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Research Unit on the Economics of Excisable Products

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BACK TO NORMAL? SMOKING AND QUITTING BEHAVIOUR IN SOUTH AFRICA AFTER THE TOBACCO SALES BAN

RESULTS FROM A THIRD SURVEY

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EXECUTIVE SUMMARY

After the lifting of the sales ban on tobacco in August, REEP conducted a third survey between 16 September and 6 October. Only those respondents to the second survey who had agreed to be contacted again were involved, giving a final group of 3 766 respondents who had completed both the second and third surveys.

Of these, 16.7% indicated that they had quit smoking during the sales ban; of these, slightly more than half had relapsed by the time of the third survey, about 43% before the ban was lifted and 57% afterwards. By the time the third survey was conducted, about 9% of the respondents had successfully quit and had not relapsed.

Continuing smokers smoked an average of 17.3 cigarettes per day before the sales ban, 13.3 cigarettes per day during the sales ban (4-19 June 2020), and 16.6 cigarettes per day after the sales ban was lifted. 22% of respondents indicated that they smoked more cigarettes after the ban, 38% smoked fewer cigarettes, and 40% smoked the same number of cigarettes as they did before the ban.

Most cigarettes sold during the sales ban were sold through informal and novel distribution channels (such as social media, family and friends, and essential worker acquaintances). After the ban was lifted, these channels all but disappeared. Most cigarettes were again sold through formal retail outlets (56%), informal convenience stores (30%), wholesalers (5%), and street vendors and car guards (4%). The latter group was the only one which indicated an appreciable increase in its share of total sales (from 2% to 4%), relative to before the sales ban.

Respondents were asked whether the ban *caused* them to use any tobacco products other than cigarettes. 38% of respondents indicated that it had. Of those that used other products, the most popular were roll-your-own tobacco (56%), e-cigarettes/heated tobacco products (32%), and pipe tobacco (16%). Respondents could choose more than one option; therefore, the sum is more than 100%.

Before the lockdown, nearly 74% of cigarettes smoked by respondents were produced by the multinational companies (MNCs, these companies are British American Tobacco, Japan Tobacco International and Philip Morris International). By June 2020 the share of the MNCs had dropped to 17%, but by September 2020 it had increased to 66%. Compared to the pre-lockdown period, all three MNCs lost market share (between 10% and 14% in relative terms). With one exception (*Winston*), all the major MNC brands had a smaller market share after the ban was lifted than in March 2020.

As discussed in the second report, the non-MNCs all gained market share during the sales ban period. After the sales ban was lifted, their market shares were substantially higher than before the ban. 35% of respondents indicated that they smoked a different brand after the ban was lifted than before it was imposed, while 65% of respondents indicated that they smoked the same brand. Of the respondents who switched brands, 36% switched from an MNC brand to a non-MNC brand, while only 11% switched from a non-MNC brand to an MNC brand.

Unsurprisingly, cigarette prices dropped from their highly inflated levels immediately when the sales ban was lifted. Nevertheless, British American Tobacco announced price increases of between 4% and 10% within a week of the lifting of the ban. The reported average price of MNC brands was nearly 5% higher in September 2020 than in the pre-lockdown period. The reported retail prices of non-MNC brands were 30% higher than the pre-ban prices. Although there were some variations between companies, the non-MNC company with the lowest price increase (Carnilinx) still had average prices 24% higher than before the ban was imposed.

It seems that the various tobacco companies took the view that smokers had become used to high prices during the sales ban and that they could enhance their profitability by increasing the price, vis-à-vis the

pre-ban period, after the ban was lifted. The very substantial increase in the retail price of non-MNC brands means that they are converging towards the MNC prices. This reduces the opportunity for substitution, which is a positive tobacco-control outcome.

As we did in the second report, we recommend that National Treasury should increase the excise tax at the earliest opportunity. This will decrease cigarette consumption and increase government revenue. At the same time, the South African Revenue Services (SARS) and other law enforcement agencies should prioritise curbing the illicit trade in cigarettes. The government should ratify the Protocol to Eliminate Illicit Trade in Tobacco Products and implement its provisions, particularly a Track and Trace system that is independent of the tobacco industry.

BACK TO NORMAL? SMOKING AND QUITTING BEHAVIOUR IN SOUTH AFRICA AFTER THE TOBACCO SALES BAN: RESULTS FROM A THIRD SURVEY

1. INTRODUCTION[1]

On 18 August 2020 the ban on tobacco sales (including vaping products) in South Africa was lifted, as the country moved to level 2 lockdown. The sales ban was in place for more than 20 weeks. South Africa was one of only three countries globally to implement a tobacco sales ban as part of its response to COVID-19. India banned tobacco sales for six weeks and Botswana banned tobacco sales for twelve weeks. The tobacco products sales ban was probably the single most controversial measure taken by government to curb the spread of COVID-19.

The Research Unit on the Economics of Excisable Products (REEP), based at the University of Cape Town, conducted two online surveys during the sales ban. The first survey was conducted between 29 April and 11 May, as the country went from lockdown level 5 to level 4 (1 May 2020). The second survey was conducted between 4 and 19 June, just after the country moved to lockdown level 3 (1 June 2020). The first report was based on more than 12 300 usable responses; the second report on more than 23 000 usable responses. The first and second reports are available online. The reports were shared with members of Cabinet and the National Coronavirus Command Council (NCCC). The findings also received a substantial amount of media exposure.

The results of the two reports were similar, but in June (i.e. when the second survey was conducted) cigarette prices had increased by much more than during the earlier period, and market shares continued to change. While we acknowledge that the sampling was imperfect, given that these were online surveys and not nationally representative, we believe that the surveys provided an interesting insight into the impact of the sales ban.

The sales ban caused a number of smokers to quit smoking. In the June survey, 9% of respondents indicated that they had successfully quit smoking since the sales ban was imposed. African respondents were generally more successful at quitting cigarettes, compared to other ethnic groups, and especially to White respondents. Given that the survey over-sampled Whites, the percentage of quitters in the general population was probably higher than 9%. Successful quitters were generally lighter smokers than continuing smokers and quit primarily because cigarettes had become too expensive during the ban, or because cigarettes were difficult to find. Most successful quitters quit smoking in the early weeks of the sales ban.

More than 90% of continuing smokers were able to purchase cigarettes, despite the sales ban. By early May the average price of cigarettes was about 90% higher than pre-lockdown, while by early to mid-June prices were nearly 250% higher. Sharing of individual cigarettes was more common during the sales ban than before the sales ban. Whereas more than three-quarters of cigarettes smoked before the lockdown were produced by the multinational tobacco companies (MNCs, i.e., British American Tobacco, Philip Morris International, Japan Tobacco International and Imperial Tobacco), their share in our sample decreased to about 38% in early May and to less than 20% in early to mid-June.

