



Department of Finance  
Canada

Ministère des Finances  
Canada



# **A Study on the Potential Economic Impacts of the Select Luxury Items Tax Act**

**March 2023**

**Canada** 

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# A Study on the Potential Economic Impacts of the Select Luxury Items Tax Act

## 1. Introduction and Summary

In Budget 2021, the government announced the introduction of a tax on the sale of new luxury vehicles and aircraft with a retail price of over \$100,000, and new vessels with a price of over \$250,000. The Select Luxury Items Tax (LT) has been in effect since September 1, 2022 and is calculated at the lesser of 20 per cent of the value above these price thresholds or 10 per cent of the full value of the subject luxury vehicle, vessel or aircraft.

The policy objective of the LT is to improve the fairness of the tax system by ensuring that those who can afford to buy luxury goods contribute slightly more to the tax system. However, as with any other tax, raising revenues to finance government expenditures creates an efficiency loss in the economy. The magnitude of the economic loss of taxation depends on several factors, including the level of taxation being imposed, the size of the tax base and the extent to which individuals and businesses respond to taxation by, for example, changing their level of consumption or investment.

This report presents estimates of the potential economic impact of the LT. We use Statistics Canada's Input-Output Model (STC IOM), combined with assumptions regarding the potential response of consumers, to produce the estimated impacts on Gross Domestic Product (GDP) and employment. The STC IOM is widely used by researchers to determine the impacts of specific demand or supply shocks on the Canadian economy. The model offers a detailed representation of the Canadian economy and accounts for the interdependencies between the various economic sectors and the final demand for products and services (i.e., downstream and upstream economic impacts).

It is important to note that the results presented in this report, as well as those used in other studies examining the impact of the LT, offer only a partial equilibrium view of the economic impacts and rely on several fairly strong assumptions that likely lead to an overestimation of the impacts. Also, it will not be possible to precisely determine the extent of the behavioural response of consumers to the LT until detailed data become available, covering a number of years. In absence of recent evidence for the Canadian context, the results herein are based on the very few available empirical studies from the 1980s and 1990s on the behavioural response of consumers in the United States to changes in the price of luxury goods, as well as on informed assumptions borrowed from other studies examining the economic impact of the LT. Given the lack of empirical evidence on the topic, this report provides a potential range for the economic impact of the LT.

Estimates suggest that the introduction of the LT could lower total Canadian GDP by between \$58 million and \$125 million (or equivalent to up to 0.005% of total Canadian GDP – a negligible share, although this entirely reflects the very narrow and specific base to which this tax is applied), and could result in total employment losses of between 400 and 870 (full-time equivalent (FTE)). The estimated magnitude of the economic impact differs by type of subject luxury item. Key results for the sectors directly impacted are noted below.

- GDP could fall by between \$19 million and \$31 million for the broader Canadian automobile sector (or between 0.10% and 0.16% of its estimated sectoral specific GDP) as a result of the LT on subject luxury vehicles. Job losses in the sector could amount to between 150 and 255 FTEs. Retailers of luxury vehicles would be more affected than others in the automobile sector.
- In the case of vessels, retailers and manufacturers could be relatively more affected by the tax. The GDP of the boat retail sector could fall by between \$5 million and \$16 million (or by between 2.2% and 6.8%

of the sector's GDP), and employment losses could amount to between 50 and 155 FTEs. The vessel manufacturing sector could register a decline in GDP in the range of \$3 million to \$9 million (or between 1.1% and 3.5% of its GDP). The employment losses could be between 20 and 65 jobs.

- The GDP of the broader aerospace sector could decline by between \$2 million to \$4 million as a result of the LT on subject aircraft – which is equivalent to less than 0.1% of the sector's GDP. About 10 to 20 jobs could be lost.

The report is organized as follows. Section 2 presents background information on the LT. Section 3 describes the data and methodology used for the study. Section 4 presents the results. Concluding remarks are in Section 5.

## 2. Background Information

The *Select Luxury Items Tax Act* (the Act) received royal assent on June 23, 2022 and the LT came into effect on September 1, 2022. The LT generally applies to new vehicles and aircraft priced over \$100,000 and to new vessels priced above \$250,000. The amount of the tax is calculated as the lesser of 10 per cent of the full value of the vehicle, vessel or aircraft, or 20 per cent of the value above the price threshold.

The tax is generally applied at the final point of purchase of new luxury vehicles, vessels and aircraft in Canada. In the case of imports, application is generally either at the time of the final point of purchase in Canada following importation or at the time of importation (in cases where there will not be a further sale of the goods in Canada – e.g., personal importation).

