is a market failure, as it is in regard to lack of access to health and education, this means that the options available include subsidizing access for those that are otherwise unserved, or mandatory risk-pooling (as in insurance-based healthcare systems).

98. Studies have empirically investigated the consequences for the performance and outreach to the poor and women following the increase in competition both at the country level and across countries. McIntosh et al. (2005) study of the microfinance industry in Uganda shows that competition had detrimental effects on repayment performance in incumbent microfinance institutions, and led cherry-picking and targeting of richer clients. They also find evidence that increased competition influenced information sharing about the borrowers reliability. De Quidt et al. (2018) uses proxies of competition from the traditional financial sector such as domestic credit to GDP to show that competition led to an increase in the reliance on an individual lending methodology. Kar and Swain's (2018) study of cross-country data shows that increased competition led to increased profitability but came at the cost of lower outreach to the poor. That is, it had detrimental consequences for the fulfillment of microfinance social mission, outreaching the poor and unbankable women.

Food for thought for competition policy?

99. The case of the microfinance industry and the consequences of rising competition for the fulfillment of the industry social mission provides some food for thought for competition authorities. In particular, it suggests that promoting competition in markets that have traditionally suffered from market failures (such as credit provision for women) may require authorities to consider whether existing alternatives (often informal and/or not-for-profit solutions) already exist in the economy (for example microfinance or informal lending in the case of access to credit). Increased competition in such markets and the associated increase in for-profit actors may have potential effects on the functioning of these alternative solutions which are likely to be prevalent in developing countries and lead to unintended consequences for access to credit for women and the poor.

100. While no definite answer exists regarding the general consequences of increased competition in the provision of services by profit driven firms on the performance of not-for-profit organizations, the interplay between non for profit and for profit players is likely to be worth considering before the introduction of policy changes in such environments. In particular, increasing competition to reduce prices and hence increase access to microfinance might need to be combined with parallel solutions for those that might lose their access as a consequence of increased competition.

101. The next section discusses concrete steps for competition authorities to take into account gender in their practice.

4. Integrating gender into competition policy

102. The main goal of competition law is to protect consumers from anticompetitive conduct, agreements and acquisitions by firms that increase prices or reduce quality and hence lead to a deterioration in consumer welfare. The aims of competition policy however can be considered to go further and to include maximizing consumer welfare by reducing barriers to entry, and addressing other features of markets that prevent, restrict or distort competition. Competition policy can undermine incumbent's power within markets. By levelling the playing field and creating equal opportunities that will maximize efficiency, competition policy may also undermine existing power structures in society.

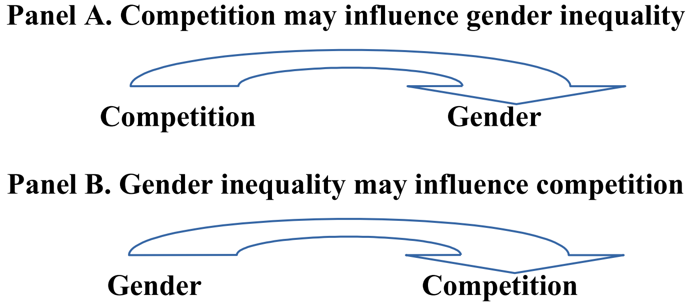
103. When considering how competition policy may take into account gender considerations two approaches naturally present themselves: a normative and a positive one. At the positive level, the question is: how to incorporate gender considerations into competition authorities practice to help them deliver their goal of increasing consumer welfare? At the normative level, the question is: should competition authorities consider gender perspectives and gender issues as part of their mandate and/or in some of their decision-making process?

104. In this section, we start by discussing the positive question. We draw on the analysis in the previous sections to present a menu of options for competition authorities. We then discuss normative considerations regarding competition policy role in the face of challenges related to gender inequality. We do so by discussing existing public interest considerations in the mandate and practice of competition authorities around the world.

4.1. Lessons learned: a bi-directional relation between competition and gender

105. In this paper, we have sought to explore the interrelation between market competition and gender. We have shown that this relation is bi-directional. That is, competition may influence gender inequality and, at the same time, gender inequality and the use of a gender lens may have an impact on the competitive process and the work of competition authorities. Figure 1 and Table 3 summarize the contribution of the paper.

Figure 1. The bi-directional relation between gender and competition



106. We have studied the relation from competition to gender (Panel A of Figure 1) through applications 3 and 4 which relate to the advocacy activities of competition authorities. As discussed throughout the paper, taking into account gender may result in a "double dividend". That is, by promoting competition in certain markets, competition authorities may reduce market distortions in a particular market (*first dividend*) and contribute to reduce gender inequality (*second dividend*).

107. We have reviewed existing theory and evidence that suggest that promoting competition can decrease gender inequality, particularly when inequality results from taste-based discrimination *(section 2.1)* except when discrimination arises from prejudiced consumers. We have also argued that promoting competition in specific markets (such as childcare, elderly care, infrastructure and financial markets) can help promote female economic participation and reduce gender inequality *(section 2.2).* Efforts by competition authorities to tackle the factors that drive some markets into the informal sector may also influence gender inequality since women are overly involved in informality in many countries and are often found in a vulnerable position within the informal sector. *(section 2.2).* Last but not least we have shown that promoting competition in markets with not-for-profit actors may require a careful analysis of their interplay with for-profit actors.

108. To study the relation from gender to competition (Panel B of Figure 1), we have presented applications 1 and 2, which relate directly to competition law and merger control, the core duties of competition authorities. These applications suggest that considering gender can help improve the efficacy of competition authorities in their promotion of market efficiency. For example, we have argued that considering gender may influence product market definition (Application 1 section 3) and that considering gender may influence the tools that competition use to incentivize firms to refrain from making anti-competitive agreements (Application 2 section 3).

4.2. A positive approach for competition authorities

How can competition authorities integrate gender considerations into their practice?

