

# **An evaluation of appropriate stimulus measures to support the recovery of the South African automotive industry**

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## **Abstract:**

The COVID-19 pandemic and associated lockdowns have resulted in unprecedented disruption to all South African manufacturing value chains. The impact was most severe on globally interconnected value chains such as the automotive sector. The South African government mainly responded by implementing supply side stimulus measures such as the COVID-19 Unemployment Insurance Fund Temporary Employee/Employer Relief Scheme (UIF TERS) and the COVID-19 Loan Guarantee Scheme. These attempted to stabilize employment in the economy during the crisis and ensure firms could resume operations post-lockdown. Between July and August 2020, a survey of 24 automotive vehicle assemblers and distributors was undertaken to understand the impact of COVID-19 on the industry and to consider industry proposals for stimulus support. Based on an analysis of these COVID-19 survey responses, as well as a macroeconomic analysis of the performance of the South African automotive industry over the period of the crisis, the authors evaluate the efficacy of South Africa's stimulus measures relative to the 21 largest vehicle producing countries globally (South Africa is in 22<sup>nd</sup> position). The findings and recommendations are intended to inform policymakers on the most appropriate measures to support the industry's recovery and reconstruction from the economic impact of COVID-19.

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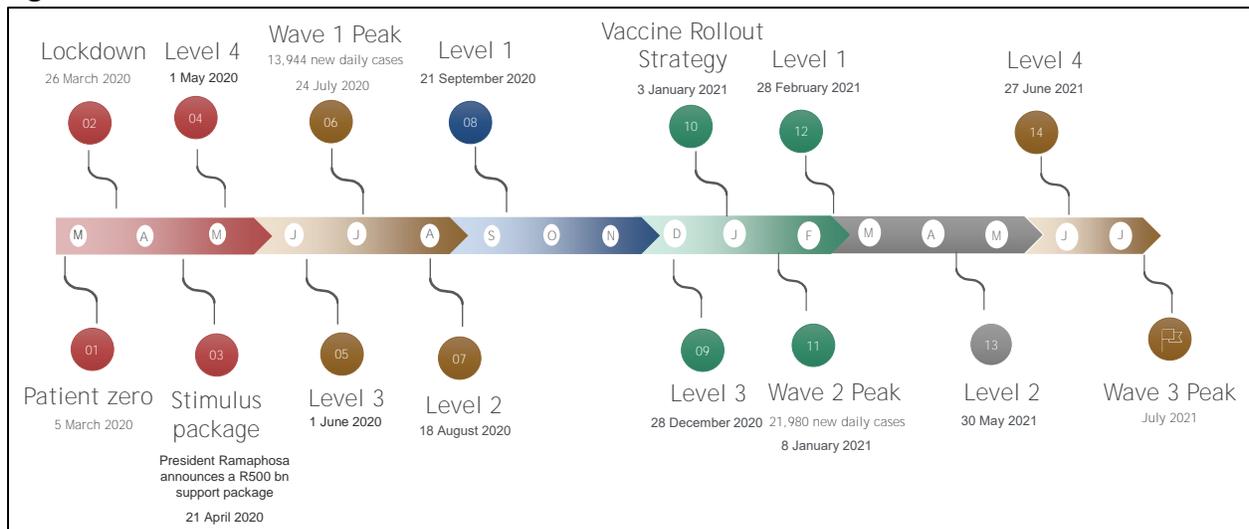
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## Introduction

The COVID-19 pandemic has had a rapid and severe impact on the global automotive industry. From the beginning of 2020, many countries underwent some form of lockdown, restricting production and trade to limit the spread of the virus. These measures have created an unprecedented disruption to global value chains, such as evident for the automotive industry. Consequently, global vehicle demand and automotive industry production was affected.

As shown in the COVID-19 timeline in Figure 1, the first case of COVID-19 in South Africa was confirmed on the 5<sup>th</sup> of March 2020. Subsequently, the government implemented a comprehensive lockdown of the economy on the 26<sup>th</sup> of March 2020 with travel restrictions implemented on the 18<sup>th</sup> of March 2020. All forms of production were closed except for essential services during the initial lockdown period, with partial automotive production only resuming on the 4<sup>th</sup> of May 2020. Moreover, vehicle dealerships were only allowed to resume trading on the 1<sup>st</sup> of June 2020. Over the 16 subsequent months the country has experienced three waves of COVID-19 infections and in response the government has put the country in various stages of lockdown.

