

# An Economic Assessment of Menstrual Hygiene Product Tax Cuts

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## **Glossary**

**AMPS** - All Media and Product Survey

**FCTC** – Framework Convention on Tobacco Control

**GDP** – Gross Domestic Product

**GST** – General Sales Tax

**HDI** – Human Development Index

**HIC** – High Income Country

**MH** – Menstrual Hygiene

**MHM** – Menstrual Hygiene Management

**LMIC** – Low- and Middle-Income Country

**PMA** – Performance Monitoring and Accountability

**SRO** – Statutory regulatory order

**RIP** – Relative Income Price

**VAT** – Value-Added Tax

**WASH** – Water Sanitation and Hygiene

## EXECUTIVE SUMMARY

Access to menstrual hygiene (MH) products is key to safe menstrual hygiene management (MHM) that promotes dignity and health for women and girls all over the world. MHM has implications for labor market functioning, schooling outcomes, social well-being, and ultimately the economy. The social and economic barriers faced by women and girls have inspired an effort to reduce or remove taxes on MH products to increase affordability, expand the number of women and girls who have access to them, and ultimately advance gender equity. Numerous countries in Europe, Africa and elsewhere have already removed MH product taxes and/or organized free distribution of MH products to vulnerable population.

This study was funded by the Bill & Melinda Gates Foundation and focuses on the role that removing or reducing value-added taxes (VAT) and/or general sales tax (GST) may play in improving MH product affordability and access, with a focus on countries in Sub-Saharan Africa and South Asia.

### Research summary and components

This report evaluates the economic impact of MH product tax cuts with a focus on the implications for affordability, equity of access and use, and government revenue. In analyzing the political economy of the MH product markets, we point to potential threats and opportunities for MHM campaigns. Those include collaboration with MHM industry with close monitoring to ensure fair market competition and adherence to product standards set by governments.

We primarily draw on information from four countries (Bangladesh, Kenya, Nigeria and South Africa) that experienced MH product tax cuts and substantiate it with data from other countries in order to determine patterns and make global comparisons. Additionally, we built an economic toolkit that can be used by advocacy groups and policy makers to evaluate the economic aspects of decision-making around menstrual hygiene products and model potential outcomes.

The four focus countries were selected considering their varying approaches to MH product tax cuts.

- **Bangladesh** removed VAT on raw materials for production of MH products from July 2019 until June 2021 to stimulate local production. So far, only one local company with market dominance qualifies for this temporary tax cut. VAT on both domestic and imported products is still charged, and imported products are levied a supplementary import tax.
- **Kenya** has some of the most far reaching MH product tax cut policies in the world. It removed VAT on sanitary pads and tampons as early as 2004, import tax on final products in 2011, and VAT and excise tax on imported raw material for production of MH products in 2016.
- As of February 2020, **Nigeria** exempts locally manufactured MH products from VAT, but it still charges VAT on imported products and on raw materials.
- **South Africa** removed VAT on sanitary pads in April 2019, but VAT on tampons are still in place.

Our research concludes that **removing VAT/GST alone will not sufficiently improve the affordability of MH products in order to increase use. Even if all VAT/GST tax cuts were passed on to consumers, the impact on price would be relatively small.** There are many political and economic barriers, including complex tax systems and corporate interests, preventing the tax cut from translating into lower prices. Additional measures such as free distribution or

targeted subsidies are needed to improve affordability, as well as secure equal access and use of products. MH product tax relief can be seen as a part of a fiscal package to increase access to households who are poor. In addition, MH product tax relief campaigns in the four focus countries have shown great value in raising awareness on gender justice and reducing stigma associated with menstruation and MHM policy. This evidence is captured in a companion report by Global Health Visions.

## Key findings

### **1. MH products are significantly less affordable in low- and middle-income countries (LMICs) than in high-income countries (HICs)**

Globally, there has been a move towards removing VAT/GST on MH products with the intention to increase their use by making them more affordable, especially in LMICs. Our *MH products affordability index*, a tool built for this report to compare affordability of sanitary pads (note that use of other MH products is negligible in LMICs) across countries and over time, confirms these products are more than twice less affordable in LMICs than HICs. To the best of our knowledge, this is the most extensive and systematically comparable tool of its kind. The index reflects both prices of MH products and average income and provides a rationale for policies aiming to reduce MH product prices in LMICs.

### **2. VAT/GST removal in LMICs is insufficient to increase affordability of MH products**

Kenya, a country that successfully removed all applicable taxes has the least affordable sanitary pads among our four focus countries. Even though the affordability of sanitary pads in South Africa is comparable to many HICs, this picture is distorted by high levels of inequality not captured by the index.

There is scope to use fiscal policies to increase affordability of MH products in LMICs. Since tax removals are not sufficient in improving affordability of MH products, the governments are using other measures such as providing for free distribution or by subsidizing the products. All focus countries have an allocation for free distribution with a limited scope, primarily via schools and family planning centers. However, budgetary and logistical challenges limit the reach of these policies.

Over time, sanitary pads became more affordable in the majority of LMICs due to both real prices declining and income increasing, but the changes are small. For example, between 2013 and 2018, sanitary pads became 10% more affordable in Kenya due to a price decline, but this translates to only about 1.7% annual increase in affordability. In Bangladesh, the average annual increase in affordability of sanitary pads reached only 1.3% during 2013 - 2018. Even though the price decline in Bangladesh is attributed to the country's effort to promote local manufacturing of MH products, the government support of a local monopoly resulted in imposing a supplementary duty on imported MH products, which undermines market competition and likely contributes to higher average prices.

### **3. A change in retail price is more dependent on market competition and local production rather than the tax scheme**

Tax removal does not necessarily lead to lower retail prices. Rather, the link between tax removal and price change is complicated due to private sector power to dictate the price.

Some governments made attempts to regulate the retail prices of MH products by providing targeted subsidies, setting price caps, and by negotiating with manufacturers. Generally, prices of locally produced disposable MH products are about 30 to 80% cheaper compared to brand-name products, while the annual cost for reusables is only about 20% of disposables. Based on information from Bangladesh, wholesale and retail margins vary between 2% - 3% and 15% - 20%, respectively, with higher margins on more expensive products.

To study the issue of price forming, we created a *market concentration index* to assess market competitiveness for MH products. We found that the market in South Africa is relatively competitive while the markets in Kenya and Bangladesh are not, with only one company claiming a large market share. Connecting this result to the affordability index, **one can preliminary conclude that lack of competitiveness in the MH product market may result in higher prices and lower affordability. The lack of competition allows MH product manufacturers and retailers to absorb tax cuts into their profit margin.**

#### **4. VAT/GST systems are complex, and removal does not necessarily result in a retail price reduction**

The complexity of tax systems presents an obstacle to a meaningful impact of a tax removal on price even if the tax cut is fully passed on to consumers. Apart from VAT/GST tax (completely removed in Kenya, removed on sanitary pads in South Africa and on domestically produced MH products in Nigeria), there are also taxes on raw material (removed in Bangladesh, Kenya) and corporate income taxes (temporarily lowered in Tanzania), which can boost local production of MH products, and subsequently lower their prices.

Removing just one tax or removing the incorrect tax may not achieve the desired goal of lower prices and may even bring unintended consequences such as giving competitive advantage to certain providers as was the case in Bangladesh. There is also a difference between exemption from paying VAT/GST (e.g. India and Nigeria) and setting its rate to zero (e.g. Kenya and South Africa). Products exempt from tax cannot claim back any input tax and tax amounts may be passed on to the consumers. On the other hand, products with zero-rated VAT/GST can get refunds on any VAT paid on inputs making the final product truly VAT/GST free.

When the advocacy effort is non-specific as to which tax is targeted, it creates ambiguity for policy makers, other key stakeholders, and opens the space for commercial interests as witnessed in Bangladesh. In Kenya, for example, taxes on MH products were removed in three waves requiring three different legislations, yet products remain unaffordable.

**Rigorous evidence about the link between tax changes and changes in retail prices from LMICs is entirely missing**, even from Kenya where the first tax was removed as early as 2004. There is some anecdotal evidence of prices decreasing after the tax removal in South Africa and in Kenya, and in Bangladesh due to promotion of local production. It is not clear if these price changes increased access or use.

#### **5. Removing VAT/GST is simply not enough to stimulate use of MH products**

The impact of VAT/GST removals on prices and on MH product use is not well documented due to lack of follow up research in LMICs. To fill in this gap, we built a tax simulation model that can assess the impact of VAT/GST tax removal on price, consumption and foregone tax revenue. The *tax simulation model* is also designed to assess the impact of a tax removal on the poor

relative to the more affluent touching upon the issue of equity. Based on an extensive literature review, this is the first modelling tool of its kind for MH products.

Assuming that the recent tax changes in South Africa and Nigeria are fully passed on to consumers, the model predicts that these policies will lead to a very small price decline, and therefore a negligible increase in affordability, consumption, and impact on lower income households (equity). The model demonstrates that the cost-benefit of a tax removal, measured by comparing the tax savings for the poor with the tax revenue loss, is not enough to justify a tax removal.

Given the paucity of data and the lack of adequate feedback from tax officials and private sector due to COVID-19 travel restrictions during the research period, the results of our model are preliminary. However, the model is ready to be populated with data and easily customized for local specific context. Additionally, it should be noted that choice of product is not necessarily preference, but rather a matter of access (a combination of affordability, geographical accessibility and acceptability).

## **6. Wealth, education and urban residence are the most important determinants of MH product use in LMIC**

The analysis shows that socio-economic status (wealth, education and urban residence) are strong determinants of MH product use, with women from higher wealth groups, more education and those living in urban areas more likely to use either sanitary pads or tampons. Specific factors differ by country. In Kenya, there is similar usage of pads across wealth quintiles, whereas in Bangladesh, there are stark differences in usage, with pad consumption concentrated among the wealthiest. Overall, there is still large cohort of women using cloth as a MH product, which poses several health and practicality threats to women who must rely on this. These factors are important to consider when shaping and motivating national fiscal policies in order to correctly target vulnerable populations.

## **7. Poor access among vulnerable populations may have created a market for dangerous counterfeit products**

In some countries, women are enticed to buy cheaper counterfeit products, which tend to be low quality and can have negative health impacts on women. These products can contain herbicides and pesticides, that have been reported to result in skin irritations and potentially even reproductive health issues or sepsis. Companies operating in LMICs might be tempted to offer lower-priced, lower quality products in order to increase their market, and their profit. This can have negative health implications as evidenced recently in Kenya, with the #myAlwaysexperience campaign.

## **Recommendations**

While each of the selected four countries had quite distinct experiences, we identified a list of common recommendations to improve the affordability of MH products:

- 1. Systematically evaluate the impact of tax removals and other MHM policies on prices, affordability, MH product use, MH product quality, and equity. This can be done by collecting data before and after the implementation of a new policy.** Such evaluations are completely missing in LMICs, and only sparse in HICs. Routine household surveys should include a set of MHM questions and MH product prices should be monitored regularly by including them into the basket of goods monitored for the Consumer Price Index

(CPI). The availability of both price and consumption data will inform essential economic research on price responsiveness among different income groups. This data is currently severely lacking, impeding conclusions on price elasticity, which is a core component of fiscal policy proposals and advocacy activities. Collecting price data over time is crucial in measuring price responsiveness. In addition, data on products' quality and presence of counterfeit/illicit products need to be collected to monitor unintended consequences of any tax change. See Appendix IV for a recommended list of questions for household level survey. In Appendix IX, we have also started compiling data points from media sources on the prices of MH products in the focus countries and other LMICs. One potential use for this is to create a centralized platform where activists and researchers can input and provide data on MH price points.

2. **Promote local manufacturing of MH products and incentivize competition.** Prices of locally manufactured MH products and prices in competitive markets are lower and thus more affordable. Local production and increased competition may be encouraged through the removal of taxes on raw material used for production, preferential corporate tax rates, or access to financial resources and loans. It is important to be aware of corporate interests during the tax removal negotiations so that market competition is not jeopardized, and the quality of products available in a market is not compromised.
3. **Increasing MH product affordability requires a complex tax policy proposal that goes beyond removing VAT/GST. Proposals should be explicit in which taxes are being targeted, the rationale for that approach, and ideally provide cost-benefit analysis of the proposed policy incorporating national data.** Furthermore, advocacy efforts should continue after the policy change to ensure that the tax removals or reductions have their intended impact. We include a tool which tax advocacy groups would be able to use in opposing counterarguments against MH product tax cuts (Appendix I).
4. **In addition to tax cuts, policymakers should consider measures such as targeted subsidies to women and girls to support free or affordable distribution of MH products.** Offering targeted subsidies (e.g. in the form of discount vouchers) and engaging private companies via their social corporate responsibility programmes to donate free MH products with no compromise on their quality would further increase access to MH products. This free provision of MH products is essential to promoting the dignity and health for women and girls, which is an important outcome. It is important to note that the empirical evidence linking MHM to schooling outcomes and labor market outcomes has been mixed. Therefore, using this argument as basis for free provision has the potential to slow down efforts of promoting MHM as it may not result in the promoted outcomes.

# An Economic Assessment of Menstrual Hygiene Product Tax Cuts

## Introduction

One of the major components to safe MHM is improved access to MH products as method of promoting dignity and health for women and girls globally. Most women of child-bearing age experience a monthly, non-optional menstrual period, which require purchasing menstrual products to manage sanitation. Poor management of menstrual hygiene is a multi-sectoral issue, affecting sexual and reproductive health, schooling and education, water, sanitation and hygiene (WASH), and more. Inadequate MHM impacts health,<sup>1</sup> labor market functioning,<sup>2</sup> schooling outcomes<sup>3</sup> and social well-being<sup>4</sup>.

Given that MHM is an economic necessity for most women, there has been a pressing need to consider whether any taxes or tariffs on menstrual products should be removed on the grounds of promoting gender equality and improving affordability of the products. African countries which have taken steps to remove taxes on MH products include Mauritania, Nigeria, Uganda, Kenya, South Africa, Guinea, Equatorial Guinea, Ethiopia and Rwanda.

This study was funded by the Bill & Melinda Gates Foundation and aims to answer some of the key questions around MH product affordability, focusing specifically on the role that reducing value-added taxes (VAT) and/or general sales tax (GST) may play in improving affordability and use.

The report draws on the country experiences of four diverse African and Asian countries where MH product tax cuts have been implemented. The specifics of the tax policy change differed in size, design, timing and potential impact across these countries. Country details are as follows:

- **Bangladesh:** Bangladesh removed VAT on raw materials for production of MH products from July 2019 until June 2021 to stimulate local production. So far, only one local company with market dominance qualifies for this temporary tax cut. VAT on both domestic and imported products is still charged, and imported products are levied a supplementary import tax.
- **Kenya:** Kenya has one of the most far reaching MH product tax cut policies in the world. It removed VAT on sanitary pads and tampons as early as 2004, import tax on final products in 2011, and VAT and excise tax on imported raw material for production of MH products in 2016.
- **Nigeria:** As of February 2020, Nigeria exempts locally manufactured MH products from

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<sup>1</sup> Adequate access to safe MH products promotes personal hygiene. Menstrual products used, cleaned and dried in unhygienic conditions may result in increased reproductive tract infections (Mishra VK. Social and psychological impact of limited access to sanitation: MHM and reproductive tract infections. 2015). Inadequate access also increases the likelihood of transactional sex occurring in exchange for MH products, which increases the likelihood of contracting sexually transmitted infections (Phillips-Howard PA, Otieno G, Burmen B, Otieno F, Odongo F, Odour C, et al. Menstrual needs and associations with sexual and reproductive risks in rural Kenyan females: a cross-sectional behavioral survey linked with HIV prevalence. *Journal of women's health*. 2015;24(10):801-11).

<sup>2</sup> There has been limited evidence linking labour market absenteeism to MHM (Ichino A, Moretti E. Biological gender differences, absenteeism, and the earnings gap. *American Economic Journal: Applied Economics*. 2009;1(1):183-218, 2; 1. Ichino A, Moretti E. Biological gender differences, absenteeism, and the earnings gap. *American Economic Journal: Applied Economics*. 2009;1(1):183-218, 2. Herrmann MA, Rockoff JE. Do menstrual problems explain gender gaps in absenteeism and earnings? Evidence from the National Health Interview Survey. *Labour Economics*. 2013;24:12-22).

<sup>3</sup> The empirical evidence linking MHM and schooling outcomes (particularly school absenteeism) has delivered mixed results (Sumpter C, Torondel B. A systematic review of the health and social effects of menstrual hygiene management. *PLoS one*. 2013;8(4):e62004; Oster E, Thornton R. Menstruation, sanitary products, and school attendance: Evidence from a randomized evaluation. *American Economic Journal: Applied Economics*. 2011;3(1):91-100).

<sup>4</sup> One of the most difficult outcomes of poor MHM to quantify is its impact on social capital. Fear and shame (either self-imposed or societal) are barriers to girls and women's mobility and participation in events, which have isolating effects. These have been described in smaller, qualitative studies (Sumpter C, Torondel B. A systematic review of the health and social effects of menstrual hygiene management. *PLoS one*. 2013;8(4):e62004).

VAT, but it still charges VAT on imported products and on raw materials. This exemption applies to all MH products, including sanitary pads and tampons. Other than the VAT exemption, all other taxes are still being imposed on MH products.

- **South Africa:** South Africa VAT zero-rated sanitary pads in April 2019, but VAT on tampons are still in place. All other taxes and duties, including import taxes, are still in place on all MH products (including sanitary pads).

This research project produced the following tools, which are included in this paper:

- Narrative report of key findings
- Affordability index: We developed a global affordability index of sanitary pads to measure and compare the relative affordability of sanitary pads across countries and years. The index considers differences in prices and average incomes of the country citizens.
- Market concentration index: In order to gauge the level of competition in sanitary pad sales, we calculated a market concentration index. The index ranges between 1 and 100, with a higher index value representing a higher market concentration, or less competition.
- Tax simulation model: This is a preliminary tool to simulate the impact of the policy change on MH product consumption, government revenue from MH taxes, MH product retail prices and household distributional consequences.

Detail on these products can be found below and in the appendices. The key findings are substantiated by our empirical findings, literature reviews and interviews with key stakeholders in government, civil society, and the private sector; they are cross-referenced to the appendix for more methodological insights.

## Key findings

### ***1. MH products are significantly less affordable in low- and middle-income countries (LMICs) than in high-income countries (HICs)***

There has been growing momentum for the removal of taxes on MH products in order to improve their affordability, especially in LMICs. However, improving the financial affordability of MH products is only one component of improving access to MHM, with the acceptability of the service and geographical accessibility playing similarly crucial roles.<sup>1</sup> Making MH products a socially acceptable purchase is key to improving use, even when products are financially affordable. Each of the components of access is important to ensure MHM that promotes dignity and health for women and girls all over the world.

That being said, fiscal policies can be a potentially effective tool to increase the affordability of MH products and reduce their economic burden. Our MH products affordability index<sup>5</sup>, a tool built for this report to compare the affordability of sanitary pads across countries and over time, confirms that sanitary pads are at least twice as affordable in HICs compared to LMICs.

#### *The affordability index*

In our analysis, affordability is defined as the *'quantity of resources required to buy a unit of the product*

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<sup>5</sup> A detailed description of the data, methodology and the results of the affordability index is available in appendix II

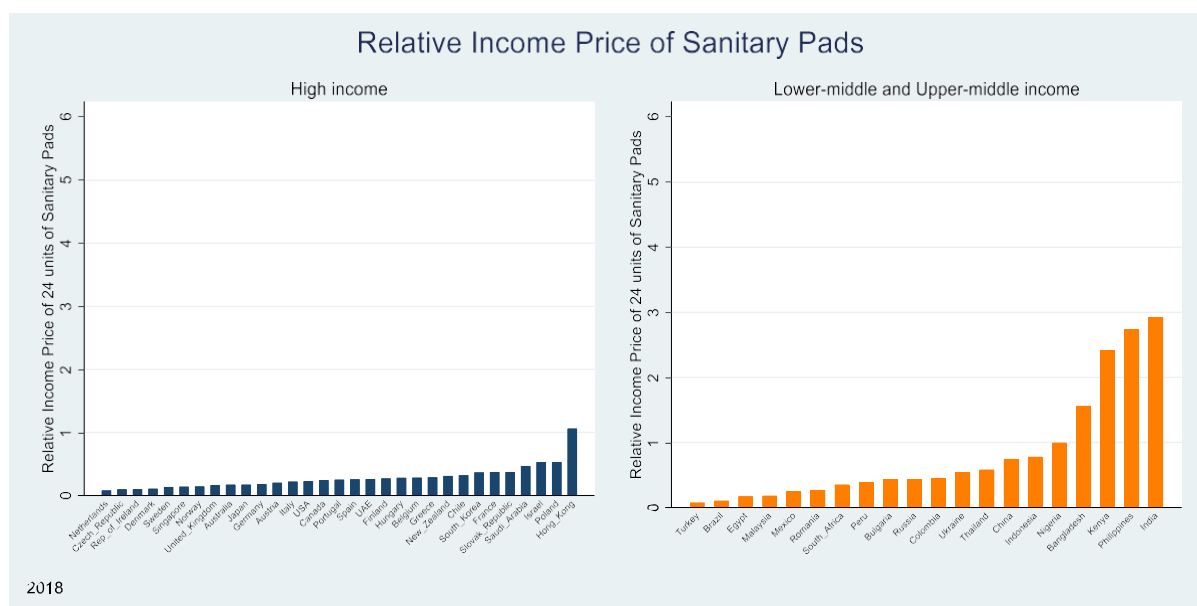
under investigation (in terms of time, money or other products)' <sup>ii</sup>. This is referred to as the Relative Income Price (RIP) of the Product. More specifically, affordability will be defined in terms of a country's GDP per capita required to purchase a certain amount of MH products. Using this concept, we develop a global index to measure and compare the affordability of MH products. Women in LMICs rely predominantly on sanitary pads as a commercial MH product. As a result, the affordability analysis will focus on sanitary pads.

The Relative Income Price (RIP) of MH products is defined as the percentage of GDP per capita required to purchase 24 units of that MH product. <sup>6</sup> A higher RIP indicates lower relative affordability.

The major benefit of this tool is that it draws on one single data source and covers several countries, including various LMICs. As a result, it is one of the most extensive MH product affordability indices currently available. <sup>7</sup>

These results are reflected in the figure below, which shows the 2018 RIP for countries studied, disaggregated by World Bank economic status. The mean real RIP high income countries in 2018 was 0.28%, while it was more than double that at 0.74% in LMICs. Kenya, Nigeria and Bangladesh have some of the highest RIPs in our sample. In 2018, Kenya had a RIP of almost 2.4%, indicating that it would take approximately 2.4% of their real GDP per capita (\$1202 in 2010 US prices) to buy 24 units of sanitary pads annually. In 2018, Nigeria had a RIP of almost 1% and Bangladesh had a RIP of 1.56%. The South African RIP in 2018 of 0.35% is closer to HIC affordability levels.

Figure 1: The relative income price of sanitary pads in 2018



Source: Data from GlobalData

## 2. VAT/GST removal in LMIC is insufficient to increase affordability of MH products

A first look at the affordability index in Figure 1 reveals that **VAT/GST removal is not necessarily enough to improve MH product affordability**. Of all our focus countries, Kenya has implemented the most extensive MH products tax cuts. However, Kenya also has the least

<sup>6</sup> The 24 units threshold is chosen on the assumption that women might require two units per months for the 12 months of the year. The amount required will of course vary according to a woman's flow and number of menstruation days.