New passenger vehicles above \$100,000 are generally subject to the LT but the Act provides for specific circumstances in which no tax is applicable. As examples:

- The LT is generally not payable in respect of used vehicles. Once a vehicle has been registered with the Government of Canada or a Province, no tax is payable on subsequent sales;
- Off-road and farm vehicles fall outside the scope of the tax; and
- Heavy-duty vehicles such as trucks and cargo vans with a gross vehicle weight rating of more than 3,856 kg and public sector vehicles (such as buses, police cars and ambulances), as well as hearses, are not subject to the tax.

Additional details on the application of the LT for vehicles can be found in the Canada Revenue Agency's Luxury Tax Notice LTN2 ([Subject Vehicles Under the Select Luxury Items Tax Act - Canada.ca](#))

In the case of subject aircraft and vessels, the luxury tax is not payable in specific circumstances. Most notably, the sale of an aircraft or a vessel is exempt from the LT if the asset is to be used 90% or more in the course of certain business activities. Other exemptions include the sale/importation of floating homes, commercial fishing vessels, ferries, and cruise ships. Additional details on the application of the LT for aircraft and vessels can be found in the Canada Revenue Agency's Luxury Tax Notices LTN3 and LTN4 ([Subject Vessels Under the Select Luxury Items Tax Act - Canada.ca](#) and [Subject Aircraft Under the Select Luxury Items Tax Act - Canada.ca](#))

Actual revenues are not yet available as registrants have just begun to remit the tax (as of January 2023). Projected revenues for the LT were initially presented in Budget 2021 and updated in Budget 2022 to reflect the later, September 1, 2022 implementation date. The projected amount of revenues for the luxury tax are \$75 million for 2022-23 and \$135 million for 2023-24 – the latter being the first complete fiscal year of tax. Total revenues are projected to be \$630 million over the five-year period ending in 2026-27. Since the LT is part of the

consideration for the calculation of the Goods and Services Tax (GST)<sup>1</sup>, GST revenues related to the LT are expected to be about \$5 million annually and to total \$24 million by 2026-27.

The LT on luxury vehicles is estimated to account for the largest share of total revenue at about \$95 million in 2023-24, or 70% of the total. Projected revenues from vessels and aircraft in 2023-24 are, respectively, \$30 million (or about 20% of the total) and \$10 million (or about 7%). Details on projected revenues are presented in Table 1. It is important to note that these budget revenue estimates included an assumed behavioural response, as consumers were expected to somewhat reduce their spending on these goods (more details on the assumptions related to the potential behavioural response are provided in Section 3.3).

**Table 1: Estimated Revenues from the Select Luxury Items Tax (millions of dollars)**

	2022-23	2023-24	2024-25	2025-26	2026-27	Total
Subject vehicles	55	95	100	100	100	450
Subject vessels	15	30	30	30	30	135
Subject aircraft	5	10	10	10	10	45
Total – Select Luxury Items Tax	75	135	140	140	140	630
Goods and Services Tax	4	5	5	5	5	24
Total Revenues	79	140	145	145	145	654

Source: Budgets 2021 and 2022.

## 3. Methodology and Data

### 3.1 Statistics Canada’s Input-Output Model

This report makes use of Statistics Canada’s input-output model to construct a range for the potential economic impact of the introduction of the LT. The key feature of this type of macro-economic model is that it accounts for the linkages between the various economic sectors in the economy to generate the broader economic impacts of a supply or demand shock on a specific commodity group.

The STC IOM<sup>2</sup> accounts for the interlinkages of narrowly defined sectors and commodities in the Canadian economy, including 240 industries and 492 commodities. Statistics Canada’s Supply-Use Tables (SUT)<sup>3</sup> for 2019 are the main data source of the model. The SUTs include information on the value of commodities used in the production of specific supplies (i.e., the intermediate inputs) as well as on the value of the final demand of commodities by households, the public sector and non-profit organisations.

The model generates economy-wide impacts through three types of effects – direct, indirect and induced. The first represents the initial economic impact of a supply or demand shock related to a specific commodity or sector. It measures the first-order economic impact on the consumption and supply of that specific commodity such as a change in the GDP and employment level for the primary sectors impacted. The second represents the impacts associated with the shock rippling through other sectors of the economy, as the demand for different

<sup>1</sup> Including the federal portion of the Harmonized Sales Tax.

<sup>2</sup> [Input-Output Model Simulations \(National Model\) \(statcan.gc.ca\)](https://www150.statcan.gc.ca/n1/pub/62-625-x/2016001/article/00001-eng.htm)

<sup>3</sup> [Supply and Use Tables \(statcan.gc.ca\)](https://www150.statcan.gc.ca/n1/pub/62-625-x/2016001/article/00001-eng.htm)

intermediate inputs (i.e., commodities/services) used in the production of the sectors primarily impacted is indirectly affected.