**Figure 1: South Africa COVID-19 timeline**

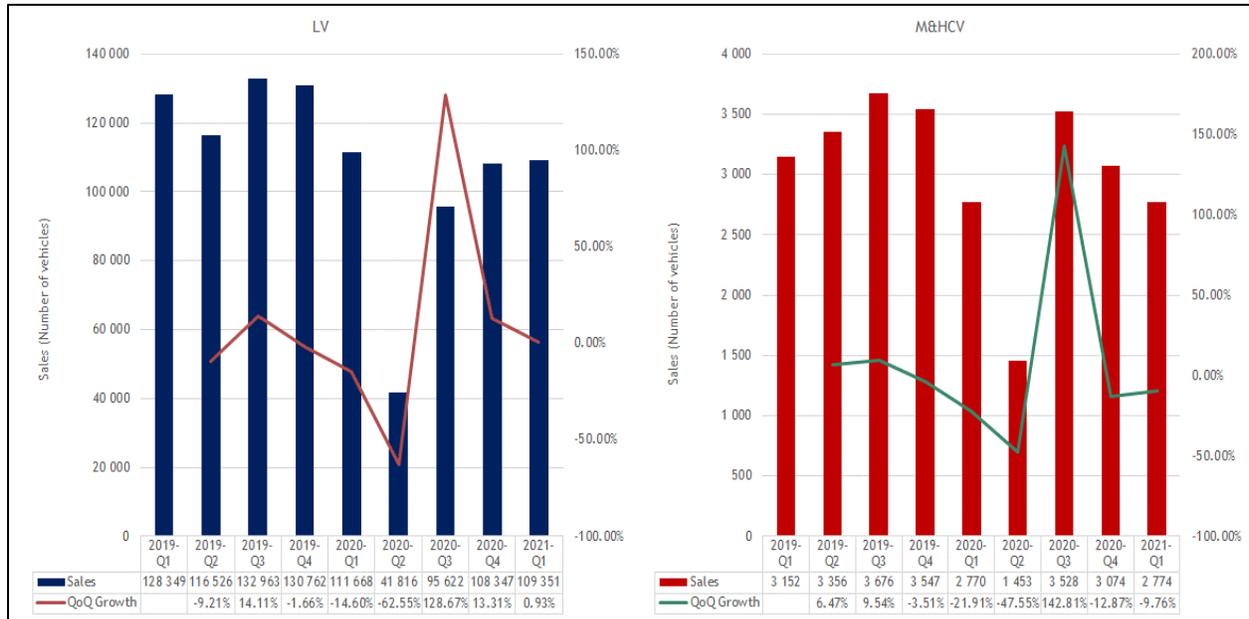


Source: AutoStats, 2020.

The South African automotive market was already experiencing a period of decline prior to the advent of the pandemic. Domestic vehicle sales have been subdued for a lengthy period and decreased by 2.9% from 2018 to 2019 (AutoStats, 2020). As a result of the pandemic and associated lockdown, Figure 2 shows that light vehicle sales declined by 13% in the first quarter of 2020 and by an unprecedented 63% in the second quarter (light vehicle sales were measured on a quarterly y-o-y comparative basis) (AutoStats, 2020). Similarly, sales of medium and heavy commercial vehicles (M&HCV) declined by 12% in the first quarter of 2020 and 57% in the second

quarter (AutoStats, 2020). Positively, sales for all market segments rebounded in the final quarter of 2020, however, sales were muted in the first quarter of 2021.

**Figure 2: Light and M&HCV sales 2019 – 2021 (quarterly, y-o-y percentage growth)**

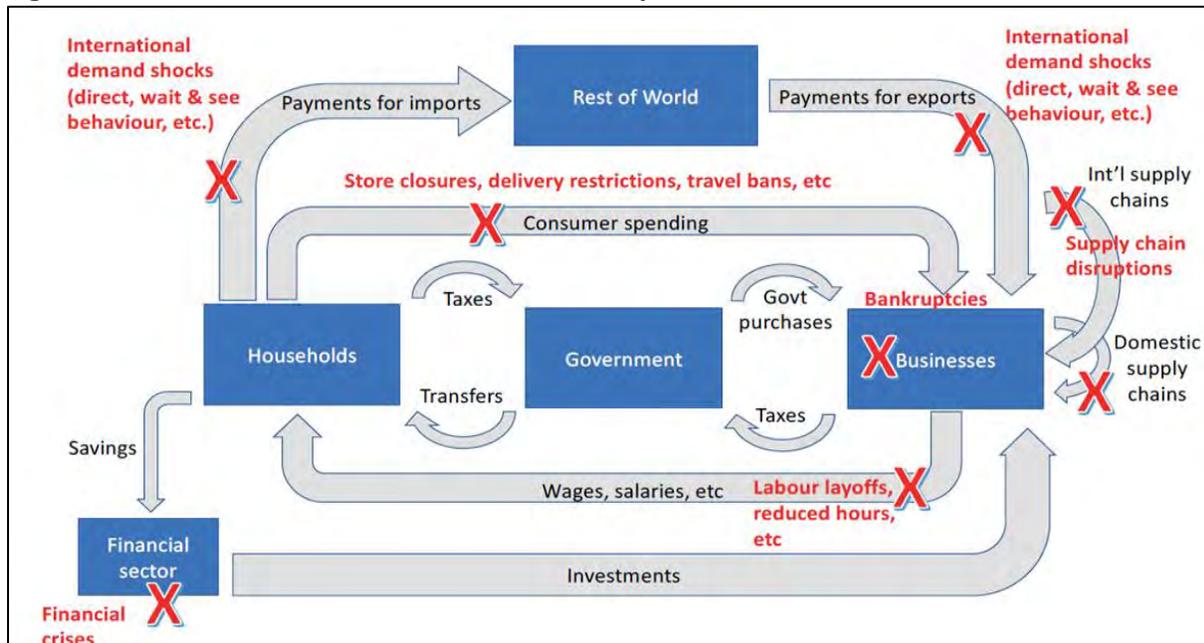


Source: AutoStats, 2020.