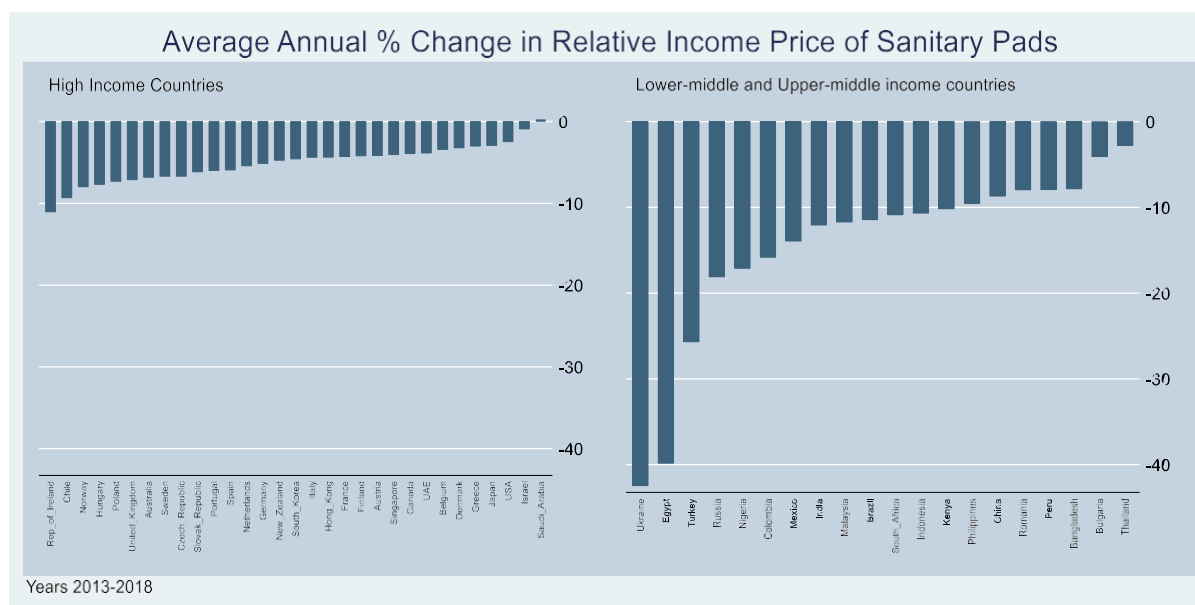
<sup>7</sup> The index uses proprietary data from GlobalData, which comes with its own limitations. We were unable to verify the data against other data points and data sets due to the lack of information collected on MH products.

affordable sanitary pads among our four focus countries. Even though the affordability of sanitary pads in South Africa is comparable to many HICs, this picture is distorted by high levels of inequality in South Africa not captured by the index.

Our index does indicate that sanitary pads are becoming slightly more affordable over time in all the LMICs included in the index, due to both real price declines and income increases. However, the changes are small in most countries (see figure 2). As previously mentioned, sanitary pads are more than twice as expensive in LMICs compared to HICs, and an annual 1 to 2% improvements in the affordability of MH products in LMICs are not sufficient to equalize global affordability.

Although sanitary pads became 10% more affordable between 2013-2018 in Kenya due to a price decline<sup>8</sup>, this equates to an approximate 1.7% annual increase in affordability. South Africa and Nigeria each experienced an 11% and 17% improvement in affordability, respectively, driven largely by a decrease in retail prices of sanitary pads. Our empirical analysis does not make it possible to identify the drivers of these retail price drops, but based on expert interviews, it is likely that the drop in real prices in South Africa was driven by companies anticipating tax removals and running promotion or PR campaigns about not charging the tax. The drivers in Nigeria are less clear. In fact, during interviews experts reported an increase in MH product prices, but this was likely to be the spike in inflation in Nigeria and would have been evident across all consumer items and not just MH products. In Bangladesh, the average annual increase in affordability of sanitary pads reached only 1.3% during 2013 - 2018. The price decline in Bangladesh is attributed to the country's effort to promote local manufacturing of MH products. The Bangladeshi government imposed supplementary duty on imported MH products to support a local monopoly. This evidently resulted in anti-competitive behavior and contributed to higher prices on average.

Figure 2: Average Annual % Change in Relative Income Price of Sanitary Pads



Source: Data from GlobalData

### 3. A change in retail price is more dependent on market competition and local production rather than the tax scheme

One of the potential challenges which limits the impact that a tax removal may have in improving the affordability of MH products, is that a tax policy does not necessarily lead to lower retail

<sup>8</sup> These are real price declines, so they take into account inflation.

prices. **Although government dictates the tax policy, the MH product manufacturers and retailers essentially set the retail price.** As a result, when there is little market competition, the incentive for the private sector to drop the retail price, rather than just absorbing the tax removal into their profit margin, is very small. This is further complicated by a paucity of rigorous evidence about the impact of a tax change on prices in LMICs<sup>9</sup>, even from countries like Kenya where the first tax was removed as early as 2004. The evidence on this topic has been predominantly anecdotal. There is evidence of price drop after the tax removal in South Africa and in Kenya, and a price drop in Bangladesh due to promotion of local production. Price data is the major missing ingredient to perform a thorough assessment of any price-related intervention in the MH products market, and crucial in determining price responsiveness.

One way to overcome this barrier is for national governments to impose retail price regulation measures. A summary of these measures is available in Table 1 and includes targeted subsidies, setting price caps, and by negotiating with manufacturers. The only example of such a policy currently in place is the targeted subsidies currently being implemented in India. India initiated the Menstrual Hygiene Scheme in 2010, which provides highly subsidized sanitary pads to rural girls living below the poverty line. State governments followed suit with similar initiatives.<sup>iii</sup> In 2012 a pack of 6 pads under the scheme was sold for a subsidized cost of Indian Rupees (Rs) 1 to Below Poverty Line (BPL) girls, while the same pack was sold for low price of Rs 6 to rural girls above the Above Poverty Line (APL).<sup>iv</sup> The price of a medium quality pack of 10 sanitary pads was about Rs 30-40.<sup>v</sup>

India and market leaders (i.e. the industry) in Bangladesh are determining Maximum Retail Prices (MRPs) which are enforced by the government. However, setting a price cap was rejected either due to lack of mandate (Tanzania) or due to unintended consequences (India). In Tanzania, the government only has the mandate to regulate the prices of public goods and services. Unfortunately, MH products therefore fall outside of the scope of goods which the government is able to price control. In India, the MH product companies argued that a price cap would put a stop on offering premium value-added products, as the price cap would disincentivize any innovation. **Generally, prices of locally produced disposable MH products are about 30 to 80% cheaper compared to brand-name products, while the annual cost for reusables is only about 20% of disposables.**

In Bangladesh, the product category leader sets up MRPs considering competition, consumer use pattern, unit size and costs. The same entity also sets up all prices along the distribution channels (i.e. retail and wholesale margins). Retail margins vary between 15% - 20%, and wholesaler margin is reported to be approximately 2% - 3%. The choice of margin depends on the variant of MH product. For instance, the more modern or premium products that are more expensive, usually have a higher margin. As the retailer margin is considered on top of trade price, the higher the investment of the retailer, the higher the margin. MRP is marked on the products by irremovable ink and is strictly enforced by the Bangladesh Standards and Testing Institution (BSTI) at the point of sale. Mostly retailers charge the price mentioned on the pack. Consumers are also able to check prices written on the pack while purchasing.<sup>vi</sup>

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<sup>9</sup> Literature on the topic of taxation on MH products is thin, and there is a major paucity of estimates of price elasticity or price responsiveness. A summary of any literature pertaining to this topic is available in Appendix III. Also included in Appendix III is a list of available data sources to conduct analysis on the topic. To advance the MHM, it is paramount to evaluate the impact of tax removals on price, affordability, consumption, and equity. Data is needed to assess the sensitivity of different income groups to MH product price changes. Price data is the major missing ingredient to perform a thorough assessment of any price-related intervention in the MH products market. Institutions who conduct nationally representative household-level surveys should include a set of MHM economic questions to the standard questionnaires and to regularly monitor the MH products prices (see template questionnaires in Appendix IV). The responsibility rests with national governments to assess whether their policy change resulted in the targeted improvement in affordability by monitoring prices.

Nigeria is considering subsidies for pads through discussions with manufacturers, in addition to their exemption of VAT on MH products.<sup>vii</sup> The goal is to reduce the price of a pack by N10 to N20, or by 4% to 8% based on the price of cheapest products on the market.<sup>viii</sup>

The Competition Commission of South Africa could have been helpful in translating VAT zero-rating into lower prices for those products.<sup>x</sup> However, the Commission acts only upon submissions, but no submission was made in this respect.<sup>xi</sup>

*Table 1: Regulations to control retail price*

Efforts to regulate retail prices	Countries	Notes
<b>Targeted subsidies</b>	India	Target: rural poor women
<b>Negotiation with providers</b>	Nigeria	Nigerian government negotiating with manufacturers to lower the price; no results, yet.
<b>Setting price cap, maximum retail price or indication price</b>	India, Tanzania, Bangladesh	Proposed, but rejected due to lack of mandate (Tanzania) or due to industry pushback (India). MRP is printed on products and enforced in Bangladesh
<b>Enforce competition</b>	South Africa	Competition Commission did not get any complaint about prices not going down, so they did not react.

### *The Market Concentration Index*

To study the issue of price forming, we created a market concentration index to assess market competitiveness for MH products. The index gives a value between 1 and 100, with a higher index value representing a higher market concentration, or less competition.<sup>10</sup> The index was created using the GlobalData reports, as was used to create the affordability index.

We found that the market in South Africa is relatively competitive while the markets in Kenya and Bangladesh are not, with only one company claiming a large market share. Unfortunately, no data is available for Nigeria. While South Africa has a relatively competitive market (Index score=23), the market for sanitary pads in Kenya (Index score=43) and Bangladesh (Index score=47) is highly concentrated in a single company. Above 25 (the U.S. standard), a market is considered non-competitive. More specifically:

- In Bangladesh, the market for sanitary pads is relatively uncompetitive with an index value of 47. The market is dominated by Square Group Bangladesh’s Senora brand, which controls 66% of the market. The second biggest market player is Advanced Chemical Industries Limited’s Savlon Freedom (15% of the market), followed by Procter and Gamble’s Whisper Sanitary Pads (8%). Missing from the GlobalData report is Square Group Bangladesh’s low-cost and accessible brand Femina. The Square Group states that this brand hold a 15% market share. Therefore, the lack of competition in the market for MH products in Bangladesh is likely underreported.
- Kenya also has a less competitive market, with an index value of 43 in 2018. In 2018, according to the GlobalData market report, Procter & Gamble’s Always sanitary pads were

<sup>10</sup> A detailed description of the index methodology and results are available in Appendix IV.

the most popular seller in Kenya, with 63% of the market share. The second most popular brand is Edgewell Personal Care's Stayfree (12% the market), followed by Interconsumer Products Ltd's All-Tyme sanitary pads (6%). The dominance of the Always brand as a sanitary pad consumer choice results in an uncompetitive market for sanitary products in Kenya.

- The competitiveness index in South Africa in 2018 was approximately 23. In 2018, according to the GlobalData market report, Procter & Gamble's Always Sanitary Pads was the dominant market player in South Africa, with 18% of the market share. The Lil-Lets Group Limited Lil-Lets brand was the second largest contributor at 11.49%, and Sca Group's Lifestyle brand the third largest market share holder at 7.9%. Other market competitors include Kimberly-Clark's Kotex sanitary pads (3.09%), Johnson & Johnson's Stayfree (2.93%), Kimberly-Clark's Freedom (1.75%), Lion Match Company's Comfitex (1.21%), Paychest's Flush-Aways (1.8%) and the remaining 28.12% consisting of smaller companies.

**Connecting this result to the affordability index, one can preliminarily conclude that lack of competitiveness in the MH product markets is related to higher prices and lower affordability.** The results are reported in Appendix V. We find that there is a positive relationship between the level of competition in a country and the affordability of sanitary pads (more competition is correlated with relatively more affordability). The nature of this analysis means that the relationship is not causal but correlated. The lack of competition allows MH product manufacturers and retailers to absorb tax cuts into their profit margin. **It is likely that increasing competition in these countries would lower market prices.**

#### ***4. VAT/GST systems are complex, and removal does not necessarily result in a retail price reduction***

When advocating for a tax removal, it is very important to understand the tax structure in order to assess the potential for the tax removal to impact price. **The complexity of tax systems in most LMICs presents an obstacle to a meaningful impact of a tax removal on price even if the tax cut is fully passed on to consumers.** Apart from VAT/GST tax, there are also taxes on raw material and corporate income taxes. A detailed discussion of the regulatory and legislative considerations of a MH product tax change is available in appendix VIII.

Kenya first removed VAT on the final products in 2004, but understood that there are other taxes imposed on MH products. Those were eventually removed in 2011 (import duty) and in 2016 (VAT and excise on raw material).<sup>xii xiii xiv</sup>

Nigeria removed VAT on locally manufactured sanitary pads and tampons in February 2020, but VAT on input raw material and VAT on imported MH products are still in place. In addition, the imported raw materials and imported MH products are also levied import taxes, which contributes to the overall tax burden. **Reducing the import tax on raw material of MH products can be a challenge since the raw material is also being used in the production of other goods** that would necessarily qualify for a tax exemption.<sup>xv</sup>

Removing just one tax or removing the incorrect tax may not achieve the desired goal of lowering prices. It may even have unintended consequences such as creating a competitive advantage to certain providers, as was the case in Bangladesh, a move which can harm affordability.

The manner of eliminating the tax is also important. In the case of a zero-rating of menstrual products (e.g. South Africa, Kenya), manufacturers can reclaim the VAT paid on input costs. If the tax is exempt (e.g. Nigeria), the VAT paid on input costs cannot be claimed back by the manufacturers and as a result, it is passed on to the consumers.<sup>xvi</sup> This will limit the impact of the tax policy on lowering retail prices. Tax exemption, for example, led to a price advantage for importers of MH products in India.<sup>xvii</sup> It also gave an advantage to larger manufacturers, because it is easier for them to apply tax credits on purchased inputs. Larger firms also produce items that are not tax exempt and can apply MH product tax credits to non-tax-exempt products. Therefore, **the way that tax is removed or reduced could have a negative impact on small domestic producers.**<sup>xviii</sup> This would reduce market competition and may lead to higher rather than lower prices.

The advocacy effort is often non-specific as to which tax is targeted, and this creates ambiguity for policy makers and other key stakeholders. In Kenya, for example, taxes on MH products were removed in three waves requiring three different legislations. The government bodies deciding tax removal or cuts need to receive a proposal with a technical analysis of the implications and clearly articulated policy goals, as was noted by a government official in Bangladesh.<sup>xix</sup> In South Africa, a technical report was prepared, but it focused on distributional consequences rather than gender equity.<sup>xx</sup> One of the most powerful arguments for a tax removal or cut is a cost-benefit analysis, namely how much benefit is there to the economy for one currency unit of tax not collected.<sup>xxi</sup> **Given the complexity of the issue, tax experts, economists and lawyers should be involved in the preparation of a proposal.**

Some countries are trying to adopt policies that would address multiple issues. For example, Bangladesh tried to address both the affordability of MH products and saving foreign exchange by cutting tax on imported raw material and increasing import tax on the final MH product.<sup>xxii xxiii</sup> Tanzania reduced corporate income tax in order to boost local production of MH products and to increase its affordability.<sup>xxiv xxv</sup>

Tax removal naturally attracts corporate interest in the anticipation of larger market shares and a possible increase in profit margins. In Bangladesh, for example, the local manufacturers lobbied for protection from foreign competition.<sup>xxvi</sup> The government responded by imposing a supplementary duty on imported MH products,<sup>xxvii xxviii</sup> which undermines market competition and likely contributes to higher average prices. Attempts to offer lower-priced products in LMICs in order to increase the market can result in products of substandard quality with negative health implications, as evidenced recently in Kenya.<sup>xxix</sup>

## ***5. Removing VAT/GST is simply not enough to stimulate use of MH products***

Whether or not a change in MH product tax policy has any impact on MH product prices and consequently, MH product access and possibly use, is not clear. One of the major factors contributing to this lack of evidence is the shortage of impact research, price data or general monitoring and evaluation on the topic in LMICs.

### ***The Tax Simulation Model***

To address this shortage, we built a tax simulation model that can assess the impact of VAT/GST tax removal on price, MH product use and foregone tax revenue. The tax simulation model is also designed to assess the impact of tax removal on the poor relative to the more affluent touching upon the issue of equity. Based on an extensive literature review, this is the first modelling tool of its kind for MH products. The model description, assumption and results are presented in full in

Appendix VI. Assuming that the recent tax changes in South Africa and Nigeria are fully passed on to consumers, the model predicts that these policies will lead to a very small price decline, and therefore a negligible increase in affordability, access and equity. It should be reiterated that these findings reported below are preliminary and requires validation from policy makers, a process inhibited by the global Covid-19 pandemic. The tools currently rely on the limited available and often unvalidated data.

## South Africa

In 2018, the South African government VAT zero-rated sanitary pads. Prior to the zero-rating, the VAT amount was 14%. There has not been an evaluation of the impact of the tax change on consumption, revenue and retail prices. In the results presented below, we predict what would happen to the outcomes if the change in tax policy was accompanied by an equally sized drop in retail prices (i.e. full pass-through of the tax decrease).

Table 2: Summary results from the MH product tax simulation model, South Africa (full pass-through)

		Before tax change	After tax change	Percentage change
	Quantity consumed	110, 741, 228.9	117, 459, 281.29	6%
	Average retail price (2018 US\$) (price per unit)	2.25	1.97	-12%
	VAT/GST revenue (2018 US\$)	30, 589, 107.73	0.00	-100%
	Annual unit consumption per capita <sup>11</sup>	7.99	8.47	6%
Distributional outputs	Equity Gains ratio	1.58	1.14	
	Actual expenditure as a percentage of required expenditure	14.38%	17.63%	22.65%
	Benefit cost ratio		0.66	

- The tax change should result in a 6% increase in sanitary pads being used, and a 12% drop in the retail price.
- The model predicts that prior to the tax change, the VAT revenue from MH products amounted to 30.6 million US\$.<sup>12</sup>
- There is a small shift in the annual unit consumption per capita. While on average, women used almost 8 units per year in South Africa, this should increase to 8 and a half units after the tax change. As noted, a general estimate is that a woman will require 24 units a year for safe MHM.
- **Equity gains ratios:** The equity gains ratio is used to assess whether a product is disproportionately used by the poor, and whether it makes distributional sense to remove VAT. It is calculated by dividing the MH product household expenditure share of the poor by the household expenditure share of the non-poor. The value reflects the relative spending by the poor to the non-poor. For instance, a value of five indicates that the

<sup>11</sup> This is the average annual unit consumption across the population of menstruating women and does not specify how many pads users actually consumed.

<sup>12</sup> This is much higher than the revenue loss predicted by the Independent panel (8.3 million US\$) as listed in Appendix III. Our estimates are based on the number of products sold in the market based on average market prices reported by GlobalData.

spending share of the poor is five times the amount that the non-poor is spending.<sup>13</sup>

- Prior to the tax change, the equity gains ratio<sup>14</sup> on sanitary pad consumption in South Africa was 1.58, meaning that for every 1% of expenditure by the non-poor, the poor households would allocate 1.58% of their expenditure to these products. The poor spent almost one and a half times as much of their household expenditure on sanitary pads than the non-poor. Spending on MH products places a disproportionate burden on the poor.
- After the tax change, the model predicts that the equity gains ratio will improve to 1.14. For every 1% of expenditure by the non-poor, the poor households allocate 1.14% of their household expenditure on sanitary pads.
- **Benefit cost ratio:** In order to calculate a benefit cost ratio, we need to define and measure a benefit of this policy as well as a cost. Although government revenue will be lost due to the change in tax policy, the tax revenue not collected from the poor is considered a benefit, while the tax revenue not collected from the non-poor is considered a cost.
- The benefit cost ratio is therefore calculated as VAT savings to households that are poor, divided by VAT revenue not collected from households that are classified as non-poor. For instance, in our preliminary model, it is predicted that the revenue loss from removing VAT on MH product sales to households that are poor will be just over 12 million US\$ ('VAT savings to the poor'). On the other hand, the revenue loss from removing VAT on MH product sales to households that are non-poor will be approximately 18.5 million US\$ ('VAT revenue foregone to households that are non-poor'). This results in a benefit cost ratio of 0.66 (or \$12 million/\$18.5 million). For every \$1 that the government will not collect from the non-poor (a cost), it will also not be collecting \$0.66 from the poor (considered a benefit). An equitable ratio is one where the gain to the poor is at least half the benefit to the non-poor (or a benefit cost ratio of at least 0.5). This ratio gives some indication of whether VAT savings from the tax reduction reaches the targeted income groups. Since the benefit cost ratio is higher than 0.5, we can conclude that this policy was equitable.
- **Actual expenditure as a percentage of required expenditure** We measure the distance between actual and required expenditure on MH products, where required expenditure is a product of the average number of women in a household, the price of MH products and the assumption on required monthly sanitary products.<sup>15</sup> For this report, here we make the conservative assumption that women require 2 units per month. A percentage of 10% would indicate that expenditure on MH products are only 10% of what it should be to make sure that each menstruating person receives at least one packet of sanitary pads per month.
- Prior to the tax change, actual expenditure on MH products was only 14.38% of what it should be to ensure adequate supply. We predict that this will increase to 17.63% after the tax change in the optimistic scenario of a drop in retail prices. This signifies a slight improvement.

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<sup>13</sup> Suppose a hypothetical scenario where persons in the poorer income quintiles have an average annual household income of \$100, and that they spend \$5 a year on MH products (5% of their annual budget). Suppose the non-poor have an average household income of \$10 000 and spend \$100 a year on MH products (1% of their annual budget). This amounts to an equity gains ratio of 5 (5%/1%). Although the poor spend less money in absolute terms, they spend five times more in relative terms.

<sup>14</sup> Given the unequal distribution of wealth in South Africa, a poor/non-poor cut-off of the 7<sup>th</sup> expenditure decile was chosen. Households are classified as "poor" if they fall below this threshold.

<sup>15</sup> Required expenditure = Price \* Quantity required (24 units per year) \* average number of menstruating women per household.

## Nigeria

In 2019, the Nigerian government declared locally manufactured sanitary pads and tampons VAT exempt. The exemption means that VAT is still being charged on raw materials<sup>16</sup> used in the production of MH products. Here we predict the scenario where there is a full pass-through of the tax change onto retail prices.

Table 3: Summary results from the MH product tax simulation model, Nigeria (full pass-through)

		Before tax change	After tax change	Percentage change
	Quantity consumed	23, 220, 000	23, 624, 102.85	2%
	Average retail price (2018 US\$) (price per unit of 8 pads)	1.42	1.37	-4%
	VAT/GST revenue (2018 US\$)	1, 570, 639.06	335, 574.38	-79%
	Annual pack (units of 8 pads) consumption per capita <sup>17</sup>	0.42	0.43	2%
Distributional outputs	Equity Gains ratio	Unavailable	Unavailable	Unavailable
	Actual expenditure as a percentage of required expenditure	3.52%	3.58%	1.74%
	Benefit cost ratio		0.98	

- The results show that the impact of the tax policy would be small. A VAT exemption would result in a 2% increase in quantity consumed, and a 4% decrease in the average retail price of MH products.
- Prior to the policy change, it is estimated that the government collected approximately US\$1.6 million in government VAT revenue from MH product sales. This amount decreased by 79% after the tax policy change.
- When aggregated over the entire population, the average unit consumed per capita is very low in Nigeria. After the tax change, it was estimated that a Nigerian woman has access to almost half a unit of sanitary pads per year.
- As previously mentioned, the benefit cost ratio is calculated as VAT savings to households that are poor (income not spent on MH product taxes due to the tax policy change), divided by VAT revenue foregone to households that are classified as non-poor (VAT revenue which the government loses because non-poor do not spend on MH product taxes either). The benefit cost ratio<sup>18</sup> of 0.98 indicates that there is an almost equal relationship between the tax revenue saved by households that are poor compared to the revenue foregone from households that are non-poor. This is more than 0.5, indicating a fairly equitable impact. The measure should not be interpreted as a stand-alone measure,

<sup>16</sup> Given that we do not know the price of raw inputs, we assume that it is 20% of the retail price of the final product.

<sup>17</sup> This is the average annual unit consumption across the population of menarche women and does not specify how much pads users actually consume.

<sup>18</sup> Similar to the South African case, a poor/non-poor cut-off of the 7<sup>th</sup> expenditure decile was chosen. Households are classified as “poor” if they fall below this threshold

but within the context of other outcome measures.

The model illustrates the limited scope of removing VAT from MH products. Given the paucity of data and the lack of adequate feedback from tax officials and private sector due to COVID-19 travel restrictions, the results of our model are preliminary. However, the model is ready to be populated with data and easily customized for the specific local context.

## ***6. Wealth, education and urban residence are the most important determinants of MH product use in LMIC***

It is important to consider whether the proposed fiscal policies will be effective in targeting low-income women and vulnerable populations. Although we are unable to directly measure the impact of the tax changes on these groups, we can draw conclusions based on the consumption of the MH products prior to the tax changes. To this end, we draw on the range of data sources to understand the determinants and distribution of demand of MH products. The full set of results, methodology and data description is available in appendix VII.

When we look at the characteristics of cloth and sanitary pad use, some clear trends emerge. Sanitary pads are the most used MH products in Nigeria (67.2%), South Africa (67.9%) and Kenya (86%), while slightly less than a third of Bangladeshi women use sanitary pads. The data shows that cloth use is still common in Bangladesh, with 66% of women reporting using cloths as a MH product. This is slightly lower in Nigeria (31.2%) and Kenya (14%). Tampons are rarely used by women in Nigeria, Kenya and Bangladesh (less than 2% of women use tampons in these countries). Only in South Africa do we see a non-negligible number of women using tampons (18.3% of women report using tampons).