In both reports we concluded that the sales ban was not achieving its intended purpose. The fact that so many people were able to purchase cigarettes, despite the ban, suggests that the illicit market, which was already well established before the lockdown, became even more entrenched. The government lost more than R1 billion in tobacco excise tax for each month that the sales ban was in place. In the previous

[1] REEP would like to thank respondents of all three surveys for their time in answering the questionnaires. We also want to acknowledge Nicole Vellios and Elizabeth Baldwin for excellent comments on earlier versions of this report.

two reports, we recommended that the government lift the sales ban. In the second report, we also recommended that the government should substantially increase the excise tax on cigarettes once the sales ban is lifted, since the sales ban had shown that the market could carry much higher prices (at least in the short run). Rather than allowing this extra money to funnel to the tobacco industry and illicit traders, the government could raise its revenue by increasing the excise tax. An increase in the excise tax will typically raise the retail price of cigarettes. Research has shown that consistent increases in the retail price reduces the demand for cigarettes, presumably much more than a temporary increase in the excise tax (International Agency for Research on Cancer [IARC], 2011). The sales ban caused a massive spike in retail prices, but smokers were aware that the ban was temporary, and for many it did not have the intended impact on consumption.

Tobacco control advocates agree with our recommendation that the excise tax be substantially increased and are calling for a doubling of the excise tax when the next budget is tabled in Parliament (Hlatshaneni, 2020). The evidence from the surveys conducted by REEP suggests that this is feasible. The only proviso is that the illicit trade should be under control. Given that it has probably become more entrenched during the sales ban period, it will be challenging for the South African Revenue Services (SARS) to achieve this. Implementing a track and trace system, as recommended by the Protocol to Eliminate the Illicit Trade in Tobacco Products, is expected to support the SARS initiatives.

REEP conducted a third survey, since the ban on cigarette sales was lifted, to analyse South Africa's cigarette market. We conducted the survey about four weeks after the ban was lifted, in order to give the market an opportunity to find a new equilibrium. In particular, we investigated market shares and cigarette prices, and whether smokers switched to other tobacco and/or nicotine products as a result of the sales ban.

2. METHODOLOGY

When we conducted the second survey in June 2020, we asked respondents whether we could contact them again. Of the 23 631 complete respondents to the second survey, 16 421 (69.5%) responded positively and provided contact details. We approached these previous respondents between 16 and 27 September 2020 with the third questionnaire. We contacted them via email (n = 14 421) or via SMS (n = 2 000), depending on contact details provided in round 2. In order to include (and increase the proportion of) relatively poor (and often African) respondents, we approached respondents who previously used the data-free Moya platform, to respond to the third survey through the same platform. To encourage participation, respondents were offered the chance to win one of ten R200 airtime vouchers.

Respondents answered the questionnaire on SurveyMonkey. The Ethics in Research Committee of UCT's Faculty of Commerce approved the study (REC 2020/09/003). Of the 16 421 potential respondents, roughly 4 000 answered the questionnaire. We used the email address and/or mobile number to link the round 2 and round 3 responses. This resulted in 3 766 matched records. The analysis in this report will consider only these 3 766 records, except where clearly stated.

The data are not representative of the South African smoking population. To determine whether the profile of respondents in the third survey is similar to that of the second round, Table 1 presents a comparison of all 23 631 respondents of the second round with the second-round results of the 3 766 respondents who also participated in the third survey.

Table 1: Characteristics of respondents in the second and third surveys

	Round 2 survey (n = 23 631)	**Respondents to round 3 only (n = 3 766)**	**P-value**
Ethnicity			
African	13.3	18.1	0.000
Asian/Indian	4.6	3.9	0.050
Coloured	17.8	19.2	0.040
White	56.5	54.3	0.011
Gender			
Female	60.6	58.0	0.002
Male	37.5	41.0	0.000
Smoking characteristics			
Buy from formal outlet, pre-sales ban	65.4	61.7	0.000
Successfully quit during sales ban	8.9	11.5	0.000
Per stick price in June	5.69	5.77	0.129
Proportion buying MNC in June	18.1	17.2	0.256
Prop sharing cigarettes in June	25.8	27.6	0.035

Notes: "Round 2 survey" includes all cleaned round 2 survey responses. "Respondents to round 3 only" includes the subset of round 2 respondents who participated in the round 3 follow-up survey. P-values are for proportions/difference in means tests. Please note that all statistics in this table are based solely on the responses provided in the second survey; no responses to questions asked in the third survey are shown here.

As we pointed out in our previous report, females and Whites were substantially over-represented in the second round, relative to the national smoking population, while males and Africans were under-represented. In the third round, these sampling biases are still prevalent, but slightly less than in the second round. In terms of ethnicity, there is a significantly greater proportion of Africans in the third-round survey, but even so, they are still substantially under-represented. Whites are still over-

represented in the third round. There is a significantly smaller proportion of females in the third-round survey than in the original second-round survey, but, even so, females are still over-represented in the data.

There are some variations between the two samples when considering smoking characteristics. The full sample of round 2 respondents had a significantly higher proportion of smokers buying from formal retail outlets, and a smaller proportion of smokers reporting successfully quitting during the sales ban, than the round 3 respondents who reported on these things in round 2. The full sample of round 2 respondents also had a smaller proportion of smokers reporting sharing cigarettes than the round 3 respondents. There is no significant difference between the average price paid during the ban or the proportion who bought multinational tobacco company brands during the ban.

For the remainder of the report we will consider round 3 respondents (n=3 766). We will use their responses to the round 3 questionnaire to establish their behaviour post-ban, and use their responses from round 2 survey to assess their behaviour before and during the ban.

3. RESULTS

3.1 Quitting behaviour

In the second survey, about 71% of successful quitters indicated that they did not intend to smoke again when the sales ban was lifted, while 7% indicated that they would start smoking again and 21% were uncertain. Of the 3 766 respondents who completed the third survey, 628 (17%) indicated that they had quit smoking during the tobacco sales ban (Table 2). Of these, 321 (51%) indicated that they had started smoking again at the time of the survey. Of the respondents that had started smoking again, 138 (43%) had started smoking again before the sales ban was lifted, and 180 (57%) after the sales ban was lifted.

Thus, by the time the third survey was conducted, about 9% of the respondents had successfully quit and had not relapsed.

Table 2: Quitting behaviour during and after the sales ban, by demographic characteristics

	Quit during the sales ban		**Started smoking again**			
	N	**Proportion**	**N**	**Proportion**	**Before 17 Aug**	**After 17 Aug**
Male	303/1488	20.4	148/303	48.8	40.1	59.9
African	186/454	41.0	84/186	45.2	33.7	66.3
Coloured	36/224	16.1	23/36	63.9	34.8	65.2
Indian	12/80	15.0	3/12	25.0	66.7	33.3
White	69/730	9.5	38/69	55.1	55.3	44.7
Female	294/2072	14.2	159/294	54.1	45.2	54.8
African	115/213	54.0	50/115	43.5	28.0	72.0
Coloured	76/489	15.5	48/76	63.2	41.3	58.7
Indian	8/64	12.5	4/8	50.0	50.0	50.0
White	95/1306	7.3	57/95	60.0	63.2	36.8
Ethnicity and/or gender undisclosed	31/195	15.9	14/31	45.2	57.1	42.9
Overall	**628/3755**	**16.7**	**321/628**	**51.1**	**43.4**	**56.6**

Table 2 reveals substantial variation in reported quitting behaviour across ethnic and gender groups. Males, with a quitting rate of 20.4%, were substantially more successful at quitting than females, who had a quitting rate of 14.2%. The gender difference in quitting rates applies to all ethnic groups other than Africans, where females (54%) report a substantially higher quitting rate than males (41%). Whites reported the lowest quitting rates (9.5% among male and 7.3% among female respondents).