109. This section presents a menu of options from a positive approach. We present alternative ways, that are feasible or already existing, in which competition might integrate gender considerations into their practice. We do not argue that competition authorities should follow a given strategy, for example whether they should value equity effects in addition to efficiency or not. We expect that most authorities will have efficiency focused mandates from government, in which case they may consider equity impacts as welcome side-effects of their core duty. Nevertheless, some of these authorities may wish to consider such impacts within their prioritization decisions in order to increase their impact without departing from a consumer welfare standard in the cases that they investigate. In other cases, we recognize that some authorities may have an explicit mandate to deliver equity.

A menu of options

110. This section proposes a menu of options for competition authorities.

Table 3. A menu of options for competition authorities

		Consequences		Double dividend*
Competition authorities activities	**Menu of Options**	**Efficiency**	**Equity**	**Yes/No/Maybe?**
Competition Law and Merger control				
Antitrust enforcement	Check product market definition along gender lines to evaluate anti-competitive practices (see Application 1 section 3).	X	?	Maybe****
	Consider using exploitative abuse of dominance provisions in the law to take cases against gender-based price discrimination (see Application 1 section 3).		X	
Merger control	Check product market definition along gender lines to evaluate merger consequences (see Application 1 section 3).	X	?	Maybe****
Advocacy				
Market studies	Study barriers to entry across gender lines including transaction costs and behavioral factors (see section 2.3).	X	X	Yes
	Study whether key markets for women are working well (see section 2.2).	X	X	Yes
	Provide consumer remedies that account for gender differences in transaction costs and behavioral factors (see section 2.3).	X	X	Yes
Ad hoc advocacy	When providing opinions on regulations or governments policies, agencies may identify the additional consequences for gender inequality of any anti-competitive concern that they identify.	X	X***	Yes
Consumer protection*	Check whether gender is a dimension of consumer vulnerability in a given market.		X	

Note: * Double dividend: Whether the action may improve efficiency in a particular market (first dividend) and contribute to reducing gender inequality (second dividend).
** Consumer protection concerns only those competition authorities with a consumer protection mandate.
*** While ad hoc advocacy may not have a direct effect on equity, it may contribute to it indirectly.
**** This may affect decision-making and therefore prevent price rises in gendered markets.

111. Based on our research, we argue that competition authorities whose mandate is focused on consumer welfare and/or total welfare may find value in considering the options listed in Table 3 that are directly related to efficiency consequences. Furthermore, because some of options in Table 3 lead to both efficiency and equity gains (involving a double dividend) while others do not, the realization of a double dividend (and the gains in terms of gender equality) may guide prioritization decisions of competition authorities in situations where they do have some discretion in case selection (for instance in antitrust case selection and for market studies). For example, not taking into account the double dividend may be seen as "leaving money on the table". Through prioritization, competition authorities could complement or contribute to policy efforts in the fight against gender inequality at a relative low cost, in line with approaches steaming from gender mainstreaming and gender budgeting.

112. It is also worth considering whether competition authorities that have a broader public interest mandate from government should incorporate gender equality as part of that enlarged mandate. In section 4.3 we discuss arguments over the incorporation of gender equality as a public interest of competition authorities, drawing from existing examples of authorities with public interest.

113. In addition to this menu of options, two issues are relevant across the range of competition authorities' activity. These are prioritization and evaluation. We next discuss key takeaways from our studies regarding these issues.

Takeaways for prioritization and ex-post evaluation

114. Case prioritization is an issue that potentially spans many activities of competition authorities. Competition authorities typically have a good deal of discretion regarding what they prioritize in areas such as market studies and advocacy. Discretion in case selection is lower in the realm of antitrust enforcement, though room for may remain prioritization. Evaluating how case prioritization relates to gender may help competition authorities understand their impact on gender inequality, and whether they are missing opportunities. Yet, assessing the extent to which case prioritization may suffer from particular selection biases, for instance those related to gender, may be challenging.

115. Within the broader policy world there is an increasing effort to evaluate the consequences of policies. This increasing need for accountability follows both an internal and external logic. Internally, evaluating the consequences of policies can improve future decision-making. Externally, it can help policy makers to inform the public about the benefits and, by doing so, secure public funding and support for their mission. The trend towards ex-post evaluation is also taking place within competition policy. The OECD (2016) guide provides conceptual and practical guidance for competition authorities to undertake ex-post evaluation of enforcement decisions, such as merger control and antitrust.

116. Current ex-post evaluation tends to focus on evaluating the direct consequences of enforcement decisions. Some competition authorities, such as New Zealand Commerce commission, also evaluate whether the hypotheses that were held when making enforcement decisions are correct. Being able to correctly anticipate market developments and to rely on relevant hypotheses about the functioning of markets is key for good policy. Ex-post evaluation is also used by competition authorities as a way to assess the techniques and theories they rely on, and also as a way to gather information regarding relevant economic sectors. To the extent that case prioritization may suffer from selection or omitted variable biases related to gender, competition authorities may also need to integrate gender in the evaluation of case prioritization in their practice.

117. Many competition authorities that do ex-post evaluations focus on direct effects, mostly gathering information on how prices have evolved, and to a lesser extent, on the quality, variety, innovation and entry aspects of the market functioning. Yet, the policy world is also discussing whether and how to evaluate indirect consequences of competition policy that are broader and that encompass macroeconomic factors.

118. In the 2015, the UK CMA, the Netherlands ACM and the European Commission (DG COMP) held a conference on competition authorities ex-post evaluation focusing on indirect effects (deterrence and macroeconomic related). Gathering information regarding the consequences of competition policy for gender related outcomes would also help to guide policy. In particular, it would provide substantive facts indicating whether there is a difference regarding the beneficiaries of the interventions of competition authorities, and hence whether there is a need to do more to integrate gender in the formulation and enforcement of policy.

119. Based on the analysis in this paper and the existing research discussed, we believe that integrating gender into the ex-post evaluation or impact assessment process that is performed regularly by competition authorities may be worthwhile.

4.3. A normative approach: the role of competition policy

120. Competition authorities around the world differ in the nature of their mandate (OECD, 1994). For many, it is to maximize consumer welfare, while for some it is to maximize total welfare. Also, for a number of competition authorities, their mandate includes public interest considerations complementing the focus on consumer welfare. The inclusion of public interest may be related to historical factors or strategic factors. For example, while in South Africa the competition authority includes race as part of its public interest mandate, in many other cases the inclusion of public interest relates to specific sectors such as national defense or the media, among others.

