OXFORD ECONOMICS AFRICA

VAPOUR PRODUCTS ASSOCIATION

VAPING INDUSTRY ECONOMIC FOOTPRINT AND IMPACT OF THE TPEDSC BILL

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A REPORT FOR VPASA

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EXECUTIVE SUMMARY

The government aims to tighten regulation on the tobacco industry through the Tobacco Products and Electronic Delivery Systems Control (TPEDSC) Bill. However, stakeholders in the 'vaping' industry – manufacturers and retailers of Electronic Nicotine Delivery Systems (ENDS) and Electronic Non-Nicotine Delivery Systems (ENNDS) – oppose the Bill in its current form as it seeks to impose similar restrictions on traditional tobacco and ENDS/ENNDS products, despite these product classes differing in many aspects.

Against this background, this study estimates the **economic contribution of the vaping industry in South Africa** in 2021, in terms of Gross Value Added (GVA) contribution to GDP, employment, and tax revenue. It then examines the potential impact that the proposed TPEDSC Bill will have on the vaping industry itself (relative to its footprint in 2021), the industries in its supply chain and the overall economy. This is achieved by investigating the case where certain stipulations in the Bill lead to a decline in legitimate ENDS/ENNDS sales.

SOUTH AFRICA VAPING INDUSTRY OVERVIEW

TOTAL ECONOMIC IMPACT

VAPING INDUSTRY'S ECONOMIC CONTRIBUTION

South Africa's **vaping industry continues to grow** as vapour products are seen as less harmful alternatives to traditional tobacco products.

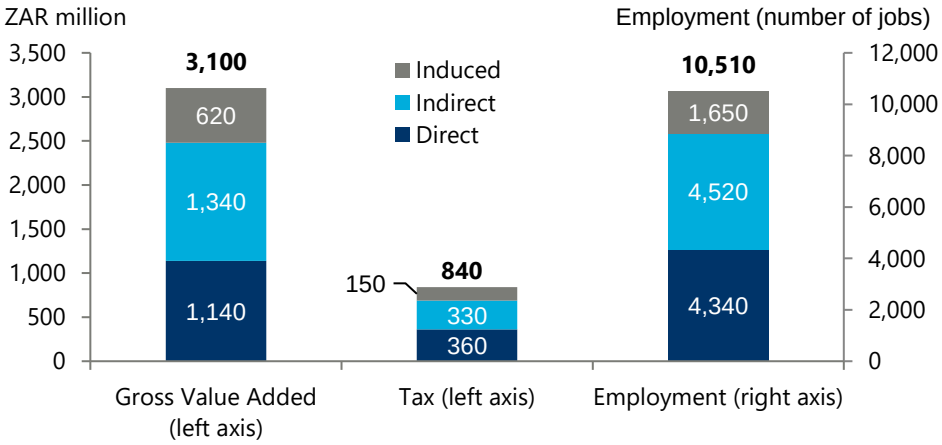
According to the latest Global Adult Tobacco Survey (GATS), roughly 2.2% of South Africa's adult population were ENDS/ENNDS product users (daily and less than daily use) during 2021. On average, vaping products are relatively more expensive than traditional tobacco products in South Africa.

This is made worse by the widespread trade in cheap illicit cigarettes across the country. Hence, while the industry has experienced a steady expansion, there is still significant room for growth under the right fiscal and regulatory circumstances, with a large number of traditional tobacco users that may switch to less harmful alternatives such as ENDS/ENNDS products.

The vaping industry makes a **significant economic contribution** from its retail and business operations, procurement, as well as payment of wages to staff. The South African vaping industry has grown notably with vapour product sales estimated at R1.7 billion in 2021, up from sales of around R1.1 billion in 2020.

Counting the direct, indirect, and induced channels of impact, the vaping industry contributed about **R3.1 billion in GVA to South Africa's GDP**, **while it supported at least 10,500 jobs in 2021.**

Looking at the vaping industry's direct tax payments (including VAT) and the tax payments it supports through procurement and wage payments, the industry supported an estimated **R840 million in tax revenue during 2021**.



IMPACT OF TPEDSC BILL

The proposed TPEDSC Bill, in its current form, could have substantial adverse consequences for the vaping industry. These adverse implications could deprive South Africa's estimated 12.7 million smokers access to less harmful alternatives as well as have adverse economic impacts. Most stipulations of the proposed TPEDSC Bill will have adverse effects on the vaping industry. The most notable which will affect the industry's sales are the following:

(i) ban on selected sales channels;
(ii) prohibition of advertising, promotion, sponsoring & display;
(iii) standardised packaging & health warnings; and
(iv) ban on ENDS/ENNDS product use in public places.

Hence, the approach followed is to examine the potential impact in a situation where these stipulations in the Bill lead to a decline in legitimate ENDS/ENNDS sales. For the purposes of estimating the size effect of various measures in the Bill this study relied on conservative estimates from the literature reflecting a decline in prevalence. It must be noted that research related specifically to the impact of these stipulations on vaping products is in many cases still very limited. Hence, this study also draws from the literature focused on traditional tobacco. It must be highlighted that in some cases the literature has yet to reach a consensus. We are aware that the tobacco industry has challenged the findings of many of the studies relied upon in this report and has commissioned evidence indicating no or even a counterproductive effect of certain of the measures in the Bill. Furthermore, our assessment of the potential impact of the measures in the Bill on sales of ENDS/ENNDS is significantly different to our assessment of the size of those impacts on the sale of traditional tobacco products owing to the distinct nature of the markets: the market in traditional tobacco products is mature and well-established with a high incidence of low-priced duty-not-paid driving accessibility; the ENDS/ENNDS market is nascent and growing despite more limited awareness of the product category and higher entry costs.

TPEDSC IMPACT ON INDUSTRY SALES

Based on data from a survey of vaping industry participants in South Africa, it is estimated that about 3.0% of the industry's sales are facilitated through pharmacies & other health establishments, while 10.3% of sales are facilitated through online & postal distribution channels, with the remaining 86.7% of sales being facilitated through traditional retail channels.

Thus, the proposed TPEDSC Bill stipulation to ban sales through online & postal distribution and pharmacies & other health establishment channels could see the **industry's sales decline by as much as 13.3%.**

In addition, the TPEDSC Bill seeks to prohibit the advertising, promotion, sponsorship and display of vapour products. A ban on advertising will limit access to information about less harmful alternatives as smokers would be less informed about the benefits of ENDS/ENNDS products.

It is estimated that the prohibition on advertising, promotion, sponsorship and display of ENDS/ENNDS products, as proposed in the TPEDSC Bill, could **reduce the vaping industry's product sales by as much as 9.7%.**

The Bill also stipulates that the Minister may make regulations regarding the packaging and labelling of ENDS/ENNDS systems which may include standardised packaging. This would put new and emerging vaping brands at a major disadvantage to well-established tobacco brands.

Furthermore, standardised packaging may also contribute to increased counterfeiting as products without brand markers are easier to clone. In addition, the Bill seeks to introduce health warnings for ENDS/ENNDS products.

It is estimated that the introduction of health warnings and the implementation of standardised packaging that includes the use of uniform colours and removal of logos and branding could **reduce the vaping industry's sales by around 4.7%.**

The proposed Bill also intends to ban the use of ENDS/ENNDS in public spaces, despite these products lacking ingredients such as tar, and that second-hand exposure to metals and organic compounds from these products are markedly lower in comparison to traditional tobacco cigarettes.

A ban on the use of ENDS/ENNDS products in public spaces will reduce their demand and, in turn, sales as the appeal to many users is that these products can be used in situations where traditional tobacco cigarettes cannot. It is estimated that the ban on the use of ENDS/ENNDS products in public spaces could **reduce their sales in South Africa by about 5.9%.**

ECONOMIC IMPACT OF TPEDSC BILL

After combining the estimated impact of all the various proposed provisions in the draft TPEDSC Bill we determined that the total vaping industry's sales could decline by 33.5%. The estimated decline in vapour product sales could lead to a loss in terms of the industry's GVA contribution to GDP of about **R680.0 million**. The related loss in the vaping industry's contribution to jobs is estimated at **2,530**. Furthermore, due to the Bill, tax revenues could decline by **R220.0 million**.