The relatively large percentage of respondents who started smoking again after they had initially quit during the sales ban is disappointing from a public health perspective. It is probably also disappointing for the individuals themselves, given that more than 70% of respondents indicated that they wanted to quit smoking, even after the ban was lifted. This illustrates the well-known fact that cigarettes are extremely addictive. Research has shown that it takes most smokers multiple attempts to quit before they finally break the habit (Borland *et al*. 2012; García-Rodríguez *et al*., 2013; Chaiton *et al*., 2016).

3.2 Smoking behaviour after the sales ban was lifted

a) Cigarette consumption

In round 3, respondents were asked how many cigarettes they smoked on average per day in the past week. We combined this information with the respondents' declared daily consumption for the pre- and during-sales ban periods (based on the data collected in June 2020). The results, broken down by demographic group, are shown in Table 3. Respondents who indicated that they had quit during the sales ban period are excluded from the table.

Table 3: Average daily cigarette consumption, pre-, during, and post-sales ban

	Average daily consumption			P-value	Pre-sales ban vs. post-sales ban: % of smokers smoking:		
	Pre-sales ban	During sales ban	Post-sales ban	Pre-sales ban vs. post-sales ban	More	Same	Less
Male	17.2	13.4	16.7	0.049	21.9	40.2	37.9
African	8.5	5.4	9.8	0.056	33.3	23.0	43.6
Coloured	13.0	8.6	12.6	0.595	19.9	38.6	41.6
Indian	12.7	10.5	12.9	0.899	31.6	38.6	29.8
White	21.6	17.5	20.4	0.000	17.9	46.3	35.8
Female	17.4	13.3	16.6	0.000	22.3	39.8	37.9
African	7.0	4.1	8.1	0.232	34.5	17.9	47.6
Coloured	12.4	8.4	12.6	0.676	28.1	35.7	36.2
Indian	11.1	8.6	12.7	0.320	42.9	28.6	28.6
White	20.0	15.7	18.6	0.000	18.8	43.1	38.1
Ethnicity and/or gender undisclosed	17.4	13.4	15.5	0.002	20.7	35.3	44.0
Overall	**17.3**	**13.3**	**16.6**	**0.000**	**22.1**	**39.7**	**38.2**

Note: The table includes smokers who smoked a positive number of cigarettes in all three periods (N=2855 for all columns). The data for the pre- sales ban and during sales ban consumption were collected in round 2. "P-value Pre-sales ban vs. post-sales ban" represents the p-value for the T-test for difference in means between pre-sales ban and post-sales ban cigarette consumption.

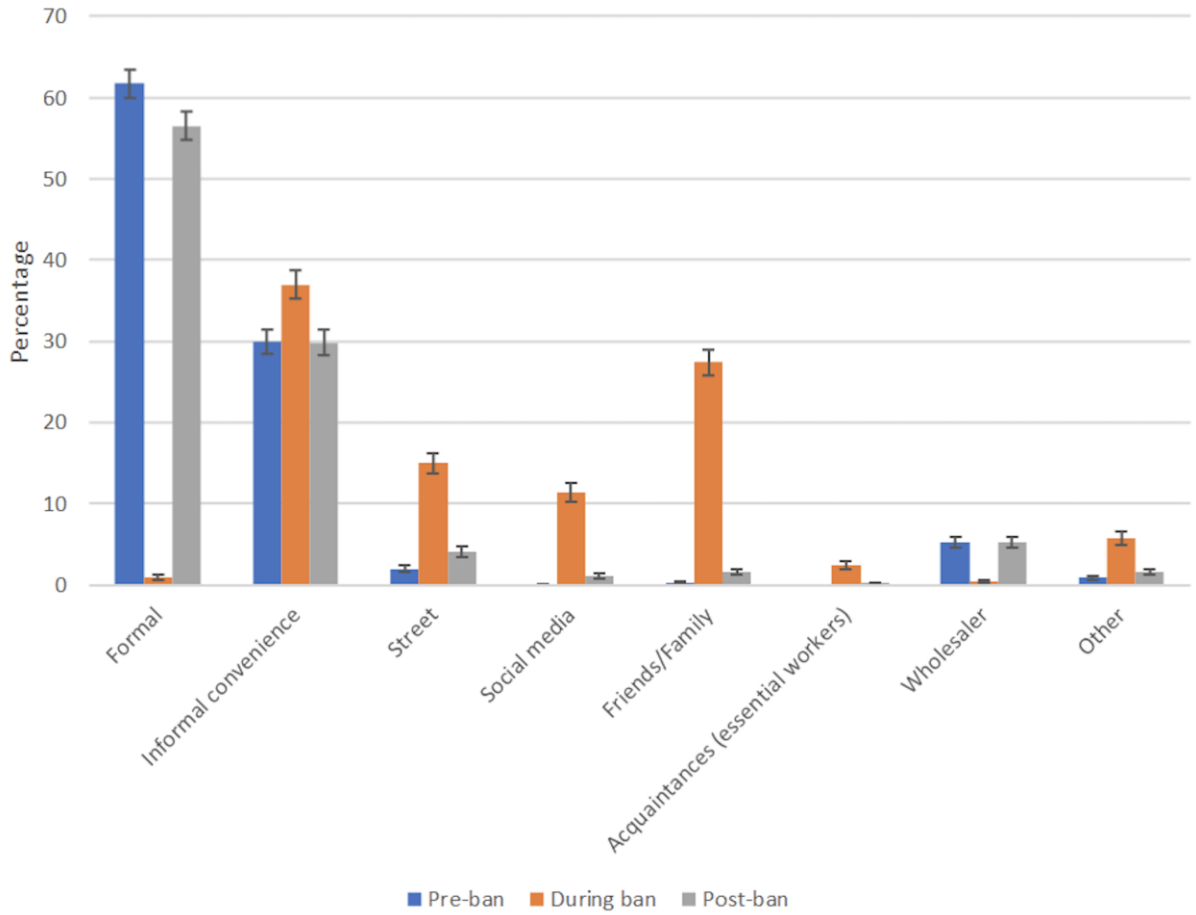
Overall, continuing smokers reduced their consumption by 4 sticks per day during the sales ban. After the sales ban, consumption increased, but per capita consumption is still almost one stick less per day than pre-lockdown. Consumption before and after the ban was not statistically different for Africans, Coloureds and Indians (for both males and females in each ethnicity group), while White male and female respondents experienced a significant reduction in consumption in the post-ban period. The overall finding that average post-ban consumption is less than pre-ban consumption is driven by the fact that White respondents comprise a large proportion of the sample.