## Literature review

Pandemics have the potential to cause significant disruption to economic activity due to their multi-dimensional impacts. As shown in Figure 3 below, a pandemic has at least three channels of impact: disruption to production and supply chains, financial liquidity impacts, and a reduction in demand and associated investment in productive assets to meet demand. Surges in infections can create significant disruption to individual firms and can cause governments to restrict or lock down trade and production activities. Due to the depressed economic environment, consumers and investors restrict demand and investment, respectively, in goods and services. Lastly, these challenges result in financial liquidity issues for firms as revenues decline and stock holding increases. These periods of inactivity result in systemic macroeconomic impacts such as unemployment and financial shocks.

**Figure 3. Theoretical model for the economic impact of a health shock**



Source: Based on Baldwin (2020) “Keeping the lights on: Economic medicine for a medical shock”, VoxEU.org, 13 March.

COVID-19 was declared a global pandemic by the World Health Organisation (WHO) on the 11<sup>th</sup> of March 2020 (WHO, 2020). A global pandemic of this nature has not been experienced since the 1918 Spanish Influenza<sup>3</sup>. Given the scope of this pandemic and the contemporaneous nature of this paper, there is not yet an established literature on appropriate policy responses to COVID-19. However, there are potential lessons to be drawn from literature on the impacts and responses of the automotive industry to the 2008 Global Financial Crisis (GFC).

Apart from the housing and finance industries, the automotive industry experienced the most severe impacts from the GFC (Pavlínek, 2012). Global vehicle production declined 3.7% in 2008 and 15.8% in 2009 (OICA, 2020). The reason for this disproportionate impact is the fact that vehicle purchases are very sensitive to business cycles and economic shocks reduce demand for new vehicles as consumers delay their purchases (Dicken, 2011). Established automotive markets in the Global North, such as North America and Western Europe, were the most significantly affected by the GFC despite government efforts to encourage consumer demand for new vehicles (Klier and Rubenstein, 2010; Stanford, 2010). On the other hand, developing economies such as China, India, and Brazil, were less severely impacted by the crisis (Van Biesebroeck and Sturgeon, 2010; Cruz and Rolim, 2010). In terms of the extended supply chain, Van Biesebroeck and

<sup>3</sup> The 1918 Spanish influenza was caused by an H1N1 influenza. The 1918 Spanish influenza lasted from 1918 to 1920. It infected about 500 million people, roughly one-third of the world’s population at that time and resulted in the deaths of 50 million (Liang, Liang, and Rosen, 2018).

Sturgeon (2010) argue that the crisis led to further consolidation of the supplier base as smaller local suppliers were more vulnerable to closure and bankruptcy compared to larger globally integrated suppliers.

There was a contrast in regional policy responses to the crisis. The Global North focused on interventions to directly respond to the production and supply chain impacts by rescuing the operations of Original Equipment Manufacturers (OEMs) and their suppliers. In contrast, developing countries - such as Mexico, Thailand, and South Africa – which are dominated by foreign owned OEMs, had limited scope to directly affect OEM production and supply chains<sup>4</sup> (Wad, P 2009). Instead, developing countries focused on developing the domestic market and opportunities for export. In China, for instance, government actions focused on infrastructure investments - especially in rural areas - and provided selective demand assistance to the automotive industry. Overall, governments in developing countries, and in particular China, focused interventions on providing credit facilities and guarantees to automotive businesses; providing incentive programs for the scrapping of old motor vehicles for purchase of new ones with cleaner technology; reducing vehicle taxes; and renewing public sector vehicle fleets (Wad, 2009). The most significant supply side intervention by larger developing countries was to fund R&D in alternative “green technologies”. Brazil, for instance, made advances in bio-fuel development and the Chinese government prioritized green technologies (Wad, 2009).

The literature review on policy responses to the GFC, especially based on the developing economy experience, which were less affected by the GFC, suggests that the most important intervention is to focus on demand side measures to stimulate new vehicle purchases.

## **Methodology**

The study focused on evaluating the most appropriate demand side stimulus measures to COVID-19, which were determined by the literature review as the most effective response to an economic crisis affecting the automotive industry. The study used three methods of analysis to evaluate the most appropriate policy response for South Africa to the current COVID-19 crisis on the automotive industry. This encompassed consultations with South African based automotive assemblers and distributors, an analytical review of government stimulus measures being implemented in leading competitor economies, and modelling of the effects of preferred stimulus options using a vehicle demand price elasticity model.