R680.0 million	2,530	R220.0 million
Loss in GVA contribution to GDP	Loss in industry's contribution to jobs	Loss in industry's contribution to taxes

It is important to highlight that **the impact may in fact be substantially larger** given that the industry has expanded since 2021. Furthermore, the Bill will not only have adverse effects for a specific period in time as modelled in this report, but these adverse economic impacts will accumulate in future years as the Bill will inhibit the growth of the nascent vaping industry in South Africa.

This study does not examine or model the potential adverse impact of the Bill on the economic benefit arising from what the vaping industry refers to as "Tobacco Harm Reduction". However, based on the growing consensus that vaping is less harmful than cigarettes and that using vaping products may be a more effective way to quit smoking than traditional methods, it is reasonable to assume that such a significant decline in vaping product sales is likely to be associated with adverse economic outcomes in terms of the projected health costs associated with tobacco consumption.

INDUSTRY-LEVEL IMPACT OF TPEDSC BILL

At the industry level, the impact is significant in the sectors from which the vaping industry sources its inputs, those that the industry relies on for the distribution and retail of its products, as well as the services it utilises. Some of the sectors most severely impacted are as follows:

MANUFACTURING

- R35.3 million loss in GVA, loss of 90 jobs

TRANSPORT & COMMUNICATION

- R29.0 million loss in GVA, loss of 76 jobs

TRADE & HOSPITALITY

- R228.2 million loss in GVA, loss of 1035 jobs

FINANCIAL & BUSINESS SERVICES

- R113.8 million loss in GVA, loss of 213 jobs

1. INTRODUCTION

The South African government ratified the World Health Organisation's (WHO) Framework Convention on Tobacco Control (FCTC) in 2005. According to the Government of South Africa, this treaty means that it "*has an obligation to protect its citizens from tobacco by implementing strong evidence-based tobacco control interventions*[1]."

The government aims to tighten regulation on the tobacco industry through the Tobacco Products and Electronic Delivery Systems Control (TPEDSC) Bill[2], which was published in the Government Gazette on September 29, 2022.

This Bill replaces the previous draft legislation known as the Control of Tobacco Products and Electronic Delivery Systems (CTPENDS) Bill which was first published in the Government Gazette on May 9, 2018. The draft legislation was informed by a Social Economic Impact Assessment System (SEIAS) carried out by the Department of Health (DoH), which included initial input from stakeholders. The SEIAS highlighted that the intention of the proposals contained therein is aimed at promoting and maintaining public health through:

1. Strengthening the current legislation by repealing the Tobacco Products Control Act, and;
2. To align legislative amendments with changes in the epidemiological and technological environments and the WHO FCTC.

It must be noted that the vaping industry has changed significantly since 2018 and an updated SEIAS has not been conducted for the TPEDSC Bill. Vaping industry stakeholders have also criticised the amendments proposed in the TPEDSC Bill, with one of the main criticisms being that the bill in its current form seeks to impose the same stringent regulations on the vaping industry as it does on the tobacco industry.

The 'vaping' industry – more specifically manufacturers and retailers of Electronic Nicotine Delivery Systems (ENDS) and Electronic Non-Nicotine Delivery Systems (ENNDS) – in particular, is opposed to many of the proposed changes, primarily due to the fact that the TPEDSC Bill imposes similar restrictive measures on traditional tobacco (like cigarettes) and ENDS/ENNDS products, despite these product classes differing in many aspects.

Industry stakeholders also criticise the proposed changes for reportedly not being based on credible health evidence while also largely ignoring feedback received through industry consultations.

Some of the key changes proposed in the draft TPEDSC Bill, specifically as it pertains to vaping products are outlined below:

[1] DoH. 2018.

[2] Republic of South Africa. 2022.

PROPOSED REGULATIONS IN DRAFT TPEDSC BILL

The TPEDSC Bill, in its current form, essentially treats vaping products similarly to traditional tobacco products, like cigarettes. Therefore, the majority of the regulatory amendments apply to both classes of products, despite these products being different in many respects. Some of the main regulations proposed in the TPEDSC Bill, specifically as it pertains to vaping products, are as follows:

1. **Ban on smoking (including vaping) in public places:** Including enclosed public places or workplaces, vehicles containing children (<18), enclosed common areas of multi-unit residences, health facilities and private dwellings used for commercial activity (childcare, schooling, domestic employment). Furthermore, an owner or person in control of a public place may prohibit smoking in an associated outdoor space, and the minister may prohibit smoking in any outdoor public place or workplace under certain conditions.
2. **Advertising, promotion, and sponsorship:** Advertising, promotion and sponsorship of vaping products are prohibited. This entails the prohibition of product placements or branding through broadcast media, any commercial communication likely to promote a value-chain participant, the distribution of samples or gifts, financial incentives to retailers to encourage sales, individual targeting via face-to-face contact, telemarketing, or text messaging, displays at educational & hospitality venues, entertainment-related events, and product branding at retail outlets, etc.
3. **Regulations on packaging and labelling:** Implementation of uniform colours, removal of logos and branding, may not state a product is less harmful, incorporate messages of the harmful effects of using the product and the benefits of stopping the use of the product.
4. **Ban on selected sales channels:** Sales are prohibited at health establishments (including pharmacies), places where a person under the age of 18 years receives education or training, through postal services, online (internet or any electronic medium) or vending machines.
5. **Potential restrictions on flavourings:** Currently the bill stipulates that the Minister of Health will be able to regulate the standards to which ENDS/ENNDS products are accountable to including the component, contents, emissions, ingredients, additives, colourants and characterised flavourings.

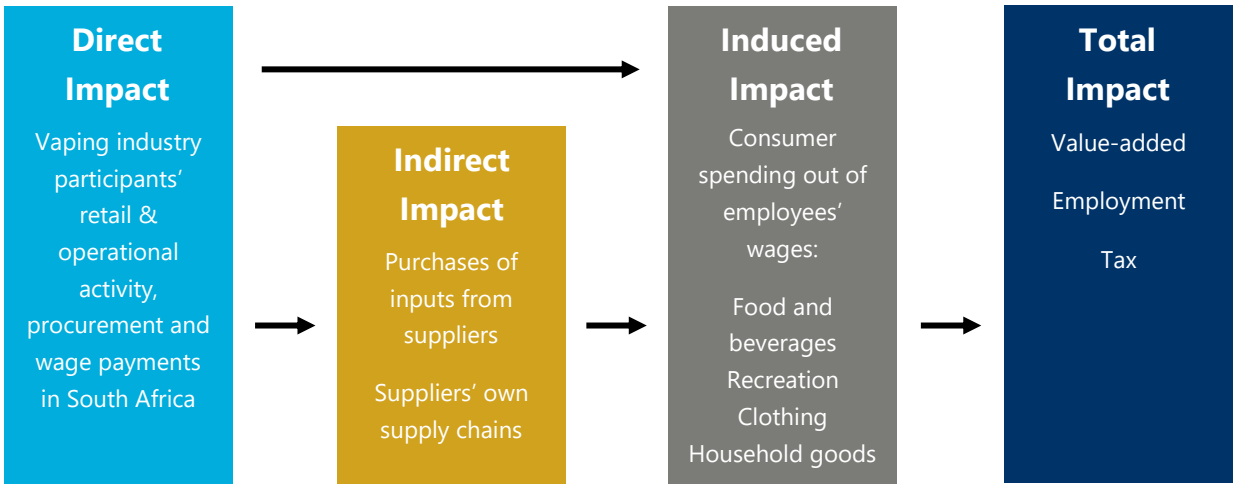
Against this background, this study estimates the economic contribution of the vaping industry in South Africa in terms of the industry's GVA contribution to GDP, employment, and tax revenue.

In turn, this then allows for the investigation to shift to examining the likely impact on the industry that would stem from some of the regulations proposed in the TPEDSC Bill, such as those outlined above. Specifically, the aim is to assess how the implementation of the TPEDSC Bill will impact the vaping industry (relative to its footprint in 2021) and the broader South African economy. The approach followed is to examine the potential impact in a situation where the stipulations outlined above lead to a decline in legitimate ENDS/ENNDS sales.