From the last three columns, we see that almost 40% of smokers indicated smoking the same number of cigarettes on average per day before and after the ban, while another 38% smoked less in the post-ban period. About 22% of respondents indicated that they smoked more cigarettes per day in the post-ban period.

b) Retail outlet and packaging types

During the sales ban, almost no cigarettes were bought through formal retail outlets (defined as supermarkets, tobacco shops, liquor stores and petrol stations). Before the sales ban was implemented in March 2020, about 60% of respondents purchased their cigarettes from these outlets. When the sales ban lifted, smokers, to a large extent, returned to their pre-ban distribution channels (Figure 1).

Figure 1: Distribution of outlets where respondents purchased cigarettes pre-, during, and post-ban (with 95% confidence intervals)



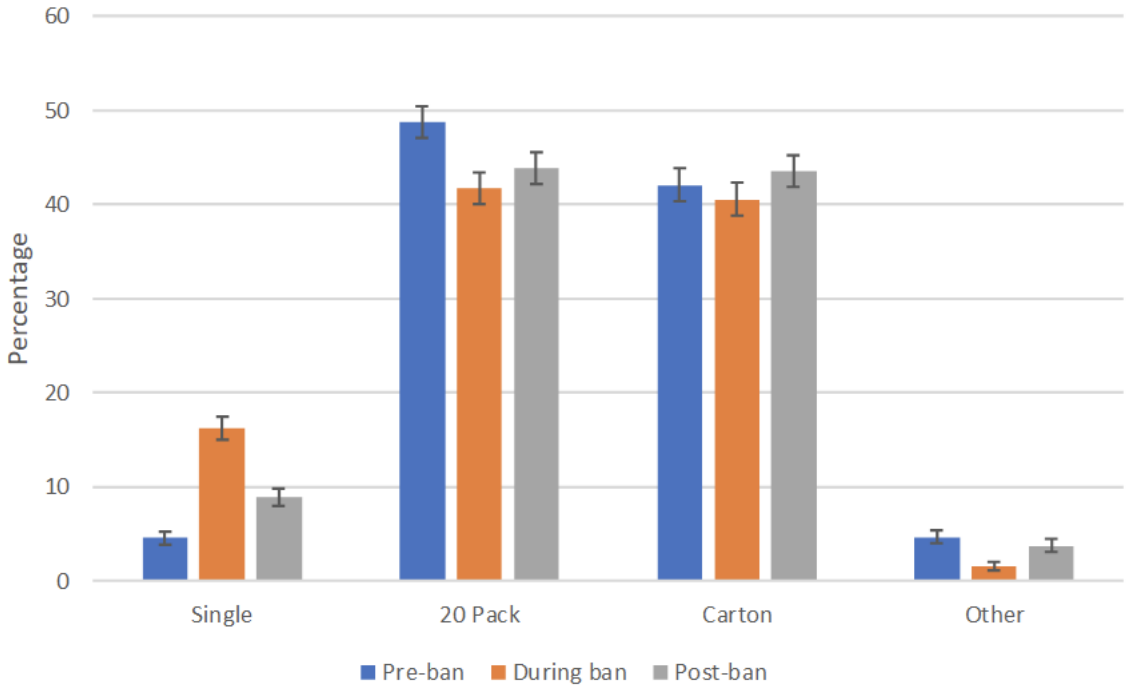
Notes: "Formal" includes supermarkets, petrol stations, liquor stores and tobacco shops. "Informal convenience" includes spaza shops, cafes, and house shops. "Street" includes street vendors and car guards.

The percentage of people who purchased cigarettes through informal convenience stores (specifically spaza shops and house shops) increased during the sales ban, but decreased to its pre-ban levels after the ban was lifted. While unconventional distribution channels became important during the sales ban (such as social media and friends/family), these all but disappeared in the post-ban period. The only "outlet" that was able to increase their post-ban market share, compared to the pre-ban period, were street vendors and car guards (combined into one category). Their share of sales increased from 2% pre-ban to 15% during the ban, and was 4% after the ban was lifted.

Figure 2 illustrates the shares of the different packaging types bought by the sample in the pre-, during and post-sales ban periods. Pre-ban, 20-packs were the most popular packaging type in the sample, with almost 50% of purchases, while cartons followed close behind, and singles and other packaging types (packs of 10 or 30 cigarettes) made up the minority of purchases. During the ban this composition shifted, with singles becoming significantly more popular at the expense of the other packaging types.

Comparing the pre- and post-sales ban packaging distributions, the share of single sticks has nearly doubled for the respondents in the sample. This suggests that the preference for single sticks persisted even after the end of the ban. The share of packs of 20 cigarettes has decreased by about 5 percentage points post-ban, vis-à-vis the pre-ban period, whereas the popularity of cartons and other packaging types among our respondents remained broadly the same.

Figure 2: Distribution of packaging type by period (with 95% confidence intervals)



Note: "Other" includes packs of 10 and 30 cigarettes.

c) Cigarette brands and their manufacturers

The sales ban greatly changed the competitive landscape and the relative shares of cigarette producers. In our sample of respondents, local producers, many affiliated to the Fair-trade Independent Tobacco Association (FITA), were able to expand their market share, at the expense of the MNCs. In our previous reports we indicated that the market share of the MNCs decreased from 77% pre-lockdown, to 38% in early May and to less than 20% in June 2020. In the post-sales ban market, the market share of the MNCs has increased substantially.

Table 4 shows the market share of the MNCs, by demographic group, for the same group of respondents, i.e. continuing smokers that completed both the second and the third surveys. The data are weighted by the reported daily consumption in each of the three periods. The estimates for the pre-ban and during the ban period differ slightly from the results reported in the second REEP report, because here we report on a subgroup of survey two respondents (i.e. only those who also completed the subsequent third survey). Despite minor differences, the pre- and during sales ban proportions are very similar to those given in the second report (see Table 12 in that report).

Table 4: Percentage of smokers who smoked MNC brands before, during, and after the sales ban

	Pre-ban proportion	During ban proportion (June 2020)	Post-ban proportion	% change pre- vs post-ban
Male	74.9	19.5	65.3	-12.8
African	68.8	19.1	61.6	-10.4
Coloured	75.3	16.1	60.6	-19.5
Indian	83.6	22.1	77.5	-7.3
White	75.3	19.8	66.2	-12.0
Female	72.8	15.7	65.7	-9.7
African	82.1	18.9	68.9	-16.0
Coloured	81.5	17.2	66.5	-18.4
Indian	80.2	38.4	69.4	-13.5
White	70.6	14.9	65.3	-7.5
Ethnicity and/or gender undisclosed	74.2	12.9	65.4	-11.9
Overall	**73.7**	**17.0**	**65.5**	**-11.0**

Note: Multinational companies include British American Tobacco, Philip Morris International, Japan Tobacco International, and Imperial Tobacco. The data are weighted by cigarette consumption in the respective periods.

Amongst those in our sample, MNCs gained back a large share of their pre-lockdown market. In the post-sales ban period, around two-thirds of all cigarettes purchased by respondents in our sample were MNC brands. This share is similar across gender and ethnic groups. Despite the very large increase in the share of MNC brands after the sales ban was lifted, compared to during the ban, the MNC share is 8.2 percentage points (or 11%) lower than their market share before the ban.