121. At the policy level, integrating gender considerations in the formulation of competition policy can be considered as part of gender mainstreaming. According to Fox (2017), notions related to equality of opportunity are part, or have been part, of competition law in many countries. Fox (2017) argues that back in the 19th century, antitrust cases in the US took inequality into account. Indeed, it is not inconceivable that some competition authorities may find themselves with mandates that extend beyond efficiency. In such circumstances there is a question as to whether gender equality should be included as one of the public interest elements in that mandate. We now turn to discuss these normative considerations.

Box 6. Three existing models: consumer welfare, total welfare and public interest

The majority of competition policy regimes focus exclusively on efficiency and welfare (consumer and sometimes producer as well) to evaluate efficiency gains in competition cases (Blair and Sokol, 2013). *The consumer welfare model*, which has become dominant, posits that more competitive markets are more efficient in ensuring that consumer will face lower prices, higher quality products and a wider choice variety. The consumer welfare model is based on efficiency but focuses on giving consumers a fair share of total wealth (Harker, 2011). But it does not deal with distributional issues within groups of consumers. In that sense it is not a priori concerned with distribution. *The total welfare model* is not concerned with distribution of benefits between producers and consumers. Last, but not least, *the public interest model,* takes into account distributional issues and/or of vulnerable or strategic segments of the market. As a general approach it is mostly prevalent in non-OECD countries (Reader, 2016).

122. Public interest refers to the consideration of non-economic goals related to consequences other than efficiency.[41] Existing competition authorities using public interest clauses vary in their application and institutional design. The inclusion of public interest in merger control regimes may involve either an explicit requirement for consideration of public interest in a competition authority's assessment, exemptions from competition authority assessment, or allowing other bodies to override the authority of competition authorities in specific cases. In some cases, competition authorities may implicitly recognize the need to balance social objectives, for example, when economic shocks or particular events trigger specific needs. Public interest considerations may also vary across countries and over time (Jolly, 2007). For example, in South Africa, the history of apartheid lead to the preamble to the competition law stating explicitly that the law should "promote a greater spread of ownership, in particular to increase the ownership stakes of historically disadvantaged persons".[42] In Australia, national interest considerations include economic and non-economic factors and are considered in the evaluation of foreign entity acquisitions. In Canada, federal agencies other than the competition bureau take into account public interest considerations by reviewing mergers related not only to foreign acquisitions, but also to mergers in regulated sectors such as finance and transportation.

The inclusion of gender equality as public interest?

123. While it is not evident that there is any need for a general public interest test in competition law, if governments were to decide to add one to the mandate of a competition authority, then there would be grounds for including gender inequality amongst those public interests. This would recognize that women have been historically disadvantaged in many countries and socio-economic contexts.

124. Indeed, as we have identified in this paper there may be a number of synergies and less tension between such an objective and an efficiency objective than is the case where for example the public interest is defined according to the number of jobs in an area. There may therefore be good reasons for a competition authority to administer any such test in a transparent fashion, rather than for a ministry or an equality agency to be given responsibility for it.

[41] Public interest considerations in merger control (DAF/COMP/WP3/2016).

[42] Moreover it appears that this will be strengthened under amendments to the competition law.

125. As we have noted, a potential conflict may arise where consumers rather than firms exhibit taste-based discrimination through their willingness to pay, and this leads to gender-based discrimination. We have argued that in such cases gender blind application of competition principles would not contribute to the reduction of gender-based discrimination. However, such issues can be addressed within the existing framework of most countries consumer protection laws, and hence would not require the stretching of competition law to accommodate them.

126. It should also be noted that the inclusion of any public interest risks increasing legal uncertainty by reducing the predictability in enforcement. It may also lead to room for political pressure and an impact on the relevant time horizon of competition policy.

5. Summary and conclusion

127. Historically, women have faced barriers in their access to markets and, when participating in markets, they have experienced inferior outcomes. Unfortunately, these barriers and inferior outcomes persist in many countries, as overall progress in addressing them is still too slow. Formal barriers (legal and regulatory), informal barriers (behavioural and cultural) and the unequal division of household labour across genders, place significant impediments to women economic participation This poses a threat not only to a fair distribution of resources but also to economic development and inclusive growth. Gender inequality leads to smaller, less efficient and less competitive markets where talent is misallocated and where competition works less efficiently to guarantee high consumer welfare.

128. There is a growing interest in measuring and evaluating the consequences of public policies for gender equality. Since 1995 the UN has included gender mainstreaming in development and economic policy. This involves recognizing that public policies that are not explicitly related to gender may have unintended consequences, positive or negative, for gender equality. By integrating gender in the design, implementation and evaluation of public policies the goal is twofold. First, to promote gender equality at a lower cost, avoiding double spending. Second, to improve the efficiency of policy by promoting an understanding of gender related societal factors that are relevant to the policy goals themselves. In practice, gender mainstreaming requires policy actors and institutions to develop an understanding of the gender dimension of specific policies. Adopting a gender perspective in areas where gender has traditionally been absent requires the development of expertise crossing disciplines and policy boundaries.

129. The purpose of this paper was to propose a first step towards building a framework for developing ways in which competition policy may take gender into account. To do so, we have proceeded as follows. We started by motivating why greater gender equality offers both equality and efficiency gains for the economy at large, discussing existing work documenting the economic costs of gender inequality. We then have developed a conceptual framework on the bi-directional relation between gender and competition.

130. We discussed how competition may contribute to the fight against gender inequality. As theorised by Becker (1957) promoting competition can contribute to the fight against gender discrimination by driving participants that exhibit taste-based discrimination against women out of the market. Yet we have also suggested that this does not hold when firms cater to prejudiced consumers in which case competition, unmediated by consumer protection rules, may exacerbate discrimination.