In addition to the direct and indirect impacts, the model generates results for the economic impacts induced by a change in household income as a result of a change in the level of employment. This induced effect will impact the broader economy through a change in final demand (as a result of a change in income) for the broad range of commodities/services.

Figure A1 in Annex illustrates how a domestic demand shock can be transmitted through the economy via the indirect and induced effects on the domestic demand.

Although input-output models are valuable in providing a sense of the magnitude and channels of transmission of an economic shock, the economic literature notes a number of important limitations that hinder their ability to provide accurate final economic impact estimates. In the context of this study, we note some of them below.

- The results are static, and ‘partial equilibrium’ only (i.e., not able to capture all of the reactions in the economy, and thus the final outcome). Prices and wages do not adjust in input-output models as a result of a demand or supply shock. In reality, prices and wages adjust to the new market conditions and can partially offset the economic impacts from a negative shock (e.g., output, job losses), and *vice versa*. The results presented in this study are therefore only partial.
  - For example, the model does not account for labour market dynamics. In a tight labour market, as we have been experiencing recently, a portion of jobs losses could be readily recovered by other sectors of the economy.
  - The positive economic impact from the end uses of the revenues collected is also absent from this type of model.
- There is no substitution effect between different commodities. The model does not account for the fact that the amount that may no longer be spent on a given product as a result of the imposition of a tax could instead be spent on other goods or services in the economy.
  - For example, a consumer who decides to minimize exposure to the tax by spending \$110,000 on an automobile rather than \$140,000 could spend that difference on other goods or services.
- The model assumes that changes in outputs lead to linear and proportional changes in inputs to production, such as labour. In reality, these changes are not proportional as inputs are mostly indivisible and do not always lead to proportionate changes.
  - For example, a car dealer will need a showroom for a given range of car models sold. Should the demand for cars drop by 10%, the showroom space and related expenditures will likely remain the same.
- Aggregation bias – Although input-output models can be based on disaggregated data, it can be difficult to obtain reasonable impact estimates for very narrowly defined commodities such as those examined in this study. For example, in the case of subject luxury vehicles, the commodity groups represented in STC IOM are *Automobiles* and *Sport Utility Vehicles*, broadly defined. As a result, although fewer luxury vehicles are currently built in Canada than imported, the model assumes that domestic production of vehicles will be impacted more broadly according to the overall share of vehicles domestically produced. This will lead to an overestimation of the impact on domestic suppliers of vehicles if not controlled for.

- To minimize this type of bias, the results presented in this study are calibrated to reflect the observed share of the domestic production of the specified luxury goods sold on the domestic market.

The limitations noted above would all likely lead to an overestimation of the economic impacts of a demand shock – although the extent of the overestimation is difficult to measure.

In addition to modelling and data limitations, a host of other macroeconomic factors will affect the purchase of subject luxury goods. For example, the general level of inflation in the Canadian economy (and globally) has been higher over the last 18 months after many years of price stability. This can and likely is affecting current purchasing decisions. In response to higher inflation, interest rates have also risen. The Bank of Canada's policy interest rate has climbed by 4.25 percentage points, to 4.5 per cent, between March 2022 and January 2023. This too will likely affect purchases of subject luxury goods, some or some part of which are likely financed through borrowing. Global supply chain issues have also likely affected and may continue to affect such purchases. Media reports suggest that critical electronic components, for example, have led to long wait times for certain goods. Any such shortages, and their subsequent unwinding, would also affect sales volumes. As data on the sale of subject goods become available, it will still be challenging to precisely disentangle the impacts of these economic factors from the impact of the LT.

Given these important limitations and the absence of a robust literature on the potential behavioural response of consumers (as discussed in Section 3.3), results from this report should be interpreted with some caution.

## 3.2 Market Data

This section provides an overview of the market data for the three types of luxury goods. The data described below are used as the basis to determine the potential economic impact of the LT, in conjunction with information on the potential response of consumers (as described in Section 3.3)

### **Subject Vehicles**

Market data for vehicles were obtained from IHS Markit (S&P Global) and the Canadian Black Book. IHS Markit compiles detailed data on the units of new vehicles registered in Canada by type of model and by month. The data on units sold were linked to the price data compiled by the Canadian Black Book<sup>4</sup> to determine the vehicles subject to the LT.