In Table 5 we indicate the shares for the different companies before, during and after the sales ban, for respondents who answered the third survey. As in the previous table, the shares are weighted by the respondents' daily cigarette consumption, for each of the three different periods.

Table 5: Individual companies' share of cigarettes bought by survey respondents, pre-, during, and post-sales ban

Manufacturer	Pre-sales ban	Sales ban (June 2020)	Post-sales ban	% change pre- vs post
British American Tobacco	47.8	8.4	40.9	-14.4
Japan Tobacco International	15.5	4.4	14.0	-9.9
Gold Leaf Tobacco	12.6	26.6	14.0	10.8
Philip Morris International	10.2	4.0	8.7	-14.0
Carnilinx	6.0	13.9	6.2	3.8
Best Tobacco	1.9	10.6	3.5	88.6
Pacific Cigarette Company	1.8	8.0	3.4	86.1
Amalgamated Tobacco	1.5	10.1	2.0	29.1
Afroberg Tobacco	0.5	3.2	2.4	406.1
Protobac	0.4	0.4	0.3	-18.6
Olomide	0.3	2.3	0.6	69.5
Folha	0.2	0.5	0.1	-32.6
Other	1.3	7.6	3.8	
Total	100	100	100	

Notes: All individual responses are weighted by their declared consumption.

The MNCs' market shares decreased during the sales ban period, and, even though they recovered substantially after the sales ban was lifted, had not returned to their pre-lockdown levels when we conducted the survey. Relative to the pre-sales ban period, BAT's market share decreased by 6.9 percentage points (14%), Japan Tobacco International's (JTI) market share decreased by 1.5 percentage points (10%) and Philip Morris International's market share decreased by 1.5 percentage points (14%).

The market shares of smaller local producers substantially increased during the sales ban period. Even after the sales ban was lifted, their market shares were higher than in the pre-lockdown period. Gold Leaf Tobacco Corporation (GLTC), the largest of the local producers, increased its market share from 12.6% pre-lockdown to 14% after the sales ban was lifted, an increase of 1.4 percentage points, or 11%. Best Tobacco Company (with an increase of 1.6 percentage points (89%)), Pacific Cigarette Company (also with an increase of 1.6 percentage points (86%)), Amalgamated Tobacco (with an increase of 0.5 percentage points (29%)), and Afroberg Tobacco Company (with an increase of 1.9 percentage points (more than 400%)) have also been able to increase their market shares substantially. Given the relative smallness of these companies at the outset, and the limited size of the sample, the growth rates are subject to some sampling and random variation. However, that does not negate our finding that these companies have seen a substantial increase in their market share.

Table 6 shows the market shares of the top 20 pre- ban brands before, during, and after the sales ban.

Table 6: Percentage of cigarettes purchased by respondents pre, during, and post-sales ban

Brand	Producer	Pre-sales ban share	During sales ban share	After sales ban share	% change, pre- vs post-ban
Pall Mall	BAT	12.7	1.8	11.9	-6.2
Peter Stuyvesant	BAT	11.7	2.6	9.5	-18.7
Camel	JTI	7.3	2.2	6.2	-15.7
Winston	JTI	6.6	0.8	6.9	5.1
Marlboro	PMI	6.5	3.4	5.8	-10.6
Benson & Hedges	BAT	5.9	0.4	5.5	-7.2
Kent	BAT	4.9	0.4	3.2	-34.8
Dunhill	BAT	4.4	0.7	3.6	-17.8
Chesterfield	PMI	3.7	0.6	3.0	-19.8
Rothmans	BAT	3.7	1.3	3.2	-11.9
Rudland & George (RG)	GLTC	3.6	11.5	4.4	20.3
Voyager	GLTC	2.9	0.9	3.3	15.3
Sharp	GLTC	2.4	5.7	1.9	-20.1
JFK	Carnilinx	2.3	6.1	2.3	-0.5
Courtleigh	BAT	2.1	0.7	2.1	3.6
Caesar	Best	1.8	7.5	3.0	63.7
Chicago	GLTC	1.8	6.1	2.8	55.4
Atlantic	Carnilinx	1.7	1.4	1.3	-24.0
Liggett Ducat (LD)	JTI	1.3	0.8	0.4	-65.2
Remington Gold	Pacific	1.3	4.8	2.7	110.8
Other		11.4	40.3	16.9	48.1

Notes: The table is ordered according to the pre-ban brand rank (top 20). Pre-sales ban shares are based on round 2 data; collected between 4 June and 19 June. This table is based on responses from smokers who participated in the third round of the survey, and the same group of respondents who completed the second survey. All data are weighted by cigarette consumption in the relevant period.

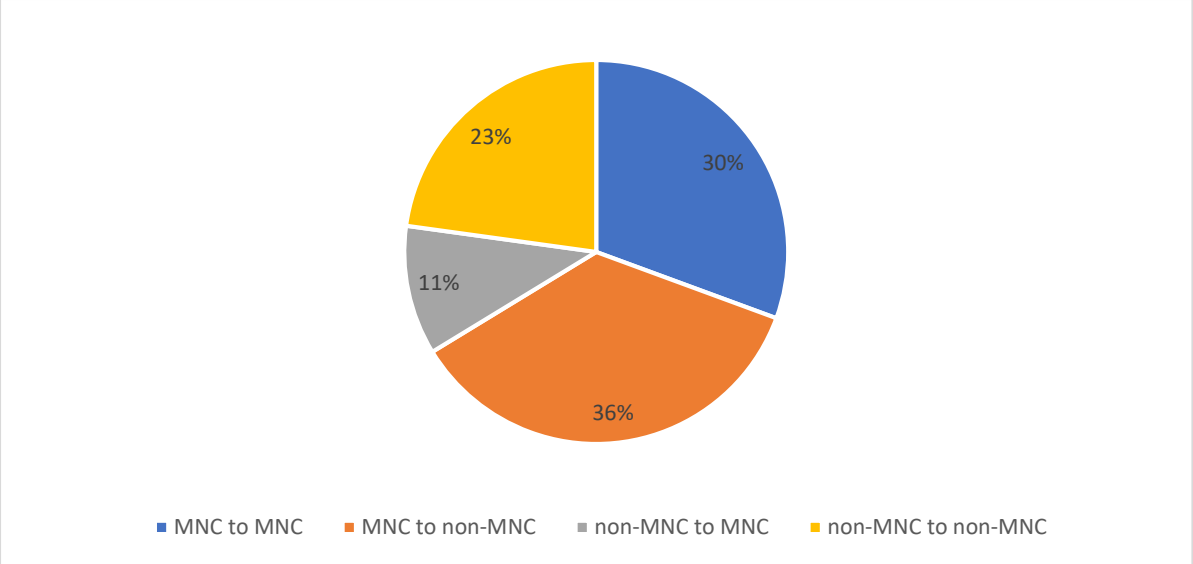
We see from Table 6 that order of the individual brands' market shares in the post-ban period has broadly reverted back to the order of brands' pre-ban market share. However, the dominant brands have become somewhat less popular. All the prominent MNC brands, other than JTI's *Winston*, have a lower market share post-ban than pre-ban. BAT's *Pall Mall* is once again the dominant brand, with 11.9% of the sample market, down from 12.7% pre-lockdown. Gold Leaf Tobacco Corporation's *RG* brand, which became the single most-sold brand during the sales ban period, with a market share of 11.5%, is the most popular non-MNC brand after the lifting of the sales ban, but its market share has dropped to 4.4%. Nevertheless, this is still 0.8 percentage points (20%) higher than before the sales ban was imposed. It has overtaken BAT's *Dunhill*, *Rothmans* and *Kent* brands, as well as Philip Morris's *Chesterfield*, which were all more popular in the pre-ban period. Other brands that have substantially increased their market shares post-ban are Best Tobacco Company's *Caesar* (1.2 percentage points or 64%), GLTC's *Chicago* (1.0 percentage points or 55%) and Pacific Tobacco Company's *Remington Gold* (1.4 percentage points or 111%). Overall, the market has become less concentrated in terms of brands, as the top 20 brands, which accounted for 89% of the market pre-ban, make up only 83% of the of market post-ban.