131. We presented data showing that a substantial part of women's contribution to the economy takes place in the informal economy (OECD, 2018) or as unpaid work within the household. Drawing on labour market theories we have argued that the market price for these unpaid services increases women's reservation wage and hence reduces their labour force participation both as workers and as entrepreneurs. The efficient and competitive functioning of certain markets is therefore critical for women. In particular, we identified these critical markets as those that provide services that substitute for unpaid services traditionally provided by women within the household. We have argued that this is also the case for markets that provide services that complement women's labour force participation, such as financial markets and infrastructure markets. Last but not least we discussed how informality may hurt both women and the competitive process. Addressing the factors that drive markets into the informal sector may result in a double dividend for competition authorities and society at large.

132. We then looked at how gender may influence the functioning of markets. We reviewed existing literature regarding how gender influences both the propensity of women to enter markets and the outcomes experienced within markets, impacting the efficient functioning of markets in ways that are relevant for competition authorities. In particular, gender influences market entry of entrepreneurs (women face legal and regulatory barriers) affecting the quality pool of entrepreneurs. This can potentially reduce competitive pressures on incumbent firms and outcomes. Gender can also influence market entry due to behavioral, cultural and identity-related factors. Such factors can leave high-skilled women out of high return occupations due to a need for temporal flexibility and of the provision of household caring activities. In part as a result of this, gender influences the return to market participation as employees and entrepreneurs (the gender wage gap). From the perspective of competition policy, these findings complement our argument that focusing on specific markets (child and elderly care, infrastructure, finance) may lead to benefits that contribute to increase both market efficiency and market inclusion.

133. We have also shown that gender can also influence the prices consumers pay (women pay higher prices for a range of similar products) and the transaction costs associated with participation in markets. As a consequence, a competition agency undertaking a market study and identifying such price differences may want to ask whether these differences reflect a well-functioning market, or whether they suggest that demand-side remedies might improve consumers' ability to drive competitive incentives and obtain better outcomes from the market. In testing the effectiveness of such remedies, agencies may find that differences in biases, bargaining approaches, or information processing strategies lead to certain types of remedy being more effective for women than for men. This might suggest the need for such remedies to combine different approaches and perhaps to target them at different groups.

134. In the second part of the paper, we applied our conceptual framework to four distinct cases; two of them directly related to the basic duties of competition authorities, and two of them to their advocacy activity. In particular, we have considered how gender influences product market definition. Doing so we have argued that if competition authorities limit themselves to looking at how 'consumers' as a whole switch between different products, they may risk overlooking preferences based on gender (or other aspects of) identity which are strong enough to require the definition of a separate market for gendered products. The potential consequence of mis-defining such markets is that mergers that reduce competition for gendered products might not be challenged, potentially leading to increased price differentials, or that exclusionary practices are permitted on the basis of illusionary competitive constraints from producers of other-gender products. In a second

application, we explore whether adopting a gender lens might help agencies to incentivize whistle-blowers to report collusive agreements.

135. Regarding advocacy, we discussed two applications related to prioritization decisions of competition policy that illustrate how promoting competition in certain sectors may be particularly relevant for leveling the playing field across genders. In particular, we discussed the Japanese Fair Trade Commission market study on the childcare market, and the UK Competition and Market Authority market study on residential and nursing care homes for the elder. These examples suggest that where competition authorities prioritize market studies and investigations they may obtain a "double dividend" from reducing market distortions in a particular sector (first dividend) and improving women's ability to achieve work-life balance and participate in the labor market (second dividend). Our last application concerned the case of the microfinance industry. In particular, we discussed the consequences of the documented increase in competition in industry characterised by the interplay of not-for-profit players, which operate with a social mission, and for -profit actors. The consequences of increased competition from profit driven firms on the performance of not-for-profit organizations remains unclear. However, the example suggests that the interplay between not-for-profit and for-profit firms is likely to be complex and that it is worth considering before the introduction of policy changes in such environments, especially in developing countries.

136. Last but not least, we have offered a menu of options for competition authorities on how they might integrate gender into their practice. In doing so we have taken care to recognize that this will depend on the mandate the competition authority has, as well as its appetite to maximize that impact in light of that mandate. In particular, we argued there is scope to apply a gender lens to prioritization decisions, and that a good place to start is to look back and evaluate the gender impact of previous prioritization decisions. Future work may be useful to help authorities in this task. We concluded the paper by discussing normative considerations regarding the potential inclusion of gender equality as public interest.

137. Future work may dig deeper into our analysis. We hope that future research and policy work will contribute to enlarge and revisit our discussion, which we see as a starting point. In particular, future work can study how best to integrate gender considerations into prioritization and evaluation guidelines. Also, conditional on a growing interest from competition authorities around the world to incorporate gender as public interest, future work may learn from competition authorities that already have public interest considerations, such as South Africa. In particular, such cases can provide a basis for exploring the role of varied institutional designs and their practical implementation. We also note that digitalization and rise of artificial intelligence are already changing the nature of markets. On the one hand, these may decrease the cost of doing business, and increase the viability of flexible participation in markets, which can be relatively more beneficial to women. On the other hand, research suggests (Caliskan et al., 2017) that algorithmic price setting may not be gender neutral, as one might expect, but instead seems to reproduce existing prejudices and biases.

References

Adams, R., Kräussl, R., Navone, M. A., Verwijmeren, P. (2017), 'Is Gender in the Eye of the Beholder? Identifying Cultural Attitudes with Art Auction Prices' Available at SSRN: https://ssrn.com/abstract=3083500 or http://dx.doi.org/10.2139/ssrn.3083500

Aigner, D. and Cain, G. (1977), 'Statistical Theories of Discrimination in Labor Market' *Industrial and Labor Relations Review*, 30(2): 175-187

Akerlof, G., and Kranton, R. (2000), 'Economics and Identity'. *Quarterly Journal of Economics* 105(3), 715–53

Alesina, A., Giuliano, P., Nunn, N. (2013), 'On the Origins of Gender Roles: Women and the Plough.' *Quarterly Journal of Economics*, Vol. 128(2): 469-530