Socio-economic status (wealth, education and urban residence) are strong determinants of MH product use, with women with higher wealth and education levels, and those living in urban areas more likely to use either sanitary pads or tampons. Cloth use is an inferior MH product choice and poses several health and practicality threats to women who must rely on this as a MH product.

Points of distribution for family planning may be a viable access point for countries that are considering the free distribution of sanitary pads. 31% of Nigerian sanitary pad users currently use family planning, and 47% of Kenyan sanitary pad users access family planning. Twenty-one percent of Nigerian women who use cloth as a MH product, and 54% of Kenyan women who use cloth as a MH product, also access family planning.

Most women using cloths as MH product are married or cohabitating (more than 70% in Nigeria and Kenya), or their form of employment or daily activity is classified as housework (75% in Bangladesh). Among South African women who use tampons, the majority are single (63%). Although it is unclear from these characteristics, one might insinuate that a woman's position and power within a household plays a role in her choice of MH product. This is a topic that should be explored further and more rigorously.

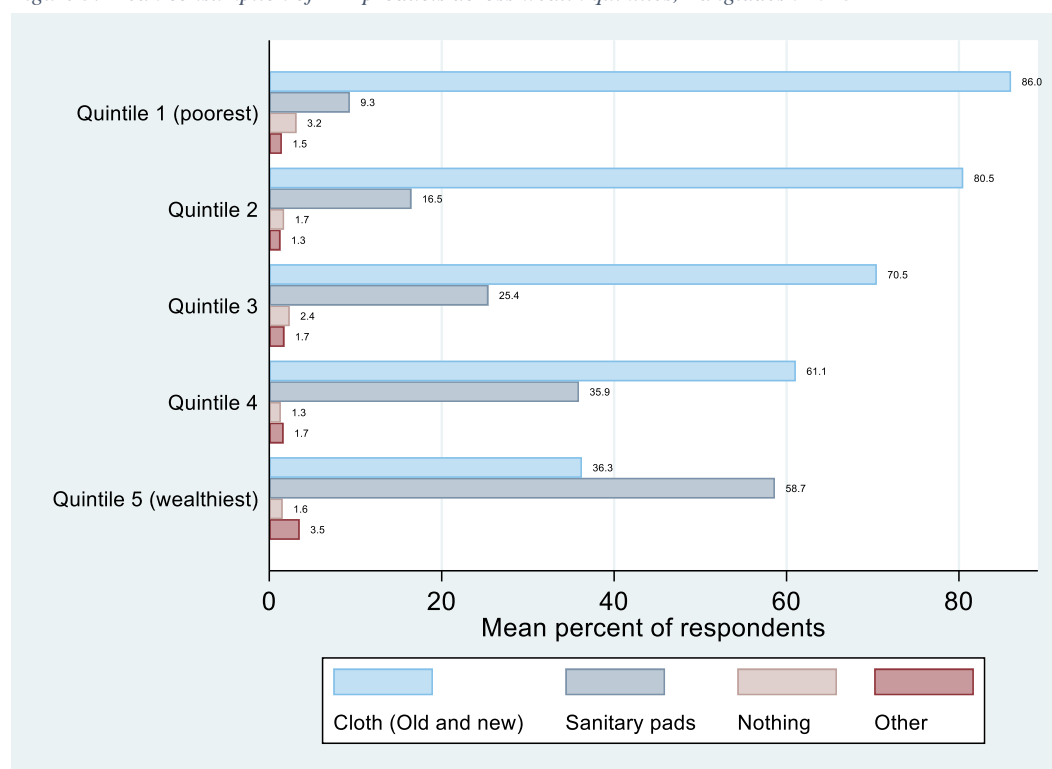
Bangladesh is in a very disadvantaged position when it comes to access to MH products. Most women still use cloth as a MH product, even women from more affluent households. Among the richest wealth group, 36.3% of women still use cloth as a MH product. The figure below shows a clear distinction in MH product use by wealth groups.<sup>19</sup> Among wealth quintiles 1 and 2 (the

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<sup>19</sup> Wealth status was calculated using principal component analysis based on a set of reported assets by households. This included power, a wardrobe, tables and chairs, clock (wrist or wall), bed, a chowki, radio, television (with a distinction

poorest), more than 80% of individuals use cloth as a MH product. Among the richer wealth group (wealth quintile 5), approximately 59% of women use sanitary pads. However, even among the richest wealth group, 36.3% of women still use cloth as a MH product. A disaggregation of these results by rural-urban status shows that area of residence is an important determinant of product used. While 73% of women residing in rural areas use cloth, 56% of women residing in urban areas use cloth. Only 23% of women residing in rural areas use pads, while the figure is slightly higher at 39% for women residing in urban areas.

Figure 3: Mean consumption of MH products across wealth quintiles, Bangladesh 2018



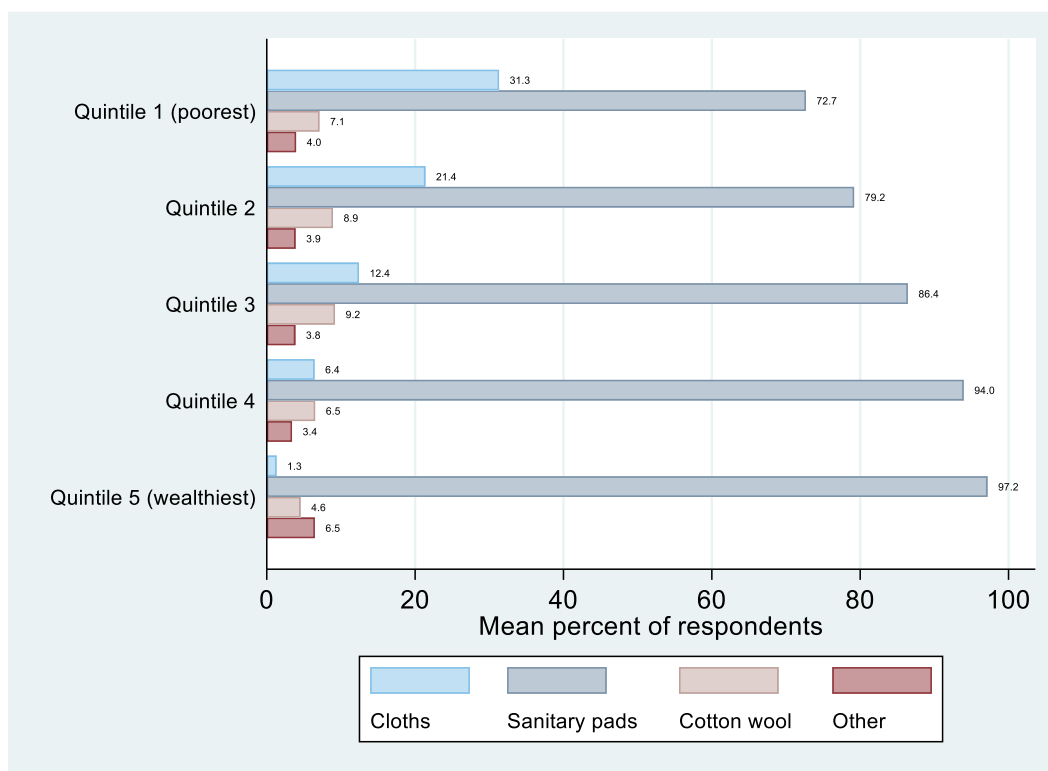
Source: created from National Hygiene Survey for Bangladesh, 2018

In Kenya, we observe an equal distribution of MH product use. Although cloth and cotton wool are still mostly used by poorer women, access to sanitary pads are equally distributed across wealth groups in Kenya. The figure below shows the percentage of MH products used within each wealth quintile. For instance, even among the lowest (poorest quintile), 72.7% of women report using sanitary pads.

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between colour and black/white), refrigerator, bicycle, motorcycle, sewing machine, mobile phone, landline phone, household agricultural machinery, cars and fan (ceiling or table). The number of assets were considered with the calculations.

Figure 4: Mean consumption of MH products across wealth quintiles, Kenya 2016

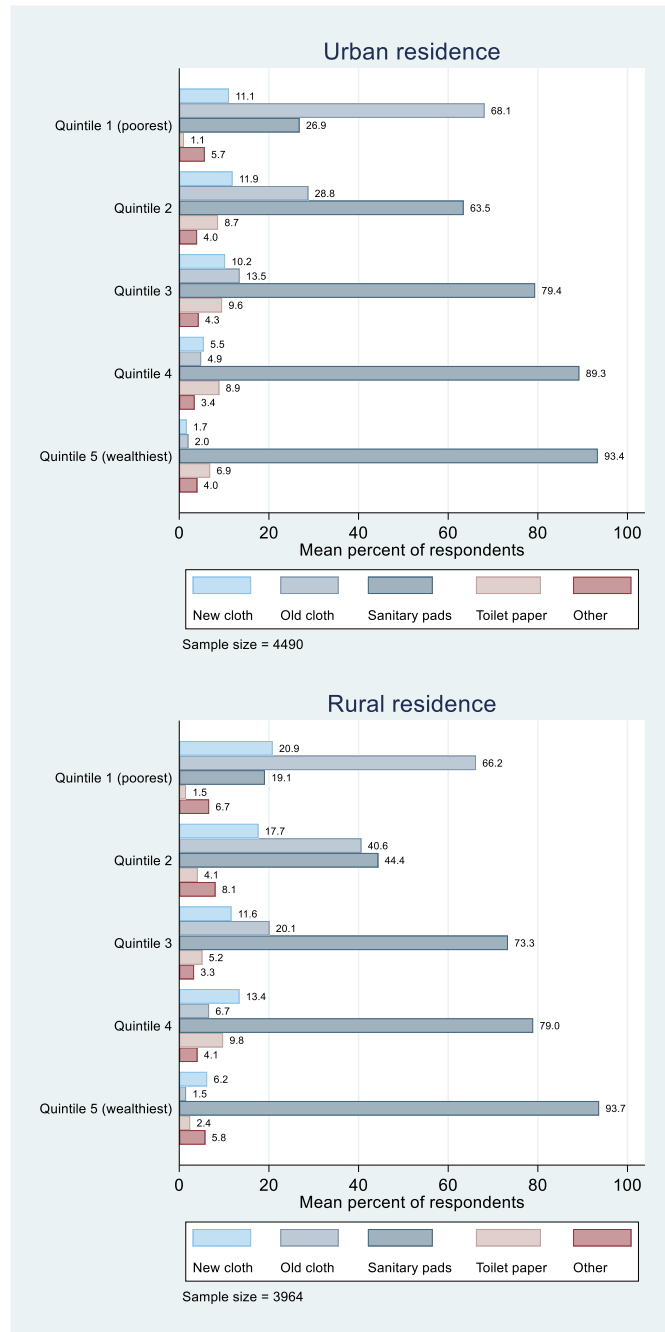


Source: created from PMA 2020 data for Kenya 2016

For Nigeria, the data analysis supports statements made by advocates that in 2018 cloths (old and new) are being used vastly amongst the poorer population. Nearly all cloth as MH product usage is being used by the bottom 60% of women in the wealth distribution. Usage of sanitary pads is more concentrated among the affluent. Tampon usage is almost non-existent in Nigeria. Only 0.43% of women reported using tampons, and these women were predominantly in the highest wealth quintile.

Economic status (wealth) is a better predictor in Nigeria of usage than residence (whether someone lives in an urban or rural area). A closer look at the average product consumption across wealth quintiles, divided by urban and rural residence (figure below) shows that cloth usage among the lower quintiles is similar regardless of the urban-rural divide.

Figure 5: Mean consumption of MH products across wealth quintiles and urban-rural residence, Nigeria 2018



Source: created from PMA 2020 data for Nigeria 2018.

Tampon usage in South Africa is slightly more concentrated among the wealthier population. In South Africa, only sanitary pads (and not tampons) were VAT zero-rated. Anecdotal evidence from interviews with stakeholders revealed that one of the explanations for this was that tampons are only used by wealthier women. While it is true that tampons are not necessarily being used as much by women in lower wealth quintiles in South Africa, the statement heard during interviews does not necessarily give the full picture. Tampon users fall largely in wealth quintiles 3 (39%) and 4 (27%) in South Africa. Given the unequal distribution of wealth in

South Africa, quintiles 3 and 4 are very much economically disadvantaged in the country. Secondly, the statement does not consider that women from lower wealth quintiles may increase their consumption if the VAT was removed from tampons. The VAT percentage in South Africa is high at 15%, and this may pose a significant cost. This is not necessarily the case for other LMICs where the VAT rates are around 4 or 5%. There is scope to VAT zero-rate tampons in South Africa as well, as a policy change will affect the economic disadvantaged. This also highlights the need for national level analysis, as **blanket MH product tax strategies fail to take into account distributional and impact differences across countries.**

### ***7. Poor access among vulnerable populations may have created a market for dangerous counterfeit products***

A potential consequence of poor access to affordable MH products among vulnerable populations is that it may have created a market for cheap but lower-quality counterfeit products. The spread of fake MH products can threaten the agenda to achieve safe MHM due to their dubious quality that can result in health problems. The presence of counterfeit MH products globally has not been systematically documented. Therefore, the evidence is anecdotal and country specific. In 2019, South Africa reported the discovery of several illegal sanitary pad manufacturing facilities. They were producing a counterfeit substandard version of Always Ultra feminine hygiene products, a trademark of Procter & Gamble.<sup>xxx xxxi</sup> Often, the counterfeit packages contained fewer than the advertised number of pads, and the fake pads were thinner and had wings that hardly stuck to the underwear. The counterfeit products were reported to be contaminated with bacteria<sup>xxxii</sup>, which could pose a health risk, and some women developed a rash or infection after using these products. The counterfeit pads were uncomfortable and eventually shred and dissolved like toilet paper would.<sup>xxxiii</sup>

Nigeria suffers from the influx of fake and substandard sanitary pads manufactured both within borders and from abroad. In some cases, unbranded sanitary pads are placed into the package of a popular brand<sup>xxxiv</sup> and usually distributed in mid-range supermarkets.<sup>xxxv</sup> Some of the fake pads contained pesticides and herbicides which directly enter the blood stream and interferes with internal organs. In addition to skin irritation, these unsafe sanitary pads make women susceptible to life-threatening reproductive diseases, cancers and can result in fatal sepsis.<sup>xxxvi</sup> The Nigerian Customs Service has no knowledge of fake sanitary pads entering the country, but the National Agency for Food Drug and Control (NAFDAC), confirmed seizure of fake sanitary pads and baby diapers.<sup>20</sup>

## **Conclusion and Recommendations**

### ***There is scope to use fiscal policies to increase affordability of MH products in LMICs***

**Tax removal in isolation is not enough to sufficiently improve affordability and access to MH products in LMICs.** Given the limitations of tax removals to influence affordability, access and use of MH products, it is essential that policy makers consider additional fiscal policies (e.g. free distribution and/or targeted subsidies) to improve access. All four focus countries have attempted

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<sup>20</sup> Although not a study country, there is also anecdotal evidence of counterfeit products in China. Counterfeit MH products have been on the market in China since 2013. In 2016, a facility manufacturing millions of counterfeit sanitary pads was discovered in southeast China. The police seized the fake sanitary pads with a resale value of more than 40 million Yuan (\$5.9m). They were distributed to supermarkets with a discounted price under the trademarks of leading Chinese brands such as ABC or Whisper. Source: Kerry Allen. China 'fake sanitary pads' scam sparks health concerns. BBC Monitoring, 27 October 2016. <https://www.bbc.com/news/world-asia-pacific-37788670>

alternative policies, though success has been hampered by implementation inefficiencies.<sup>21</sup> Kenya began providing free sanitary pads to schoolgirls in 2011 when the government allocated almost USD 4 million to the project and committed an additional USD 2 million in 2014.<sup>lx</sup> On November 21, 2019 Kenya adopted a stand-alone National Menstrual Hygiene Management policy aimed at scaling up the delivery of menstrual hygiene products for those in need.<sup>lxi</sup>

South Africa allocated R209 million (USD 14 million) for free distribution of MH products to poor schools in the financial fiscal year 2020/21.<sup>lxii</sup> This is an approximate 30% increase compared to 2019/20.<sup>lxiii</sup> Free distribution to wider public was also discussed during the tax debate, but it was rejected on both budgetary and logistic grounds (e.g. possible theft and benefits to women from more affluent households).<sup>lxv</sup> Nigeria has allocated some resources to provide free MH products.<sup>lxvi</sup>

These policies, and similar policies in other non-study countries, are listed in the table below.

*Table 4: Countries with policy to provide for free distribution of MH products*

Policy	Countries	Notes
A stand-alone policy for the delivery of MH products for free for those in need	Kenya	Free distribution began in 2011; stand-alone policy adopted in 2019
Bill guarantees free MH products in schools, colleges, and universities	Scotland <sup>22</sup>	Bill received preliminary approval in Feb 2020.

<sup>21</sup> An alternative policy which has not been extensively considered would be to earmark taxes collected on MH products for free distribution of MH products. However, this has not been a popular policy option. Based on desktop research, there is no country in Sub-Saharan Africa or any other LMIC that earmarks taxes collected from MH products. The only country identified as earmarking tax from MH products in the world was the UK. Since 2015, the UK has earmarked the revenue collected from the 5% VAT on MH products for charities working with vulnerable women and girls. The earmarking was set up in the response to the EU rule not allowing a zero rate of VAT to be applied to women’s sanitary products. UK applies the lowest rate of 5%. In March 2018, the UK government announced that the Tampon Tax Fund will receive a portion of the funds from taxing period products and will direct it to addressing period poverty. In 2018, this amounted to £15 million and was used to address sexual violence, social exclusion, and mental health. The UK plans to abolish the VAT on MH products as of January 2021. Sources: Budget 2020: Pledges on tampon tax and the future of cash. 7 March 2020. <https://www.bbc.com/news/business-51772425>. Women and girls set to benefit from £15 million Tampon Tax Fund. Department for Digital, Culture, Media & Sport and Tracey Crouch MP. 26 March 2018. <https://www.gov.uk/government/news/women-and-girls-set-to-benefit-from-15-million-tampon-tax-fund>

<sup>22</sup> In 2018, the Scottish government made period products freely available in schools, colleges, and universities.<sup>22</sup> The scheme cost £5.2m per year.<sup>22</sup> In February 2020, the Period Products (Free Provision) Bill received preliminary approval in the Scottish Parliament.<sup>22</sup> The legislation would create the legal obligation for the Scottish government to make sure MH products are available free for those who need them. The Scottish government estimates the cost to implement the legislation at £24 million annually (about \$31 million). Sources: Scotland Poised To Become 1st Country To Make Period Products Free; February 27, 2020; <https://www.npr.org/sections/goatsandsoda/2020/02/27/809990550/scotland-poised-to-become-1st-country-to-make-period-products-free>; Nadia Khomami. Scotland to offer free sanitary products to all students in world first. 24 Aug 2018. <https://www.theguardian.com/uk-news/2018/aug/24/scotland-to-offer-free-sanitary-products-to-all-students-in-world-first>

Budget allocation for free provision in poor schools, poor communities

South Africa, Zambia<sup>23</sup>, California<sup>24</sup>, Nigeria, Rwanda<sup>25</sup>

Usually not sufficiently funded; problems with distribution, limited evidence that the policies are well targeted.

### **There is a role for private sector in increasing access to MH products in LMICs**

In South Africa, Procter & Gamble provides free Always sanitary pads for 13,000 schoolgirls every year as a part of its corporate social responsibility.<sup>lxiv</sup> A local tax accountant in Nigeria proposed that MH product manufacturers/importer could be offered a tax write-off for donating some of their products for those in need.<sup>lxvii</sup> Local manufacturing is capable of producing cheaper products, and more competition leads to lower prices. However, one needs to be aware of corporate interests in cutting costs, increasing profit, and in eliminating competition. In Bangladesh, for example, a supplementary duty on imported MH products was imposed to protect a local monopoly, which undermines market competition and likely contributes to higher average prices. An effort to supply affordable products in Kenya led to cost cutting that resulted in substandard products. Therefore, governments need to establish standards to protect consumers/women and enforce them.

### **Retail price is more dependent on market competition and local production rather than the tax scheme that can be complex**

Tax campaigns need to consider the complex nature of pricing and taxes. There are many layers of taxes imposed on MH products, and these different layers have different implication for the final retail prices. It is important for the advocates and policymakers to understand this relationship and also the market conditions where the manufacturers and retailer decide retail prices of the MH product.

### **More data and research are needed**

The deficiency of economic data probably explains the paucity of research in the area of MHM. As result, standard parameters such as the price and income elasticities of demand do not exist in any of our four focus countries. This is very likely true for the rest of Africa and Asia based on our extensive search for data and any available literature. As result, the economic tools built for this report and very much sought after by policy makers working on tobacco control, for example, cannot be fully populated and used by advocates without some primary data collection.

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<sup>23</sup> Since 2017, Zambia has a government program to provide free sanitary pads for schoolgirls in some rural and underserved areas. The program is supported by a budget allocation. Source: Joshua Jere. Focus on Menstrual Health Keeps Zambian Girls in School. October 17, 2019. <https://www.voanews.com/africa/focus-menstrual-health-keeps-zambian-girls-school>

<sup>24</sup> California passed a bill in 2017 requiring public middle schools and high schools where at least 40% of students meet the federal poverty level, to stock half of the restrooms with free tampons and sanitary pads.

<sup>25</sup> Rwanda's Ministry of Education in collaboration with the Ministry of Health and the Ministry of Local government offers free sanitary products in schools via Icyumba Cy'umukobwa (The Girls Room) program that also provides pain relievers and consultations with experienced female advisors that can help young women navigate the challenges of menstruation. Source: Ynis Isimbi. Rwanda removes VAT on sanitary products, as the fight to end period poverty continues. January 17th, 2020. <https://blogs.lse.ac.uk/internationaldevelopment/2020/01/17/rwanda-removes-vat-on-sanitary-products-as-the-fight-to-end-period-poverty-continues/>

# APPENDIX

## Appendix I: Addressing counterarguments

The proponents of the tax removal on MH products encounter numerous counter arguments during their campaigns. Common opponents include policy makers and government officials who fear the potential budget implications of the policy change. Economists are often opposed to tax removals as they may create inefficiencies and tax evasion. At least eight common arguments against removing or reducing tax on MH products are cited in the literature and the media. We organized these arguments and paired them with possible responses, recognizing that these responses need to be country specific.

1. There will be a significant revenue loss.

*Response:* Numerous studies show that the revenue impact is relatively small.<sup>xxxvii</sup> Additionally, excise taxes can be increased in other areas (e.g. tobacco or alcohol) to compensate. The revenue loss was less than 0.01% of total tax revenue in Canada and Australia,<sup>xxxviii</sup> and less than 0.001% of the California state budget.<sup>xxxix</sup> In Australia, the critics of the tax removal pointed to a potential shortfall in state, territory, and federal budgets. The loss was estimated to be about \$21 million (A\$30 million) a year. In South Africa, the revenue loss estimated by the Independent Panel of Economists appointed to calculate the impact of the tax, estimated a revenue loss of 8.3 million US\$.

2. Price will not be reduced or that the price drop is very small after a tax removal due to a complicated tax structure and due to providers' profit-seeking behavior.<sup>xlvii xlviii</sup>

*Response:* Even though price drop is not always recorded immediately, there is also a general lack of evaluation after a tax removal. The price dynamics have many determinants in addition to tax, and it seems that the market competitiveness plays a role. In New Jersey, for example, consumer prices on menstrual products decreased by 7.3% after the 2005 tax removal. The price drop was greater than the removed 6.9% sales tax, and low-income consumers received the most benefit from the lower tax, as their prices went down by 12.4%.<sup>xlx</sup> Even though some price reduction following a tax removal has been reported from Kenya and South Africa, tax removal is generally not sufficient to increase affordability.

Therefore, tax cuts should be accompanied by additional measures to increase affordability (e.g. free distribution in Kenya and South Africa<sup>l</sup>) and to ensure that the cut is reflected in the retail price (e.g. requiring a price sticker or indication on the product packaging).<sup>li</sup> In South Africa and in the UK, some retailers themselves absorbed the VAT as a gesture of corporate social responsibility.<sup>lii</sup> Even if the economic benefits of the tax repeal are not borne by consumers, repealing MH product taxes advances gender equality and protects women's health.

3. There are some administrative and compliance costs of reducing or removing the tax, because it will require both the revenue authorities and taxpayers to make changes to their existing systems.<sup>liii</sup>

*Response:* These are a one-time fixed cost.

4. Tax on MH products is economically efficient since it minimally distorts consumers behavior.

The demand for MH products is highly inelastic.

Response: Taxes on MH product need to be removed since they impose gender inequality as well as significantly higher burden on poorer households and women who participate in the workforce.