Based on sales data for 2022 (Table 2), 23,914 units were above the price threshold of \$100,000 – representing about 1.5% of total units sold<sup>5</sup>. The total market value of these above-threshold vehicles was about \$3.3 billion in 2022 (or about 4.1% of the total value of vehicle sales).

Over 75% of the units have a price between \$100,000 and \$150,000 – accounting for two-thirds of sales value. Although units in this price segment will make up a large share of those subject to the new tax, they are expected to account for about one-third of the LT collected on vehicles.

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<sup>4</sup> For models where the Canadian Black Book did not publish price information, the manufacturer's suggested retail prices (MSRP) available on the manufacturers' website were used.

<sup>5</sup> Total vehicle sales are from Statistics Canada. Table 20-10-0001-01, New motor vehicle sales.



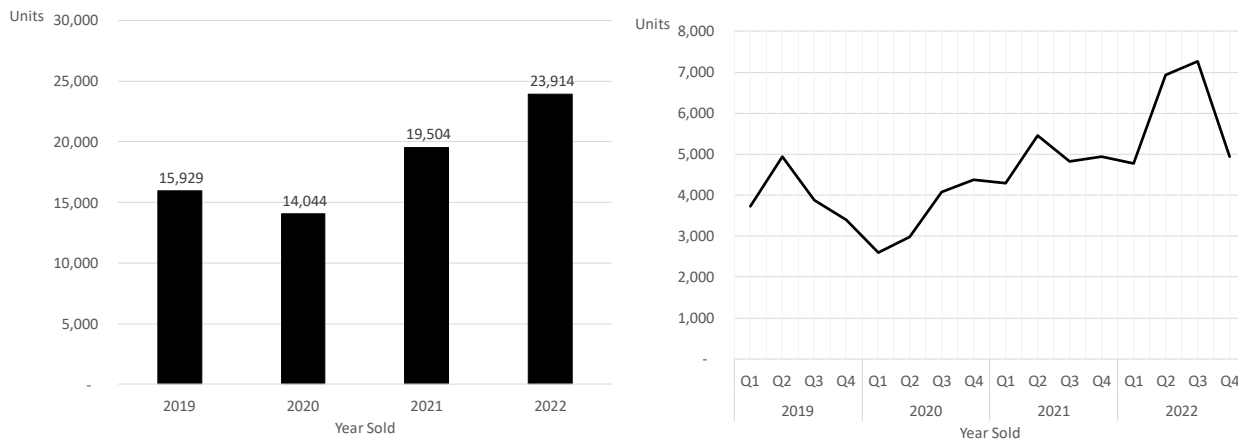
**Table 2: Distribution of Vehicles Sold with a Price Greater than \$100,000 (2022 market data)**

Price Range (\$)	Units	Sales Value (in millions of dollars)	As a share of the total (%)	
			Units	Sales Value
100,000 - 150,000	18,534	2,197.4	77.5	65.9
150,000 - 200,000	2,800	463.9	11.7	13.9
200,000 - 250,000	1,655	367.7	6.9	11.0
250,000 - 300,000	416	107.8	1.7	3.2
300,000 - 400,000	262	87.8	1.1	2.6
400,000 - 500,000	168	68.8	0.7	2.1
Over 500,000	79	41.9	0.3	1.3
<b>Total</b>	<b>23,914</b>	<b>3,335.3</b>	<b>100.0</b>	<b>100.0</b>

Source: Department of Finance calculations based on data from IHS Markit (S&P Global) and the Canadian Black Book. Note: Numbers may not add due to rounding.

The left pane of Figure 1 shows the annual sales of vehicles over \$100,000 since 2019. The units sold increased from 15,929 in 2019 to 23,914 in 2022 – a 50% increase over three years. The increase is mainly due to the inflationary increase in the price of vehicles, which is pushing more vehicles above the fixed threshold with time.

**Figure 1: Sales of Vehicles Greater than \$100,000, 2019 to 2022 (units)**



Source: Department of Finance calculations based on data from IHS Markit (S&P Global) and the Canadian Black Book.

The right pane of Figure 1 presents the sales on a quarterly basis. Compared to 2021, it shows that sales increased substantially in the months ahead of the implementation of the LT on September 1, 2022, and dropped by a roughly equivalent amount during the last quarter of 2022. It is likely that consumers have accelerated their purchases of luxury vehicles to avoid the LT in the second and third quarter of 2022. However, other factors could also have affected the timing of the sales, including for example, supply chain disruptions (and the unwinding of them) or interest rate developments. Even as data on the sale of subject goods become available, it will still be challenging to precisely disentangle the impacts of the various other factors that affect sales. That being said, the overall sales level in the fourth quarter of 2022 remained aligned with sales observed during 2021.