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<sup>4</sup> Despite largely not having domestic ownership, developing economies were protected from significant supply side impacts such as downsizing of plants and retrenchments of employees by labour market protections. The automobile industry is relatively well unionised across the world including in developing countries such as Brazil, South Africa, and Malaysia.

The consultations with locally based automotive assemblers and distributors were used to advise and inform which proposals were most preferred by the industry for stimulus support. A semi-structured questionnaire was developed to solicit inputs from South African based automotive assemblers and distributors on the question of demand-side stimulation. The questionnaire was administered between the 31<sup>st</sup> of July and the 17<sup>th</sup> of August 2020. A total of 24 responses were received, 14 from light vehicle companies and 10 from M&HCV companies.

The investigation into government stimulus measures being implemented in leading competitor economies was conducted to draw lessons from leading automotive economies, and to explore the validity of their potential replication in South Africa. A systematic desktop-based review was conducted of COVID-19 stimulus packages already implemented or currently proposed in the 21 largest vehicle producing countries globally (South Africa is in 22<sup>nd</sup> position). The desktop research was conducted from the 31<sup>st</sup> of July to the 21<sup>st</sup> of August 2020. Desktop research was mainly conducted online through multiple sources: media articles, consulting reports, formal government publications, automotive association websites, and employer and union publications. Furthermore, academics were also contacted in the USA, EU, and Thailand to ascertain whether they were aware of any specific support package elements being provided to the automotive industry.<sup>5</sup>

Lastly, the researchers analysed the findings from the two initial research phases to explore the most appropriate potential levers for stimulating demand in South Africa. This was done by modelling the effects on the South African market and fiscus, using a vehicle demand price elasticity model. Given the country's constrained fiscal position, attention was focused on demand stimulation opportunities that are likely to have no negative impact on the South African fiscus.

### **Findings from the automotive stimulus survey**

Light vehicle companies were given six stimulus options to choose from, whereas M&HCV companies were only given five options. Companies were asked to rank the options that they believed would be the most effective in aiding the recovery of the South African vehicle market. A rank of 1 represented the option a company believed to be most effective and a rank of 5 or 6 represented the option a company believed to be the least effective. A summary of the results is presented in Table 1 below.

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<sup>5</sup> The academics contacted were Dr Tim Sturgeon, Senior researcher at the Industrial Performance Centre (IPC) based at Massachusetts Institute of Technology (MIT); Professor Kriengkrai Techakanont, Associate Professor, Faculty of Economics, Thammasat University; and Dr Lorenza Monaco, Senior Lecturer, School of Economics, University of Johannesburg (UJ), currently based in Italy.

**Table 1: Summary of questionnaire results**

Impact rank	Light vehicle results	Avg. score (n=14)	M&HCV results	Avg. score (n=10)
1 <sup>st</sup>	Tax reduction on new vehicles	1.9	Direct vehicle purchasing subsidy	2.0
2 <sup>nd</sup>	Direct vehicle purchasing subsidy	2.8	Vehicle finance support	2.4
3 <sup>rd</sup>	Vehicle finance support	2.9	Tax reduction on new vehicles	2.6
4 <sup>th</sup>	First-time buyers' incentive	3.6	Government purchases	3.8
5 <sup>th</sup>	Government purchases	4.8	Vehicle scrapping allowance	4.3
6 <sup>th</sup>	Vehicle scrapping allowance	5.0		

Among light vehicle companies, a tax reduction on new vehicles was deemed the most preferred stimulus measure, followed by the provision of direct subsidies, and then vehicle finance support. Local OEMs had a stronger preference for a tax reduction (1.8 average score) and subsidy (2.4), whereas importers and dealerships had a stronger preference for vehicle finance support (2.3) and a weaker preference for a tax reduction (2.0 average score). A direct vehicle purchase subsidy was the most popular stimulus measure for M&HCV companies, followed by the provision of vehicle finance support and then a tax reduction. Local M&HCV OEMs had a slightly weaker preference for a subsidy (2.2 average score) and tax reduction (2.8), but a stronger preference for vehicle financing support (2.2).

Industry respondents identified a range of specific tax reduction proposals:

- A tax reduction based on the domestic market's price elasticity, whereby reduced prices would stimulate vehicle sales, but without reducing government revenues. This view was based on previous research undertaken for the National Association of Automobile Manufacturers of South Africa (NAAMSA)<sup>6</sup> that suggested the domestic vehicle market was over-taxed, and that revenue was being lost to the fiscus because of the excessive taxation on vehicles, leading to a "throttling" of demand.
- The provision of duty relief on all passenger vehicles for a period of 12 months and Value Added Tax (VAT) exemption for a 12-month period (suggested by importers and dealerships).
- The provision of an accelerated "wear and tear" allowance on company-purchased vehicles.
- The introduction of tax incentives for Battery Electric Vehicles (BEV) and/or Battery Hybrid Electric Vehicles (BHEV) rather than the punitive Carbon (CO2) tax, which is perceived to have

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<sup>6</sup> The National Association of Automobile Manufacturers of South Africa (NAAMSA) is the industry association representing South African OEMs and vehicle importers (NAAMSA, 2020).

no environmental impact given South Africa's poor fuel quality and the allocation of revenue earned to the general fiscus.