5. Removing the tax on MH products will set up a dangerous precedent for other products.<sup>liv</sup> For example, soap is taxed, though most people agree that it is a necessity. Where should the line be drawn?

A shrinking sales tax base will eventually lead to higher overall tax rates.<sup>lv</sup>

Response: Taxes on MH product need to be removed since they impose gender inequality as well as significantly higher burden on poorer households and women who participate in the workforce. The size of the revenue collected on MH products is minimal.

6. There are other policies that can make the products more accessible and affordable (the existence of superior alternatives argument). For example, products can be distributed for free in low-income area schools and to vulnerable populations, or retailers could cover the tax as a part of their marketing activities.<sup>lvi</sup>

Response: Removing tax is not a solution in and of itself but should be one piece in a comprehensive package. It is the government's responsibility to pursue tax justice and not impose an undue financial burden on women for a biological need. Gender-based discrimination violates the principals of equal protection, embedded in many constitutions.<sup>viii</sup>

7. Repealing tax on MH products will have the unintended effect of reducing consumer prices for high-income women as well. These distributional consequences support adopting alternative policies that provide direct subsidies for menstrual hygiene products to low-income women.

Response: Taxes on MH product need to be removed since they impose gender inequality.

8. The Australian health minister was against the tax removal, arguing that the MH products did not prevent illness unlike condoms.<sup>lix</sup>

Response: Taxes on MH product need to be removed since they impose gender inequality as well as significantly higher burden on poorer households and women who participate in the workforce. Unaffordable MH products result in poor women using inferior pads or non-hygienic cloth, which are dangerous to women health. The size of the revenue collected on MH products is minimal.

## Appendix II: A MH product affordability index

The financial affordability of a product is driven by the price of the product as well as an individual's income. There has been an increase in the economic growth rates of LMICs over the last years, which would have had an impact on women's ability to afford MH products. However, in tackling the affordability of MH products, focus is predominantly placed on approaches to decreasing price as it is more easily malleable by government tax policies.

Drawing on the peer-reviewed research on the affordability of cigarettes and alcohol, affordability is defined as the ‘quantity of resources required to buy a unit of the product under investigation (in terms of time, money or other products).’<sup>lxviii</sup> This is referred to as the Relative Income Price (RIP) of the Product. More specifically, affordability will be defined in terms of a country’s GDP per capita required to purchase a certain amount of MH products.

Using this concept, we develop a global index to measure and compare the affordability of MH products. This analysis forms the basis and rationale for adopting tax policies which would make MH products more affordable. As is evident from the rest of our analysis, women in LMICs rely predominantly on sanitary pads as a commercial MH product. As a result, the affordability analysis will focus on sanitary pads. Important to note is that the index should be evaluated *relative* to other countries and years, rather than be evaluated as an *absolute* measure of affordability. It should be interpreted as affordability relative/compared to another point in time or relative to another country.

## Data

In order to create the index, data on income and prices are required. Given the lack of globally comparable price data on MH products, we use a derived price as a proxy. To this end, we used the GlobalData reports on Feminine Hygiene Products for 51 Countries, collected between the years 2013 and 2018.<sup>26,27</sup> Income is proxied for using Gross domestic product (GDP) per capita data<sup>28</sup>, retrieved from the World Bank.<sup>lxix</sup> This measure is advantageous in that it is globally comparable and is considered a good indicator of living standards.<sup>29</sup>

## Method

The Relative Income Price (RIP) of MH products is defined as the percentage of GDP per capita required to purchase 24 units of that MH product. The 24 units threshold is chosen on

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<sup>26</sup> GlobalData is only available for a limited set of countries. These include Australia, Austria, Bangladesh, Belgium, Brazil, Bulgaria, Canada, Chile, China, Colombia, Czech Republic, Denmark, Egypt, Finland, France, Germany, Greece, Hong Kong, Hungary, India, Indonesia, Israel, Italy, Japan, Malaysia, Mexico, the Netherlands, New Zealand, Nigeria, Norway, Peru, Philippines, Poland, Portugal, Republic of Ireland, Romania, Russian Federation, Saudi Arabia, Singapore, Slovakia, South Africa, South Korea, Spain, Sweden, Thailand, Turkey, United Arab Emirates, United States of America, Ukraine, United Kingdom and Venezuela.

<sup>27</sup> Although the reports do not supply price data, it does provide information on the volume of MH products sold (for sanitary pads and tampons separately) as well as the market value in US\$ of these products. In order to create a derived price, market value is divided by number of products sold.

$$\text{Proxy price}_{\text{MH product in year } x} = \frac{\text{Market value US\$}_{\text{MH product in year } x}}{\text{Volume of product sold}_{\text{MH product in year } x}}$$

This approach disregards potential price variation within the country and should not be interpreted as a standalone average price of MH products within a country. Rather, it is a globally comparable measure of average prices drawn from a single data source and will assist us in gauging the comparability of prices. It holds no value outside this analysis. The proxy price is converted to real prices using 2010 as the consumer price index base year.

<sup>28</sup> GDP per capita is measured in real US\$ (2010 prices).

<sup>29</sup> One major drawback of using the RIP and specifically GDP per capita as a measure of income, is that it gives an inadequate picture of the true affordability in countries with high levels of inequality. South Africa, for instance, has a GDP per capita which classifies it as an upper-middle income country. However, its high Gini coefficient of 0.63<sup>26</sup> puts it as one of the most unequal societies in the world (World Bank. The World Bank in South Africa Overview. [cited 27 May 2020]. Available from: <https://www.worldbank.org/en/country/southafrica/overview>). The South African RIP is unlikely to reflect the affordability of MH products for the very poor of society.

the assumption that women might require two units per months for the 12 months of the year. The amount required will of course vary according to a woman's flow and number of menstruation days.<sup>30</sup>

A higher (lower) RIP indicates less (more) affordability (both in terms of price and income). For instance, a RIP for sanitary pads of 5% in 2018 indicate that it would take 5% of that country's GDP per capita to purchase 24 units of sanitary pads. In another country, we may find a RIP for tampons of 1% in 2018. Tampons are relatively more affordable in the second country than the first country, driven either by a higher GDP per capita or lower MH product prices.

The following results are calculated:

- Result 1: The relative income price of sanitary pads and tampons in 2013 and 2018, disaggregated by World Bank Economic Development Status.
- Result 2: The average annual percentage change in the RIP of sanitary pads and tampons from 2013 to 2018. The results are disaggregated by World Bank Economic Development Status. A negative value indicates that the product has become more affordable over this time period.
- Result 3: In order to discern what is driving this change in the RIP between 2013 and 2018, the change in RIP is disaggregated into changes in price and changes in GDP per capita. These results are also disaggregated by World Bank Economic Development Status.

## Results

### *Result 1:*

The first set of results highlight some key points:

- Firstly, the relative income price for sanitary pads are much higher in low-and middle-income countries than high-income countries. I.e. sanitary pads are less affordable in LMICs.
  - The mean real RIP in high income countries in 2018 was 0.28 %, while it was more than double that at 0.74% in LMICs.
  - The two countries with the highest RIPs are India and Philippines.
  - Kenya, Nigeria and Bangladesh have some of the highest RIPs in our sample. In 2018, Kenya had a RIP of almost 2.4%, indicating that it would take approximately 2.4% of their real GDP per capita (\$1202 in 2010 US prices) to buy 24 units of sanitary pads.
  - In 2018, Nigeria had a RIP of almost 1% and Bangladesh had a RIP of 1.56%
  - The South Africa RIP in 2018 of 0.35% is closer to HIC affordability standards.
- Secondly, a comparison of the 2013 and 2018 RIP graphs show a potential improvement in the affordability of sanitary pads over this time period. This is explored more precisely in result set 2.

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<sup>30</sup> It is calculated as follows, where *i* and *j* refers to country and year respectively:

$$Relative\ Income\ Price_{ij} = \frac{Real\ price\ of\ 24\ units\ of\ MH\ product_{ij}}{Real\ GDP\ per\ capita_{ij}} * 100\%$$

Figure 6: The relative income price of sanitary pads in 2013

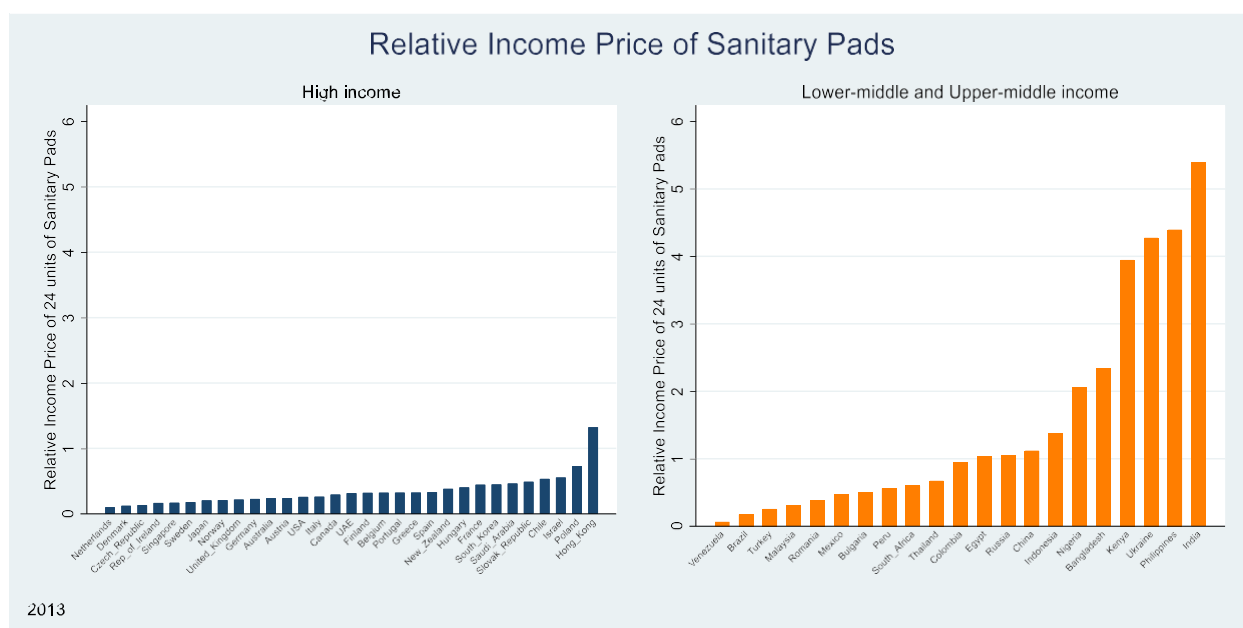
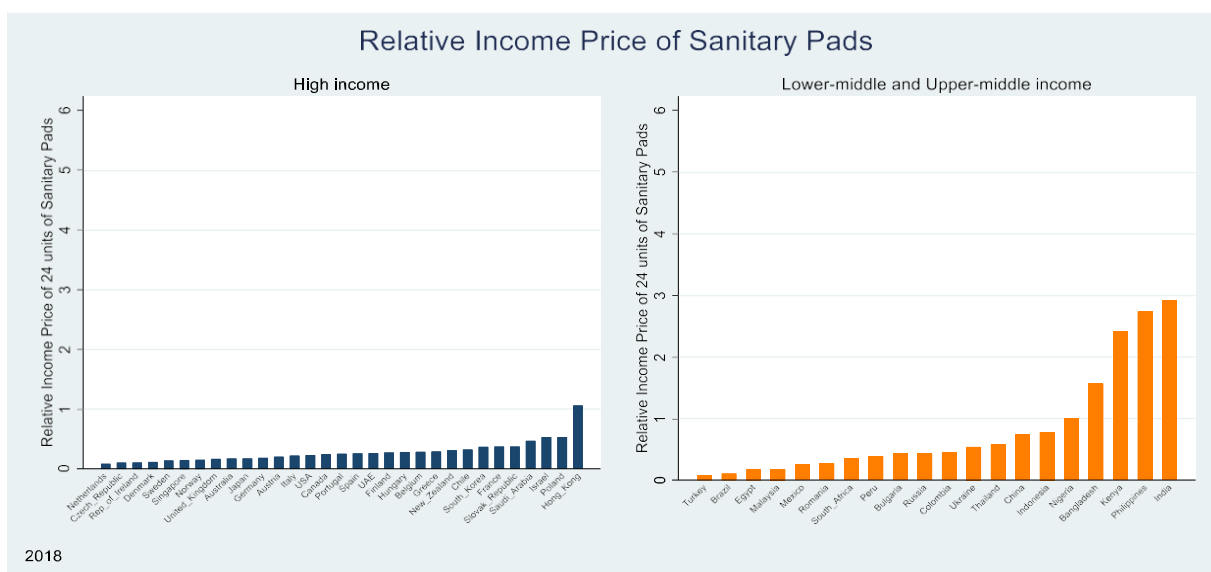


Figure 7: The relative income price of sanitary pads in 2018

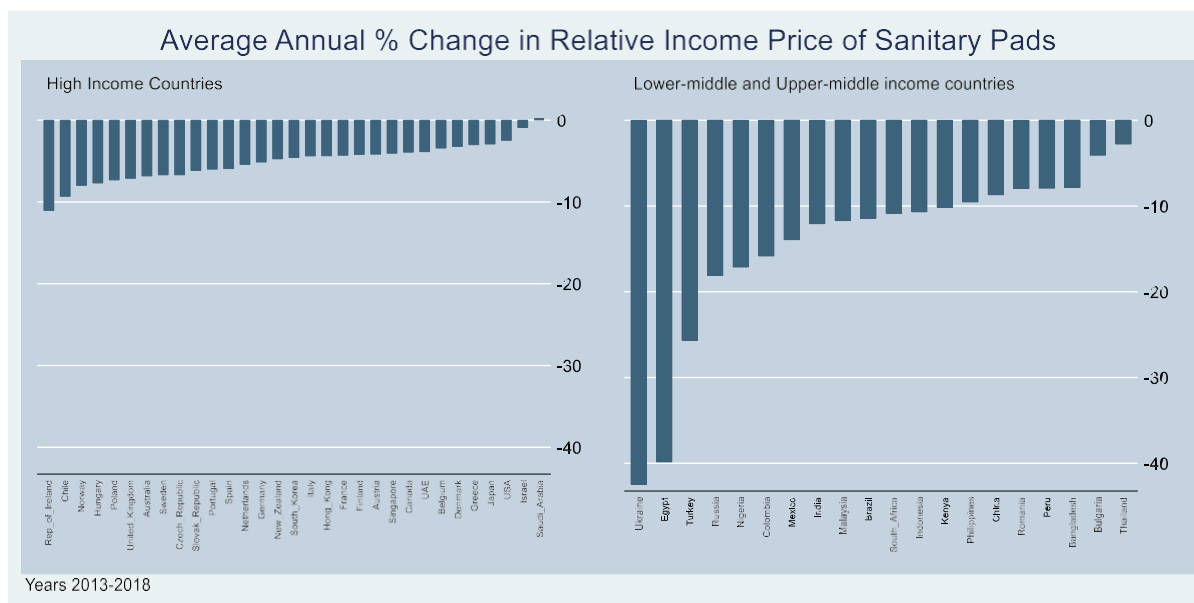


Result 2:

Looking at the average annual % change in the RIP of sanitary pads between the period 2013 and 2018, we see that globally there was an improvement in the affordability of these products, and that the largest shifts in affordability occurred within LMICs.

- Only in Saudi Arabia did we observe a worsening of affordability.
- South Africa experienced an 11% improvement in affordability, Kenya a 10% improvement in affordability, Nigeria a 17% improvement in affordability and Bangladesh an 8% improvement in affordability.

Figure 8: Average Annual % Change in Relative Income Price of Sanitary Pads

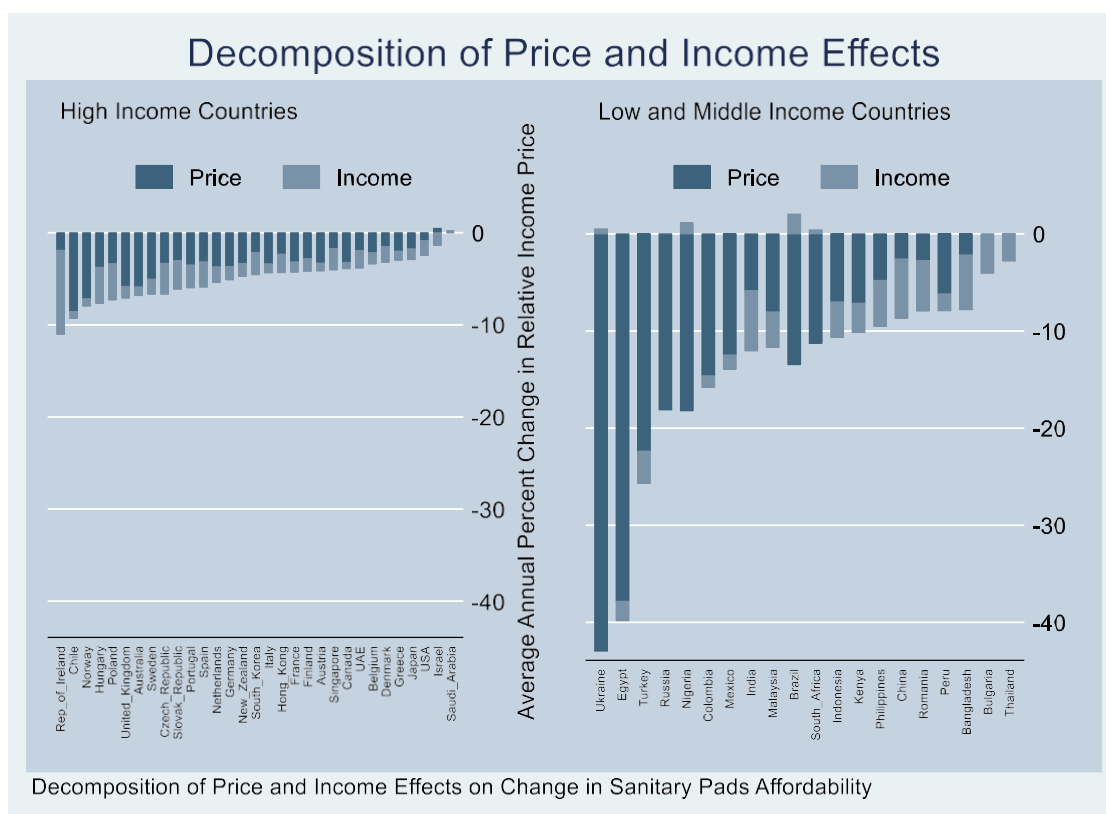


*Result 3:*

A decomposition of the affordability measure into price and income effects reveal that the largest shifts in LMICs occurred as the result of decreases in real prices.

- In South Africa and Nigeria, real GDP per capita worsened between 2013 and 2018. However, the effect was countered by a drop in the real prices of sanitary pads over this time period.
- In Bangladesh, both a drop in real prices of sanitary pads as well an increase in the real GDP per capita, contributed to an improvement in affordability. However, economic growth as measured using GDP per capita is the main driver. There is scope for using taxes to influence prices of the sanitary pads in Bangladesh.
- Kenya experienced both an increase in GDP per capita over the period studied, and a drop in the real price of sanitary pads. This drove a decrease in the RIP of sanitary pads. The drop in the real price is the dominant driver.

Figure 9: Decomposition of price and income effects



### Appendix III: Literature and Data Summary

Table 5 Literature summary

Country	Source	Context and methodology	Finding
New Jersey, United States.	Cotropia & Rozema, 2005 <sup>lxx</sup>	<p>Cotropia and Rozema use a difference-in-difference approach to examine the impact of a 2005 removal of menstrual hygiene products from the sales tax base in New Jersey on prices by comparing average change in prices in New Jersey to neighboring states.</p> <p>The authors use proprietary data (the Nielsen Consumer Panel Data) from 2004 to 2006 for the analysis.</p>	<p>The tax policy change successfully resulted in the drop of menstrual hygiene product retail prices.</p> <p>The authors found that in the state studied, the tax cut was well targeted and shifted to low-income consumers. However, there was large product variety with over 37 brands studies, indicating a competitive market.</p> <p>The paper does not contain any price elasticity estimates.</p>

## South Africa

### Independent panel study<sup>lxxi</sup>

Prior to the increase of the value-added tax in South Africa from 14% to 15% in 2018, the South African Minister of Finance commissioned an independent panel of experts to analyze the distributional consequences of the VAT increase, and to recommend potential zero-rating of certain items. One of the products considered was sanitary products, which included both sanitary pads as well as tampons.

Most of the analysis was done using the South African Living Conditions Survey (2014/2015), which collected data on household expenditure of specific items.

The panel found that zero-rating of MH products would have little impact on improving their affordability, but that the products should be zero-rated due to gender equity concerns. Furthermore, they recommended that the zero-rating should be combined with free distribution.

Focusing on the expenditure on sanitary products as a percentage of household expenditure, the authors find that the poorest 80% of households in South Africa spend approximately 0.05% of their household expenditure on MH products. This result holds true across deciles (i.e. this is true for the poorest 10%, the poorest 20%, the poorest 30%, etc.). The top 10% of household spend only 0.021% of their household expenditure on MH products. *The share is both a function of household expenditure as well as the price of MH products.*

When looking at *absolute* expenditure, they find that the richest 10% of the population spend 10 times more on MH products compared to the poorest.

*Revenue foregone:* Total sales of MH products (including VAT) are estimated to be R1 billion in 2017. Of this amount, the foregone revenue due to zero-rating is R120 million (approximately \$8.3 million in 2018). The panel estimated that the impact of the VAT zero-rating would be approximately R75 million (in 2018 prices) for the poorest 70% of households.

*Unmet need:* The panel estimated that the poorest 70% of households currently have unmet need for MH products. This is calculated by comparing current expenditure to required expenditure. Required expenditure is calculated as number of women aged 13 to 55 in the decile (this is likely to differ across deciles) multiplied by a price of R1.50 per tampon/sanitary pad multiplied by 20 (assumed number of items required during a cycle).

*Benefit cost ratio:* The panel computes the benefit cost ratio of a zero VAT rating by comparing the VAT savings for the poorest 40% compared to VAT revenue foregone for the rest of the population (or the more affluent 60%). This ratio for South Africa is calculated as 0.254 for MH products. The gain to the non-poor should not be more than twice

			<p>the benefit to the non-poor.</p> <p><i>Equity gain ratio:</i> The equity-gain ratio is calculated by dividing the proportional expenditure on sanitary products by households in deciles 1 to 4 (very poor) to the proportional expenditure on MH products by households in deciles 9 and 10 (the richest deciles). The panel calculates an equity-gain ratio of 1.859, meaning that the average proportional spending of the poor is only 1.859 time that of the non-poor.</p>
<p>South Africa</p>	<p>The Institute of Economic Justice<sup>lxxii</sup></p>	<p>The report was written as an advocacy activity in support of zero-rating MH products (along with a range of other products) within the context of the South African government increasing the overall VAT rate from 14% to 15%. The report was sent to the Independent Panel previously quoted.</p> <p>The analysis was done using the South African Living Conditions Survey (2014/2015).</p>	<p><b>Elasticity:</b> No attempt was made at elasticity calculation. On the contrary, it was assumed that consumption would stay the same with the change in price.</p> <p><b>Progressivity of spending</b> of MH products was measured as the spending on that item as a proportion of total consumption, disaggregated by consumption deciles. The authors find that the bottom 70% of households in South Africa spend 0.06% of their total consumption on MH products. This percentage is 0.03% for the top 30% of households. The poor are spending a higher proportion of their income on MH</p>

			<p>products than the rich.</p> <p>The authors further argue that MH products should be zero-rated on socio-economic rights grounds.</p> <p><b>Benefit-cost ratios were also calculated:</b> The benefits-cost ratios of zero-rating sanitary pads and tampons was calculated as 0.86. The financial benefit of zero-rating MH products to the poor (the poorest 70% of the population) did not exceed the cost of forgone revenue from consumption by the rich (the richest 30% of the population).</p> <p><b>Revenue loss:</b> The authors estimate that zero-rating MH products, alongside a very long list of other products, would result in a revenue loss of R17bn in 2018 prices with R5.5bn benefitting the poorest four income deciles and the remainder lost to the wealthiest six deciles.</p>
South Africa	Nhlapo <i>et al.</i> , 2019 <sup>lxxiii</sup>	Prior to investigating the development of a low cost, environmentally friendly sanitary pad, the authors conducted a 50-person (aged 18+) survey essentially asking respondents their perception of the affordability of sanitary pads, desired quality and their	<p>The authors find that there is indeed a trade-off between creating an environmentally friendly product and keeping costs low.</p> <p>The available results showed that 92% of participants preferred disposable as opposed to reusable MH products. Sixty percent of women</p>

		<p>willingness to pay for sanitary pads.</p> <p>The authors do not follow standard willingness to pay format. Results from the survey are not publicly available.</p>	<p>preferred sanitary pads, and 23% preferred tampons.</p> <p>Always was found to be the most popular disposable brand.</p> <p>Ten percent of women report that they find MH products unaffordable.</p>
United States	<p><b>Smith &amp; Chudnow, 2018</b></p> <p><b>Conference proceedings (unpublished)<sup>lxxiv</sup></b></p>	<p>Smith and Chudnow measure the demand for MH products in the United States.</p> <p>Only the conference proceedings for this analysis is available. The paper itself is unpublished.</p> <p>The authors use proprietary data (the Nielsen Consumer Panel Data) from 2004 to 2006 for the analysis.</p>	<p>The authors find that the demand for tampons is price inelastic, with an estimate of -0.45 for low-income households. The price elasticity is -0.52 among high income households. The price elasticity for sanitary pads/pantyliners are -0.41 among low income women and -0.45 among high income households.</p> <p><b>These are currently the only price elasticity estimates available.</b></p>
Uttar Pradesh, India	<p>Aylward <i>et al.</i>, 2018.<sup>lxxv</sup></p>	<p>Adolescent girls and young women's preferences and willingness to pay for MH products using discrete choice experiments. The DCE was applied to 1200 women aged 13-24 in Uttar Pradesh, India.</p>	<p>The authors find that although price is an important predictor of product choice and preference, quality is also a crucial determinant of preference.</p> <p>Approximately 40% of their sample were unable to afford the sanitary pads that are available on the market. Women were willing to pay an average of 3.67 Indian Rupees for a commercial pad on the market valued at 4-5 Indian Rupees. Only 10% of the sample were willing to pay</p>

	<p>more than 6.0 Indian Rupees, which is the price of a product with the quality preferences that women preferred.</p> <p>Neither age nor residence (urban-rural status) was a major determinant of willingness to pay.</p> <p>Women in urban areas reported spending between 29 and 32 Indian Rupees per month on MH products, and 21-23 Indian Rupees in Rural Areas. At an average of 30 Indian Rupees per pack, this amounts to fewer than six commercial pads per woman per month.</p>
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Below is a list of available data sources for analysis on MH products. We specifically looked at the ability to use the data sources for economic analysis and modelling.