## Subject Vessels

There is limited information readily available on the units and prices of vessels sold in Canada. For the purpose of this study, we use data from a study commissioned by the National Marine Manufacturers Association of Canada (Mintz and O’Riordan (2021))<sup>6</sup> to determine the economic impact of the LT. The report offers data and assumptions on the number of vessels that would be subject to the LT including a price distribution for the subject vessels. Table 3 includes the data used by the authors.

Based on this data, 1,116 units would have been impacted by the LT with an estimated market value of \$532 million in 2020. About 70% of the vessels have a price in the range of \$250,000 to \$400,000. The total value of all vessels that would be subject to the LT represents about 40% of household spending on recreational boats<sup>7</sup>.

**Table 3: Distribution of Vessels with a Price Greater than \$250,000 (2020 market data)**

Price Range (\$)	Units	Estimated Sales Value (in millions of dollars)	As a share of the total (%)	
			Units	Estimated Sales Value
250,000 - 300,000	531	146.0	47.6	27.4
300,000 - 400,000	242	84.7	21.7	15.9
400,000 - 500,000	124	55.8	11.1	10.5
500,000 - 750,000	98	61.3	8.8	11.5
750,000 – 1,000,000	56	49.0	5.0	9.2
1,000,000 – 1,500,000	36	45.0	3.2	8.5
1,500,000 – 2,000,000	9	15.8	0.8	3.0
2,000,000 – 3,000,000	13	32.5	1.2	6.1
Over 3,000,000	7	42.0	0.6	7.9
<b>Total</b>	<b>1,116</b>	<b>532.0</b>	<b>100.0</b>	<b>100.0</b>

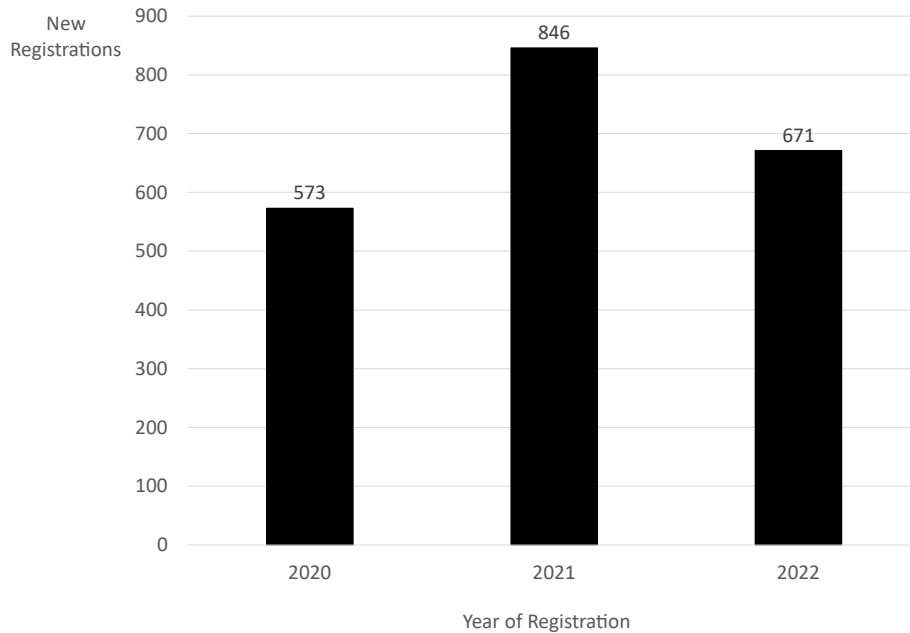
Source: Mintz and O’Riordan (2021). Note: Estimated sales value are determined by multiplying the units sold and the average price as reported in Table 7 of their report. Numbers may not add due to rounding.

In addition to the data made available by Mintz and O’Riordan (2021), Transport Canada publishes data on the registration of vessels by model year. Although the dataset provided by Transport Canada does not have information on the price of the vessels registered, other characteristics, such as the hull type and length of the vessel, can be used to narrow the total number of vessels registered to a potential number of units that could be subject to the LT (Figure 2).

<sup>6</sup> Mintz, J. and F. O’Riordan (2021). “An Economic Evaluation of the Proposed Luxury Boat Tax”, Prepared for the National Marine Manufacturers Association. <https://nmma.net/assets/cabinets/Cabinet486/Luxury%20Tax%20Paper%2027.09.2021%20FINAL.pdf>

<sup>7</sup> Supply and Use Tables (statcan.gc.ca)

**Figure 2: New Registrations of Vessels, 2019 to 2022 (units)**



Source: Department of Finance calculations based on Transport Canada data.  
Note: The numbers include vessels manufactured in the previous five years but not previously registered that are greater than 8 meters in length.