According to those respondents who indicated a preference for a direct purchasing subsidy, it was emphasised that this would incentivise buyers to make more immediate purchasing decisions, rather than delaying their purchases further into the future. The specific subsidy would be passed directly to customers to stimulate sales volumes and would have the biggest impact on the bottom end of the market, which was the most price sensitive.

One specific proposal for a direct subsidy was to increase the incentive for local vehicle assemblers earned under the Automotive Production and Development Programme (APDP). This would mean increasing the Production Incentive (PI) from 25% to 30% for a limited period. It was argued that the additional 5% could be converted to a cash value which could then be transferred to consumers to improve the affordability of vehicle models that are locally produced and imported by South African OEMs. It was noted that such a model would essentially have no direct impact on the fiscus, with the consumer incentive essentially funded through the duty pool of the OEMs. It was emphasised that support of this nature for a period would have a significant impact on the South African market.

The rationale for a direct subsidy in the M&HCV segment was that a direct vehicle purchase subsidy would assist emerging entrepreneurs, Small and Medium Enterprises (SMEs) and thus grow the vehicle sales base amongst small businesses where large potential M&HCV demand exists. It was emphasised that the most important factor when purchasing a M&HCV is the total cost of ownership and therefore any tax reduction or purchasing subsidy would motivate business owners to consider buying additional units or replacing older units in their fleet. Specific direct subsidy proposals included the provision of a direct purchasing subsidy of 10% on M&HCVs and/or the zero rating of VAT on M&HCVs. The rationale for vehicle finance support was that SMEs typically struggle to secure any form of asset-based financing. Any reduction in credit risk would therefore stimulate credit activity in the M&HCV market and increase vehicle demand.

### **Findings from the global automotive COVID-19 stimulus package reviews**

The findings from the review of stimulus measures enacted by global competitors are presented in three categories: countries with no evidence of COVID-19 demand support, countries with general demand stimulus programmes and countries that have framed specific automotive demand support programmes.

As depicted in Table 2, our research found that 14 of the world's 21 leading automotive producing economies are not yet offering any form of demand stimulus to their respective automotive sectors. These countries' COVID-19 stimulus packages have focused on broader supply-side

support for industry and the extension of unemployment and social benefits to their broader citizenry. However, five countries were noted as currently having negotiations in place for potential government support. As such, a broader number of countries may soon be providing more automotive-specific support.

**Table 2: Countries presently not offering COVID-19 related automotive demand stimuli**

Countries with no COVID-19 auto demand stimulus support	Countries with no support, but where support is presently being considered
<ul style="list-style-type: none"> <li>• United States of America (USA)<sup>7</sup> – including the states of Alabama, South Carolina, and Tennessee</li> </ul>	<ul style="list-style-type: none"> <li>• United States of America (USA) - State of Michigan</li> </ul>
<ul style="list-style-type: none"> <li>• Mexico</li> </ul>	<ul style="list-style-type: none"> <li>• India</li> </ul>
<ul style="list-style-type: none"> <li>• South Korea</li> </ul>	<ul style="list-style-type: none"> <li>• Czechia</li> </ul>
<ul style="list-style-type: none"> <li>• Brazil</li> </ul>	<ul style="list-style-type: none"> <li>• United Kingdom</li> </ul>
<ul style="list-style-type: none"> <li>• Thailand</li> </ul>	<ul style="list-style-type: none"> <li>• Italy</li> </ul>
<ul style="list-style-type: none"> <li>• Canada</li> </ul>	
<ul style="list-style-type: none"> <li>• Turkey</li> </ul>	
<ul style="list-style-type: none"> <li>• Slovakia</li> </ul>	
<ul style="list-style-type: none"> <li>• Iran</li> </ul>	
<ul style="list-style-type: none"> <li>• Poland</li> </ul>	

Two countries, Japan, and Germany are offering general demand stimulus policies that will indirectly benefit automotive industry demand. The Japanese government is providing a once-off universal cash grant for every resident in the country to be used as desired. The grant is worth 100,000 yen (\$936). In addition to direct automotive industry support, the German government also decreased the country’s VAT rate by three percentage points from 19% to 16%. However, this change remained in effect for only a limited duration (1st of July 2020 to the 31st of December 2020).

Only six of the 21 countries researched are presently offering some form of automotive specific demand stimulus. The stimulus programmes represent a mixture of new and established programmes that have either been adapted or extended to support the recovery of automotive vehicle demand post COVID-19 lockdowns.

Table 3 summarises the countries that presently offer automotive support, as well as whether these support programmes are new or recently adjusted/extended.

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<sup>7</sup> Given the federal constitution of the USA, and the potentially significant role of individual states in providing demand stimulus packages (through, for example, state-levied general sales tax benefits), the research included a sub-national focus on four US automotive producing states.