Alesina A., Lotti, P., Mistrulli, E. (2013), 'Do Women Pay More for Credit? Evidence From Italy', *Journal of the European Economic Association*, Volume 11, Issue suppl_1, 1 January 2013, Pages 45–66, https://doi.org/10.1111/j.1542-4774.2012.01100.x

Arrow, K. (1973), 'The Theory of Discrimination' in Ashenfelter, O. and Rees, A. '*Discrimination in Labor Markets*', Princeton University Press, p. 3-33

Bae, S., and Lee, T. (2011), 'Gender differences in consumers' perception of online consumer reviews' *Electronic Commerce Research*, 11(2), 201-214

Baert, S., Cockx, B., Gheyle, N., Vandamme, C. (2015), 'Is There Less Discrimination in Occupations Where Recruitment Is Difficult?' *Industrial and Labor Relations Review* 68 (3): 467–500. URL: http://ilr.sagepub.com/content/68/3/467

Becker, G. (1957), *The Economics of Discrimination*, Second Edition, The University of Chicago Press Economics

Bellucci, A., Borisov, A., Zazzaro, A. (2010), 'Does gender matter in bank–firm relationships? Evidence from small business lending' *Journal of Banking & Finance*. 34. 2968–2984. 10.1016/j.jbankfin.2010.07.008

Bertrand, M. (2011), 'New Perspectives on Gender.' In Ashenfelter, O. and Card, D. (editors) *Handbook of Labor Economics*, Vol. 4b. Amsterdam: Elsevier. pp. 1543-1590

Bisin, A. and Verdier, T. (2001), 'The Economics of Cultural Transmission and the Dynamics of Preferences,' *Journal of Economic Theory*, Elsevier, vol. 97(2), pages 298-319

Black, D. A. (1995), 'Discrimination in an Equilibrium Search Model.' *Journal of Labor Economics* 13 (2): 309–34

Black, S. and Strahan, P. (2001), 'The Division of Spoils: Rent-Sharing and Discrimination in a Regulated Industry'. *American Economic Review*, Vol. 91, No. 4 (September), pp. 814-31

Black, S. E. and Brainerd, E. (2004), 'Importing Equality? The Impact of Globalization on Gender Discrimination'. *Industrial and Labor Relations Review*, 57(4), 540–559

Blair, R. and Sokol, D. (2013), 'Welfare Standards in U.S. and E.U. Antitrust Enforcement', 81 *Fordham L. Rev.* 2497, published on http://scholarship.law.ufl.edu/facultypub/360

Blau F. and Kahn, L. (2017), 'The Gender Wage Gap: Extent: Trends, and Explanations' *Journal of Economic Literature*, vol. 55(3), pp. 789-865

Bowles, H., Babcock, L., McGinn, K. (2005), 'Constraints and Triggers: Situational Mechanics of Gender in Negotiations.' *Journal of Personality and Social Psychology* vol. 89, pp.951-965

Bowles, H., Babcock, L., Lai, L.(2007), 'Social Incentives for Sex Differences in the Propensity to Initiate Bargaining: Sometimes It Does Hurt to Ask.' *Organizational Behavior and Human Decision Processes* vol. 103, pp.243-273

Braeden, I., Martinez Sola, L.M., Vossenberg, S. (2018), 'Mainstreaming Gender Equality to Improve Infrastructure Development Impact'. PIDG Kit Final Report

Brabeck, M. (1983), 'Moral development: Theory and research on differences between males and females' *Developmental Review*, vol. 3, pp. 274-291

Brabeck, M. (1984),'Ethical characteristics of whistle blowers'*Journal of Research in Personality*, vol. 18, pp. 41-53

Breschi, S., Lassébie, J., Menon, C. (2018), 'A portrait of innovative start-ups across countries', *Documents de travail de l'OCDE sur la science, la technologie et l'industrie*, n° 2018/02, Éditions OCDE, Paris, https://doi.org/10.1787/f9ff02f4-en

Card, D., Cardoso, A. R., Kline, P. (2016),'Bargaining, sorting, and the gender wage gap: Quantifying the impact of firms on the relative pay of women' *The Quarterly Journal of Economic*s, vol **131 (2), pp. 633-686**

Caliskan, A., Bryson, J., Narayanan, A. (2017), 'Semantics derived automatically from language corpora contain human-like biases' Science *Vol. 356, Issue 6334, pp. 183-186*

Chinhui, J., Ujhelyi, G., Villegas-Sanchez, C. (2014),'Men, women, and machines: How trade impacts gender inequality'*Journal of Development Economics*, vol. 106, pp.179-193, ISSN 0304-3878, https://doi.org/10.1016/j.jdeveco.2013.09.009.

Collins, D., Morduch, J., Rutherford, S., and Ruthven, O. (2009), *Portfolios of the Poor: How the World's Poor Live on $2 a Day*. Princeton University Press

Commission Notice 97/C 372/03

Competition and Market Authority (2016), 'Care homes market study: final report' https://assets.publishing.service.gov.uk/media/5a1fdf30e5274a750b82533a/care-homes-market-study-final-report.pdf

Cooke, D., P Fernandes, A., Ferreira, P. (2018),'Product market competition and gender discrimination' (No. 00105). Gabinete de Estratégia e Estudos, Ministério da Economia

Croson, R., Marks, M., Snyder, J. (2008), 'Groups Work for Women: Gender and Group Identity in Social Dilemmas.' *Negotiation Journal*, vol. 24(4), pp.411–27

Croson, R. and Gneezy, U. (2009), 'Gender differences in preferences' *Journal of Economic Literature* vol. 47(2), pp. 1–27

Darley, W. K. and Smith, R. E. (1995), 'Gender differences in information processing strategies: An empirical test of the selectivity model in advertising response' *Journal of Advertising*, vol. 24(1), pp. 41-56

De Blasio, B. and Menin, J. (2015), 'From Cradle to Cane: The cost of gender pricing in New York City' NYC Department of Consumer Affairs

Del Bono, E. and Vuri, D. (2011), 'Job mobility and the Gender Wage Gap in Italy' *Labour Economics* vol. 18(1) pp.130-142