Table 6: Data review of available sources that consider MH product use

Data & Year	Country	Questions
All Media and Product Survey (AMPS, 2015)	South Africa, (data available on request)	<p>Respondents asked about the type, amount and brand of MH product use.</p> <ul style="list-style-type: none"> <li>Missing: the data set does not contain information on MH expenditure, or prices.</li> </ul>
Demographics and Health Survey Phase 8, 2019/2020	Currently Rwanda and Mauritania (not yet released)	<ul style="list-style-type: none"> <li>“During your last menstrual period, what did you use to collect or absorb your menstrual blood?”</li> <li>“During your last menstrual period, were you able to wash and change in privacy while at home?”</li> <li>“How old were you when you had your first menstrual period?”<sup>31</sup></li> </ul> <p>Missing: the data set does not contain information on MH expenditure, amount used or prices.</p>
Demographics and Health Surveys, 2018 and earlier	Several countries (data available on request)	Only pertains information on MH with regards to reproduction.
Living Conditions Survey, 2014/2015	South Africa (data available on request)	Information on MH product choice and expenditure.

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<b>National Hygiene Survey, 2014 &amp; 2018</b>	Bangladesh (not publicly available)	Information on MH product choice and expenditure.
<b>PMA2020 Nigeria, 2018</b>	Nigeria (data available on request)	Questionnaire asks about type of MH products used, WASH access and conditions, and whether a lack of MH products result in work or school missed.  Missing: the data set does not contain information on MH expenditure, amount used or prices.
<b>PMA2020 Kenya, 2016</b>	Kenya (data available on request)	Questionnaire asks about type of MH products used, WASH access and conditions, and whether a lack of MH products result in work or school missed.  Missing: the data set does not contain information on MH expenditure, amount used or prices.
<b>PMA2020 Rajasthan India, 2017</b>	Rajasthan, India (data available on request)	Questionnaire asks about type of MH products used, WASH access and conditions, and whether a lack of MH products result in work or school missed.  Missing: the data set does not contain information on MH expenditure, amount used or prices.
<b>PMA2020 Uganda, 2017</b>	Uganda (data available on request)	Questionnaire asks about type of MH products used, WASH access and conditions, and whether a lack of MH products result in work or school missed.  Missing: the data set does not contain information on MH expenditure, amount used or prices.

#### Appendix IV: Potential questions to include in future household surveys:

- Have you menstruated or had your period in the last three months? If yes, please answer the following questions:
- How many days does your period currently last?  
.....  
.....
- People use different methods of protection when their having their menstrual period to prevent bloodstains from becoming obvious. What do you use most for projection, if anything? Anything else?
  - Pads/Sanitary napkins from the shop
  - Cloth
  - Tampons
  - Nothing
  - Other .....
- How many units of your product do you typically use over a period? (e.g. 1.5 boxes of tampons, or 1 packet of pads). Please be descriptive

- .....  
 .....
- How much does one of these units cost you?  
 R.....
  
  - Do you pay for these products yourself, or does someone else buy them for you? If somebody else, who?
    - I buy them myself
    - Somebody else .....
  
  - If you pay for these products yourself: Are there times when you cannot buy other things you need because you must pay for this product? If so, what are these products?  
 .....  
 .....

## Appendix V: Market concentration in sanitary pad manufacturing and sales.

In order to gauge the level of competition in sanitary pad sales within a country, we calculate the Herfindahl-Hirschman Index (from here on referred to as the HHI index). The HHI index is a tool to measure market concentration and competition within an industry by looking at company market shares.<sup>32</sup> A higher HHI represents a higher market concentration, or less competition.<sup>33 34</sup>

The HHI is calculated from the same GlobalData source as was used to calculate the RIP. The data is once again only available for a limited set of countries, and only for the period 2015 to 2018. Unfortunately, the data is unavailable for Nigeria.

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<sup>32</sup> More specifically, it represents the sum of the square of the market shares of firms selling sanitary pads within the industry.

<sup>33</sup> Countries use various thresholds to distinguish between competitive markets versus non-competitive markets. For instance, using US standards, a market is considered non-competitive if the HHI is larger than 25 (<https://www.justice.gov/atr/horizontal-merger-guidelines-08192010>).

<sup>34</sup> The exact formula of the index is as follows:

$$HHI = \sum_{i=1}^N MS_i^2$$

Where  $MS_i$  refers to the market share of manufacturer  $i$  in the MH product market, and  $N$  refers to the number of manufacturers. The measure is not without its criticisms (Matsumoto A, Merlone U, Szidarovszky F. Some notes on applying the Herfindahl–Hirschman Index. Applied Economics Letters. 2012;19(2):181-4), but it widely applied (Rhoades SA. The Herfindahl Hirschman index. Fed Res Bull. 1993;79:188.)

Figure 10: Map: Herfindahl-Hirschman Index for Sanitary Pads 2018

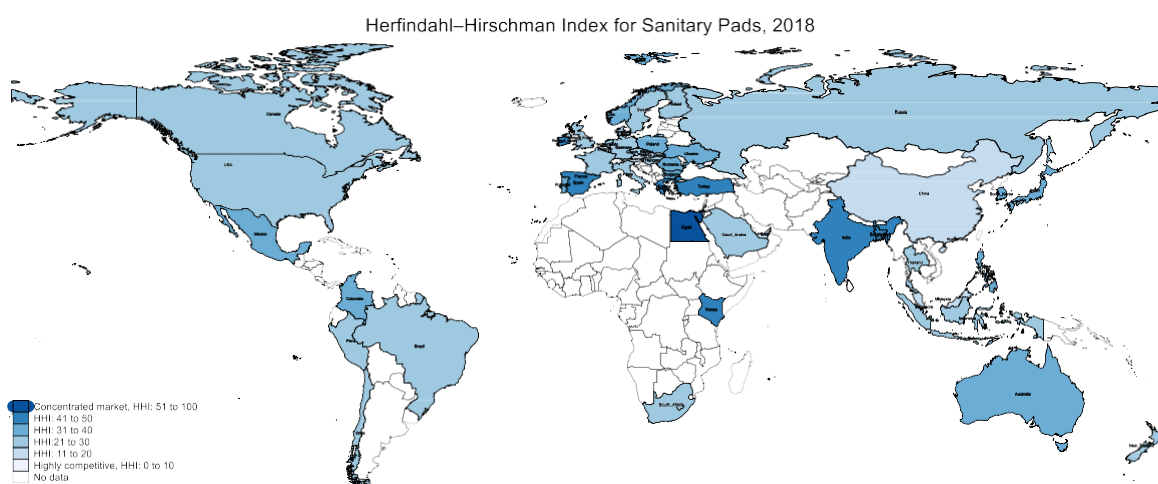
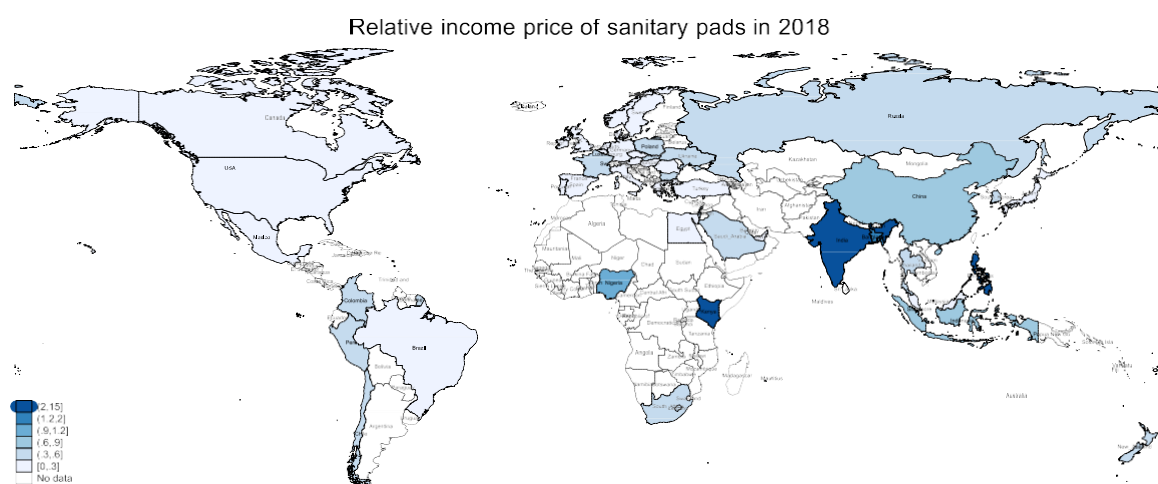


Figure 11: Map: Relative income price for sanitary pads in 2018



Above, the HHI 2018 is mapped alongside the Real RIP in 2018. A loose comparison shows similar color shading when comparing these two measures. A more precise way to analyze this relationship is a pooled ordinary least squares analysis. The relationship between the real RIP and HHI (1), HHI and Year (2) and HHI, Year and World Bank Economic Status (3) is presented in the table below.

Table 7: Regression results of the relationship between RIP and HHI, pooled.

	(1) OLS	(2) OLS	(3) OLS
	Coefficient estimate (Standard Error)	Coefficient estimate (Standard Error)	Coefficient estimate (Standard Error)
HHI	0.0217*** (0.00541)	0.0217*** (0.00544)	0.0169*** (0.00502)

Year 2015		(Reference)	(Reference)
Year 2016		-0.0556 (0.140)	-0.0549 (0.128)
Year 2017		-0.0905 (0.140)	-0.0892 (0.128)
Year 2018		-0.119 (0.140)	-0.117 (0.128)
LMIC			0.602*** (0.0943)
Observations	200	200	200
R-squared	0.075	0.079	0.239

Standard errors in parentheses  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

There is a small, positive and statistically significant relationship between HHI and RIP. A higher HHI in the sanitary pad market is associated with a higher RIP of sanitary pads. The analysis is repeated below but disaggregated by year. Although this decreases the sample size, the positive relationship between HHI and RIP remains.

Table 8: Regression results of the relationship between RIP and HHI, disaggregated by year

	2015		2016		2017		2018	
	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS
	Coefficient estimate (Standard Error)	Coefficient estimate (Standard Error)	Coefficient estimate (Standard Error)	Coefficient estimate (Standard Error)	Coefficient estimate (Standard Error)	Coefficient estimate (Standard Error)	Coefficient estimate (Standard Error)	Coefficient estimate (Standard Error)
HHI	0.0219* (0.0116)	0.0184* (0.0104)	0.0148 (0.00969)	0.0128 (0.00881)				
LMIC	0.733*** (0.215)	0.623*** (0.194)	0.557*** (0.183)	0.495*** (0.167)				
Observations	50	50	50	50				
R-squared	0.271	0.247	0.221	0.210				

Standard errors in parentheses  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## Appendix VI: Modelling the impact of a tax policy change on MH products

In order to evaluate the impact of a change in the VAT/GST policy on MH products, we created a preliminary model to simulate the impact of the policy change on MH product consumption, government revenue from MH taxes, MH product retail prices and household distributional consequences will be.

The model is based on the TetSim tobacco tax simulation model<sup>lxxvi</sup>, but draws on individual-level tax simulation models from the literature<sup>lxxvii</sup>. The tax simulation model is a policy tool that estimates the quantitative impact of a fiscal policy change on several variables. In practical terms, the model is an excel file with built in structures and equations.

The model uses the principle of price and income elasticity (responsiveness) to predict the impact of a tax change on the relevant outcome measures and is adaptable to a range of tax structures and levels. This model is advantageous in its simplicity, minimal data requirements and translatability to policy makers. A description of the assumptions, key parameters and data to predict precise and reliable estimates is presented in the appendix. **Only a summary of the final outputs for two country case studies, Nigeria and South Africa, are presented and discussed here.**

There are a couple of limitations to the model that should be noted. Firstly, the model was built with publicly available data and desk research, and without contacting government employees. This is a result of the limitations posed by the current COVID19 pandemic. To finalize the models, they should be presented to the necessary persons to receive adequate feedback. This is common practice with tobacco tax simulation modelling.

Another major limitation is the paucity of research on price elasticities of MH products. There is very little quantitative evidence on how women would respond to a change in the price of MH products. Reactions may include buying more of the product or switching to other types of products. We are also likely to see women from different wealth backgrounds respond differently. Somebody who is affluent is not likely to change their MH product use with a change in price. Alternatively, somebody who is very poor is likely to be very price sensitive. We are unable to account for these nuances in this analysis. The only available estimate is from a US study, and we use the price elasticity for low income households.<sup>lxxviii</sup>

## **Assumptions and parameters of the tax simulation model**

The excel file consists of 6 sheets:

### **1. Proposed policy change sheet:**

The opening sheet allows the user to choose between three potential policy changes. These include a VAT zero-rating, a VAT exemption or a reduction in VAT.

Secondly, the user needs to choose how the MH product industry will respond to a change in tax policy. This can either be an equally size change in price, a partial drop in price or a full absorption of the tax change into their profit margin. The effectiveness of the change in tax as a tool to improve affordability will depend on how the tax change influences retail price. Women will change their demand for MH products in response to changes in the retail price, not in response to the tax change.

A drop in the VAT being charged on MH products should technically result in the drop of the retail price. The magnitude of the price decrease, and therefore its effectiveness, depends on the degree to which the tax decrease is passed through to the MH product consumers, which is to some extent dependent on the market structure. Manufacturers and retailers in a less competitive market structure may choose to absorb the tax cut in the retail price, thereby increasing their profit margin without losing market share or demand for their products. Cotropia and Rozema use a difference-in-difference approach to examine the impact of a 2005 tampon tax repeal in New Jersey on prices by comparing average change in prices in New Jersey to neighboring states. The authors found that in the state studied, the tax cut was well targeted and shifted to low-income consumers. However, there was large product variety with over 37 brands studies, indicating a

competitive market.

2. **Inputs** sheet: This is the main macroeconomic indicator input sheet. The user needs to populate the orange boxes in the model.
  - Average price and market share of sanitary pads in the Local Currency Unit. The model will adjust for inflation and exchange rate (LCU to Dollar) if the year of the reported prices do not match the year of analysis. The model allows for different products to be considered, and final results are weighted for market share.
  - VAT: The user needs to report the VAT rate on the point of sale, as well as the VAT rate on raw materials. The user also needs to report the base value, or cost of the raw materials. If no value or cost is reported, the cost is assumed to be 20% of the price of the most popular domestic brand.
  - Economy and demographics: This include GDP, the economic growth rate, number of women of menstruating age, CPI (2010 to 2019) and the LCU to Dollar exchange rate (2010 to 2019).
  - Annual consumption/sales: The total, annual amount of MH products being used/sold in the country.
  - Consumer response: price and income elasticity. Price elasticity estimates are necessary to estimate how responsive consumption will be to a change in the price of MH products. To calculate elasticities, one requires price and consumption data that varies over time (time-series) or alternatively across areas (cross-sectional analysis). These estimates are likely to be limited in a LMIC setting given data limitations. There exists a paucity of these estimates. One conference presentation using US data (Nielsen consumer panel data) finds that the demand for tampons is price inelastic, with an estimate of -0.45 for low-income household. Simply put, a 10% drop in the price of tampons would result in a 4.5% increase in the demand for tampons among low-income households.<sup>lxxix</sup> As this is the only current estimate, this is the assumed price elasticity in the model.

Similarly, an increase in income will result in an increase in consumption. The country's GDP growth is used as a proxy for an increase in household income. A lack of research means that there are no income elasticity estimates available. Income elasticity is currently not included in the calculation.
  - Consumer response: The use needs to input the number of Units required per woman per month.
3. **Distributional inputs** sheet: The distributional input sheet is used to assess the impact of the tax change across wealth/income/expenditure deciles in the country. It is necessary to assess whether the tax change will benefit lower income households.
  - The inputs from the distributional inputs sheet needs to be calculated from a household survey.
    - Poor/non-poor decile cut-off (e.g. this decile and below are classified as being poor): An assumption needs to be made about the poverty line cut-off. That is, which deciles are poor, and which are non-poor.
    - Disaggregated by decile: The sheet requires population size by age and gender, the number of households, and the number of pads/units per women per annum.
    - Disaggregated by decile: Expenditure on pads per women per annum, as well

as total household expenditure.

#### 4. **Outputs** sheet:

The impact of the change in tax policy on consumption, retail price and government revenue are presented here. The sheet consists of two main tables: a baseline (prior to tax change) and the key parameter after the tax change.

The user does not need to change anything on this sheet. The following key parameters are calculated:

- Consumption: MH products used before and after the tax change. This calculation takes the change in retail price and price elasticity into account.
- Retail price of MH product.: the retail price of the product before and after the change in the tax policy. This is a summation of VAT and the net-of-vat price.
- VAT: The amount of VAT being charged on MH products, before and after the tax change.
- Net-of-vat price: This is the difference between the retail price and VAT. If no other tax is charged on MH products, this is the final amount that will go to the retailer and producer. The calculation of the net-of-vat price after the tax change considers the user's choice of industry response from the "Proposed Policy Change" sheet.
- VAT tax burden: This is the percentage of the retail price which consists of VAT.
- VAT Revenue: The estimated amount of VAT revenue collected. This is calculated by multiplying consumption with the VAT amount.
- Net-of-vat Revenue: This is the remainder of revenue from MH product sales.
- Annual consumption per capita: Total consumption of MH products divided by the menstruating population.

#### 5. **Distributional outputs** sheet:

The impact of the change in tax policy across wealth/income/expenditure deciles is reported in this sheet. It is necessary to assess whether the tax change will benefit lower income households. ‘

The user does not need to change anything on this sheet. The following key parameters are calculated:

- Actual expenditure as a percentage of Required expenditure: This parameter calculates the distance between actual and required expenditure on MH products, where required expenditure is a product of the average number of women in a household, the price of MH products and the assumption on required monthly sanitary products. For this report, we assume women require 2 units of sanitary pads per month.
  - The parameter considers differences in household sizes and the number of women in households (if the data is available).
  - The percentage is calculated before and after the tax change.
- Proportional expenditure by decile: Expenditure on MH products as a percentage of total household expenditure, disaggregated by decile. The code automatically considers the poor/non-poor cut-off stipulated by the user. This is used to calculate the equity gains ratio.
- Equity gains ratio: The equity gains ratio is used to assess whether a product is

disproportionately used by the poor, and whether it makes distributional sense to remove VAT. It is calculated by dividing the proportional expenditure of the poor by the proportional expenditure of the non-poor. The value reflects the average proportional spending by the poor to the non-poor. For instance, a value of 5 indicates that the poor spend 5 times that of the non-poor on MH products within their budgets.

- Benefit-cost ratio: VAT savings to households that are poor, divided by VAT revenue foregone to households that are classified as non-poor. The gain to the non-poor should not be more than twice the benefit to the non-poor.

#### 6. Summary sheet:

The summary sheet neatly summarizes key parameters. These are discussed in the main text.

## Appendix VII: The characteristics and distribution of MH product use

It is important to consider whether the proposed fiscal policies will be effective in targeting low-income women. In this section, the goal is to evaluate whether a VAT/GST tax policy change would have potentially reached the objectives it set out to achieve. Although we are unable to directly measure the impact of the tax changes, we can draw conclusions based on the consumption of the MH products prior to the tax changes.

This would include the MH product usage patterns according to household wealth, and the benefits these households would derive in the scenario of a zero rating.

In this report, we consider the impact of the VAT/GST policy changes focusing on **vertical** equity (distributional consequences across wealth groups).

### Methodology

**The first step is to understand the determinants and distribution of demand of MH products.** To this end, we draw on the range of data sources listed in the table in the previous section.

**Vertical equity: Concentration curves are plotted for each country.** The concentration curve is a tool to display the share of MH product consumption by the cumulative proportions of individuals in country *x*'s population ranked from the poorest to the wealthiest. The concentration curve is therefore used to illustrate the inequality of products being used by wealth groups: it plots the cumulative distribution of MH product use as a function of the cumulative distribution of the menstruating population by wealth distribution. A curve that lies above (below) the diagonal shows that use is more concentrated among the poor (affluent). A curve that lies on the 45-degree angle line indicates complete equality.<sup>lxix</sup>

**Reporting bias:** A concern for household survey data on MH product consumption is the presence of underreporting and missing observations. These methodological issues would be particularly pronounced in countries where there is still much stigma around MH. For instance, in the South African report by an independent panel of experts, they find that approximately 50% of the Living Conditions Survey had underreported MH product use.

### Data

We draw on the various data sets listed in data review section to identify the characteristics and

determinants of MH product use among women in the countries of interest. The following data sets are used:

**Bangladesh:** The Bangladesh National Baseline Survey (2018) was accessed and used to calculate differences in MH product consumption across wealth groups. The survey is a nationally representative survey aimed at measuring water, sanitation and hygiene indicators in Bangladesh. A total of 4751 women were sampled, of which 4655 answered MH product questions. The MH product use data is collected for women aged between 11 and 49.<sup>lxxxix</sup>

**Kenya:** The PMA 2020 data on MH product usage is available for Kenya in 2016. Questions on MH product usage was asked to 6 051 women, of which 4 573 answered.<sup>lxxxix</sup>

**Nigeria:** The Performance Monitoring and Accountability 2020 (PMA2020) data set is available and used for Nigeria. The data was captured in 2018, and sample 11 479 women aged between 15 and 49, of which 8 469 reported on the MH product consumption.<sup>lxxxix</sup>

**South Africa:** In terms of data availability, the All Media and Product Survey (AMPS) from 2015 is available in order to gain a deeper understanding of economic differences in MH product use in South Africa. The AMPS data is a nationally representative survey of South African adults (aged 15+) focusing on the consumption of media, products and services. Questions regarding MH product usage is captured for all women aged 15 and older. While there is a total of 12 827 women in the sample, 12 373 reported on MH product use.<sup>lxxxix</sup>

## The characteristics of MH product use

**Sanitary pads:** Sanitary pads are the most used MH products in Nigeria (67.2%), South Africa (67.9%) and Kenya (86%), while slightly less than a third of Bangladeshi women use sanitary pads. In all three countries but Kenya, sanitary pad use is more prevalent among urban as opposed to rural women. This is likely the result of differences in wealth between urban and rural residence, with urban women being more able to afford sanitary pads.

As expected, sanitary pads are used more by wealthier (quintile 5) than poorer (quintile 1) women. This distorted distribution of use is particularly evident in South Africa, where most sanitary pads being used in the country falls outside the scope of the lowest quintile. Sanitary pads are a less popular option among the top quintile, most likely due to their preference for tampons as a MH product choice. Only in Kenya do we observe a fairly equal distribution of sanitary pad use across wealth groups.