From the survey conducted in June 2020, we observed that a large share of the sample switched from smoking MNC brands to non-MNC brands. Formal retail outlets, which primarily sold MNC brands, were unable to sell cigarettes, which greatly limited smokers' access to the MNC brands. Pre-lockdown, the non-MNC brands had a disproportionately large share in the informal markets. Thus, the producers of these brands had a major competitive advantage over the MNCs in getting their product to their customers, as well as to other customers who were simply desperate to find cigarettes.

We investigated whether the brand shifting persisted once the sales ban ended and the market normalised. Based on 3049 observations from respondents who answered the relevant questions in both the second and the third surveys, 65% indicated that they smoked the same brand after the sales ban was lifted as before the sales ban, while 35% indicated that they smoked a different brand.

In Figure 4, we analyse brand switching in more detail. Of the smokers who indicated that they switched brands between March 2020 (pre-ban) and September 2020 (post-ban), most (36%) switched from an MNC brand to a non-MNC brand (Figure 3). 30% of switchers switched from one MNC brand to another MNC brand, and 23% switched from one non-MNC brand to another non-MNC brand. Only 11% of switchers switched from a non-MNC brand to an MNC brand.

Figure 3: Brand switching by producer classification, before the sales ban vs. after the sales ban



Notes: The figure includes continuing smokers (non-quitters), who reported brands in both periods and whose reported pre-ban brand (in round 2) is different to their reported post-ban brand (reported in round 3).

d) Cigarette prices

Cigarette prices increased sharply during the sales ban. In our earlier reports we indicated that, by early May, the average price of cigarettes was 90% higher, and by early June the average price was nearly 250% higher, than in March 2020. Unsurprisingly, cigarette prices decreased substantially after the sales ban was lifted in August.

Soon after the sales ban was lifted, BAT announced an increase in the retail price of their cigarette brands, presumably to make up some of the losses that they incurred during the sales ban (Business Insider SA, 2020). In Table 7 we indicate the average price per cigarette before, during and after the sales ban, by demographic group, and in Table 8 by some product characteristics. Although the number of observations in some categories is too small to allow us to make strong conclusions, the average

post-ban price of cigarettes is higher than for nearly all demographic groups. Where the reported average post-ban prices are lower (e.g. for White males and African females) the differences are insignificant.

Table 7: Average per stick price by demographic group pre-, during, and post sales ban

	Pre-sales ban	SD	During sales ban	SD	Post sales ban	SD	% change pre vs post	P-value pre vs. post
Male	1.69	0.56	5.58	2.54	1.75	0.67	3.4	0.003
African	1.90	0.70	5.57	2.22	2.14	0.80	12.7	0.000
Coloured	1.62	0.49	7.76	2.59	1.66	0.66	2.2	0.474
Indian	1.69	0.51	4.68	1.58	1.85	0.68	9.2	0.065
White	1.64	0.52	5.05	2.35	1.64	0.57	-0.4	0.708
Female	1.58	0.51	5.84	2.84	1.63	0.52	3.7	0.000
African	2.04	0.62	5.48	2.66	1.99	0.75	-2.6	0.586
Coloured	1.62	0.43	8.00	2.55	1.65	0.48	1.4	0.389
Indian	1.52	0.60	5.08	2.17	1.58	0.49	3.8	0.467
White	1.53	0.51	5.14	2.59	1.61	0.51	5.0	0.000
Ethnicity and/or gender undisclosed	1.65	0.51	5.60	2.83	1.69	0.55	2.3	0.385
Overall	**1.63**	**0.56**	**5.76**	**2.80**	**1.73**	**0.66**	**5.8**	**0.000**

Notes: "P-value" represents the p-value for the T-test for difference in means.

The average per-cigarette price is 5.8% higher post-ban than pre-ban.[2] Table 8 indicates the average per-cigarette prices for different product characteristics pre-, during, and post-ban. Again, the average prices post-ban are greater than the average prices pre-ban for all product characteristics, indicating that price increases were applied across the board, but not necessarily equally. The average price of cigarettes produced by the MNCs increased by nearly 5% compared to the pre-ban period, whereas the average price of cigarettes produced by the non-MNCs increased by 30%. This indicates a substantial convergence of cigarette prices between these two groups of suppliers, even though the MNC brands still sell at a premium to the non-MNC brands.

[2] The average cigarette price is a weighted average of the pre-ban and post-ban prices, where the weights are based on the purchasing patterns in the two periods. We do not apply fixed weights. Because the structure of the market has changed significantly towards the cheaper non-MNC brands after the sales ban, the post-ban weighted average cigarette price is skewed towards the lower prices. The average price increase, calculated from the weighted cigarette prices, is thus lower than the weighted average of the price increases.

Table 8: Average price per stick by purchase characteristic, pre-, during, and post-sales ban

	Pre-sales ban	SD	During sales ban	SD	Post-sales ban	SD	% change pre vs post	P-value
Packaging								
Single	2.41	0.85	7.88	3.35	2.76	1.15	14.6	0.001
20 Pack	1.66	0.46	6.16	2.52	1.68	0.49	1.2	0.271
Carton	1.50	0.57	4.51	2.15	1.57	0.54	4.9	0.001
Other	1.95	0.49	6.22	2.30	2.01	0.56	3.0	0.410
Store Classification								
Formal	1.75	0.41	4.67	2.19	1.79	0.45	1.8	0.027
Informal convenience	1.42	0.68	6.20	2.70	1.59	0.81	12.0	0.000
Street vendor	1.61	1.09	6.21	3.20	2.25	1.30	40.1	0.001
Wholesaler	1.42	0.61	4.05	1.81	1.52	0.53	7.1	0.108
Other	1.27	0.66	5.33	2.68	1.68	1.01	32.1	0.007
Producer Classification								
MNC	1.84	0.40	6.40	3.04	1.93	0.51	4.9	0.000
Non-MNC	1.01	0.51	5.63	2.73	1.32	0.76	30.6	0.000
Overall	**1.63**	**0.56**	**5.76**	**2.80**	**1.73**	**0.66**	**5.8**	**0.000**

Note: "Other" packaging includes packs of 10 and 30 cigarettes. For store classification, "Formal" includes formal retailers, petrol stations, liquor stores and tobacco shops. "Informal convenience" includes spaza shops, cafes and house shops. "Street" includes street vendors and car guards. "Other" includes friends/family, social media, acquaintances (essential workers), vending machines, and respondents who selected the "other" option. The "P-value" represents the p-value for the T-test for difference in means of prices pre-sales ban and post-sales ban.