2. VAPING INDUSTRY'S ECONOMIC CONTRIBUTION IN SOUTH AFRICA

This section provides a brief overview of South Africa's vaping industry, before **outlining the sector's economic contribution to the economy in 2021** which is the latest year for which a full year's financial and macroeconomic data is available. The report will focus on three channels of impact: direct, indirect (supply chain), and induced (wage spend).

Fig. 1. Vaping industry economic contribution channels



These three impact channels are measured using the following metrics: GVA contribution to GDP, employment, and tax revenue. The full methodology is detailed in the Appendix.

2.1 SOUTH AFRICA VAPING INDUSTRY OVERVIEW

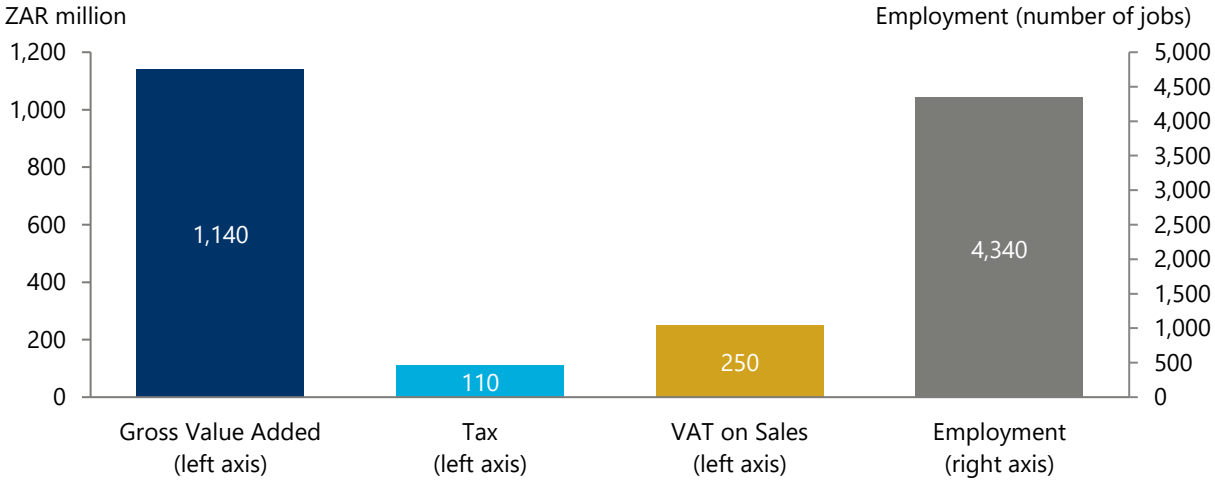
South Africa's vaping industry continues to grow as vapour products are seen as less harmful alternatives to traditional tobacco products. According to the latest Global Adult Tobacco Survey[3] (GATS), roughly 2.2% of South Africa's adult population were ENDS/ENNDS product users (daily and less than daily use) during 2021. While vaping costs have decreased over the years, on average, vaping is still more expensive than traditional tobacco smoking in South Africa[4]. This is, in part, worsened by the availability of cheap cigarettes in the illicit market[5]. That said, the South African vaping industry has grown notably and based on survey data collected from industry participants[6], **vapour product sales were estimated at R1.7 billion in 2021.**

[3] GATS, 2022.
[4] Agaku et al. 2021b.
[5] Vellios et al. 2022.
[6] Survey data was collected electronically using a questionnaire sent to industry participants through VPASA.

2.2 DIRECT ECONOMIC IMPACT OF THE VAPING INDUSTRY

By manufacturing, distributing and retailing vapour products, the industry makes a significant contribution to South Africa's economy. In 2021, the vaping industry's retail and operational activities directly generated an estimated **R1.1 billion in GVA contribution** to South Africa's GDP, equivalent to about 1.0% of the construction sector's GDP during that year. The vaping industry was also directly responsible for **4,340 jobs** (including retail jobs) in South Africa in 2021, while the businesses within the industry paid about **R110 million in taxes** (corporation, UIF and staff income taxes). An additional **R250 million in VAT** was collected on the sale of vapour products.

Fig. 2. Vaping industry's direct economic impact in South Africa, 2021

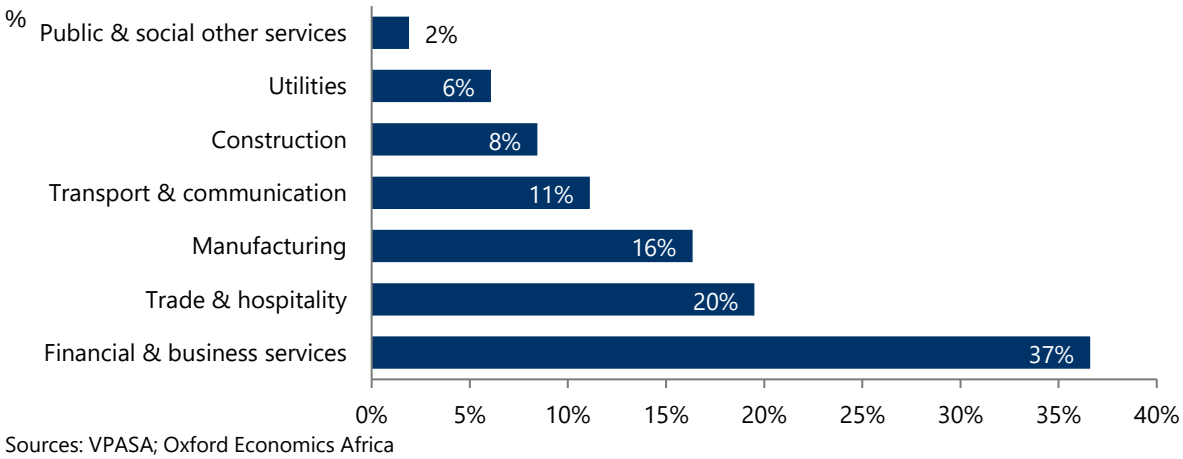


Sources: VPASA; Oxford Economics Africa

2.3 INDIRECT ECONOMIC IMPACT OF THE VAPING INDUSTRY

Despite importing a significant share of its inputs, the vaping industry still supports several sectors of the domestic economy through its procurement from South African suppliers. Looking at the industry's procurement profile, the largest expenditure was within the financial & business services, trade & hospitality and manufacturing sectors.

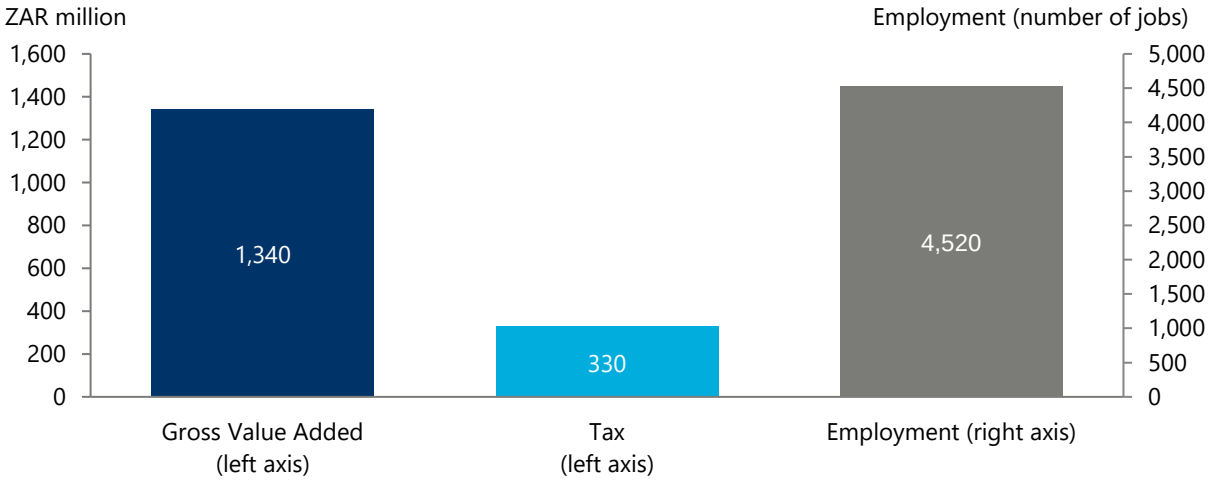
Fig. 3. Vaping industry's input procurement profile in South Africa, 2021



Sources: VPASA; Oxford Economics Africa

In total, the industry spent about R420.7 million to procure inputs from domestic suppliers. Through its overall supply-chain activity in South Africa, the vaping industry supported an estimated **R1.3 billion in GVA contribution** to the country's GDP in 2021.