De Quidt, J., Fetzer, T., Ghatak, M. (2018), 'Commercialization and the decline of joint liability microcredit'*Journal of Development Economics*, vol. 134, pp.209-225, ISSN 0304-3878,https://doi.org/10.1016/j.jdeveco.2018.05.010

Demirguc-Kunt, A., Klapper, L., Singer, D., Van Oudheusden, P. (2015),'*The Global Findex Database 2014: measuring financial inclusion around the world' Policy Research working paper; no. WPS 7255*. Washington, D.C.: World Bank Group

EIGE (2016), 'Gender in Transport'

Eil, D. and Rao, J.M. (2011), 'The good news–bad news effect: asymmetric processing of objective information about yourself' *American Economic Journal, Microeconomics*. vol. 3(2) pp.114–38

Elborgh-Woytek, K., Newiak, M., Kochhar, K., Fabrizio, S., Kpodar, K., Wingender, P., Clements, B., Schwartz, G. (2013), 'Women, Work, and the Economy: Macroeconomic Gains from Gender Equity' *IMF Staff Discussion Notes* No. 13/10

European Commission (2017), '2017 report on equality between women and men in the European Union' ISBN 978-92-79-65778-8 doi:10.2838/52591

Feldman, Y. and Lobel, O. (2010), 'The incentives matrix: The comparative effectiveness of rewards, liabilities, duties and protections for reporting illegality' *Texas Law Review*, vol. 87

Fehr, E., Naef, M., Schmidt, K.M. (2006), 'Inequality aversion, efficiency, and maximin preferences in simple distribution experiments: comment.' American Economic Review vol. 96, pp.1912–1917

Fernández, R. (2007), 'Alfred Marshall lecture women, work, and culture' *Journal of the European Economic Association*, vol. 5 (2-3), pp. 305-332

Fernández, R. (2008), 'Culture and Economics' in the *New Palgrave Dictionary of Economics*, 2nd edition, edited by Steven N. Durlauf and Lawrence E. Blume, Palgrave Macmillan (Basingstoke and New York)

Ferrant, G. and Kolev, A. (2016), 'Does gender discrimination in social institutions matter for long-term growth?:Cross-country evidence', *OECD Development Centre Working Papers*, No. 330, OECD Publishing, Paris. https://doi.org/10.1787/5jm2hz8dgls6-en.

Field, E., Pande, R., Rigol, N., Schaner, S.,Moore, C. T. (2016), 'On her account: Can strengthening women's financial control boost female labor supply?' Technical report

Foreman, K.J., Marquez, N., Dolgert, A., Fukutaki, K., McGaughey, M., Pletcher, M.A., Smith, A.E., Tang, K., Yuan, C., Brown. J.C., Friedman, J., He, J., Heuton, K.R., Holmberg, M., Patel, D., Reidy, P., Carter, A., Cercy, K., Chapin, A., Douwes-Schultz, D., Frank, T., Fullman, N., Goettsch, F., Liu, P.Y.,, Nandakumar. V.,, Reitsma, M.B., Reuter, V.,, Sadat, N., Sorensen, R.J.D., Srinivasan, V., Updike, R., York, H., Lopez, A., Lozano, R., Lim, S.S., Mokdad, A.H., Vollset, S.E., Murray, C.J.L. (2018), 'Forecasting life expectancy, years of life lost, and all-cause and cause-specific mortality for 250 causes of death: reference and alternative scenarios for 2016–40 for 195 countries and territories using data from the Global Burden of Disease Study' *The Lancet* 16 October 2018. doi:10.1016/S0140-6736(18)31694-5

Fox, E. M. (2017), 'Antitrust: tracing inequality- from the United States to South Africa' *Competition Policy International*, Inc.

Freeman, R. and Schettkat, R. (2005),'Marketization of Household Production and the EU-US Gap in Work'. *Economic Policy, vol.* 20 pp. 6-50

Garcia-Herrero, A. (2016), 'Japan needs labour market reform, not just higher wages' *Blog Post April 14, 2016, Bruegel*. Available online at http://bruegel.org/2016/04/japan-needs-labour-market-reform-not-just-higher-wages/

Gay V., Hicks. D., Santacreu-Vasut, E. (2016), 'Language and Gender Roles among Immigrants to the US: A Historical Perspective'. *Studi di Genere: Il Mondo Femminile in un Percorso Interdisciplinare*. Edicusano, Roma, P. Paoloni (ed)

Ghosh, S. and Vinod, D., (2017), 'What Constrains Financial Inclusion for Women? Evidence from Indian Micro data', *World Development* vol.92, pp. 60-81

Global Findex database

Gneezy, U., Leonard, K.L., List, J.A. (2009), 'Gender differences in competition: evidence from a matrilineal and a patriarchal society'. *Econometrica* vol. 77 pp.1637–64

Goldin, C. (2006),'The Quiet Revolution That Transformed Women's Employment, Education, and Family' *American Economic Review* vol. 96 (2) pp.1–21

Goldin, C. (2014), 'A Grand Gender Convergence: Its Last Chapter.' *American Economic Review*, vol. 104 (4) pp.1091-1119

Gompers, P., Huang, K., Calder-Wang, S. (2017),'Homophily in Entrepreneurial Team Formation' *Harvard Business School Entrepreneurial Management* Working Paper No. 17-104; Available at SSRN: https://ssrn.com/abstract=2973329

Government of Japan (2018), 'Women and Men in Japan' Cabinet Office, *Gender Equality Bureau* http://www.gender.go.jp/english_contents

Greenberg, J. and Mollick, E. (2016),'Activist Choice Homophily and the Crowdfunding of Female Founders' *Administrative Science Quarterly*, vol. 62 issue: 2, pp. 341-374

Greenwood, J., Seshadri, A., Yorukoglu, M. (2005), 'Engines of Liberation.' *Review of Economic Studies* vol. 72 (1): pp. 109–33

Harker, M. (2011), 'Antitrust Law and Administrability: Consumer versus Total Welfare', *World Competition*, vol. 34 issue 3, pp. 433–447