Based on these data, new registrations of recent pleasure craft (i.e., those manufactured in the last five years but not previously registered) that are greater than 8 meters in length totaled about 573 units in 2020, 846 units in 2021 and 671 units in 2022. Not all of these units would have been subject to the LT as they include vessels costing less than \$250,000, such as boats with outboard motors, which account for about half of the units noted. Although the registration data suggest that the estimate of Mintz and O'Riodan (2021) is an upper bound for the number of impacted vessels, we use the price distribution, as described in Table 3, to estimate the economic impacts as no other data on boat prices are available.<sup>8</sup>

### **Subject Aircraft**

Data from the Transport Canada's Civil Aircraft Registry are used to determine the estimated number of aircraft that could be subject to the LT. The registry data include detailed information on the aircraft registered. For the purpose of this study, we use information on the make and model of the aircraft, the year the aircraft was manufactured, the owner (e.g., an individual or a corporation), and the type of use (private and commercial).

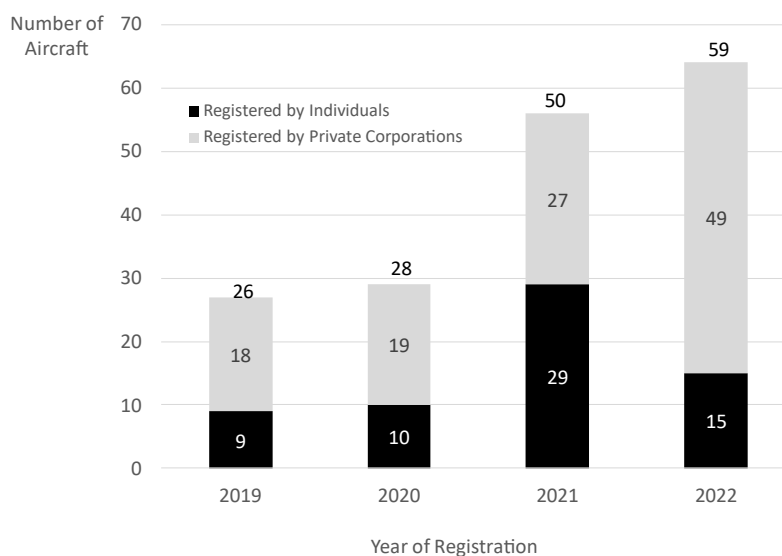
Based on this information, Figure 3 shows the number of aircraft newly registered between 2019 and 2022 (built in the previous 5 years), by both individuals and private corporations.<sup>9</sup> Commercial transportation corporations and publicly listed corporations are excluded from the statistics as it is unlikely that their purchase of aircraft will be subject to the LT. As well, an aircraft purchased by a private corporation is exempt from the LT to the extent

<sup>8</sup> Data from Mintz and O'Riodan (2021) on the price distribution of boats are from a survey of Canadian dealers conducted by the National Marine Manufacturers Association of Canada in relation to sales of recreational vessels for 2020.

<sup>9</sup> In 2023, the LT will apply to aircraft manufactured after 2018. The statistics exclude basic ultra-light aircraft as these are typically sold below the \$100,000 threshold. Advanced ultra-light aircraft are however included in the statistics.

that the aircraft is for use of at least 90% of the time for qualifying business flights<sup>10</sup>. That said, all of these private corporate registrations are assumed to be subject to the LT and thus included in the economic impact analysis (and in Figure 3) as some could be subject should they not meet the 90% threshold. On an annual basis, from 2019 to 2022, the average number of newly registered aircraft (built in the previous 5 years) is 15 for individuals and 28 for private corporations. There were strong increases in the number of aircraft registered by private corporations in 2021 and 2022 (27 and 49 total registrations, respectively) and by individuals in 2021 (29 units).

**Figure 3: New Registrations of Aircraft registered by Individuals and Private Corporations, 2019 to 2022 (units)**



Source: Department of Finance calculations based on Transport Canada data.

Note: The numbers include aircraft manufactured in the previous five years but not previously registered.

### 3.3 Potential Behavioural Response

The impact of the LT on the sales of luxury goods, and in turn overall economic activity, will depend on the extent to which consumers respond to higher prices by either purchasing a less expensive good to minimize or avoid exposure to the tax, a different type of ‘luxury’ good to avoid the tax or by making no purchase at all. The empirical literature on the behavioural response of consumers to a change in the price of luxury goods is very limited, particularly so as pertains to luxury vehicles, vessels and aircraft. The economic theory does, however, provide some insights on the economics of luxury goods, and how individuals may react to the tax.