Fig. 4. Vaping industry's indirect impact in South Africa, 2021



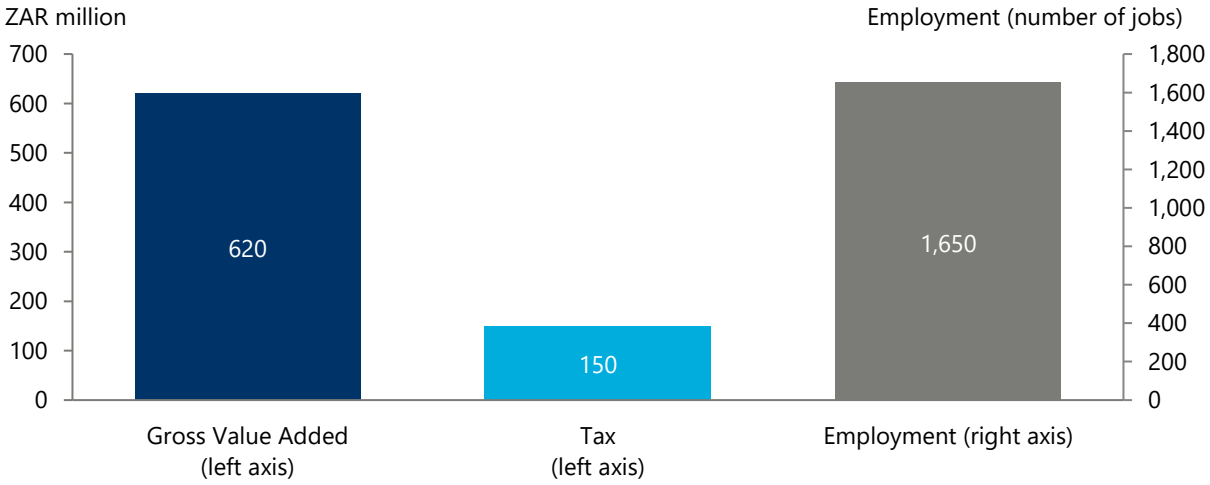
Source: Oxford Economics Africa

This supply chain economic activity supported an additional **4,520 jobs** in 2021 and stimulated the payment of **R330 million in taxes** to the South African Revenue Services.

2.4 INDUCED ECONOMIC IMPACT OF THE VAPING INDUSTRY

The wages paid by the vaping industry and those paid by the companies within its supply chain stimulate further economic activity in South Africa's consumer economy. A large portion of this would have been spent on food, housing, healthcare and other consumer goods & services.

Fig. 5. Vaping industry's induced impact in South Africa, 2021



Source: Oxford Economics Africa

The wages paid by the vaping industry and the companies in its supply chain induced an **additional R620 million in GVA contribution** to South Africa's economy.

Furthermore, the wages paid by the industry supported **R150 million in additional tax payments** to the government. Also, the wages paid by the vaping industry and the companies in its supply chain supported a further **1,650 jobs.**

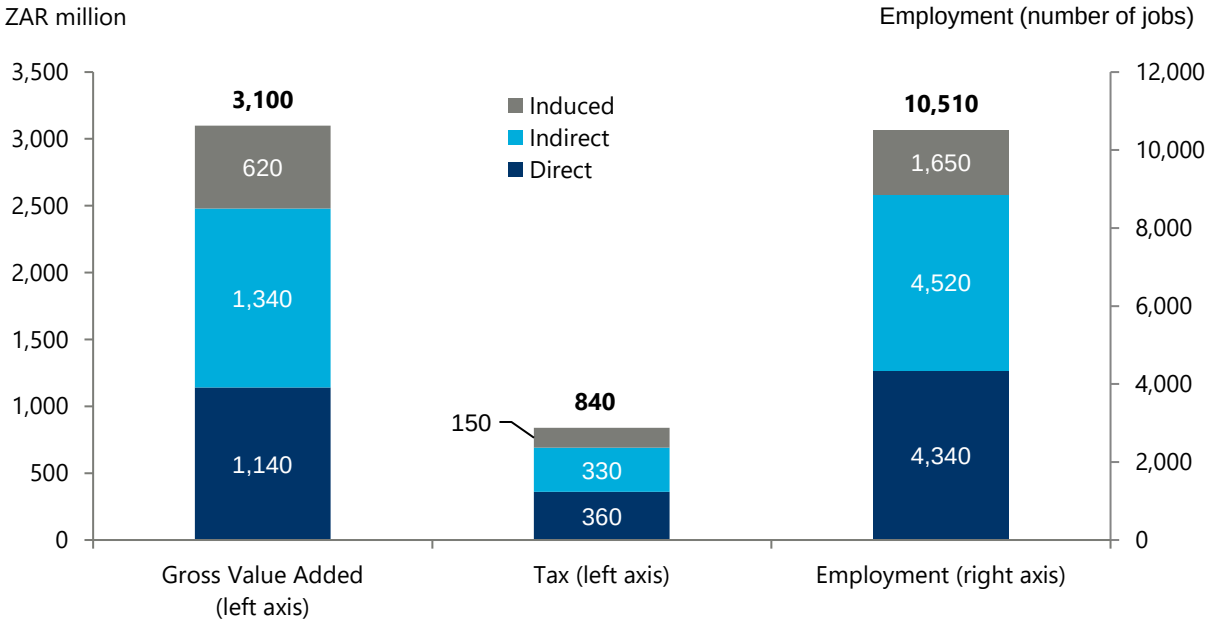
2.5 OVERALL ECONOMIC IMPACT OF THE VAPING INDUSTRY

The vaping industry's total economic contribution was considerable in 2021. Counting the direct, indirect, and induced channels of impact, the vaping industry supported an estimated **R3.1 billion GVA contribution** to South Africa's GDP in 2021. This was equivalent to 2.2% of construction sector GDP that year.

The **industry also supported 10,510 jobs** across the three channels of impact in 2021.

Looking at the industry's direct tax payments (including VAT on sales which amounted to roughly R250 million) and the tax payments it supports by buying goods & services from suppliers and paying staff wages, **the vaping industry facilitated an estimated R840 million in total tax payments.**

Fig. 6. Vaping industry's total economic impact in South Africa, 2021



Source: Oxford Economics Africa

3. THE IMPACT OF THE TPEDSC BILL

Given the growing demand and use of vapour products in South Africa, the government has moved to regulate demand and supply in the industry through the proposed TPEDSC Bill.

However, the TPEDSC Bill in its current form imposes similar restrictive measure on both ENDS/ENNDS products and traditional tobacco cigarettes, despite these product classes differing in many aspects. Given that the vaping industry is still growing and certain evidence from the literature shows that ENDS/ENNDS products are less harmful than traditional combustible cigarettes[7] and may be an effective gateway out of smoking for those that have been unable to quit through other means[8], any premature and excessive regulation could deprive millions of South African smokers access to less harmful alternatives (compared to traditional tobacco products).

In addition, the provisions in the Bill could have adverse economic implications for the growing vaping industry along with other sectors of the economy supported by the vaping industry. In this section, the economic impact of some of the stipulations of the proposed TPEDSC Bill is examined.

3.1 IMPACT OF TPEDSC BILL ON VAPING INDUSTRY SALES

Most stipulations of the proposed TPEDSC Bill will have adverse effects on the vaping industry. Notable are the following, which will affect the industry's sales:

(i) ban on selected sales channels;

(ii) prohibition on advertising, promotions, sponsorship & display;

(iii) standardised packaging & health warnings; and

(iv) ban on ENDS/ENNDS product use in public places**.**

The approach followed is to examine the potential impact in a situation where these stipulations lead to a decline in legitimate ENDS/ENNDS sales.