**Table 3: Countries providing automotive demand stimulus policies**

Country	Policy	New programme	Extended/adjusted programme
China	Subsidies for NEVs (Electric and Hybrid)		X
	Local governments subsidies for ICE vehicles	X	
	Increasing vehicle registration quotas	X	
	Subsidies for locally produced vehicles	X	
Germany	Subsidies for EVs and Hybrids		X
	Fleet exchange program aimed at electric mobility and tradespeople	X	
Spain	Scrappage scheme	X	
	National and local government official fleet upgrading programme	X	
France	Subsidies for EVs and Hybrids		X
	Scrappage scheme		X
Russia	Scrappage scheme		X
Indonesia	Loan payment deferral scheme; administration fee reduction	X	
	Down payment reduction program	X	

As highlighted in Table 3, the automotive specific programmes that have either been introduced or adapted (from existing programmes) in response to COVID-19 typically focus on either subsidising the consumption of New Energy Vehicles (NEVs) (for example, China, Germany and France), subsidising the consumption of all vehicles (China), providing scrapping allowances on old vehicles (Spain, France, Russia), targeting support for businesses (Germany), credit relief for consumers (Indonesia), and support for government fleet purchases (Spain). The scale of the individual programmes are highly variable, with the European Union (EU) economies and China appearing to provide the greatest level of market stimulation through the peak of the COVID-19 pandemic.

### Modelling of stimulus measures

Based on the review of major vehicle producing economies, and the inputs from South African automotive stakeholders, the options for domestic market light vehicle demand stimulation would appear to fall into three distinct categories: tax reductions, the direct provision of vehicle purchasing subsidies, and the provision of discounted vehicle finance support.

The potential range of mechanisms for these three options are summarised in Table 4.

**Table 4: Light vehicle stimulus options and associated mechanisms**

<b>Options</b>	<b>Mechanisms</b>
<b>Tax reduction</b>	<ul style="list-style-type: none"> <li>• Ad valorem reduction</li> <li>• CO<sub>2</sub> tax reduction</li> <li>• VAT reduction</li> <li>• Import duty reduction</li> <li>• Tyre levy (but extremely small)</li> </ul>
<b>Vehicle subsidy</b>	<ul style="list-style-type: none"> <li>• Direct vehicle purchasing/selling subsidy</li> <li>• Additional subsidy tied to local production</li> <li>• Guaranteed trade-in value on old vehicles (“cash for clunkers”)</li> </ul>
<b>Finance</b>	<ul style="list-style-type: none"> <li>• Government guarantee for finance</li> <li>• Leasing VAT adjustment</li> <li>• Developmental ownership support</li> </ul>

The list of potential interventions presented in Table 4 are agnostic of government affordability considerations. Given the highly fiscally constrained position of the South African government, certain options are likely to be unfeasible, particularly given the considerable support already provided to the South African automotive industry through the APDP. While all of the options presented in Table 4 may represent options for South African vehicle market demand stimulation, we have therefore only considered potential light vehicle stimulus recommendations that are fiscally neutral (i.e., where improved vehicle affordability, and hence increased sales, are not at a cost to the government purse). As such, we have only considered tax-based support mechanisms that are fiscally neutral, as well as an amendment to the treatment of VAT as part of lease agreements. These would appear to be two major opportunities to stimulate vehicle demand at zero expense to the South African fiscus.

The South African vehicle market’s price elasticities for the period 2007 to 2018, as calculated by B&M Analysts in 2019 as part of another NAAMSA-funded project (Barnes and Grant, 2019), can be used to accurately estimate the impact of any tax reductions on new light vehicle demand. The price elasticities are shown in Table 5 below. The average price elasticity of new vehicles across all price points is -1.16. This indicates that holding all else constant, a 1% increase in the price of new vehicles is associated with a 1.16% decrease in the demand for new vehicles.

**Table 5: The South African vehicle market's price elasticities, 2007 to 2018**

	Average	Quintile 1 (R0- R214,200)	Quintile 2 (R214,200- R303,283)	Quintile 3 (R303,283- R408,500)	Quintile 4 (R408,500- R613,200)	Quintile 5 (R613,200- R9,942,000)
Price elasticities	-1.162***	-1.795***	-1.950***	-1.023***	-0.236***	-0.818***
	(0.00791)	(0.0342)	(0.0680)	(0.0825)	(0.0657)	(0.0175)

Source: Barnes and Grant (2019)

Note: Robust standard errors in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

As further highlighted in Table 5, vehicles at the lowest price point (i.e., within quintile 1) are far more price sensitive than the market average. The elasticity in this price segment is -1.8. This indicates that a 1% increase in the price of new vehicles up to R214,200 (inclusive of VAT and all other taxes) is associated with a 1.8% decrease in demand, ceteris paribus. Interestingly, the most price sensitive market is not quintile 1, but rather quintile 2. New vehicles sold at a price from R214,200 to R303,283 have a price elasticity of -1.95. Therefore, a 1% increase in the price of new vehicles at this price point is associated with a 1.95% decrease in the demand for new vehicles, ceteris paribus. The price sensitivity wanes in quintiles 3 to 5, with the price elasticity in quintile 3 being almost unit elastic and quintiles 4 and 5 being relatively inelastic. All the price elasticities across the market segments are statistically significant at a 99% level of confidence.