The economic literature describes high-end luxury goods as Veblen goods<sup>11</sup>, the demand for which increases with price – reflecting their exclusivity and the hedonistic characteristics of consuming them. This could lead to a result where the LT would not negatively affect sales for very high-end luxury goods. At the same time, some

<sup>10</sup> Section 10 of the Act provides details on the definition and calculation of business use.

<sup>11</sup> Veblen, T. (1997). “The Theory of the Leisure Class”, Champaign, Ill: Project Gutenberg.

less wealthy consumers that are purchasing luxury may react more strongly by purchasing a less expensive luxury good, or none at all.<sup>12</sup>

Given the absence of conclusive and recent empirical evidence of the extent of the behavioural response of consumers to luxury taxes, a range of potential economic impacts is presented in this study. The lower and upper bound scenarios are informed by the few empirical studies that exist and by assumptions from other reports examining the economic impacts of the LT. These are described in the following sections.

### **Subject Vehicles**

Bordley (1993) is one of the few studies measuring the impact of prices on the demand of luxury cars.<sup>13</sup> Based on United States survey data, the author has estimated the elasticity of demand for luxury cars at -2.4 – i.e., a 10% increase in the price of luxury cars would lead to a 24% decrease in the quantity or volume of sales.

In the lower bound impact scenario for vehicles, we assume that the elasticity of demand for vehicles between \$100,000 and \$150,000 is -2.4. For the sales of vehicles above \$150,000, we assume these goods to be perfectly inelastic – i.e., the very wealthy will continue to purchase very high-end vehicles, consistent with the theory of Veblen goods. Under this scenario, the sales of luxury vehicles would drop by \$125 million – representing 0.15% of the overall vehicle market.

The upper bound impact scenario assumes the elasticity of demand for vehicles to be -2.4 for vehicles up to \$200,000 while the demand for vehicles above this price is perfectly inelastic. Under this scenario, the sales of luxury vehicles would drop by \$210 million – representing 0.26% of the overall vehicle market in Canada.

### **Subject Vessels**

The preferred scenario in Mintz and O’Riordan (2021) assumes an elasticity of demand of -2.4 for all vessels subject to the luxury tax. The Parliamentary Budget Officer also assumed the same level of response for vessels in his report on the fiscal impact of the LT. A response of this magnitude is higher than the elasticities estimated in a study examining the economic impact of environmental compliance costs on the US boat industry<sup>14,15</sup>. The study reports the average elasticity of demand at -1.78 for all types of boats with the elasticities ranging from -1.4 for sailboats (over 9 meters) and -2.17 for an inboard runabout.

The lower bound scenario for this analysis assumes an elasticity of demand of -1.78 for vessels with a price below \$1 million and assumes the total numbers of unit impacted are about 758<sup>16</sup> – consistent with Transport Canada registration data. For the sales of vessels equal or above \$1 million, we assume these assets to be perfectly inelastic – i.e., the very wealthy will continue to purchase them.

For the upper scenario, we assume the level of response and market data from Mintz and O’Riordan (2021). Specifically, an elasticity of demand of -2.4 is assumed for all vessels above \$250,000 and about 1,116 units could potentially be affected by the LT.

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<sup>12</sup> Bagwell, L. S. and D. Bernheim (1996). “Veblen Effects in a Theory of Conspicuous Consumption”, *The American Economic Review*, Vol. 86, No. 3, June, pp. 349-373.

<sup>13</sup> Bordley, R. F. (1993). “Estimating Automotive Elasticities from Segment Elasticities and First Choice/Second Choice Data”, *Review of Economics and Statistics*, 75(3), pp. 455-462.

<sup>14</sup> US Environment Protection Agency (2001), “Economic Impact Analysis of the Boat Manufacturing NESHAP”, Research Triangle Park, NC.

<sup>15</sup> Raboy, D. G. (1987). “Results of an Economic Analysis of Proposed Excise Taxes on Boats”, mimeo, Washington, D.C., Patton, Boggs and Blow. Prepared for the National Marine Manufacturers Association

<sup>16</sup> 2021-2022 average of new registrations of recent pleasure craft (i.e., those manufactured in the last five years but not previously registered) that are greater than 8 meters in length. The data for 2020 was excluded from the average given the potential impacts of the COVID-19 pandemic.

Our impact scenarios assume that the sales of vessels could decrease by between \$33 million and \$103 million as a result of the introduction of the LT – representing between 1.84% to 5.81% of the overall market of boats and personal watercraft in Canada.