For the purposes of estimating the size effect of various measures in the Bill this study relied on conservative estimates from the literature reflecting a decline in prevalence. It must be noted that research related specifically to the impact of these stipulations on vaping products is in many cases still very limited. Hence, this study also draws from the literature focused on traditional tobacco.

However, it must be highlighted that in some cases the literature related to traditional tobacco has yet to reach a consensus. We are aware that the tobacco industry has challenged the findings of many of the studies relied upon in this report and has commissioned evidence indicating no or even a counterproductive effect of certain of the measures in the Bill.

[7] NASEM, 2018; Unger & Unger, 2018; Boland & Aesif, 2019

[8] Glasser et al. 2017; CDC, 2023

Furthermore, our assessment of the potential impact of the measures in the Bill on sales of ENDS/ENNDS is significantly different to our assessment of the size of those impacts on the sale of traditional tobacco products owing to the distinct nature of the markets: the market in traditional tobacco products is mature and well-established with a high incidence of low-priced duty-not-paid driving accessibility; the ENDS/ENNDS market is nascent and growing despite more limited awareness of the product category and higher entry costs.

3.1.1 Ban on selected sales channels

Based on data obtained from a survey of participants in the South African vaping industry we estimated that for the base year (2021) around 3.0% of the industry's sales were facilitated through pharmacies & other health establishments, while another 10.3% of sales were facilitated through online & postal distribution channels, with the remaining 86.7% of sales enabled through traditional retail channels (kiosks, specialist tobacco shops, etc.). Therefore, the proposed TPEDSC Bill's stipulation to ban sales through online & postal distribution and pharmacies & other health establishment channels could see the industry's sales decline by as much as 13.3% (3.0% + 10.3%).

3.1.2 Ban on advertising, promotions, sponsorship & display

The draft TPEDSC bill aims to extend the current prohibition on advertisement of traditional tobacco cigarettes to include a ban on advertisement, promotion and sponsorship of ENDS/ENNDS products. This involves the prevention of product placements or branding through broadcast media, any commercial communication likely to promote a value-chain participant, the distribution of samples or gifts, financial incentives to retailers to encourage sales, individual targeting via face-to-face contact, telemarketing, or text messaging, displays at educational & hospitality venues, entertainment-related events, and product branding at retail outlets, etc.

Sections 3.5(a), 3.5(d) and 3.5(e) of the Bill stipulate that retailers or wholesalers may not display the product at his or her place of business but may display a single prescribed notice informing consumers of a list of relevant products or related products for sale (along with prices and quantities) and may only include text information and pictorial health warnings as may be required.

Opponents to this proposed regulation would argue that there is evidence that indicates that ENDS/ENNDS products are less harmful than traditional tobacco cigarettes[9] and there is evidence that many consumers are not informed about the potential lower relative risks of these products compared to traditional tobacco cigarettes[10]. The latest Global Adult Tobacco Survey (GATS) indicates that only 36.1% of the South African adult population had heard of ENDS/ENNDS products by 2021[11].

Thus, the implication of this prohibition would be that current adult smokers would be less informed about ENDS/ENNDS products offering an alternative to traditional tobacco. Therefore, the restriction

[9] NASEM, 2018; Unger & Unger, 2018; Boland & Aesif, 2019
[10] Fong et al. 2019
[11] GATS, 2022

on advertisement of ENDS/ENNDS products could result in a decline in demand and thus sales of these products[12].

Studies have shown that the medium through which ENDS/ENNDS products are advertised has an impact on demand and therefore a blanket approach of banning advertisement may not represent the optimal approach as some channels of advertisement could assist in tobacco control. A study by Dave et al. (2019) examined if ENDS/ENNDS product advertising on television and magazines helped adult smokers quit. They found that television adverts did encourage adult smokers to quit but found no impact of magazine advertising.

Their results indicate that for each additional ENDS/ENNDS advert seen on television the number of adults who quit smoking increased by almost 1%. However, the visual depiction of ENDS/ENNDS product use in television adverts also matters. Maloney & Cappella (2016) found that ENDS/ENNDS advertisements with visual depictions of people using these products increased daily smokers' self-reported urge to smoke a tobacco cigarette relative to daily smokers who saw ENDS/ENNDS advertisements without visual cues.

One unintended consequence of the ban on advertisement of ENDS/ENNDS products could be an increase in traditional tobacco cigarette use. Tuchman (2019) found that in the absence of ENDS/ENNDS advertising, the demand for traditional tobacco cigarettes increased. The study finds that tobacco cigarette sales would have been 1% higher in the US between 2012 and 2015 if the advertising of ENDS/ENNDS products had been banned over the same period.

While research on the impact that a prohibition on advertising, promotion & sponsorship of ENDS/ENNDS products will have on demand is still limited, particularly for developing countries, there is more research on the impact this policy has on traditional tobacco cigarettes. **Therefore, to calculate the impact that the ban will have on ENDS/ENNDS products we can make some deductions from the research on traditional tobacco cigarettes.** Levy et al.'s (2018) tobacco control policy scorecard estimates that bans on direct advertising, such as television, radio, magazine, newspaper, billboard, and retail point-of-sale advertising, and bans on indirect marketing can reduce the prevalence rate by around 4% in the short term in high-income countries. However, the tobacco cigarette market in developed and developing countries differ significantly. The National Cancer Institute (NCI, 2013) found that a comprehensive advertising ban reduced tobacco consumption by 28.3% in developing countries and by 11.7% in the full sample of 66 countries (including developed).

From research by Zheng et al. (2017) it is estimated that the elasticity of ENDS/ENNDS advertising (mainly television and magazine advertising) on demand in the US is 0.047; that is, a 1% increase in ENDS/ENNDS products advertising resulted in a 4.7% increase in the demand for these products.

Using the own-advertising elasticity for ENDS/ENNDS products from Zheng et al. (2017) along with the results from Levy et al. (2018) and NCI's (2013) findings on the impact of comprehensive advertising bans on tobacco cigarette demand for developing and developed countries, it is estimated that the prohibition on advertising, promotion, sponsorship and display of ENDS/ENNDS products, as proposed in the TPEDSC Bill, could reduce ENDS/ENNDS sales by as much as 9.7% in South Africa. It

[12] Goel, 2010; Zheng et al. 2017; Levy et al. 2018

must be noted that a ban on ENDS/ENNDS advertising will limit access to information about vaping products, thereby possibly leading to fewer traditional tobacco users switching to less harmful alternatives – there is also evidence from the literature that demand for traditional tobacco products may increase in the absence of ENDS/ENNDS advertising.

3.1.3 Standardised packaging & health warnings

The Bill also stipulates that the minister may make regulations regarding the packaging and labelling of ENDS/ENNDS systems and products which may include standardised packaging. This would put new and emerging vaping brands at a major disadvantage to well-established tobacco brands. Furthermore, standardised packaging may also contribute to increased counterfeiting as products without brand markers are easier to clone. In addition, the Bill seeks to introduce health warnings for ENDS/ENNDS products.

To calculate what the impact would be of implementing plain packaging for ENDS/ENNDS products we made use of Levy et al.'s (2018) tobacco control policy scorecard, which estimates that plain packaging can reduce the prevalence rate by 4%-14%. While the impact on ENDS/ENNDS products is still unknown, some studies on traditional combustible cigarettes have shown that similar policies had minimal impacts on prevalence rates[13]. And given the differences between ENDS/ENNDS and traditional combustible cigarettes, including price and demand elasticities[14], the lower-end estimate (4%) was used as a proxy for the possible decline in the prevalence rate for ENDS/ENNDS products.

Then, using the 'new' ENDS/ENNDS prevalence rate and baseline (2021) vapour product sales, it is estimated that standardised packaging with health warnings could reduce sales by 4.7%.