The mean age of sanitary pad users is also in their mid to late twenties. However, there is no clear trend when it comes to their marital status. We do see that sanitary pad users are more likely to have some education (secondary and lower). In Bangladesh and South Africa, where we have information on employment status, we find that sanitary pad users are most likely houseworkers (57% in Bangladesh) or unemployed (71% in South Africa). This is counter to what one would expect given the relationship between wealth status and sanitary pad use.

We include information on whether women use family planning (available for Nigeria and Kenya) and their point of access (available for Nigeria) in order to gauge whether this is a viable access point for free distribution of sanitary pads. 31% of Nigerian sanitary pad users currently use family

planning, but they predominantly access this at a private facility. 47% of Kenyan sanitary pad users access family planning. Free distribution of sanitary pads through existing family planning access points are a potential point of distribution in these countries.

Table 9: Characteristics of sanitary pad use in Nigeria, Bangladesh, South Africa and Kenya

		<b>Nigeria</b>	<b>Bangladesh</b>	<b>South Africa</b>	<b>Kenya</b>
<b>Overall</b>		67.2%	30%	67.9%	86%
<b>Residence</b>	Urban	76%	55%	53%	35%
	Rural	24%	45%	47%	65%
<b>Wealth</b>	Quintile 1 (poorest)	6%	6%	3%	15%
	Quintile 2	15%	11%	20%	18%
	Quintile 3	21%	18%	40%	21%
	Quintile 4	26%	25%	23%	21%
	Quintile 5 (richest)	32%	41%	14%	25%
<b>Mean age of users</b>		28.25	24.68		26.8
<b>Mean age group of users</b>	15-24			30%	
	25-34			29%	
	35-49			27%	
	50+			13%	
<b>Marital status</b>	Currently married/cohabiting	49%		30%	50%
	Divorced/Widowed/Separated	4%		7%	7%
	Single	46%		63%	43%
<b>Education</b>	No education	3%	4%	1%	2%
	Secondary or lower	66%	84%	86%	52%
	Tertiary education	31%	12%	14%	45%
<b>Employment</b>	Employed		12%	29%	
	Unemployed			71%	
	Housework		57%		
	Student/Disable/Beggar		31%		

<b>Currently using Family Planning (of any kind)</b>		31%		47%
<b>Among those that used FP, place where Family planning was accessed</b>	Public/governmental facility or NGO	26%		
	Private facility	74%		
<b>Sample size</b>		8,352	4,655	12,373
				4,502

## Use of Cloths as a MH product

This section focuses on women who self-report using cloth (either old or new) as a menstrual hygiene product. Unfortunately, there is no information available for South Africa, as the data set focuses on commercial products. The data shows that cloth use is still common in Bangladesh, with 66% of women reporting using cloth as a MH product. This is slightly lower in Nigeria (31.2%) and Kenya (14%). Cloth users are more likely to be rural (71% in Nigeria, 64% in Bangladesh and 90% in Kenya). In Nigeria and Kenya, we see that women using cloths are more likely to fall within the lower quintiles. This is not the case for Bangladesh, where we observe a fairly equal distribution of cloth use across wealth quintiles. 30%% of cloth users in Bangladesh fall within the top 2 wealth quintiles.

Most women using cloths as MH product are married or cohabitating (more than 70% in Nigeria and Kenya), or their form of employment or daily activity classified as housework (75% in Bangladesh). Although it is unclear from these characteristics, this could indicate that a woman's position and power within a household plays a role in her choice of MH product. This requires further analysis. While most women using cloths have some education (secondary or lower), we do observe a larger portion of women in this category having no education at all (compared to sanitary pad users). This endorses the idea that cloth is an inferior quality MH product and that women who can afford to buy sanitary pads would rather do so. Twenty-one percent of Nigerian women who use cloth as a MH product, and 54% of Kenyan women who use cloth as a MH product, also access family planning. There is once again scope for using these established family planning distribution points to distribute free and safe MH products.

Table 10: Characteristics of cloth use in Nigeria, Bangladesh, and Kenya

		Nigeria	Bangladesh	South Africa	Kenya
<b>Overall</b>		31.2%	66%		14%
<b>Residence</b>	Urban	29%	36%		10%
	Rural	71%	64%		90%
<b>Wealth</b>	Quintile 1 (poorest)	50%	23%		39%
	Quintile 2	27%	24%		31%
	Quintile 3	13%	22%		19%
	Quintile 4	7%	19%		9%
	Quintile 5 (richest)	3%	11%		2%
<b>Mean age of users</b>		29.28	29.27		32.8
<b>Mean age group of users</b>	15-24				
	25-34				
	35-49				
	50+				
<b>Marital status</b>	Currently married/cohabiting	70%			74%
	Divorced/Widowed/Separated	5%			11%
	Single	25%			15%
<b>Education</b>	No education	36%	24%	UNAVAILABLE	12%
	Secondary or lower	60%	75%		72%
	Tertiary education	4%	1%		17%
<b>Employment</b>	Employed		10%		
	Unemployed				

	Housework		75%		
	Student/Disable/Beggar		15%		
<b>Currently using Family Planning (of any kind)</b>		21%			54%
<b>Among those that used FP, place where Family planning was accessed</b>	Public/governmental facility or NGO	50%			
	Private facility	50%			
<b>Sample size</b>		8,352	4,655		4,502

### Characteristics of tampon use as a MH product

South Africa is the only country with enough tampon use to make this kind of analysis possible. In Nigeria, Bangladesh and Kenya, tampon use amounts to less than 2%.

Slightly more than 18% of South African women use tampons. Women who use tampons are largely situated in urban areas (61%) and have at least some form of education (80% have at least secondary education or less). Among women that use tampons, the majority fall in quintile 3 (39%), then quintile 4 (27%) and quintile 5 (19%). Among South African women who use tampons, the majority are single (63%). We also see that they are mostly unemployed (67%), but this could reflect the South African unemployment rate more than anything else.

Table 11: Characteristics of tampon use in South Africa

		Nigeria	Bangladesh	South Africa	Kenya
<b>Overall</b>				18.3%	
<b>Residence</b>	Urban			61%	
	Rural			39%	
<b>Wealth</b>	Quintile 1 (poorest)			2%	
	Quintile 2			13%	
	Quintile 3			39%	
	Quintile 4			27%	
	Quintile 5 (richest)			19%	
		Less than 2% consumption	Less than 2% consumption		Less than 2% consumption

<b>Mean age of users</b>		
<b>Mean age group of users</b>	15-24	29%
	25-34	34%
	35-49	27%
	50+	10%
<b>Marital status</b>	Currently married/cohabiting	30%
	Divorced/Widowed/Separated	8%
	Single	63%
<b>Education</b>	No education	1%
	Secondary or lower	80%
	Tertiary education	19%
<b>Employment</b>	Employed	33%
	Unemployed	67%
	Housework	
	Student/Disable/Beggar	
<b>Currently using Family Planning (of any kind)</b>		
<b>Among those that used FP, place where Family planning was accessed</b>	Public/governmental facility or NGO	
	Private facility	
<b>Sample size</b>		12,373

## Delving deeper into socio-economic differences in MH product use

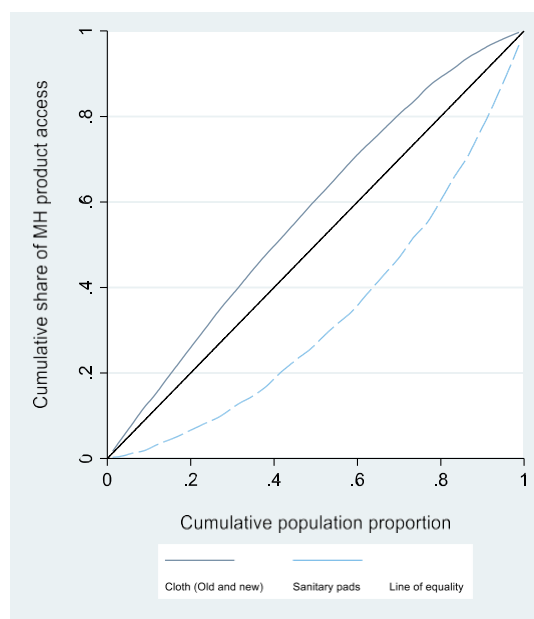
In this section, we delve deeper into the distribution of MH products being used within the countries of interest. This will give some guidance on whether removing VAT/GST on MH products will target women from poorer socio-economic backgrounds. This is done by plotting **concentration curves for each country of interest**. The concentration curve is a tool to display the share of MH product consumption by the cumulative proportions of individuals in country  $x$ 's population ranked from the poorest to the wealthiest.

### Bangladesh

Survey results show an overwhelming use of cloth among Bangladeshi women. On average 66% of menstruating women use either new or old cloth as a MH product, while approximately 30% of women use Sanitary Pads. The Survey does not directly ask women about their tampon use, but if women were to use tampons it would be included in the “other” category, which constitutes less than 2% of total consumption.

The concentration curve for the products across wealth distribution is shown in the figure below. The graph shows that although cloth use is concentrated among women of lower wealth households, access to sanitary pads are largely concentrated among women from higher wealth groups in Bangladesh (the curve for sanitary pads is below the line of equality). 70% of the sanitary pads users in Bangladesh consist of the 40% wealthiest proportion of the population.

Figure 12: Distribution of various MHH products being used by women across the wealth distribution, Bangladesh 2018

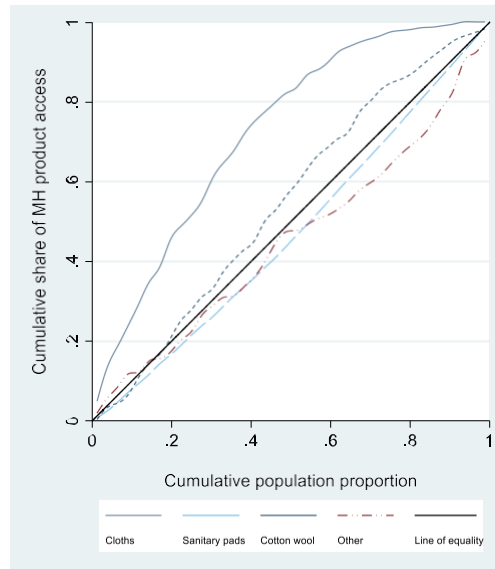


Source: created from National Hygiene Survey for Bangladesh, 2018

## Kenya

The concentration curve for the products across wealth distribution is shown in the figure below. The graph shows that although cloth and cotton wool is still mostly used by poorer women, access to sanitary pads are fairly equally distributed across wealth groups in Kenya (the curve for sanitary pads is close to the line of equality).

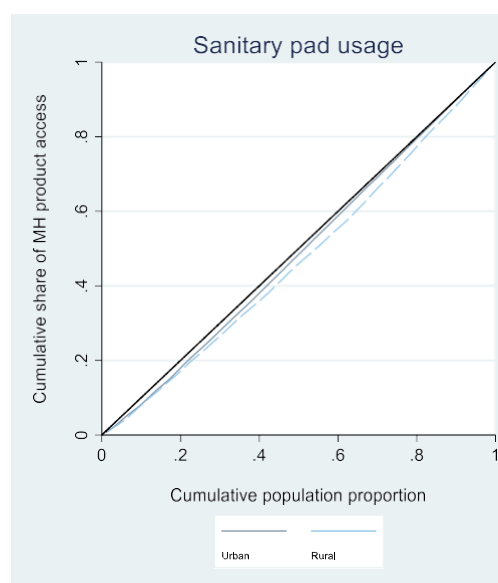
Figure 13: Distribution of various MH products being used by women across the wealth distribution, Kenya 2016



Source: created from PMA 2020 data for Kenya 2016.

A closer look the concentration curve for sanitary pad usage, disaggregated by urban-rural residence shows that equality in pad usage is higher in urban areas. Among the rural population, there is still a slightly higher usage of sanitary pads among the more affluent women.

Figure 14: Distribution of Sanitary pads being used by women across the wealth distribution, disaggregated by residence (Kenya 2016)

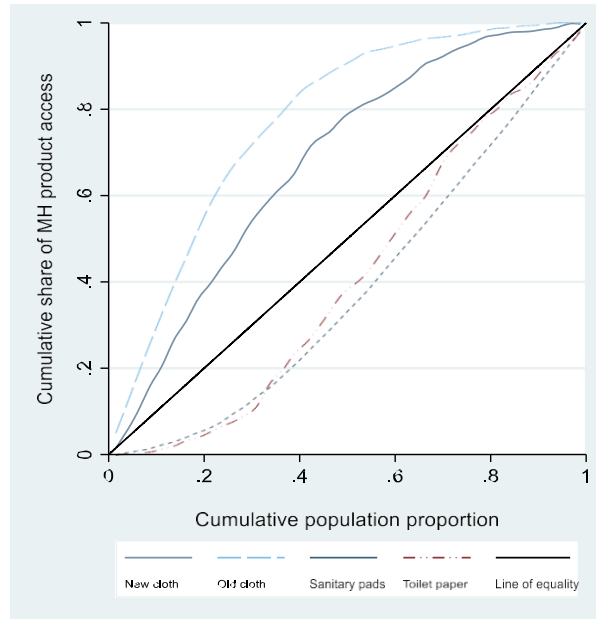


Source: created from PMA 2020 data for Kenya 2016

## Nigeria

The curve below supports statements made by advocates that in 2018 cloths (old and new) are being used vastly amongst the poorer population. Nearly all cloth as MH product usage is being used by the bottom 60% of women in the wealth distribution. Usage of sanitary pads is more concentrated among the affluent. Although not shown here, tampon usage is almost non-existent in Nigeria. This is corroborated by other, smaller surveys.<sup>lxxxv</sup> Only 0.43% of women reported using tampons, and these women were predominantly in the highest wealth quintile.

Figure 15: Distribution of various MH products being used by women across the wealth distribution, Nigeria 2018



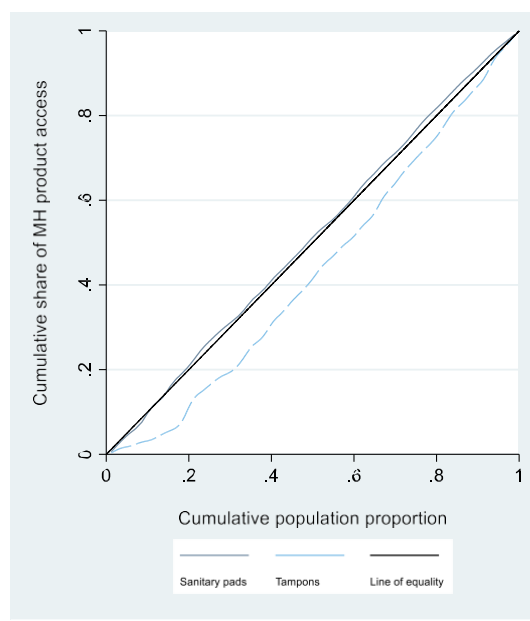
Source: created from PMA 2020 data for Nigeria 2018.

## South Africa

The concentration curves below depict equal levels of sanitary pad usage between the more affluent and the poor. Tampon usage is slightly more concentrated among the wealthier population. In South Africa, only sanitary pads (and not tampons) were VAT zero-rated. Anecdotal evidence from interviews with stakeholders revealed that one of the explanations for this was that tampons are only used by wealthier women.

While it is true that tampons are not necessarily being used as much by women in lower wealth quintiles in South Africa, the statement heard during interviews does not necessarily give the full picture. Tampon users fall largely in wealth quintiles 3 (39%) and 4 (27%) in South Africa. Given the unequal distribution of wealth in South Africa, quintiles 3 and 4 are very much economically disadvantaged in the country.

Figure 16: Distribution of various MH products being used by women across the wealth distribution, South Africa 2015



Source: created from AMPS, 2015

## Appendix VIII: The Legislative considerations of a MH product tax change

We observe that the policy changes on MH product taxes are being legislated in a variety of forms. In some countries, it is standalone legislation focusing just on MH products. For example, one of the first countries that repealed the VAT on pads and tampons, Kenya, passed this **single item legislation** in 2004. In Canada, removing the tax on MH products was done via single item legislation in July 2015.<sup>lxxxvi</sup>

In some countries, the **legislation includes other products** deemed essential such as diapers (e.g. California<sup>lxxxvii</sup>, Washington, D.C.<sup>lxxxviii</sup>, Virginia<sup>lxxxix</sup>), leak-proof underwear (e.g. Australia<sup>xc</sup>) or other food considered necessities.<sup>xc</sup> In South Africa and Nigeria, MH products were included in the basket of essential goods with no VAT during the debate about VAT increase.<sup>xcixciii</sup> In Utah, the 2019 tax removal on menstrual products was included in Utah's massive tax reform bill covering many items.<sup>xciv</sup>

The choice of products covered by the legislation is country specific and depend on framing of the issue (e.g. gender justice, poverty, achieving SDGs, etc.).<sup>xcv</sup> In some cases, it is useful to have tax removal on MH products linked to a bigger topic (e.g. SDGs) since it is easier to secure a budget appropriation to support the issue.<sup>xcvi</sup> In South Africa, however, it would have been easier to debate zero-rated VAT on MH products as a single issue.<sup>xcvii</sup> Since the debate in South Africa centered around the issue of poverty, only pads achieved the zero-rated status. Tampons were excluded since the product was perceived by be consumed by wealthier women (with no data underlining this perception).<sup>xcviii</sup>

**There are other ways to reduce/remove tax on MH products than a legislative action.** Colombia, for example, removed the tax on tampons and pads by the unanimous decision of the Constitutional Court on 14 November 2018. The ruling was based on gender equity grounds.<sup>xcix</sup> A state-wide ballot was another instrument for the removing the tax, used in the US (e.g. Nevada in 2018).<sup>c</sup>

**There are also legislative actions pertaining to a block of countries.** For example, in 2013, the East African Legislative Assembly (EALA) passed a resolution urging members of the East African Community (EAC) to abandon their taxes on sanitary pads.<sup>ci</sup>

These findings are summarized in the table below:

*Table 12: Legislative form of MH product tax changes*

Legislative form	Countries	Notes
<b>Standalone legislation</b>	Kenya, Canada	Usually driven by gender equity issue
<b>Included in law covering products deemed essential</b>	South Africa, Nigeria, Australia, California, Washington, Virginia, Utah, Germany	VAT increase motivated including MHP in the essential product category; motivated by poverty/affordability.
<b>Decision of the Constitutional Court</b>	Colombia	
<b>State-wide ballot</b>	Nevada	
<b>Statutory Regulatory Order</b>	Bangladesh	
<b>Resolution</b>	East African Legislative Assembly	It urged members of the East African Community to abandon taxes on sanitary pads.

### Cases of temporary tax removal

There have also been incidences where the MH product taxes have been temporarily removed. Zimbabwe used a Statutory Instrument to temporarily exempt imported sanitary wear for women (including pads, tampons and menstrual cups) from import duty and VAT.<sup>cii</sup> Bangladesh issued Statutory Regulatory Order to waive VAT and supplementary import duty on the imported material used for manufacturing MH products for 2 years.<sup>ciii</sup> Tanzania<sup>civ</sup> and several US states (e.g. California<sup>cv</sup> and Rhode Island<sup>cv</sup>) simply amended the state budget in anticipation of no tax income from the MH products. Removing tax via a budget adjustment is easily reversible as evident in Tanzania.<sup>cvi</sup>

### Other forms of regulatory change

Bangladesh amended the Value Added Tax and Supplementary Duty Act 2012<sup>cvi</sup> that allowed the National Board of Revenue to issue a Statutory Regulatory Order (SRO) on June 30, 2019 to waive VAT and supplementary import duty on the imported material used for manufacturing MH products for 2 years.<sup>cix</sup> The SRO had numerous conditions that must be met by those who benefit from the policy. For example, a beneficiary must have a testing lab to test products' quality and it must invest at least Tk 250 000 000 into business expansion. The goal of the policy was to support creation of large local businesses that would be capable of competing with foreign companies. In the end, only one company, Square Toiletries that heavily lobbied for the tax removal with conditions, is able to benefit from this policy. However, there are signs that few other companies are close to meeting the requirements and will be able to benefit from the tax removal.<sup>cx</sup>

In an attempt to reduce prices of MH products, Kenya removed duty on imported pads in 2011<sup>cxii</sup> and VAT and excise on raw material used in their productions in 2016.<sup>cxii cxiii</sup>

In Tanzania, the Minister of Finance proposed in 2019 to temporary reduce the corporate income tax to 25% for new investors in sanitary pad production. This measure aimed at attracting new investors, creating employment opportunities, and saving foreign exchange for the import of MH products.<sup>cxiv cxv</sup>

It is not clear how these tax cuts supporting the supply of MH products impact the retail price due to profit seeking behavior of the private sector. Unless there is healthy competition in the market, such measures may only increase their profit margins with limited impact on prices.

### **Restrictions on ability to change MH product tax policy**

Some jurisdictions are limited in their power to completely remove VAT/GST on MH products. For example, European Union countries are barred from having zero-rated VAT products. The lowest rate possible under EU VAT law is a 5% VAT.<sup>cxvi</sup> Ireland is the only EU country to have a zero tax rate on MH products as this rate was in place prior to EU legislation imposing minimum rates.<sup>cxvii</sup> The Canary Islands took advantage of its special status under the EU laws and repealed the VAT on sanitary products in 2018<sup>cxviii</sup>.

Compliant with the EU regulations, the German Parliament voted in November 2019 removed the "luxury goods" status from feminine hygiene products making them "daily necessities". This resulted in a VAT reduction from 19% (for luxury goods) to 7% (the rate for daily necessities) on 1 January 2020.<sup>cxix</sup>

### **Challenges and risks of removing MH product taxes**

The main challenge is that the tax removal will have **no or minimal impact on the retail price**. This was the case, for example, in Tanzania and India.<sup>cxx</sup> In Germany, the manufacturers had proposed "double-digit" price increases after a reduction of tax from 19% to 7% in order to bump the price up to previous levels.<sup>cxxi</sup>

In many cases the goal is to remove VAT or sales tax, yet MH products are subject to other taxes as well. For example, sanitary pads in South Africa, face a 20% import tax, and imported raw materials is also subject to taxes.<sup>cxxii</sup>

In South Africa, some retailers introduced VAT-free sanitary pads and dropped prices, even prior to adoption of zero-rated VAT on MH products.<sup>cxxiii</sup> Shoprite supermarket chains, for example, removed VAT and dropped the price of All Ultrex range sanitary pads to R10.99 (Ultra Plus 10 pads and Ultra Slim 12 pads packs<sup>cxxiv</sup>), an amount that was, on average, 50 percent less compared to other brands and deals.<sup>cxxv</sup> The supermarket ran a corporate social responsibility campaign to promote this decision.<sup>cxxvi cxxvii</sup> A study collecting monthly data on expenditures among low-income household in Pietermaritzburg, South Africa, showed that sanitary pads were 15% cheaper in September 2019 compared to September 2018<sup>cxxviii</sup> (sanitary pads became zero-rated in April 2019 and 12% price drop would have occurred if tax was completely removed), but the price collection was not systematic in terms of brands and package sizes, so no conclusion can be made about the impact of tax removal on prices.

**Price reductions are usually not uniform across products<sup>cxxix</sup>, the price reduction might be only temporary** after the publicity about the issue subsides,<sup>cxx</sup> and manufacturers manipulate prices by **changing the package sizes.**<sup>cxxxi</sup> This was reported especially by stakeholders in South Africa.<sup>cxxxi</sup>

In New Jersey, the price drop was greater for low-income consumers since tax break was over-shifted to prices for consumers without a college degree who saw prices dropped by 12.4% as opposed to the average drop of 7.3%.<sup>cxxxiii</sup> It is difficult to assess the impact of a tax removal on prices and tax revenue if there is **no follow-up evaluation** as was the case in many countries as evidenced by extensive literature review and confirmed by stakeholders from South Africa and Kenya.

To make products affordable/available to the target population, **tax removal might not be sufficient** and additional measures are needed. For example, the policy makers in South Africa and India concluded that an **additional instrument** is needed for the MH product to be available to the poor<sup>cxxxiv</sup> and began to distribute free/subsidized sanitary pads to selected schools.<sup>cxxxv</sup>

Even though the tax in Kenya was repealed in 2004, the government perceived a need for additional measures to achieve the objective of providing affordable products to those in need. To increase affordability, Kenya removed import duty on final products in 2011 and VAT and excise on raw material in 2016.<sup>cxxxvi, cxxxvii, cxxxviii</sup> In 2011, the Kenyan government decided in 2011 to supplement the VAT removal by distributing free sanitary pads to schools in low-income communities.<sup>cxxxix</sup> This program has not been nearly as effective as hoped, because demand continues to outstrip supply and there is no structure in place to track what happens to the pads and whether girls getting them at all.<sup>cxl</sup> There are reports that in some cases the teachers are stealing the pads.<sup>cxli, cxlii</sup> In Nigeria, some mothers **disallow** their daughters from **collecting the free pads** because they cannot sustain buying it for them.<sup>cxliii</sup>

The major challenges and risks of removing MH product taxes are listed in the table below.