Heyman F., Svaleryd, H., Vlachos, J. (2013), 'Competition, Takeovers and Gender Discrimination' *Industrial & Labor Relations Review*, vol. 66(2)

Hicks, D., Santacreu-Vasut, E., Shoham, A. (2015), 'Does mother tongue make for women's work? linguistics, household labor, and gender identity' *Journal of Economic Behavior & Organization*, vol. 110, pp. 19–44

Hirsch, B., Oberfichtner, M., Schnabel, C. (2014), 'The levelling effect of product market competition on gender wage discrimination' *IZA Journal of Labor Economics*, vol. 3 pp. 1-14

Holzer, H., and Ihlanfeldt, K. (1998), 'Customer Discrimination and Employment Outcomes for Minority Workers' *The Quarterly Journal of Economics*, vol. 113(3), pp. 835-867

Hubbard, S. (2017), 'How monopolies make gender inequality worse' *Forbes magazine* https://www.forbes.com/sites/washingtonbytes/2017/12/20/how-monopolies-make-gender-inequality-worse-and-concentrated-economic-power-harms-women/#379831911b11

International Labour Office (2013), 'Women in the Transport Sector', *International Labour Office – Geneva: ILO*

International Labour Office (2017), 'World Employment and Social Outlook: Trends for women' *International Labour Office –* Geneva: ILOISBN 978-92-2-130834-8 (web pdf)

International Labour Office (2018), 'Women and men in the informal economy: a statistical picture' (third edition) *International Labour Office* – Geneva: ILO

Ironmonger, D. S. (1996), 'Counting outputs, capital inputs and caring labor: estimating gross household product' *Feminist Economics* vol. 2:(3) pp. 37-64

ITU (2017), *ICT facts and figures 2017*

Jolly, R. (2007), 'Media ownership deregulation in the United States and Australia: in the public interest?' *Social Policy Section*, Research Paper no.1

Kaplow L., (2015), 'Market definition, market power,' *International Journal of Industrial Organization*, vol. 43, pp. 148-161

Kar, A. and Bali Swain, R. (2018), 'Competition, Performance and Portfolio Quality in Microfinance Markets'*European Journal of Development Research,* pp 1-29

Karlan, D. S. (2007), 'Social Connections and Group Banking' *The Economic Journal*, vol. 117, Issue 517, pp. F52–F84

Katsoulacos, Y. (2016), 'Issues in Market Definition and Assessment of Market Power Review' Workshop organised by FNE, CRESSE and ISCI Santiago, November 2016

Kempf, D. S., Laczniak, R. N., Smith, R. E. (2006), 'The effects of gender on processing advertising and product trial information' *Marketing Letters*, vol. 17(1), pp. 5-16

Khandker. S., and Koolwal, G.B. (2013), 'How competition affects the performance of Microfinance institutions in Bangladesh?' *All About Finance- A blog hosted by Asli Demirgüç-Kunt*, The World Bank

Klasen, S., and Lamanna, F. (2009), 'The impact of gender inequality in education and employment on economic growth: New evidence for a panel of countries.' *Feminist Economics* vol. 15:3 pp. 91–132

Krantz-Kent, R. (2009), 'Measuring Time Spent in Unpaid Household Work: Results from the American Time Use Survey' *Monthly Labor Review,* vol. 132, No. 7 (July), pp. 46- 59

La Porta, R. and Shleifer, A. (2014), 'Informality and Development,' *Journal of Economic Perspectives*, American Economic Association, vol. 28(3), pp. 109-26

Lee, P., and James, E. (2007), 'She-E-Os: Gender Effects and Investor reactions to the Announcements of Top Executive Appointments' *Strategic Management Journal*, vol. 28, pp. 227-241

Loayza, N., Servén, L., Sugawara, N. (2009), 'Informality in Latin America and the Caribbean', World Bank Policy Research Working Paper No. 4888

Longin, F. and Santacreu-Vasut, E. (2018), 'CEO Nomination, Gender and Leadership Stereotypes: Evidence from Lab Experiments'. Working paper

Loprest, P. (1992), 'Gender Differences in Wage Growth and Job Mobility' *American Economic Review* vol. 82(2): pp. 526-532

Massey P. (2000),'Market Definition and Market Power in Competition Analysis: Some Practical Issues' *The Economic and Social Review*, vol. 31, no. 4, pp. 309-328

McIntosh, C. and Wydick, B. (2005), 'Competition and Microfinance' *Journal of Development Economics,* vol. 78, no. 2, pp. 271-298

McDevitt, R., Roberts, J. (2014), 'Market Structure and Gender Disparity in Health Care: Preferences, Competition, and Quality of Care.' *The RAND Journal of Economics*, vol. 45, no. 1, 2014, pp. 116–139

McIntosh C., de Janvry, A., Sadoulet, E. (2005), 'How Rising Competition among Microfinance Institutions affects Incumbent Lenders' *The Economic Journal*, vol. 115, Issue 506, pp. 987–1004

McPherson, M., Smith-Lovin, L. Cook, J.M. (2001), 'Birds of a feather: Homophily in social networks.' *Annual Review of Sociology*, vol. 27: pp. 415- 44

Meyers-Levy, J., and Maheswaran, D. (1991), 'Exploring differences in males' and females' processing strategies' *Journal of Consumer Research*, pp. 63-70

Miethe, T. D. and Rothschild, J. (1994),'Whistleblowing and the control of organizational mis- conduct' *Sociological Inquiry*, vol. *64*(3), pp. 322-347

Miranda, V. (2011), 'Cooking, Caring and Volunteering: Unpaid Work Around the World', *OECD Social, Employment and Migration Working Papers*, no. 116, OECD Publishing

Moro, A., Wisniewski, T.P., Mantovani, G.M.(2017), 'Does a manager's gender matter when accessing credit? Evidence from European data' *Journal of Banking & Finance*, vol. 80, pp. 119-134

Muravyev, A., Talavera, O., Schäfer, D. (2009), 'Entrepreneurs' Gender and Financial Constraints: Evidence from International Data' Journal of Comparative Econonomics vol.37, pp. 270–286

New York Consumer Bureau (2015), 'From cradle to cane: The cost of being a female consumerA study of gender pricing in New York City'

Niederle, M. and Vesterlund, L. (2007), 'Do Women Shy Away from Competition? Do Men Compete Too Much?' *Quarterly Journal of Economics* vol. 122(3): pp. 1067–1101

Niederle, M. and Vesterlund, L. (2011), 'Gender and Competition' *Annual Review of Economics*, vol. 3, pp. 601-630

Niederle. M, Segal. C, Vesterlund. L. (2012),'How costly is diversity? Affirmative action in light of gender differences in competitiveness' *Management Science* vol. 51 issue 1 pp. iv-264

OECD (1994), Interim Report on Convergence of Competition Policies, OECD/GD(94)64, at Annex, Areas of Convergence in Competition Policy and Law

OECD (2009), Policy Roundtables, Competition Policy and the Informal Economy, OECD Paris.