3.1.4 Ban on use in public places

The proposed TPEDSC Bill intends to create 100% smoke-free areas with a ban on traditional combustible smoking but also includes a ban on the use of ENDS/ENNDS products. This ban includes the use of these products in enclosed public places or workplaces, vehicles containing children (<18), enclosed common areas of multi-unit residences and private dwellings used for commercial activity (childcare, schooling, domestic employment). A ban on the use of ENDS/ENNDS in public spaces should reduce their demand and, in turn, industry sales as the appeal to most users is that ENDS/ENNDS products can be used in situations where traditional tobacco cigarettes cannot be smoked.

The use of traditional combustible cigarette products in public spaces has already been regulated to some extent. However, the use of ENDS/ENNDS products in public spaces is a contentious issue given the novelty of the technology. Some literature such as Cann et al. (2018) argue that the use of these products in public spaces will undermine tobacco control as it normalises smoking behaviour. Others argue that the use of these products are a gateway to traditional tobacco smoking and could attract the youth to start smoking[15], but the literature has yet to reach a consensus on the validity of this

[13] Pasquereau et al. 2022; Chipty, 2016
[14] Grace et al. 2014; Corrigan et al. 2020.
[15] Egbe et al. 2019; O'Brien et al. 2021.

'gateway hypothesis.' For example, Mendelsohn & Hall (2020) finds that the evidence that vaping serves as a gateway to smoking is unconvincing, highlighting that smoking more often precedes vaping and that regular vaping by never-smokers is rare.

Meanwhile, proponents of ENDS/ENNDS product use in public argue that these products present very small exposure in comparison to traditional tobacco cigarettes[16]. The reasoning is that these products lack ingredients such as tar, and that second-hand exposure to metals and organic compounds from these products are markedly lower in comparison to traditional tobacco cigarettes[17]. While another argument for the use of these products in public spaces and in general is that they can assist as a means to smoking cessation[18].

To calculate what the impact would be of banning the use of ENDS/ENNDS in public spaces we made use of Levy et al.'s (2018) tobacco control policy scorecard, which estimates that comprehensive smoke-free air laws (including all indoor worksites, restaurants, and bars) can reduce the prevalence rate by between 5% and 15% in the short term (4 years).

Given the differences, including price and demand elasticities[19], between ENDS/ENNDS and traditional cigarettes, as well as the data uncertainty, the lower-end estimate (5%) was used as a proxy for the possible decline in the prevalence rate for ENDS/ENNDS products. Thus, it is estimated that the prevalence rate of ENDS/ENNDS in South Africa could decline by 5% due to the ban on their use in public spaces.

We obtained the prevalence rate for ENDS/ENNDS smoking in South Africa from the latest Global Adult Tobacco Survey[20] which estimates that around 2.2% of the population currently use these products. Finally, using the 'new' ENDS/ENNDS prevalence rate and the baseline (2021) vapour product sales, it is estimated that the ban on the use of ENDS/ENNDS in public spaces could reduce their sales by about 5.85%.

3.2 ECONOMIC IMPACT OF TPEDSC BILL ON VAPING INDUSTRY

After combining the estimated impact of all the highlighted provisions in the draft TPEDSC Bill (Sections 3.1.1 – 3.1.4), we estimate that the vaping industry's sales could decline by a total of 33.5%:

- Ban on selected sales channels: -13.3%
- Ban on advertising, promotions, sponsorship & display: -9.7%
- Standardised packaging & health warnings: -4.7%
- Ban on use in public places: -5.9%

Using the new after-Bill estimate, the vaping industry's direct economic contribution is re-scaled to examine the potential economic impact of the TPEDSC Bill.

[16] McAuley et al. 2012.
[17] Saffari et al. 2014; Czogala et al. 2014.
[18] Adkison et al. 2013.
[19] Grace et al. 2014; Corrigan et al. 2020.
[20] GATS, 2022

The direct GVA contribution to GDP is re-scaled in proportion to after-Bill vapour product sales. The vaping industry's multiplier impacts are then re-estimated, using the economic impact model (see Appendix), based on the after-Bill direct GVA contribution. The impacts on both GDP and employment are then used to derive the impact on tax revenues. Table 1 below presents the results.

Table 1: Economic impact of proposed TPEDSC Bill

	Baseline			Economic Loss		
Channels	**Jobs**	**GDP (R' millions)**	**Tax Revenue (R' millions)**	**Jobs**	**GDP (R' millions)**	**Tax Revenue (R' millions)**
Direct	4,340	1,140	360	-920	-200	-110
Indirect	4,520	1,340	330	-1,200	-330	-80
Induced	1,650	620	150	-410	-150	-30
Total	**10,510**	**3,100**	**840**	**-2,530**	**-680**	**-220**

Sources: VPASA; Oxford Economics Africa

The analysis suggests that once the multiplier impacts are considered, the **vaping industry's contribution to South Africa's GDP could decline by R680 million due to the provisions stipulated in the TPEDSC Bill on ENDS/ENNDS products.**

To estimate the possible indirect and induced employment changes due to the proposed TPEDSC Bill, the study uses the post-Bill GDP impacts in conjunction with labour productivity estimates[21] for each sector of the economy. These estimates suggest that the **overall employment contribution of the vaping industry could fall by 2,530 as a result of the TPEDSC Bill.**

The lower sales revenues and job losses in the vaping industry would reduce its tax contribution (corporate & income taxes, UIF, etc.) by R140.0 million. In addition, the lower value of vapour product sales could reduce VAT receipts by R80.0 million. **Overall, due to the Bill, the vaping industry's tax contribution could decline by R220.0 million.**

At the industry level, in addition to the adverse economic impact of the proposed TPEDSC Bill on the vaping industry itself, the proposed Bill will also have a significant economic impact on other industries, particularly those from which the vaping industry sources its inputs (manufacturing), those that the industry relies on for the distribution and retail of its products (trade & hospitality and transport & communications), as well as the business services it utilises (financial & business services). Table 2 below summarises the industry-level results.

[21] Labour productivity estimates for each sector are sourced from StatsSA and OECD.

Table 2: Economic impact of proposed TPEDSC Bill

	GDP (R' millions)			Employment (Jobs)		
Industry	**Direct**	**Indirect**	**Induced**	**Direct**	**Indirect**	**Induced**
Agriculture	0.0	-3.0	-4.0	0	-19	-25
Mining & quarrying	0.0	-2.7	-3.1	0	-2	-3
Vaping Industry	-200.0	0.0	0.0	-920	0	0
Manufacturing (excl Vaping industry)	0.0	-16.5	-18.8	0	-42	-47
Utilities	0.0	-5.6	-5.5	0	-4	-4
Construction	0.0	-1.2	-0.6	0	-13	-6
Trade & hospitality	0.0	-205.0	-23.2	0	-930	-106
Transport & communications	0.0	-17.1	-11.8	0	-45	-31
Financial & business services	0.0	-71.1	-42.8	0	-133	-80
Public & other services	0.0	-7.7	-41.9	0	-20	-108
Total	-200.0	-330.0	-150.0	-920	-1,200	-410

Sources: VPASA, Oxford Economics Africa

Overall, the results suggest that if the proposed provisions on ENDS/ENNDS products were enacted in their current form through the TPEDSC Bill, it would have an adverse impact on both the vaping industry and the overall economy.

It is important to highlight that **the impact may in fact be substantially larger** given that the industry has expanded since 2021. Furthermore, the Bill will not only have adverse effects for a specific period in time as modelled in this report, but these adverse economic impacts will accumulate in future years as the Bill will inhibit the growth of the nascent vaping industry in South Africa.

This study also does not examine or model the potential adverse impact of the Bill on the economic benefit arising from what the vaping industry refers to as "Tobacco Harm Reduction". However, based on the growing consensus that vaping is less harmful than cigarettes and that using vaping products may be a more effective way to quit smoking than traditional methods, it is reasonable to assume that such a significant decline in vaping product sales is likely to be associated with adverse economic outcomes in terms of the projected health costs associated with tobacco consumption.