Having established the market demand elasticities using 12 years of dealership sales, we then modelled five potential demand stimulus interventions: (1) a fiscally neutral adjustment of the ad valorem rate, (2) a removal of the CO2 emissions tax, (3) a scenario whereby the two previously mentioned interventions are combined, (4) a removal of VAT, and (5) a fiscally neutral reduction in VAT. Each of these is considered below. The impact estimated in the scenarios below are based on 2018 vehicle sales in South Africa. Therefore, the impact of these interventions in the current market climate are likely to be more pronounced.

**Table 6: The impact of various tax adjustment options on the South African auto industry**

2018	Fiscal neutral ad valorem	Removal CO2	Fiscal neutral ad valorem + CO2	VAT removal	Fiscal neutral VAT
Additional Sales revenue (excl. taxes)	R5 440 311 649	R5 427 493 148	R7 887 170 740	R20 069 228 900	R7 418 568 611
Additional vehicle demand	16 635	11 756	19 489	72 668	20 116
Impact on the fiscus	R163 400	R903 504 487	-R1 804 683 522	-R18 281 706 079	-R163 310 069
VAT	R698 975 336	R812 903 938	R781 125 805	-R19 815 476 126	-R1 533 199 176
Tyre Levy Revenue	R1 969 177	R1 485 618	R2 298 970	R7 563 821	R2 321 829
Ad Valorem	-R1 007 228 603	R859 576 280	-R1 884 579 909	R752 306 712	R997 272 085
Import Duties	R257 750 830	R253 661 880	R320 594 842	R632 129 534	R314 204 942
CO2 Tax Revenue	R48 696 660	-R1 024 123 230	-R1 024 123 230	R141 769 980	R56 090 250

Removing VAT from vehicle purchasing prices creates the largest increase in vehicle sales, with sales increasing by 72,668 units or 17.9%. However, the fiscal cost of implementing such an intervention would be very substantial, with a R17.3 billion loss in tax revenue. Reducing VAT by 2%, from 15% to 13%, would increase vehicle sales by 20,116 units or 4.9%. This intervention would only slightly increase the cost to the state. However, any changes to VAT would require the Minister of Finance to declare a change and for the VAT Act to be amended in parliament - creating a new category of reduced VAT application. Furthermore, any changes to VAT are not desirable as it has a high administrative burden. According to PWC (2012) it takes an average company 123 hours per month to comply with VAT requirements compared to 74 hours to comply with corporate income tax. Therefore, any changes to VAT on vehicles would incur hidden costs for the industry which could offset the benefits of the stimulus.

A more feasible method to reduce the tax burden and stimulate demand is to reduce the ad valorem rate and/or reducing the CO<sub>2</sub> vehicle emissions tax. Reducing the ad valorem rate from 0.00003 to 0.000022 increases vehicle sales by 16,635 units and adds no additional tax burden given market elasticities. Completely removing the CO<sub>2</sub> emissions tax on vehicles increase sales by 11,756 while adding an additional R900 million in tax revenue. Combining these two interventions adds an additional 19,489 in vehicle sales, although it also reduces tax revenue by R1.8 billion. Therefore, the most effective method to stimulate demand without any additional cost to the state would be to reduce the ad valorem rate from 0.00003 to 0.000022<sup>8</sup>.

In addition to tax-based relief, the other major opportunity to stimulate vehicle sales at zero cost to the fiscus is through amending the way the government treats the payment of VAT on leased vehicles. If this were amended, vehicle affordability would be improved and VAT would simply be recovered over a longer time frame, instead of being lost. A lease finance facility allows one to use an asset while paying for it over an agreed period. Ownership does not pass to the user automatically once the final payment has been made (Standard Bank Vehicle and Asset Finance, 2020). Lease finance options are defined and governed by the National Credit Act (NCA). The suggested restructuring is to provide for the monthly payment of VAT as per rental agreements. In this way VAT would be paid proportionately to the period of use of the vehicle, instead of having to pay VAT in full and upfront as is currently the case where full VAT on the whole cost of the car is capitalised into the principal debt. This type of restructured lease could achieve a

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<sup>8</sup> The ad valorem duty is presently calculated using the following formula, as per the SARS guideline: *Ad valorem duty rate = ((Recognised Value × 0.00003) – 0.75)%*. The recognised value used for the ad valorem calculation is as per the following SARS guideline: *Value for Ad Valorem Calculation = 
$$\frac{(RRSP \times 0.72)}{(1 + (0.72 \times \text{Ad valorem Duty rate}))}$$*

substantial payment reduction in monthly instalments. This option could be implemented within the current VAT system.