Table 9 considers the reported cigarette prices of the different producers in more detail. The MNCs (British American Tobacco, Japan Tobacco International, and Philip Morris International) increased their retail prices by between 2.4% and 6.2%. On the other hand, the non-MNCs increased their average retail prices by between 24% (Carnilinx) and a 61% (Amalgamated Tobacco Company), off a low base. Excluding the "other" category, the lowest average price of cigarettes (of a particular manufacturer) among our sample of respondents, is R1.18 per stick (or R23.60 per pack of 20 cigarettes); the manufacturer is Carnilinx. This suggests that the ultra-low-price cigarettes, which were a characteristic feature of the market before the lockdown, have largely disappeared. From a public health perspective this is good, because it will discourage cigarette use, especially among the poor sections of the population. The poor are typically more vulnerable, because they do not have the financial means to protect themselves when they suffer smoking-related illnesses. Whether this means that the non-MNCs are more tax compliant cannot be determined from these numbers.

Table 9: Average per stick price by producer pre, during and post sales ban

	Pre-ban		During ban		Post-ban		Pre- vs post-ban	
Producer	**Mean**	**Sd**	**Mean**	**Sd**	**Mean**	**Sd**	**% change**	**P-value**
BAT (MNC)	1.83	0.42	6.30	3.24	1.93	0.53	5.4	0.000
JTI (MNC)	1.80	0.39	5.98	2.60	1.84	0.49	2.4	0.145
Gold Leaf (Non-MNC)	1.11	0.52	5.51	2.63	1.43	0.74	28.6	0.000
PMI (MNC)	1.93	0.33	6.97	2.94	2.05	0.39	6.2	0.000
Carnilinx (non-MNC)	0.96	0.46	6.50	2.60	1.18	0.52	23.5	0.000
Best Tobacco (non-MNC)	0.87	0.24	7.24	2.74	1.24	0.64	41.5	0.000
Pacific (non-MNC)	1.00	0.72	4.63	2.27	1.44	1.05	43.6	0.002
Amalgamated Tobacco (non-MNC)	0.77	0.28	4.80	2.33	1.24	0.70	61.4	0.000
Other	0.92	0.58	4.54	2.58	1.14	0.90	24.3	0.033
Overall	**1.63**	**0.56**	**5.76**	**2.80**	**1.73**	**0.66**	**5.8**	**0.000**

Notes: "Other" includes Afroberg Tobacco, Protobac, Olomide, Folha and any brands whose producer could not be determined.

e) Product substitution

In round 3 of the survey we added additional questions to determine whether smokers switched to tobacco alternatives as a result of the ban. For all smokers, we asked whether they used any non-cigarette tobacco products before the ban and if so, which ones (roll-your-own tobacco, snuff, pipe tobacco, e-cigarettes/heated tobacco products, waterpipe tobacco, or cigars/cigarillos). We also asked respondents whether the ban on cigarette sales *caused* them to use any tobacco products other than cigarettes, and if so, which products. Respondents were allowed to select more than one non-cigarette tobacco product for both questions. We found that 1372 (38%) respondents indicated that they started using other tobacco products as a result of the ban, the most popular being roll-your-own tobacco, followed by e-cigarettes/HTPs and pipe tobacco (Table 10).

Table 10: Product substitution

Tobacco product	**Frequency**	**Proportion**
Roll-your-own tobacco	765	55.8
Snuff	14	1.0
Pipe tobacco	228	16.6
E-cigarettes/heated tobacco products	434	31.6
Waterpipe	56	4.1
Cigars/cigarillos	77	5.6
Total	**1574**	**114.7**

Notes: The table reported smokers who indicated that they started smoking another tobacco product as a result of the sales ban (N=1372). Since respondents were allowed to report on more than one new tobacco product, the total frequency (N=1574, and proportion of 114.7) adds up to more than the N=1372 and 100%.

4. DISCUSSION

The tobacco sales ban was one of the most, if not the most, controversial aspects of South Africa's regulatory responses to COVID-19. The initial rationale for the sales ban was to relieve the pressure on South Africa's health system. The extension of the ban, even as other activities were allowed as the economy opened up, was subject to much criticism. Our studies showed that most continuing smokers were able to purchase cigarettes, albeit at highly inflated prices.

In 2017, the illicit market comprised more than 30% of the total cigarette market in South Africa. Even though the illicit market decreased somewhat in 2019, it was still at very high levels. At the start of the sales ban, 20% of the adult population smoked cigarettes. There was no comprehensive system to support smokers to quit. Imposing a ban on the sales of cigarettes with two days' notice was likely to have undesirable repercussions. Cigarettes are not like other products. They are highly addictive. While it is true that most smokers regret that they started smoking and want to quit, the uncertainty and economic hardship caused by COVID-19 and the subsequent lockdown, greatly increased many people's stress levels, making it more difficult to quit.

Quitting behaviour

A substantial number of people quit smoking during the sales ban period. This is very positive and should be celebrated. Based on the current survey, 16.7% of respondents indicated that they have quit smoking during the sales ban period. More than three-quarters of them indicated that they did not want to start smoking again. However, for many people, quitting smoking has proved to be more difficult than anticipated, because slightly more than half of respondents who indicated that they had quit, had relapsed by the time the third survey took place. A substantial proportion (43%) of people that relapsed, did so before 18 August, i.e. when the sales ban was still in place. The literature shows that relapse is a significant risk in the first year of quitting, after which the risk decreases (Garcia-Rodriguez *et al*., 2013). Thus, it is likely that the number of people that relapse will increase in the coming months.

A significant policy challenge is to create the appropriate incentives for quitters not to relapse. Tobacco control has multiple dimensions, and the onus is on the Ministry of Health to pass legislation and implement policies that will, among other things, help quitters not to relapse. Interventions such as counselling and nicotine replacement therapies can support quitters. One economic intervention that has been shown to be effective is an increase in the excise tax that will result in increases in the price of cigarettes (IARC, 2011).

The competitive situation

The sales ban resulted in major upheavals in the competitive landscape. MNCs have traditionally dominated the South African market. They had a strong presence in the formal retail outlets, and were able to charge high prices for their brands. Through the now-defunct Tobacco Institute of Southern Africa (TISA), MNCs tried to influenced policy. Campaigns like the #TakeBackTheTax campaign were used by the MNCs to create the impression that they were the only legal operators, and that the low-cost suppliers were driving the illicit market. While this is partially true, the reality was more nuanced. Revelations in *The Presidents' Keepers* by Jacques Pauw (2017), *Tobacco Wars* by Johann van Loggerenberg (2019), *Dirty Tobacco* by Telita Snyckers (2020), and testimony before the Nugent Commission (2018), strongly indicate that the MNCs were at the forefront of a range of strategies aimed at undermining their competitors and government institutions.