3.3 POTENTIAL BAN ON FLAVOURS

Section 8 of the TPEDSC Bill stipulates that the Minister may make regulations regarding the standards for manufacturing, testing, measuring and processing of relevant and related products which includes the ingredients, additives, colourants, and characterised flavourings. Furthermore, no person shall manufacture and process for sale or import a relevant product or a related product unless it complies with such standards as may be prescribed and has been tested in the prescribed manner, using the prescribed methods.

As the Bill does not yet outrightly ban flavours and the Minister has yet to introduce measures related to these stipulations, this study does not empirically estimate the impact of a possible ban on flavoured ENDS/ENNDS products. However, we can derive some insights from the literature regarding the potential impact of a flavour ban.

As already discussed in this report, there is evidence in support of the notion that ENDS/ENNDS products can be viewed as less harmful alternatives for traditional tobacco products. Studies also find that flavoured ENDS/ENNDS products have an appeal with adult tobacco users and therefore increase the likelihood of the use of these products by adult smokers. Flavoured ENDS/ENNDS use by adults was also associated with an increased perception of subjective rewarding and reinforcing of value in comparison to unflavoured ENDS/ENNDS[22].

But proponents of restrictions on flavouring in ENDS/ENNDS products point to the growing popularity of these products with the youth and suggest that the uptick in vaping among the youth is driven by access to flavoured ENDS/ENNDS products[23]. In a discrete choice experiment study, Pesko et al. (2016) found that restricting the availability of flavour options in ENDS devices to only tobacco and menthol was associated with a 2.1 percentage point decline in the selection of these devices. A literature review by Meernik et al. (2019), meanwhile, highlights the complexity of banning flavourings in ENDS/ENNDS products. When banning flavoured ENDS/ENNDS devices from the market, there is evidence that this would discourage current adult smokers from using ENDS/ENNDS products as an alternative to traditional tobacco smoking. Research also found that banning of flavouring in ENDS/ENNDS products drove consumers back to traditional combustible cigarettes[24]. Furthermore, there are a numerous studies that indicate that restrictions on flavoured ENDS/ENNDS products could result in an increase in illicit purchases[25].

This would be particularly relevant in the case of South Africa where illicit traditional tobacco trade is widespread and illicit channels have become increasingly entrenched. This would not only have a negative impact on the fiscus through lost revenue but would undermine the Bill which is also aimed at protecting consumers from unregulated products. Illicit traditional cigarettes and illicit ENDS/ENNDS products are more likely to contain hazardous materials or substances with more severe adverse health consequences[26].

[22] Audrain-McGovern et al. 2016
[23] Huang et al. 2016
[24] Li et al. 2022; Yang et al. 2020; Yang et al. 2022
[25] Freitas-Lemos et al. 2021; Freitas-Lemos et al. 2022; Silvis et al. 2022;
[26] Layden et al. 2020

4. CONCLUSION

An increase in demand for ENDS/ENNDS products has supported the expanding economic contribution of the vaping industry to the South African economy. The government, meanwhile, has moved to regulate the industry through the proposed TPEDSC Bill.

However, in its current form the Bill imposes similar restrictive measures on vaping products as it does on traditional tobacco cigarettes, despite these product classes differing in many aspects.

The aim of this study is to examine the likely impact of the TPEDSC Bill on South Africa's vaping industry. However, in order to do so, it is first necessary to gain an understanding of the industry's footprint prior to the Bill being implemented.

The first part of this study therefore examines the vaping industry's economic impact in South Africa, assessing the important role the industry fulfils in the country by estimating its GVA contribution to GDP in addition to the jobs and tax revenues which are supported by the industry. The economic impact findings reflect that the vaping industry makes a significant contribution to the South African economy.

The industry's total economic contribution – from its retail & business operations, procurement, and payment of wages to staff – was considerable in 2021. The vaping industry contributed about **R3.1 billion** in GVA to South Africa's GDP, while it supported at least **10,500 jobs** and **R840 million** worth of tax revenues in 2021 through the direct, indirect, and induced impact channels.

Despite importing a significant share of its inputs, the vaping industry still supports several sectors of the domestic economy through its procurement from South African suppliers. Looking at the industry's procurement profile, the largest expenditure was within the financial & business services (37%), trade & hospitality (20%) and manufacturing (16%) sectors. In total, the industry spent about R420.7 million to procure inputs from domestic suppliers.

The study then estimated the potential loss in the vaping industry's economic contribution (relative to its footprint in 2021) if the TPEDSC Bill were to be enacted in its current form. The approach followed is to examine the potential impact in a situation where certain stipulations in the Bill lead to a decline in legitimate ENDS/ENNDS sales.

For the purposes of estimating the size effect of various measures in the Bill this study relied on conservative estimates from the literature reflecting a decline in prevalence. It must be noted that research related specifically to the impact of these stipulations on vaping products is in many cases still very limited. Hence, this study also draws from the literature focused on traditional tobacco.

However, it must be highlighted that in some cases the literature related to traditional tobacco has yet to reach a consensus. We are aware that the tobacco industry has challenged the findings of many of the studies relied upon in this report and has commissioned evidence indicating no or even a counterproductive effect of certain of the measures in the Bill.

Furthermore, our assessment of the potential impact of the measures in the Bill on sales of ENDS/ENNDS is significantly different to our assessment of the size of those impacts on the sale of traditional tobacco products owing to the distinct nature of the markets: the market in traditional tobacco products is mature and well-established with a high incidence of low-priced duty-not-paid driving accessibility; the ENDS/ENNDS market is nascent and growing despite more limited awareness of the product category and higher entry costs.

The following stipulations in the Bill were examined to isolate the impact each would have on vaping industry sales:

- Ban on selected sales channels: -13.3%
- Ban on advertising, promotions, sponsorship & display: -9.7%
- Standardised packaging & health warnings: -4.7%
- Ban on use in public places: -5.9%

The total estimated decline in vapour product sales (-33.5%) that could be triggered by the stipulations of the TPEDSC Bill could lead to a loss in terms of the industry's GVA contribution to GDP of about **R680.0 million**. The related loss in the vaping industry's contribution to jobs and taxes could amount to **2,530 jobs** and **R220.0 million**, respectively.

It is important to highlight that **the impact may in fact be substantially larger** given that the industry has expanded since 2021. Furthermore, the Bill will not only have adverse effects for a specific period in time as modelled in this report, but these adverse economic impacts will accumulate in future years as the Bill will inhibit the growth of the nascent vaping industry in South Africa.

This study also does not examine or model the potential adverse impact of the Bill on the economic benefit arising from what the vaping industry refers to as "Tobacco Harm Reduction". However, based on the growing consensus that vaping is less harmful than cigarettes and that using vaping products may be a more effective way to quit smoking than traditional methods, it is reasonable to assume that such a significant decline in vaping product sales is likely to be associated with adverse economic outcomes in terms of the projected health costs associated with tobacco consumption.

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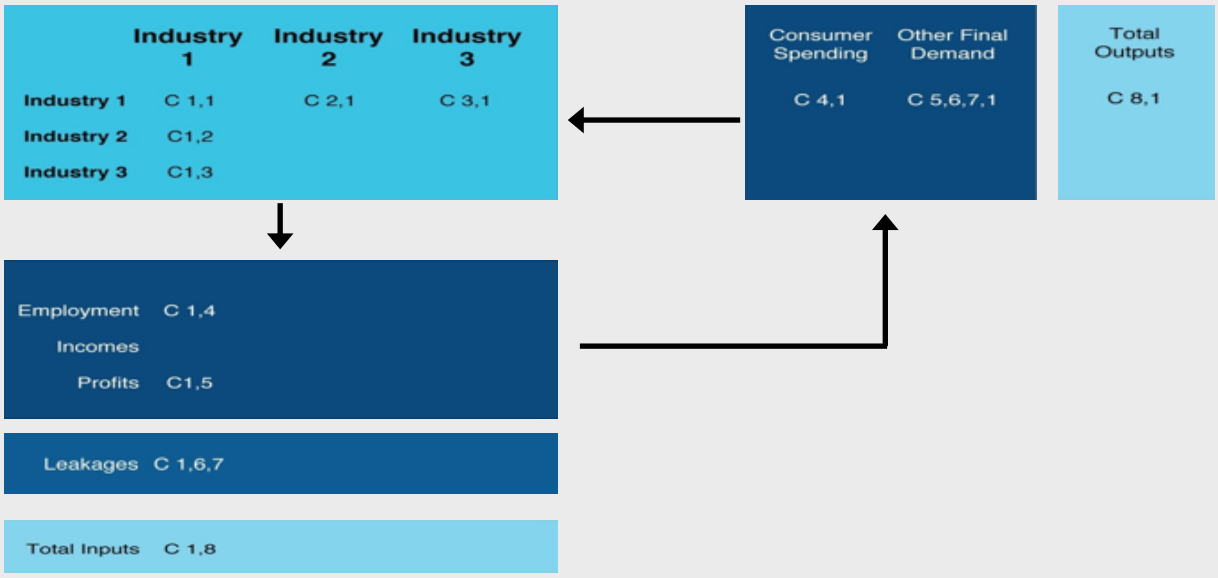
APPENDIX