Table 13: Challenges and risks of removing MH product taxes

Challenge/risk	Countries	Notes
<b>No or minimal impact on retail price</b>	Tanzania, India, Bangladesh, Germany	Other taxes (e.g. import tax; local tax) are still in place; lack of competition; price fixing.
<b>Price reductions not uniform across product</b>	South Africa	
<b>Price manipulation by introducing smaller packages</b>	South Africa	
<b>Additional policies needed to increase</b>	South Africa, Kenya, India	Usually in the form of free provisions to those in need.
<b>Lack of understanding of tax structure</b>	Nigeria, Kenya, Bangladesh	VAT on raw material still in place in Nigeria; VAT removal has limited impact on price.
<b>Lack of understanding of tax law</b>	India, Nigeria	Zero-rating vs. exemption and implication for tax credits; exemption advantage importers and large companies.
<b>Goal of tax removal is not clearly articulated</b>	Bangladesh, South Africa	Is this a business case (i.e. cost-benefit analysis is needed), gender equality case, or a poverty issue?

<b>Policy wants to address multiple issues</b>	Bangladesh. Tanzania	The policy aimed at 2 goals: increase affordability and promote large local industry that could compete with foreign companies An increase of import duty to protect the local business; selling cheap products with inferior quality with negative health consequences.
<b>Corporate interests</b>	Bangladesh, Kenya	
<b>Free provision discouraged by mothers who cannot afford to buy disposable MHP on No/insufficient evaluation of impact on</b>	Nigeria  South Africa, Kenya	

## Appendix IX: Menstrual Health Product Pricing in LMICs

### Bangladesh

- Bangladesh levies 45% supplementary duty on imported pads as part of a push to encourage local production. As result the local sanitary napkin makers hold about 90% of the market, which used to be dominated by imported products. This led to lower prices, and the market size of sanitary napkin rose from Tk 25 crore in 2008 to Tk 350 crore in 2019. Some companies are making effort to make MH products more affordable. For instance, Square has rolled out a lower price pad named Femina which is said to be free of any profits. However, prices are still higher in Bangladesh compared to India where the average price of a high-quality sanitary napkin is Rs 7.62 (Tk 9.14). In Bangladesh the comparable price is about Tk 12.<sup>exliv</sup>
- Square occupies about 80% of the market. Its most known brand Senora has 65% market share. Imported pads have < 10% of the market. There are very few users of tampons in Bangladesh. It has very limited distribution and found in superstore only. A 20-piece pack's price range is 300 – 350 tk.<sup>exlv</sup>
- Square Toiletries has a lot of political power and lobbied for both removal of tax on imported raw material (with conditions which put it in advantage over its domestic competitors), and for adding supplemental import tax of 45% on imported final products. It succeeded in both for the period of 2 years, and it is currently lobbying to make both changes permanent. The company responded to the tax removal in 2019 with no changes in prices of its flag ship product Senora (65% of the market), but it introduced of low-cost product Femina with price 5.60 Tk/pad that is being cross-subsidized from Senora that costs 8.7- 13Tk/pad. However, Femina brand was launched already in 2016. The company is fighting the social taboos and expanding the distribution channels (not only pharmacies, but also elsewhere) since it views these as major obstacles to market expansion. It is collaborating with religious leaders who seem to play an important role in addressing the MHM taboos. The company engages in social corporate responsibility by collaboration with foreign donors and providing free pads to the garment industry. The company's

spokeswoman believes that spending 50 Tk per cycle is a reasonable price.<sup>cxlvi</sup>

- Ella Pad is a reusable pad produced and sold in Bangladesh and costs Tk 20 per a piece. One-year supply of 6 pads is being sold for Tk 150.<sup>cxlvii</sup>

## Nigeria

- Between 2015 and 2019, sanitary pads like Always Ultra rose from N250 to N400. Most Tampon brand products which sold for N750 have risen to about N1200. The hike is also linked to the fall in the exchange value of the national currency, the Naira, as many women prefer foreign pads to locally manufactured products.<sup>cxlviii</sup>

### Prices for MH products in Nigeria 2015 – 2017 (Naira per pack\*)<sup>cxlix</sup>

Brand/type (manufacturer)	2015	2017
Always Ultra Sanitary Pad (Procter & Gamble)	250	500
Ladycare (Sankin Nig. Ltd)	200	400
Diva (Marley Global Ltd)	180	250
Tampons	750	1200

Note: \* each cycle requires 2 packs of 8 pieces. A pack in Nigeria contains 8 pieces according to GlobalData database.

### Cost of MHM in Nigeria in 2019 (in Naira)<sup>cl</sup>

Price segment	Costs per cycle*	Costs per year	Lifetime costs
Cheap	250 x 2 = 500	500 x 12 = 6000	6000 x 38 = 228,000
Middle	400 x 2 = 800	800 x 12 = 9600	9600 x 38 = 364,800
Expensive	1000 x 2 = 2000	2000 x 12 = 24000	24000 x 38 = 912,000

Note: \* each cycle requires 2 packs of 8 pieces. A pack in Nigeria contains 8 pieces according to GlobalData database. Exchange rate as of January 1, 2020: 1 USD = 361 Naira

- A locally manufactured Pad-Up Menstrual Kits enough for a year of MHM consists of 5 reusable pads and 1 storage bag and costs about 850 Naira as of April 20, 2020 (about \$ 2.20). The pads are super thin, breathable, leak proof, have high absorption and snap buttons that fastens beneath the pants. They can be washed with any soap or detergent and represent affordable solution that can be ordered online. The product which is chemical free and Eco friendly is manufactured by Pad-Up Creations founded by a Nigerian woman Olivia Onyemaobi. The business has created 93 permanent jobs and over 1 million kits have been distributed across 13 African countries.<sup>cli</sup>
- SuS Pads project managed by Hope Spring Water in Nigeria teaches girls how to make their own reusable menstrual pads from suitable fabrics. Instead of gifting the girls with disposable menstrual pads, the initiative wants to equip girls with the skills and knowledge they need to avoid period poverty.<sup>clii</sup>
- Those involved in manufacturing pads recommend redesigning products to remove unnecessary costs. A former production line officer for a major sanitary pad brand in Nigeria estimated that brand designs printed onto pads add about 15% to the cost, even though the pad “will still work well without it.” Branding is used to create a more premium

product and push the price point up.<sup>cliii</sup>

## Kenya

- The prices of sanitary pads appeared to drop after the VAT repeal in 2004. A pack of eight sanitary pads cost about USD 1.20 before 2004 while the same pack cost about USD 1.00 in 2016.<sup>cliv</sup>
- Always' lowest priced eight-pack of pads retailing at US 50 cents a pack.<sup>clv</sup>

## South Africa

- Some retailers introduced VAT-free sanitary pads and dropped prices, even prior to adoption of zero-rated VAT on MH products. Shoprite supermarket chains, for example, removed VAT and dropped the price of All Ultrex range sanitary pads to R10.99 (Ultra Plus 10 pads and Ultra Slim 12 pads packs), an amount that was, on average, 50 percent less compared to other brands and deals. The supermarket ran a corporate social responsibility campaign to promote this decision.<sup>clvi</sup>
- A study collecting monthly data on expenditures among low-income household in Pietermaritzburg, South Africa, showed that sanitary pads were 15% cheaper in September 2019 compared to September 2018, a price drop larger than the expected drop of 12% (the VAT represented 14% of pre-VAT price before the policy change).

### Prices of sanitary pads in Pietermaritzburg in Rands, South Africa (2018 – 2019)

	September 2018	August 2019	September 2019	May 2020
Sanitary pads (2 big packs)	80.31	64.38	68.38	68.37

*Note: Sanitary pads became zero-rated in April 2019.*

*Exchange rate as of January 1, 2020: 1 USD = 14 Rand*

However, the price collection is not systematic in terms of brands and package sizes, so no conclusion can be made about the impact of tax removal on prices. The zero-rating resulted in smaller packaging.<sup>clvii</sup>

- There are local brands of MH products in South Africa that are more affordable. Lindiwe Sanitary Pads, for example, cost R14.50 for a pack of eight medium-flow pads. Generic brands by retailers such as Clicks are also relatively affordable. However, the market is saturated by brands owned by foreign companies, and these renowned brands sell for almost double the price compared to the local brands. About 4 million out of 7 million girls between the ages of 13 and 19 living in South Africa do not have regular access to sanitary products.<sup>clviii</sup>
- In late 2019, after the zero-taxed tax on MH products was approved, Procter & Gamble invested R300 million in South Africa to build a new manufacturing facility and to update the existing one. This investment will enable local production of its Always brand of sanitary pads.<sup>clix</sup>

## Prices of MH products outside of study countries:

### Cameroon

- Prices for sanitary pads in 2019<sup>ckx</sup>:
  - Cheap brands: 600frs\*2=1,200frs\* 12=14,400frs\* 38=547,200frs
  - Mid-range brands: 900frs 2=1,800frs, 12=21,600frs\* 38=820,800frs
  - Expensive brands: 2000frs, 2=4000frs, 12=48,000frs, 38=1,824,000frs

### Ghana

- Prices for sanitary pads in 2019<sup>ckxi</sup>:
  - Cheap brands: 3 GhC \*2=6GhC\* 12=72GhC\*38=2,736GhC
  - Mid-range brands: 5GhC\*2=10GhC\*12=120GhC\*38=4,560GhC

### India

- In 2019, the cheapest sanitary pad on the market is priced at Rs 3 while many social enterprises are selling napkins at Rs 1.5/piece.<sup>ckxii</sup>
- In 2016, the price of a medium quality pack of 10 sanitary napkins was about INR 30-40. Big brands (e.g. Stayfree and Whisper from Johnsons&Johnsons and P&G) are unaffordable for low-income consumers.<sup>ckxiii</sup>

### Rwanda

- A pack of ten pads cost around 1,000 Rwandan Francs (about \$1) in December 2019 before the VAT exempt status.<sup>ckxiv</sup>

### Tanzania

- Elea pads, Manufactured by Malkia Investments (founded by Jennifer Shigoli). Reusable cotton-based sanitary pads are environmentally friendly, will last a year, and are affordable. They are locally made (creating jobs) and using local raw materials (no import tax). Solving social and environmental problems can generate revenue and be turned into financially sustainable businesses.<sup>ckxv</sup>
- Salama pads (“safe” in Swahili). Manufactured by WomenChoice (founded by Lucy Odiwa). Reusable menstrual pads (reusable for up to three years) with press-buttoned wings. They are made from, locally available reusable material: fleece, flannel, and the polyurethane waterproof material. They can be hand washed with locally available soap and then sun-dried. This makes this product environmentally friendly. Initial investment Sh200,000 (\$75) in 2016 that secured two second-hand overlock sewing machines and allowed to hire two tailors. Price (December 2018): Sh5,000 (\$2) Salama pads contain five pads per pack. Price (April 2020): \$2.20 per pad. Pads are affordable and reduces the cost of menstrual pads by an average of between 75% to 90% annually.<sup>ckxvi</sup>

### Uganda

- MakaPads are biodegradable chemical free sanitary pads made from papyrus reeds and paper waste. They are the only trademarked biodegradable sanitary pads made in Africa. The naturally absorbent material has a high capacity (one pad can be used for 8 to 10 hours). They are assembled with a moisture barrier and mesh covering and can be purchased with or

without an adhesive. The mostly manual production process needs very little electrical energy and can be generated via solar panels of total wattage 350 W. Subsequently, MakaPads are produced with minimum carbon footprints. Distributors/implementing organization: Technology for Tomorrow Ltd. (t4t) – they export to Sierra Leone. The company employs about 225 people, both skilled and unskilled, including refugees. The market price as of April 2020 is \$0.6 USD (Normal absorbency) and \$0.68 USD (Super absorbency) per pack of 10 pads. (They used to cost USD 0.41–0.54 per a 10-pad pack in 2017, about 50–75% less than commercially available products).<sup>clxvii</sup>

- In Uganda, a packet of 10 pads costs on average US\$1.35 (most likely in 2011).<sup>clxviii</sup>

## REFERENCES

- <sup>i</sup> McIntyre D, Thiede M, Birch S. Access as a policy-relevant concept in low-and middle-income countries. *Health economics, policy and law*. 2009;4(2):179-93.
- <sup>ii</sup> Blecher E, Liber A, Van Walbeek C, Rossouw L. An international analysis of the price and affordability of beer. *PloS one*. 2018;13(12); Blecher E, Van Walbeek C. An international analysis of cigarette affordability. *Tobacco Control*. 2004;13(4):339-46; Blecher EH, Van Walbeek CP. Cigarette affordability trends: an update and some methodological comments. *Tobacco Control*. 2009;18(3):167-75.
- <sup>iii</sup> Endeava and Ashley Insight. Changing the Lives of Women and Girls through Affordable Feminine Hygiene Products. World Bank, June 2017. [https://www.innovationpolicyplatform.org/www.innovationpolicyplatform.org/system/files/6\\_Health%20Female%20Hygiene%20Case\\_Jun21/index.pdf](https://www.innovationpolicyplatform.org/www.innovationpolicyplatform.org/system/files/6_Health%20Female%20Hygiene%20Case_Jun21/index.pdf)
- <sup>iv</sup> Vishakha Goyal. Scope and Opportunities for Menstrual Health and Hygiene Products in India. *International Research Journal of Social Sciences*. Vol. 5(7), 1-5, July 2016.
- <sup>v</sup> Vishakha Goyal. Scope and Opportunities for Menstrual Health and Hygiene Products in India. *International Research Journal of Social Sciences*. Vol. 5(7), 1-5, July 2016.
- <sup>vi</sup> Source: Interview with Jesmin Zaman (Head of Marketing, STL)", and Malik Sayeed (Head of Operations, STL)" from the main manufacturer in Bangladesh, SquareGroup,7/2/20
- <sup>vii</sup> Bill & Melinda Gates Foundation presentation. Menstrual Health Strategy Options. November 2019.
- <sup>viii</sup> Nigeria goment wan subsidise sanitary pad. *BBC News*. 12 October 2019. <https://www.bbc.com/pidgin/tori-50029301>
- <sup>ix</sup> Tanzania reinstates controversial sanitary pad tax. *GlobalVoices*. 29 June 2019. <https://globalvoices.org/2019/06/29/tanzania-reinstates-controversial-sanitary-pad-tax/>
- <sup>x</sup> An interview with Dr. Thabi Leoka, an economist, South Africa, June 15, 2020.
- <sup>xi</sup> An interview with Dr. Thabi Leoka, an economist, South Africa, June 15, 2020.
- <sup>xii</sup> Endeava and Ashley Insight. Changing the Lives of Women and Girls through Affordable Feminine Hygiene Products. World Bank, June 2017.
- <sup>xiii</sup> Interview with Neville Okwaro, Knowledge Management and M&E at the MoH WASH Hub in Kenya, 6/16/20.
- <sup>xiv</sup> Treasury gives sanitary pads manufacturers shot in the arm. *Business Daily*. September 25, 2016. <https://www.businessdailyafrica.com/corporate/companies/Treasury-gives-sanitary-pads-manufacturers-shot-in-the-arm/4003102-3394572-9e82o0z/index.html>
- <sup>xv</sup> WASH United. "What Impact Does VAT/GST Reduction or Removal Have on the Price of Menstrual Products?" Research report, 31 October 2019.
- <sup>xvi</sup> WASH United & Menstrual Health Alliance India. Web-dialogue 2019/2020 "Scrap The Tax – Low and Middle-income Country Perspectives“. (<https://youtu.be/W1MgDDSmskk>).
- <sup>xvii</sup> WASH United & Menstrual Health Alliance India. Web-dialogue 2019/2020 "Scrap The Tax – Low and Middle-income Country Perspectives“. (<https://youtu.be/W1MgDDSmskk>).
- <sup>xviii</sup> WASH United & Menstrual Health Alliance India. Web-dialogue 2019/2020 "Scrap The Tax – Low and Middle-income Country Perspectives“. (<https://youtu.be/W1MgDDSmskk>).
- <sup>xix</sup> An interview with Md. Tariq Hasan from the National Bureau of Revenue in Bangladesh, 1 June 2020.
- <sup>xx</sup> An interview with Prof. Ingrid Woolard from the University of Stellenbosch, 12 May 2020.
- <sup>xxi</sup> An interview with Alok Majunder from Simavi, a non-governmental organization in Dhaka, Bangladesh, 1 June 2020.
- <sup>xxii</sup> VAT, SD on sanitary napkin raw materials' import waived. *New Age*, Jul 02,2019. <http://www.newagebd.net/article/77191/vat-sd-on-sanitary-napkin-raw-materials-import-waived>
- <sup>xxiii</sup> Sanitary napkins still unaffordable for a majority. *The Daily Star*. March 08, 2020

<https://www.thedailystar.net/business/news/sanitary-napkins-still-unaffordable-large-majority-1877956>

- 
- <sup>xxiv</sup> Tanzania reinstates controversial sanitary pad tax. GlobalVoices. 29 June 2019. <https://globalvoices.org/2019/06/29/tanzania-reinstates-controversial-sanitary-pad-tax/>
- <sup>xxv</sup> WASH United. "What Impact Does VAT/GST Reduction or Removal Have on the Price of Menstrual Products?" Research report, 31 October 2019.
- <sup>xxvi</sup> Interview with SquareGroup in Bangladesh, 2 July 2020.
- <sup>xxvii</sup> VAT, SD on sanitary napkin raw materials' import waived. New Age, Jul 02,2019. <http://www.newagebd.net/article/77191/vat-sd-on-sanitary-napkin-raw-materials-import-waived>
- <sup>xxviii</sup> Sanitary napkins still unaffordable for a majority. The Daily Star. March 08, 2020 <https://www.thedailystar.net/business/news/sanitary-napkins-still-unaffordable-large-majority-1877956>
- <sup>xxix</sup> Ciku Kimeria. The story of how Kenyan women are bringing P&G to task over the Always "burning pads" saga. February 26, 2020. Quartz Africa. <https://qz.com/africa/1807045/kenyan-women-take-pg-to-task-over-always-burning-pads/>
- <sup>xxx</sup> Nabeelah Shaikh. Cops seize boxes of fake sanitary pads in Durban warehouse. <https://www.iol.co.za/sunday-tribune/news/cops-seize-boxes-of-fake-sanitary-pads-in-durban-warehouse-16177115>
- <sup>xxxi</sup> Noluthando Mdayi. This counterfeit sanitary pad operation has left many concerned about their health. 09 May 2019. <https://www.w24.co.za/SelfCare/Wellness/Body/this-counterfeit-sanitary-pad-operation-has-left-many-concerned-about-their-health-20190509>
- <sup>xxxii</sup> Nabeelah Shaikh. Cops seize boxes of fake sanitary pads in Durban warehouse. <https://www.iol.co.za/sunday-tribune/news/cops-seize-boxes-of-fake-sanitary-pads-in-durban-warehouse-16177115>
- <sup>xxxiii</sup> Noluthando Mdayi. This counterfeit sanitary pad operation has left many concerned about their health. 09 May 2019. <https://www.w24.co.za/SelfCare/Wellness/Body/this-counterfeit-sanitary-pad-operation-has-left-many-concerned-about-their-health-20190509>
- <sup>xxxiv</sup> Omolabake Fasogbon. Nigeria: Tackling the Menace of Substandard Sanitary Pads in Nigeria. 6 June 2019. <https://allafrica.com/stories/201906070550.html>
- <sup>xxxv</sup> An interview with Yemi Ojora, an accountant from Nigeria, May 5, 2020.
- <sup>xxxvi</sup> Omolabake Fasogbon. Nigeria: Tackling the Menace of Substandard Sanitary Pads in Nigeria. 6 June 2019. <https://allafrica.com/stories/201906070550.html>
- <sup>xxxvii</sup> Bill & Melinda Gates Foundation presentation. Menstrual Health Strategy Options. November, 2019.
- <sup>xxxviii</sup> Bill & Melinda Gates Foundation presentation. Menstrual Health Strategy Options. November, 2019.
- <sup>xxxix</sup> Bridget J. Crawford. Lessons from Australia's Tampon Tax Repeal: A Path to Gender Equality for the United States to Follow. 20 November 2018, <https://www.austaxpolicy.com/lessons-australias-tampon-tax-repeal-path-gender-equality-united-states-follow/>
- <sup>xl</sup> Phillips, Kristine (March 13, 2017). "There's no happy hour for menstruation!: Tax liquor instead of tampons, lawmakers say". The Washington Post.
- <sup>xli</sup> Zraick, Karen (July 12, 2019). "22 States Considered Eliminating the 'Tampon Tax' This Year. Here's What Happened". The New York Times. ISSN 0362-4331.
- <sup>xlii</sup> Australia scraps controversial tampon tax. By Steve George, CNN; October 3, 2018. <https://edition.cnn.com/2018/10/03/australia/australia-tampon-tax-intl/index.html>
- <sup>xliii</sup> Zraick, Karen (July 12, 2019). "22 States Considered Eliminating the 'Tampon Tax' This Year. Here's What Happened". The New York Times. ISSN 0362-4331.
- <sup>xliv</sup> Phillips, Kristine (March 13, 2017). "There's no happy hour for menstruation!: Tax liquor instead of tampons, lawmakers say". The Washington Post.
- <sup>xlv</sup> Phillips, Kristine (March 13, 2017). "There's no happy hour for menstruation!: Tax liquor instead of tampons, lawmakers say". The Washington Post.

- 
- <sup>xlvi</sup> Zraick, Karen (July 12, 2019). "22 States Considered Eliminating the 'Tampon Tax' This Year. Here's What Happened". The New York Times. ISSN 0362-4331.
- <sup>xlvii</sup> Bill & Melinda Gates Foundation presentation. Menstrual Health Strategy Options. November 2019.
- <sup>xlviii</sup> WASH United. "What Impact Does VAT/GST Reduction or Removal Have on the Price of Menstrual Products?" Research report, 31 October 2019.
- <sup>xlix</sup> Cotropia C, Rozema K. Who Benefits from Repealing Tampon Taxes? Empirical Evidence from New Jersey. *Journal of Empirical Legal Studies*. 2018;15(3):620-47.
- <sup>l</sup> WASH United. "What Impact Does VAT/GST Reduction or Removal Have on the Price of Menstrual Products?" Research report, 31 October 2019.
- <sup>li</sup> WASH United. "What Impact Does VAT/GST Reduction or Removal Have on the Price of Menstrual Products?" Research report, 31 October 2019.
- <sup>lii</sup> WASH United. "What Impact Does VAT/GST Reduction or Removal Have on the Price of Menstrual Products?" Research report, 31 October 2019.
- <sup>liii</sup> Suggested Covid-19 Measures for Revenue Authorities. African Tax Administration Forum. April 2020. [https://mcusercontent.com/3037567062ef1c2075560a7fa/files/333ec659-e834-472f-a600-4deb814dd91c/COVID\\_19\\_Measures\\_Final\\_English.pdf](https://mcusercontent.com/3037567062ef1c2075560a7fa/files/333ec659-e834-472f-a600-4deb814dd91c/COVID_19_Measures_Final_English.pdf)
- <sup>liv</sup> Zraick, Karen (July 12, 2019). "22 States Considered Eliminating the 'Tampon Tax' This Year. Here's What Happened". The New York Times. ISSN 0362-4331.
- <sup>lv</sup> Nicole Kaeding. Tampon Taxes: Do Feminine Hygiene Products Deserve a Sales Tax Exemption? Tax Foundation. April 26, 2017. <https://taxfoundation.org/tampon-taxes-sales-tax/>
- <sup>lvi</sup> WASH United. "What Impact Does VAT/GST Reduction or Removal Have on the Price of Menstrual Products?" Research report, 31 October 2019.
- <sup>lvii</sup> Zraick, Karen (July 12, 2019). "22 States Considered Eliminating the 'Tampon Tax' This Year. Here's What Happened". The New York Times. ISSN 0362-4331.
- <sup>lviii</sup> Even Utah is ending the discriminatory tampon tax. Who's next? Opinion. December 13, 2019. <https://www.newsweek.com/even-utah-ending-discriminatory-tampon-tax-whos-next-opinion-1477143>
- <sup>lix</sup> Australia scraps controversial tampon tax. By Steve George, CNN; October 3, 2018. <https://edition.cnn.com/2018/10/03/australia/australia-tampon-tax-intl/index.html>
- <sup>lx</sup> Endeava and Ashley Insight. Changing the Lives of Women and Girls through Affordable Feminine Hygiene Products. World Bank, June 2017.
- <sup>lxi</sup> Kenyan Government Approves A Policy Exclusively On Menstrual Health And Hygiene By WSSCC in GlobeScope, Menstruation; 10th December, 2019; <https://www.youthkiawaaz.com/2019/12/kenyan-government-approves-a-policy-exclusively-on-menstrual-health-and-hygiene/>
- <sup>lxii</sup> Estimates of National Expenditure 2020. The National Treasury. <http://www.treasury.gov.za/documents/National%20Budget/2020/ene/FullENE.pdf>
- <sup>lxiii</sup> Pontsho Pilane. #FreeToBleed: Zero-rating and free pads to start in South Africa. Health-E News. 1st April 2019. <https://health-e.org.za/2019/04/01/freetobleed-zero-rating-and-free-pads-to-start-in-south-africa/>
- <sup>lxiv</sup> P&G SA invests in local Always manufacturing plant. FMCG News South Africa. 5 Nov 2019. <https://www.bizcommunity.com/Article/196/162/197492.html>
- <sup>lxv</sup> An interview with Dr. Thabi Leoka, an economist, South Africa, June 15, 2020.
- <sup>lxvi</sup> Bill & Melinda Gates Foundation presentation. Menstrual Health Strategy Options. November 2019.
- <sup>lxvii</sup> An interview with Yemi Ojora, an accountant from Nigeria, May 5, 2020.
- <sup>lxviii</sup> Blecher E, Liber A, Van Walbeek C, Rossouw L. An international analysis of the price and affordability of beer. *PloS one*. 2018;13(12); Blecher E, Van Walbeek C. An international analysis of cigarette affordability. *Tobacco Control*. 2004;13(4):339-46; Blecher EH, Van Walbeek CP.