OECD (2016), Price Discrimination, OECD Publishing, Paris. DAF/COMP(2016)15

OECD (2016), Reference guide on ex-post evaluation of competition agencies' enforcement decisions, OECD Publishing, Paris

OCDE (2018), OECD Employment Outlook 2018, OECD Publishing, Paris

OECD (2018), Designing Publicly Funded Healthcare Markets.Background Note – 16-October 2018, DAF/COMP/WP2(2018)4

OECD (2018), Informal Economy in Latin America and the Caribbean: Implications for Competition Policy.-Background Note -18-19 September 2018, Buenos Aires, Argentina DAF/COMP/LACF(2018)4

OECD (2018), Life expectancy at birth (indicator). doi: 10.1787/27e0fc9d-en (Accessed on 24 October 2018)

Perry, G., Maloney, W., Arias, O., Fajnzylber, P., Mason, A., Saavedra-Chanduvi, J. (2007) 'Informality: Exit and Exclusion'. Washinton, D.C.: The World Bank

Phelps, E. (1972), 'The Statistical Theory of Racism and Sexism', *American Economic Review*, vol. 62(4) pp. 659-661

Pike, C. (2018),'What's gender got to do with competition policy?' On the level OECD Blog

Reader, D. (2016), 'Accommodating Public Interest Considerations in Domestic Merger Control: Empirical Insights', *CCP Working Paper* 16-3. Published at SSRN: http://ssrn.com/abstract=2736917

Reed, L. (2015), 'State of the microcredit summit campaign report' Washington D.C.: Microcredit Summit.

Rehg, M. T., Miceli, M. P., Near, J. P., Van Scotter, J. R. (2008), 'Antecedents and outcomes of retaliation against whistle-blowers: Gender differences and power relationships' *Organization Science,* vol. 19, pp. 221-240.

Report of the Secretary-General on Progress towards the Sustainable Development Goals (E/2017/66)

Riding, A.L. and Swift, C.S. (1990), 'Women business owners and terms of credit: Some empirical findings of the Canadian experience' *Journal of Business Venturing*, vol. 5, Issue 5, pp. 327-340

Roberts, T.A. and Nolen-Hoeksema, S. (1989), 'Sex differences in reactions to evaluative feedback'. *Sex Roles* vol. 21 pp. 725–47

Sigle-Rushton, W.and Waldfogel, J. (2007), 'Motherhood and Women's Earnings in Anglo-american, Continental European, and Nordic Countries.' *Feminist Economics* vol. 13 (2) pp. 55–91.

Spagnolo, G. (2005), 'Leniency and Whistleblowers in Antitrust' in Paolo Buccirossi ed., Advances in the Economics of Competition Law, Cambridge, MA: M.I.T. Press.

Stiglitz, J., Sen, A., Fitoussi, J.P. (2009), 'Report by the Commission on the Measurement of Economic Performance and Social Progress'. Paris.

Stuhlmacher, A.F. and Walters, A. (1999), 'Gender differences in negotiation outcome: A meta-analysis'. *Personnel Psychology*, vol. 52pp. 653– 677.

Swedish Association of Local Authorities and Regions (2013), 'Sustainable Gender Equality a film about gender mainstreaming in practice' https://vimeo.com/77692813

The Economist Intelligence Unit (2017), 'The Inclusive Internet Index: Bridging Digital Divides'.

The Economist Intelligence Unit (2018), 'The Inclusive Internet Index: Measuring success 2018'.

Thévenon, O. (2013), 'Drivers of Female Labour Force Participation in the OECD', *OECD Social, Employment and Migration Working Papers*, No. 145, OECD Publishing, Paris

Tilton, C. (2018), 'Women and Whistleblowing: exploring gender effects in policy design'. *Columbia Journal of Gender and Law*, pp. 338-368

United Nations (2002), 'Gender Mainstreaming: An Overview'. New York

UN Women (2014), 'Gender Mainstreaming in Development Programming". Guidance Note. New York

Winkler, A. (2016), 'Women's Labor Force Participation,' *IZA World of Labor 289 doi: 10.15185/izawol.289*

Williamson, O. (1975), '*Markets and Hierarchies: Analysis and Antitrust Implications*'. New York: Free Press

Wodon Q. T. and de la Brière, B. (2018), 'Unrealized Potential' World Bank Other Operational Studies 29865, The World Bank

World Bank Group(2018), 'Women, Business and the Law 2018' Washington, DC: World Bank. License: Creative Commons Attribution CC BY 3.0 IGO

World Bank (2018), 'Doing Business 2018: Reforming to create jobs,' available at www.doingbusiness.org

World Economic Forum (2017), 'The Global Gender Gap Report 2017'

World Wide Web Foundation (2016), 'Women's rights online: Report cards' Available online http://webfoundation.org/docs/2016/09/WRO-Gender-Report-Card_Overview.pdf

Yahmed, S. (2017), 'Gender wage discrimination and trade openness. Prejudiced employers in an open industry', ZEW Discussion Papers, No. 17-047, Zentrum für Europäische Wirtschaftsforschung (ZEW), Mannheim.

Yunus, M. and Jolis A. (1999), *Banker to the poor: Micro-lending and the battle against world poverty*. New York: Public Affairs.