A1: Input-Output (I-O) Table

Input-output (I-O) tables are designed to give a snapshot of an economy at a particular time, showing the major spending flows. These include "final demand" (consumer spending, government spending and exports to the rest of the world); intermediate spending (what each sector buys from every other sector – the supply chain); how much of that spending stays within the economy; and the distribution of income between employment income and other income (mainly profits).

Input-output tables are, therefore, particularly useful when estimating indirect and induced economic impacts. The idea behind the input-output table is that the economy can be divided into a number of producing industries and that the output of each industry is either used as an input into another industry or in final consumption. In essence, an I-O model is a table that shows who buys what from whom in the economy.

Fig. 7. Stylistic representation of an Input-Output (I-O) table



Source: Oxford Economics Africa

Reading across horizontally illustrates the distribution of each industry's output, split between intermediate demand from other industries (used as an input to production) and final demand (consumer spending, exports and other government consumption). Therefore, *Industry 2* in Fig. 7 purchases an amount, *C2,1* from *Industry 1* as an input to its production process. Thus, reading down vertically indicates what each industry purchases from other industries in the national economy by way of inputs which, when combined with imports from abroad (leakages), employment costs, operating surplus and any additional taxes or subsidies to production, give total inputs, which will equal total outputs. In the simple model illustrated in Fig. 7, *C8,1* will equal *C1,8*.

A2: Economic Impact Model

To measure vaping industry's economic contribution in South Africa, the study utilised a well-established economic impact assessment methodology that focuses on the three channels in which the industry's activities stimulate economic activity:

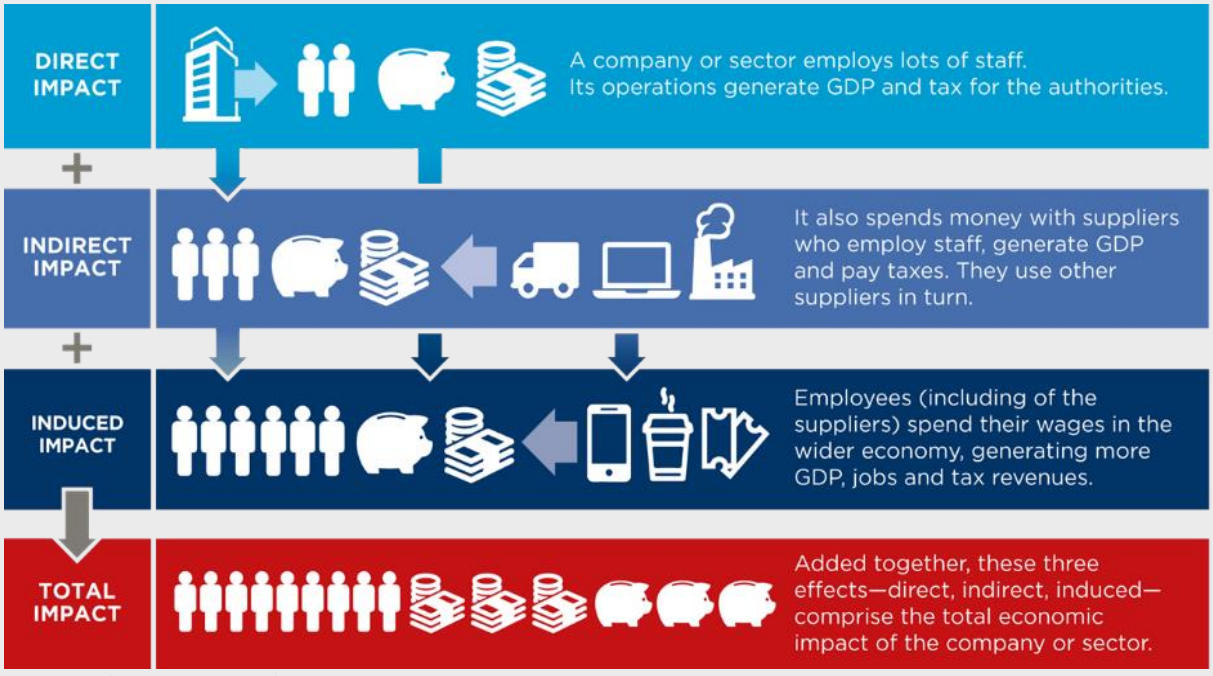
- the **direct impact** of the vaping industry participant's retail & operational activity, procurement and wage payments in South Africa. It encompasses the economic activity and employment supported by the industry itself;

- the **indirect impact** through the vaping industry's expenditure on input goods and services from South African suppliers. This expenditure stimulates economic activity and employment along the industry's supply chain; and

- the **induced impact** of individuals employed by both the vaping industry and companies in its supply chains spending their wages in the domestic economy. These employees spend a proportion of this income in the consumer economy, typically at the retail and leisure outlets close to where they live. These impacts ripple out across the rest of the South African economy through these outlets' own supply chains.

The impact channels are illustrated in Fig. 8 below:

Fig. 8. Overview of economic impact methodology channels



Source: Oxford Economics Africa

The vaping industry's overall contribution to the economy is the sum of all three channels of economic impact. The results will be presented on a gross rather than a net basis[27].

The economic impacts measured in this study will be quantified using three metrics. These are:

- **Gross value-added contribution to GDP:** this measures the contribution to the economy of each producer, industry or sector in South Africa. It is a measure of net output, most easily thought of as the value of goods or services produced, less the value of inputs used in that output's production.

- **Employment:** this is measured on a headcount rather than a full-time equivalent basis. This is to facilitate comparison with employment data for the relevant sectors sourced from official sources.

- **Tax revenues:** this is the amount of tax revenue flowing to the national government. This includes income and corporate taxes, social contributions of directly employed staff, and value-added taxes (VAT) charged on the vaping industry's sales.

The direct impact is calculated using procurement, tax, employment and financial data from a survey of vaping industry participants in South Africa.

An I-O model was developed to trace the wider (indirect and induced) economic impact. The model is based on an I-O matrix/table developed by Oxford Economics Africa using macroeconomic data from Statistics South Africa (StatsSA), the South African Reserve Bank, the National Treasury, OECD, and UNCTAD trade data. Drawing on patterns of spending observed in the I-O model, and sector-level GVA to gross output and productivity ratios from StatsSA and the UN, the indirect GVA, employment, and tax revenue impacts were also estimated.

Further augmentation of the model (to include household spending) enables the calculation of induced GVA, employment, and tax revenue impacts.

The industry multipliers used in the model would be developed using the internationally-used Leontief[28] system. Under the Leontief system, industry multipliers are calculated through a series of manipulations of the I-O matrix.

[27] A study of the gross impact necessarily ignores the alternative potential use of the resources the vaping industry employs. A net study defines the impact created by the vaping industry in excess of what would have been created if the resources were used in their second most effective use. Calculating net figures rely on many and bold assumptions about the counterfactual scenario, and are thus open to criticism, which can detract from the overall message of the research.
[28] Leontief, 1986.

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The modelling and results presented here are based on information provided by third parties, upon which Oxford Economics Africa has relied in producing its report and forecasts in good faith. Any subsequent revision or update of those data will affect the assessments and projections shown.

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