Opportunities to stimulate M&HCV demand in a fiscally neutral manner cannot be modelled as there is no price elasticity data for the South African market. In any case M&HCV purchases are based on total cost of ownership (TCO) calculations and not just new vehicle prices. The range of stimulus options, as identified from the international scan and domestic stakeholder survey, is presented in Table 7. It includes a direct vehicle subsidy, vehicle finance support, and tax reductions.

**Table 7: M&HCV vehicle stimulus options and associated mechanisms**

Options	Mechanisms
Vehicle subsidy	<ul style="list-style-type: none"> <li>• Subsidy to SME transport operators</li> </ul>
Tax reduction	<ul style="list-style-type: none"> <li>• Provision of tax relief for lower emission M&amp;HCVs, e.g., with Euro 5 engines</li> <li>• Accelerated wear and tear (depreciation allowance) on company vehicles allowing companies to replace their fleets in shorter cycles</li> </ul>
Vehicle finance	<ul style="list-style-type: none"> <li>• Government credit guarantee</li> </ul>

Given that M&HCV demand stimulation support is likely to have major fiscal consequences it would appear far more appropriate for industry to engage with national government to extend existing government support measures to transport operators, as opposed to introducing additional interventions. This includes the COVID-19 loan guarantee scheme and the COVID-19 SME fund. Both programmes could be adjusted to support company purchases of modern, fuel efficient M&HCVs that improve the competitiveness of the South African economy and bolster domestic M&HCV sales.

**Summary, conclusions, and recommendations**

The review of the 21 major vehicle producing economies is invaluable for South Africa. The findings highlight that many economies have not yet turned to direct vehicle demand stimulation, while others have tweaked and adjusted existing programmes to provide additional support during the COVID-19 crisis. While several new programmes have been enacted these have typically been in countries where existing support programmes exist, and where governments have considerable fiscal space to incentive the purchase of new vehicles. National government support is sometimes supplemented by sub-national government support (e.g., China and Germany), but support is primarily driven at a national government level.

The feedback from industry consultations suggested that a tax reduction on new vehicles is the most preferred stimulus measure among light vehicle companies. This was followed by the provision of direct subsidies, and finally, vehicle finance support. On the other hand, a direct

vehicle purchase subsidy was the most popular stimulus measure for M&HCV companies. This was followed by the provision of vehicle finance support and a reduction in tax.

Based on the findings presented in this paper we believe there is clear merit in considering four primary interventions to provide stimulus support to the South African automotive industry in response to the COVID-19 pandemic and its associated negative economic impact.

Firstly, we recommend the removal of what appears to be a regressive CO<sub>2</sub> tax. Based on our modelling the government's net fiscal position would improve by R1 billion with the removal of the CO<sub>2</sub> tax and the South African automotive industry would benefit from additional dealership sales of 11,756 units. Of these sales 1,817 would be locally manufactured (based on the existing consumption profile of domestically produced and imported models). This would sustain an additional 273 jobs in the local manufacturing supply chain (based on the existing South African vehicle unit production to employee sales ratio). Increased domestic demand would also stimulate vehicle export programmes as OEMs would need to generate more international sales to earn import duty reducing production incentives through the APDP. Based on the exporting of 9,939 additional vehicles to discount the increase in duties, an additional 1,491 jobs would be created increasing total local manufacturing employment by a more significant 1,764 people.

Secondly, we recommend a reduction of the ad valorem excise rate from 0.00003 to 0.000022. Based on our modelling the government's net fiscal position would remain unchanged based on demonstrated market elasticities over the last 12 years. The industry would benefit from an additional 16,635 units of sales. Based on the industry's production unit to employment multiplier as outlined above, this would create an additional 2,376 jobs in the South African vehicle and associated component manufacturing sector.

Thirdly, we recommend removing the upfront payment (the full capitalisation) of VAT on private lease finance agreements, thereby allowing for the monthly payment of VAT as per rental agreements. This will increase vehicle purchases through leasing models, although the actual number of additional sales cannot be computed.

Lastly, we recommend that the government make explicit its support for South African transport operators by including them explicitly in the COVID-19 loan guarantee scheme and the COVID-19 SME fund. This will strongly encourage M&HCV re-fleeting, and hence increase short term demand for vehicles.

The above package of support would significantly stimulate new light vehicle and M&HCV demand in South Africa, thereby negating the severe impact of the COVID-19 pandemic on new vehicle sales and associated vehicle production. The package of support would, most importantly, have limited (to potentially zero) impact on the fiscus, create additional high value employment in the local vehicle industry, and support the recovery of the domestic automotive value chain in

alignment with the vision and associated objectives of the South African Automotive Masterplan (SAAM), particularly the first pillar, which focused on the optimisation of the domestic market. The SAAM envisages a domestic vehicle market of 1.2 million units in 2035, with these deemed necessary to support local production of 1.4 million units. Achieving domestic market sales of 1.2 million by 2035 appears highly unlikely given the contraction of domestic vehicle demand since the completion of the SAAM, but the four recommendations presented here would certainly go some distance towards reversing a negative market trajectory that has been significantly amplified by the economic impact of Covid-19.

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