Because of the MNCs' dominant position in the market, the local manufacturers sold most of their cigarettes through the informal market. The prices were generally lower than those of the MNCs, and in many cases so low that it is impossible that excise and VAT could have been paid (Van der Zee e*t al*., 2019). When the tobacco sales ban was implemented in March 2020, the distribution channels through formal retail outlets were closed down. Cigarette manufacturers had to sell their product

through informal channels. Because they had previously developed the distribution channels to the informal market, the local producers, many affiliated to the Fair-trade Independent Tobacco Association (FITA), had a huge competitive advantage over the MNCs.

The concession to allow production for export probably created the mechanism for tobacco companies to divert cigarettes to the South African markets. As argued by Snyckers (in Bottomley, 2020), and provisionally confirmed by preliminary REEP research, cigarette exports to Namibia, Lesotho and Zimbabwe spiked in May through July 2020. It seems unlikely, given these countries' relatively small populations and low smoking prevalence, that they could consume all these cigarettes. These exported cigarettes were probably smuggled back into South Africa or never left the country (i.e. "ghost exports").

The net effect of the disruption caused by the sales ban is that MNCs' market share dropped precipitously during the sales ban. In our second report we estimated that MNCs' market share had dropped to less than 18% by June 2020, from about 77% pre-lockdown. The lifting of the sales ban reversed most of the loss of market share, but not all.

Comparing the pre- and post-ban market shares, the market shares of the three MNCs have decreased by more than 10% (in relative terms), while the market shares of the local producers have increased substantially, albeit at different rates. While it seems likely that the market was not fully settled at the time we conducted the third survey, and may still adjust somewhat in the future, it is unlikely that the market shares of the various manufacturers will return to per-lockdown levels, for a number of reasons. Many respondents indicated that they switched from MNC brands to non-MNC brands, because (1) respondents had become accustomed to them, (2) local brands were cheaper, and (3) respondents saw it as a form of tax revolt to purchase cheap (and thus possibly illicit) cigarettes.

Cigarette pricing

The sales ban greatly disrupted the market and resulted in very large increases in the price of cigarettes. Anecdotally, we were informed that cigarette prices plummeted from their elevated levels when it was rumoured that the country would move to lockdown level 2, and that the sales ban would be lifted. Cigarette prices returned to "normal" levels within days of the lifting of the ban.

According to a media report of 20 August 2020, BAT informed its retailers that it would increase the prices of its brands by between 4% and 10%, from 24 August 2020 (Business Insider SA, 2020). The retailers apparently passed these price increases on to their consumers, because our results indicate that the average retail price of BAT brands was 5.4% higher in September 2020 than before the sales ban.

In our second report we predicted that the disruption of the sales ban and the MNCs' loss of market share would result in a price war after the sales ban was lifted. Our prediction (at least at this stage) was incorrect. BAT (and the other MNCs) raised the price of cigarettes within a week after the lifting of the ban. This suggests that MNCs were confident that they would regain their market share, and sought to increase their revenues by raising the price.

Between the early 1990s and 2010 the MNCs, led by BAT, followed a strategy of substantially increasing the net-of-tax price of cigarettes, even as the government was increasing the excise tax. Even though this pricing strategy meant that they were accelerating the reduction in the quantity of cigarettes sold, the MNCs were able to increase their total turnover substantially. The economic rationale for this pricing strategy lay in the price elasticity of demand. Because the demand for cigarettes in South Africa is relatively price inelastic (van Walbeek, 2005; Mukong & Tingum, 2020), a given percentage increase in the price of cigarettes will reduce consumption by a lower percentage and will thus increase total industry revenue.

The entry of low-cost cigarette manufacturers into the market in the early 2000s, and their increasing prominence after 2010, constrained the MNCs' ability to increase the net-of-tax price further. Whereas the MNCs increased the average price of their brands by nearly 5%, compared to the pre-lockdown period, the non-MNCs increased their average prices by 30%. The evidence presented in this report, and in our second report, suggests that the non-MNCs realised that they could make more money by charging substantially higher prices than before the lockdown. Before the lockdown, the non-MNCs operated in the shadow of the MNCs, selling their product mainly through informal channels to relatively price-sensitive smokers. The sales ban allowed them to take centre stage, replacing the MNCs as the dominant force in the industry, albeit for a limited period. Desperate smokers had no choice but to purchase non-MNC brands at very high prices. The evidence of the third survey suggests that, while most smokers returned to their pre-lockdown brands after the sales ban was lifted, a substantial proportion did not. As a result the market share of the non-MNCs increased sharply. The lockdown was a boon for the non-MNCs. They were able to move from the periphery of the market to a place as genuine competitors to the MNCs. The evidence also indicates that they realised that they could charge substantially higher prices.

From a tobacco-control perspective, higher prices reduce consumption, irrespective of whether the price increases are driven by excise tax increases or increases in the net-of-tax price. The rapid increases in the price of non-MNC brands, relative to the MNC brands, indicate that the price variation between brands is becoming smaller. This reduces the substitution possibilities for smokers. Some smokers may be encouraged to quit when faced with higher prices, rather than switch to a cheaper alternative, because the alternatives are more expensive than they were before. This is also a positive tobacco-control development.

5. CONCLUSION

In this report, we have presented some results of the third online survey of smokers' behaviour after the tobacco sales ban. We linked the results of this survey to the same respondents that completed the second survey. This allowed us to obtain a relatively comprehensive picture of smokers' responses to the sales ban.

The sales ban has been disruptive, both for smokers and for the industry. The public health benefit of some people quitting smoking needs to be weighed against the loss of government revenue and the likely further entrenchment of the illicit market well beyond the lifting of the sales ban. In previous reports, we argued that the sales ban should be lifted expeditiously, because, from an economic perspective, the costs exceed the benefits.

The current survey, which was conducted between 16 September and 5 October 2020, indicates that the market has returned to normal. The MNCs have regained much of the market share that they lost during the sales ban, but they are in a significantly weakened position, relative to the pre-lockdown period. The non-MNCs, which gained market share during the sales ban, have now lost some of it, but are still in a substantially stronger position than they were before the sales ban was implemented

Post-ban retail prices have increased relative to pre-lockdown prices. The average price of MNC brands has increased by nearly 5%, while the average price of non-MNC brands has increased by 30%. The sales ban has shown that smokers are willing to accept a much higher price than was previously thought.

Based on the results of this and previous studies, we recommend that the National Treasury substantially increase the excise tax on tobacco products as soon as possible. The government should increase the excise tax at above-inflation rates in subsequent years. An increase in the excise tax will reduce tobacco consumption and increase government revenue.

At the same time, SARS and other law enforcement agencies should prioritise curbing the illicit trade in cigarettes. Some success was already achieved in the 2019/2020 financial year, but the developments during the sales ban period have probably reversed many of these gains. South Africa should ratify the Protocol to Eliminate Illicit Trade in Tobacco Products, and implement its provisions. Amongst other things, that would mean implementing a Track and Trace system that is independent of the tobacco industry.

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