---

Cigarette affordability trends: an update and some methodological comments. *Tobacco Control*. 2009;18(3):167-75.

<sup>lxxix</sup> World Bank. GDP per capita (constant 2010 US\$). [cited 1 April 2020]. Available from <https://data.worldbank.org/indicator/NY.GDP.PCAP.KD>

<sup>lxxx</sup> Cotropia C, Rozema K. Who Benefits from Repealing Tampon Taxes? Empirical Evidence from New Jersey. *Journal of Empirical Legal Studies*. 2018;15(3):620-47.

<sup>lxxxi</sup> Independent panel of experts for the review of zero rating in South Africa. 2018. Recommendations to the Minister of Finance. Available: [http://www.treasury.gov.za/comm\\_media/press/2018/2018081001%20VAT%20Panel%20Final%20Report.pdf](http://www.treasury.gov.za/comm_media/press/2018/2018081001%20VAT%20Panel%20Final%20Report.pdf) [Accessed 17 June 2020].

<sup>lxxxii</sup> Institute for Economic Justice. Mitigating the impact of VAT increase by extending zero-rating. <https://iej.org.za/wp-content/uploads/2019/05/Mitigating-the-impact-of-VAT-increase-by-extending-zero-rating-IEJ-report-09-08-18.pdf>

<sup>lxxxiii</sup> Nhlapo, M., Mashego, M., Low, M., Ming, D. and Harding, K., 2019. Investigating the development of low-cost sanitary pads. *Procedia Manufacturing*, 35, pp.589-594.

<sup>lxxxiv</sup> Smith TA, Chudnow S, editors. The Economic Burden of the “Tampon Tax” on Low-Income Households. 7th Annual Conference of the American Society of Health Economists; 2018: ASHECON.

<sup>lxxxv</sup> Aylward P, Little K, Sharma V, Satpati M, Singh A, Ahmed F, et al. Increasing Access to Menstrual Hygiene Products in India: A market development approach. *Population Services International*. 2018.

<sup>lxxxvi</sup> Van Walbeek C. A simulation model to predict the fiscal and public health impact of a change in cigarette excise taxes. *Tobacco control*. 2010;19(1):31-6

<sup>lxxxvii</sup> Independent panel of experts for the review of zero rating in South Africa. 2018. Recommendations to the Minister of Finance. Available: [http://www.treasury.gov.za/comm\\_media/press/2018/2018081001%20VAT%20Panel%20Final%20Report.pdf](http://www.treasury.gov.za/comm_media/press/2018/2018081001%20VAT%20Panel%20Final%20Report.pdf) [Accessed 17 June 2020].

<sup>lxxxviii</sup> Smith TA, Chudnow S, editors. The Economic Burden of the “Tampon Tax” on Low-Income Households. 7th Annual Conference of the American Society of Health Economists; 2018: ASHECON.

<sup>lxxxix</sup> Smith TA, Chudnow S, editors. The Economic Burden of the “Tampon Tax” on Low-Income Households. 7th Annual Conference of the American Society of Health Economists; 2018: ASHECON.

<sup>lxxx</sup> O'donnell, O., Van Doorslaer, E., Wagstaff, A. and Lindelow, M., 2007. Analyzing health equity using household survey data: a guide to techniques and their implementation. *The World Bank*

<sup>lxxxii</sup> Government of the People's Republic of Bangladesh. National Hygiene Survey, 2018. Not publicly available.

<sup>lxxxiii</sup> International Centre for Reproductive Health Kenya (ICRHK) and The Bill & Melinda Gates Institute for Population and Reproductive Health at The Johns Hopkins Bloomberg School of Public Health. *Performance Monitoring and Accountability 2020 (PMA2020) Survey round 5, PMA2016/Kenya-R5*. 2016. Kenya and Baltimore, Maryland, USA.

<sup>lxxxiiii</sup> Suggested citation: Centre for Research, Evaluation Resources and Development (CRERD), Bayero University Kano (BUK), and The Bill & Melinda Gates Institute for Population and Reproductive Health at The Johns Hopkins Bloomberg School of Public Health. *Performance Monitoring and Accountability 2020 (PMA2020) Survey round 5, PMA2018/Nigeria-R5 (National)*. 2018. Nigeria and Baltimore, Maryland, USA.

<sup>lxxxv</sup> South African Audience Research Foundation. All Media and Products Survey 2015 [dataset]. Version 1.1. Johannesburg: South African Audience Research Foundation (SAARF) [producer], 2017. Cape Town: DataFirst [distributor], 2019. DOI: <https://doi.org/10.25828/rgqe-x897>

---

<sup>lxxxv</sup> Adika V, Yabga J, Apiyanteide F, Ologidi P, Ekpo K. Perception and behaviour on use of sanitary pads during menstruation among adolescent school girls in Bayelsa State, Nigeria. *Adv Appl Sci Res.* 2011;2(6):9-15.

<sup>lxxxvi</sup> Canadian Menstruators. About The Campaign. The history of the battle for tax fairness <http://www.canadianmenstruators.ca>. Accessed 18 March 2020.

<sup>lxxxvii</sup> Phillips, Kristine (March 13, 2017). "There's no happy hour for menstruation': Tax liquor instead of tampons, lawmakers say". *The Washington Post*.

<sup>lxxxviii</sup> Phillips, Kristine (March 13, 2017). "There's no happy hour for menstruation': Tax liquor instead of tampons, lawmakers say". *The Washington Post*.

<sup>lxxxix</sup> Zraick, Karen (July 12, 2019). "22 States Considered Eliminating the 'Tampon Tax' This Year. Here's What Happened". *The New York Times*. ISSN 0362-4331.

<sup>xc</sup> Australia scraps controversial tampon tax. By Steve George, CNN; October 3, 2018. <https://edition.cnn.com/2018/10/03/australia/australia-tampon-tax-intl/index.html>

<sup>xci</sup> Leah Rodriguez South Africa Finally Declared Menstrual Products Tax-Free. October 24, 2018. <https://www.globalcitizen.org/en/content/south-africa-sanitary-pads-tax-lifted/>

<sup>xcii</sup> Johnbosco Agbakwuru. Sanitary pads, 19 other items exempted from VAT hike. January 2020. <https://www.vanguardngr.com/2020/01/sanitary-pads-19-other-items-exempted-from-vat-hike/>

<sup>xciii</sup> Nica Schreuder. Supermarket chain introduces VAT-free sanitary pads. *The Citizen*. 23.8.2018. <https://citizen.co.za/news/south-africa/1999385/supermarket-chain-introduces-vat-free-sanitary-pads/>

<sup>xciv</sup> Even Utah is ending the discriminatory tampon tax. Who's next? *Opinion*. December 13, 2019. <https://www.newsweek.com/even-utah-ending-discriminatory-tampon-tax-whos-next-opinion-1477143>

<sup>xcv</sup> An interview with Virginia Kamowa from WSSCC based in Geneva, 20<sup>th</sup> May 2020.

<sup>xcvi</sup> An interview with Virginia Kamowa from WSSCC based in Geneva, 20<sup>th</sup> May 2020.

<sup>xcvii</sup> An interview with Prof. Ingrid Woolard from the University of Stellenbosch, 12 May 2020, <sup>xcviii</sup> An interview with Prof. Ingrid Woolard from the University of Stellenbosch, 12 May 2020, <sup>xcix</sup> Corte Constitucional tumba IVA del 5 % a toallas higiénicas y tampons. 14 November 2018. <https://www.eltiempo.com/justicia/cortes/corte-constitucional-tumba-iva-a-toallas-higienicas-y-tampones-293498>

<sup>c</sup> Andrea Diaz Nevada becomes the 10th state to eliminate a 'pink tax' on menstrual products. *CNN*, November 7, 2018. <https://edition.cnn.com/2018/11/07/health/nevada-tampon-tax-repealed-trnd/index.html>

<sup>ci</sup> Ynis Isimbi. Rwanda removes VAT on sanitary products, as the fight to end period poverty continues. January 17<sup>th</sup>, 2020. <https://blogs.lse.ac.uk/internationaldevelopment/2020/01/17/rwanda-removes-vat-on-sanitary-products-as-the-fight-to-end-period-poverty-continues/>

<sup>cii</sup> Suspension of duty on sanitary wear for women. <https://www.zimra.co.zw/news/2076:suspension-of-duty-on-sanitary-wear-for-women-2>. Accessed June 13, 2020.

<sup>ciii</sup> VAT, SD on sanitary napkin raw materials' import waived. *New Age*, Jul 02, 2019. <http://www.newagebd.net/article/77191/vat-sd-on-sanitary-napkin-raw-materials-import-waived>

<sup>civ</sup> Gadosa Lamtey. Tanzania to scrap tax on sanitary pads. June 14 2018. <https://www.thecitizen.co.tz/news/Govt-to-scrap-tax-on-sanitary-pads/1840340-4612558-2tvuj7z/index.html>

<sup>cv</sup> Phillips, Kristine. March 13, 2017. "There's no happy hour for menstruation': Tax liquor instead of tampons, lawmakers say". *The Washington Post*.

- 
- <sup>cvi</sup> Zraick, Karen (July 12, 2019). "22 States Considered Eliminating the 'Tampon Tax' This Year. Here's What Happened". The New York Times. ISSN 0362-4331.
- <sup>cvi</sup> Tanzania reinstates controversial sanitary pad tax. GlobalVoices. 29 June, 2019. <https://globalvoices.org/2019/06/29/tanzania-reinstates-controversial-sanitary-pad-tax/>
- <sup>cvi</sup> International Tax. Bangladesh Highlights 2019. Deloitte. July 2019. <https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Tax/dttl-tax-bangladeshhighlights-2019.pdf?nc=1>
- <sup>cix</sup> VAT, SD on sanitary napkin raw materials' import waived. New Age, Jul 02,2019. <http://www.newagebd.net/article/77191/vat-sd-on-sanitary-napkin-raw-materials-import-waived>
- <sup>cx</sup> An interview with Md. Tariq Hasan from the National Bureau of Revenue in Bangladesh, 1 June 2020.
- <sup>cx</sup> Endeava and Ashley Insight. Changing the Lives of Women and Girls through Affordable Feminine Hygiene Products. World Bank, June 2017.
- <sup>cxii</sup> Interview with Neville Okwaro, Knowledge Management and M&E at the MoH WASH Hub in Kenya, 16 June 2020.
- <sup>cxiii</sup> Treasury gives sanitary pads manufacturers shot in the arm. Business Daily. September 25, 2016. <https://www.businessdailyafrica.com/corporate/companies/Treasury-gives-sanitary-pads-manufacturers-shot-in-the-arm/4003102-3394572-9e82o0z/index.html>
- <sup>cxiv</sup> Tanzania reinstates controversial sanitary pad tax. GlobalVoices. 29 June, 2019. <https://globalvoices.org/2019/06/29/tanzania-reinstates-controversial-sanitary-pad-tax/>
- <sup>cxv</sup> WASH United. "What Impact Does VAT/GST Reduction or Removal Have on the Price of Menstrual Products?" Research report, 31 October 2019.
- <sup>cxvi</sup> 'Tampon tax' paid around the world. 21 August 2015. <https://www.bbc.com/news/world-32883153>.
- <sup>cxvii</sup> 'Tampon tax' paid around the world. 21 August 2015. <https://www.bbc.com/news/world-32883153>.
- <sup>cxviii</sup> Half of the European countries levy the same VAT on sanitary towels and tampons as on tobacco, beer and wine. November 7, 2018 <https://civio.es/medicamentalia/2018/11/07/14-european-countries-levy-the-same-vat-on-sanitary-towels-and-tampons-as-on-tobacco-beer-and-wine/>
- <sup>cxix</sup> Tampons will no longer be taxed as luxury items, after landmark German vote By Nadine Schmidt and Sheena McKenzie, CNN. November 8, 2019 <https://edition.cnn.com/2019/11/08/europe/tampon-tax-germany-luxury-item-grm-intl/>
- <sup>cx</sup> WASH United & Menstrual Health Alliance India. Web-dialogue 2019/2020 "Scrap The Tax – Low and Middle-income Country Perspectives“. (<https://youtu.be/W1MgDDSmskk>).
- <sup>cx</sup> Lewis Sanders. Higher tampon prices on horizon despite German tax break? 18.01.2020. <https://www.dw.com/en/higher-tampon-prices-on-horizon-despite-german-tax-break/a-52049226>
- <sup>cxii</sup> Paul Adepoju. African activists seek universal access to sanitary products. Devex. 15 July 2019. <https://www.devex.com/news/african-activists-seek-universal-access-to-sanitary-products-95248>
- <sup>cxiii</sup> Nica Schreuder. Supermarket chain introduces VAT-free sanitary pads. The Citizen. 23 August 2018. <https://citizen.co.za/news/south-africa/1999385/supermarket-chain-introduces-vat-free-sanitary-pads/>
- <sup>cxiv</sup> Shoprite First to Sell VAT-Free Sanitary Pads. <https://www.shoprite.co.za/latest-news/sanitary-pad-subsidy.html>. No date.
- <sup>cxv</sup> Nica Schreuder. Supermarket chain introduces VAT-free sanitary pads. The Citizen. 23.8.2018. <https://citizen.co.za/news/south-africa/1999385/supermarket-chain-introduces-vat-free-sanitary-pads/>

- 
- <sup>cxxvi</sup> Shoprite First to Sell VAT-Free Sanitary Pads. <https://www.shoprite.co.za/latest-news/sanitary-pad-subsidy.html>. No date.
- <sup>cxxvii</sup> Nica Schreuder. Supermarket chain introduces VAT-free sanitary pads. The Citizen. 23.8.2018. <https://citizen.co.za/news/south-africa/1999385/supermarket-chain-introduces-vat-free-sanitary-pads/>
- <sup>cxxviii</sup> Household Affordability Index. Pietermaritzburg Economic Justice & Dignity. September 2019. <https://za.boell.org/sites/default/files/2019-10/September%202019%20Household%20Affordability%20Index%20PMBEJD.pdf>
- <sup>cxxix</sup> Nica Schreuder. Supermarket chain introduces VAT-free sanitary pads. The Citizen. 23.8.2018. <https://citizen.co.za/news/south-africa/1999385/supermarket-chain-introduces-vat-free-sanitary-pads/>
- <sup>cxix</sup> WASH United & Menstrual Health Alliance India. Web-dialogue 2019/2020 "Scrap The Tax – Low and Middle-income Country Perspectives". (<https://youtu.be/W1MgDDSmskk>).
- <sup>cxvii</sup> Information provided via e-mail by Julie Smith, Researcher, Pietermaritzburg Economic Justice & Dignity Group, South Africa, June 5, 2020.
- <sup>cxviii</sup> Information provided via e-mail by Julie Smith, Researcher, Pietermaritzburg Economic Justice & Dignity Group, South Africa, June 5, 2020.
- <sup>cxviiii</sup> Cotropia C, Rozema K. Who Benefits from Repealing Tampon Taxes? Empirical Evidence from New Jersey. *Journal of Empirical Legal Studies*. 2018;15(3):620-47.
- <sup>cxviiii</sup> WASH United & Menstrual Health Alliance India. Web-dialogue 2019/2020 "Scrap The Tax – Low and Middle-income Country Perspectives". (<https://youtu.be/W1MgDDSmskk>).
- <sup>cxv</sup> Leah Rodriguez South Africa Finally Declared Menstrual Products Tax-Free. October 24, 2018. <https://www.globalcitizen.org/en/content/south-africa-sanitary-pads-tax-lifted/>
- <sup>cxv</sup> Endeava and Ashley Insight. Changing the Lives of Women and Girls through Affordable Feminine Hygiene Products. World Bank, June 2017.
- <sup>cxvii</sup> Interview with Neville Okwaro, Knowledge Management and M&E at the MoH WASH Hub in Kenya, 16 June 2020.
- <sup>cxviii</sup> Treasury gives sanitary pads manufacturers shot in the arm. *Business Daily*. September 25, 2016. <https://www.businessdailyafrica.com/corporate/companies/Treasury-gives-sanitary-pads-manufacturers-shot-in-the-arm/4003102-3394572-9e82o0z/index.html>
- <sup>cxvix</sup> What Kenya Can Teach The U.S. About Menstrual Pads May 10, 2016. NPR <https://www.npr.org/sections/goatsandsoda/2016/05/10/476741805/what-kenya-can-teach-the-u-s-about-menstrual-pads>
- <sup>cxli</sup> Ebuka Onyeji. Nigeria: Period Poverty - How Menstruation Makes Nigerian Girls Miss School. *Premium Times*. 28 May 2019. <https://allafrica.com/stories/201905280145.html>
- <sup>cxli</sup> What Kenya Can Teach The U.S. About Menstrual Pads May 10, 2016. NPR <https://www.npr.org/sections/goatsandsoda/2016/05/10/476741805/what-kenya-can-teach-the-u-s-about-menstrual-pads>
- <sup>cxlii</sup> Amy Fallon. Around the world, activists are campaigning for menstrual dignity. *Equal Times*. 13 September 2019. [https://www.equaltimes.org/around-the-world-activists-are#\\_XnJEmi2Q3BJ](https://www.equaltimes.org/around-the-world-activists-are#_XnJEmi2Q3BJ)
- <sup>cxliii</sup> Ebuka Onyeji. Nigeria: Period Poverty - How Menstruation Makes Nigerian Girls Miss School. *Premium Times*. 28 May 2019. <https://allafrica.com/stories/201905280145.html>
- <sup>cxliv</sup> Sanitary napkins still unaffordable for a majority. *The Daily Star*. March 08, 2020 <https://www.thedailystar.net/business/news/sanitary-napkins-still-unaffordable-large-majority-1877956>
- <sup>cxlv</sup> Sanitary Napkin Category, Market, Consumer and Social Perception. Square Toiletries, June 2020.
- <sup>cxlvi</sup> Interview with Jesmin Zaman (Head of Marketing, STL)", and Malik Sayeed (Head of Operations, STL)" from the main manufacturer in Bangladesh, SquareGroup, 7/2/20:

<sup>cxlvii</sup> An interview with Mamunur Rahman, owner of Ella Pad, Bangladesh, 28 May 2020.

- 
- <sup>cxlviii</sup> Ebuka Onyeji. Nigeria: Period Poverty - How Menstruation Makes Nigerian Girls Miss School. Premium Times. 28 May 2019. <https://allafrica.com/stories/201905280145.html>
- <sup>cxlix</sup> An Appeal to End All the Taxes on Menstrual Hygiene Products (Including Sanitary Pads) and Pass “The Menstrual Hygiene Bill”, November 1, 2018.
- <sup>cl</sup> Sanitary Pad: How high cost dey affect poor household. <https://www.bbc.com/pidgin/media-48211797>. 9 May 2020
- <sup>cli</sup> An Appeal to End All the Taxes on Menstrual Hygiene Products (Including Sanitary Pads) and Pass “The Menstrual Hygiene Bill”, November 1, 2018; <https://www.padupcreations.com>
- <sup>clii</sup> Demola Oriyomi Ojo. Reusable Sanitary Pads: alleviating period poverty in Nigeria End Water Poverty. 7 Jan 2020; <https://www.endwaterpoverty.org/reusable-sanitary-pads-alleviating-period-poverty-Nigeria-Hope-Spring>
- <sup>cliii</sup> Paul Adepoju. African activists seek universal access to sanitary products. Devex. 15 July 2019. <https://www.devex.com/news/african-activists-seek-universal-access-to-sanitary-products-95248>
- <sup>cliv</sup> What Kenya Can Teach the U.S. About Menstrual Pads May 10, 2016. NPR <https://www.npr.org/sections/goatsandsoda/2016/05/10/476741805/what-kenya-can-teach-the-u-s-about-menstrual-pads>
- <sup>clv</sup> Ciku Kimeria. The story of how Kenyan women are bringing P&G to task over the Always “burning pads” saga. February 26, 2020. Quartz Africa. <https://qz.com/africa/1807045/kenyan-women-take-pg-to-task-over-always-burning-pads>
- <sup>clvi</sup> Nica Schreuder. Supermarket chain introduces VAT-free sanitary pads. The Citizen. 23.8.2018. <https://citizen.co.za/news/south-africa/1999385/supermarket-chain-introduces-vat-free-sanitary-pads/>
- Shoprite First to Sell VAT-Free Sanitary Pads. <https://www.shoprite.co.za/latest-news/sanitary-pad-subsidy.html>
- <sup>clvii</sup> Household Affordability Index. Pietermaritzburg Economic Justice & Dignity. September 2019. <https://za.boell.org/sites/default/files/2019-10/September%202019%20Household%20Affordability%20Index%20PMBEJD.pdf>
- <sup>clviii</sup> Karishma Dipa. SA woman's mission to provide affordable sanitary wear options to South Africans Mar 17, 2020. <https://www.iol.co.za/saturday-star/news/sa-womans-mission-to-provide-affordable-sanitary-wear-options-to-south-africans-45029676>
- <sup>clix</sup> P&G SA invests in local Always manufacturing plant. FMCG News South Africa. 5 November 2019. <https://www.bizcommunity.com/Article/196/162/197492.html>
- <sup>clx</sup> Sanitary Pad: How high cost dey affect poor household. <https://www.bbc.com/pidgin/media-48211797>. 9 May 2020
- <sup>clxi</sup> Sanitary Pad: How high cost dey affect poor household. <https://www.bbc.com/pidgin/media-48211797>. 9 May 2020
- <sup>clxii</sup> Hygiene Products on Price Control. September 03, 2019 <https://www.iasparliament.com/current-affairs/hygiene-products-on-price-control>
- <sup>clxiii</sup> Vishakha Goyal. Scope and Opportunities for Menstrual Health and Hygiene Products in India. International Research Journal of Social Sciences. Vol. 5(7), 1-5, July 2016.
- <sup>clxiv</sup> Like South Africa, Rwanda scraps tax on sanitary pads, 11 Dec 2019; <https://clubofmozambique.com/news/like-south-africa-rwanda-scraps-tax-on-sanitary-pads-149148/>
- <sup>clxv</sup> <https://unctad.org/en/pages/newsdetails.aspx?OriginalVersionID=1995>
- <sup>clxvi</sup> <https://www.worldbank.org/en/news/feature/2018/12/12/keeping-tanzanias-girls-in-school-investing-in-menstrual-hygiene;> <https://www.bbc.co.uk/programmes/w3csynk9>
- <sup>clxvii</sup> [https://www.engineeringforchange.org/solutions/product/makapads-sanitary-pads/;](https://www.engineeringforchange.org/solutions/product/makapads-sanitary-pads/) <http://t4tafrica.co>; [https://cedat.mak.ac.ug/research/maka-pads/;](https://cedat.mak.ac.ug/research/maka-pads/) Endeva and Ashley Insight.

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Changing the Lives of Women and Girls through Affordable Feminine Hygiene Products. World Bank, June 2017.

<sup>clxviii</sup> Crofts, T. and Fisher, J., 2012. Menstrual hygiene in Ugandan schools: an investigation of low-cost sanitary pads. *Journal of water, sanitation and hygiene for development*, 2(1), pp.50-58.