### Subject Aircraft

To our knowledge, there is no empirical evidence on the potential behavioural response from the taxation of privately-owned aircraft. That said, the demand for these aircraft could be elastic given the presence of competitive alternatives (such as commercial air carriers). On this basis, our upper bound scenario was developed based on an assumed elasticity of -2.4 for all aircraft and the market data described in Section 3.2.

At the same time, the very wealthy could continue to purchase private jets for personal use despite the LT. To account for the possibility that individuals could react less strongly to the tax, the lower bound scenario assumes the demand for aircraft above \$5 million is perfectly inelastic (i.e., there could be no market impacts for this segment of the market for subject aircraft).

The impact scenarios assume that the sales of aircraft could decrease by between \$14 million and \$29 million as a result of the introduction of the LT – representing between 0.24% to 0.51% of the overall market of aircraft in Canada.

Table 4 presents the assumed impact on sales for the three types of luxury goods as well as their share in the overall market for these assets. These amounts are used to determine the economic impact estimated using the STC IOM.

**Table 4: Potential Market Impacts (reduction in sales) as a result of the Select Luxury Items Tax (in 2022 dollars)**

	Reduction in Sales	
	Lower Bound	Upper Bound
Market Impact (in millions of \$)		
Subject Vehicles	125.2	210.2
Subject Vessels	32.7	102.9
Subject Aircraft	13.5	28.7
Market Impact as of share of Total Domestic Sales (in %)		
Subject Vehicles	0.15	0.26
Subject Vessels	1.84	5.81
Subject Aircraft	0.24	0.51

Source: Department of Finance calculations.

Note: Totals domestic sales include all sales of these assets in the Canadian economy (i.e., supplied by domestic producers and imports to both the commercial and personal-use markets).

## 4. Results

It is important to reiterate that the results presented in this section rely on several assumptions and should be interpreted with some caution (as explained in Section 3). For instance, the model used in this report, as well as those used in other studies examining the impact of the LT, offer only a partial equilibrium view of the economic impacts. They do not account for other economic factors that can partially offset the economic impacts of the LT. For example, the model does not account for labour market adjustments – it could be easy for workers affected

by lower economic activity to transition to another job under a tight labour market, and vice versa. As well, the model does not account for the fact that the amount that may no longer be spent on a given product as a result of the imposition of the LT could instead be spent on other goods or services in the economy.

Table 5 presents the potential economic impacts by type of subject luxury item and by type of impact (i.e., direct, indirect and induced) for both the lower and upper bound scenarios while Table 6 presents the impact by sector and commodity directly affected by the LT. The key results are noted as follow.

- The introduction of the LT could lower overall Canadian GDP by between \$58 million and \$125 million (or equivalent of up to 0.005% of total Canadian GDP – a negligible share, although this entirely reflects the very narrow and specific base to which this tax is applied), and could result in employment losses of between 400 and 870 FTEs. The magnitude of the economic impact will differ by type of subject luxury item and will depend on the extent of the response of individuals, as well as the import intensity of these items.
- About half of the total economic impact would likely be absorbed by the sectors of the economy directly impacted by the LT – in particular, retailers of subject luxury vehicles and vessels, and boat manufacturers. Overall, the direct economic impact could represent a reduction in GDP in the range of \$29 million to \$63 million while direct employment losses could be about between 240 and 515 jobs. The indirect and induced economic impacts could evenly account for the remaining half of the total economic impact.
- For subject luxury vehicles, GDP could fall between \$19 million and \$31 million for the broader Canadian automobile sector (or between 0.10% and 0.16% of its GDP) and job losses in the sector could amount to about between 150 and 255 FTEs. Retailers of luxury vehicles could be most affected within the sector accounting for between \$12 million and \$20 million of the GDP decline, and between 120 and 200 jobs. The economy-wide impacts of the LT on subject luxury vehicles could range from \$36 million to \$61 million in GDP and from about 255 to 425 FTEs lost.
- In the case of vessels, retailers and manufacturers could be relatively more affected by the tax. The GDP of the boat retail sector could fall by between \$5 million and \$16 million (or by between 2.2% and 6.8% of the sector's GDP), and employment losses could amount to about between 50 and 155 FTEs. The boat manufacturing sector could register a decline in GDP in the range of \$3 million to \$9 million (or between 1.1% and 3.5% of its GDP). The employment losses could be between 20 and 65 jobs. Overall, GDP could fall by between \$18 million and \$56 million, and employment by about between 125 and 400 FTEs with the imposition of the LT on subject vessels.
- For the LT on subject aircraft, GDP for the broader aerospace sector could decline in the range of \$2 million to \$4 million (or between 0.04% and 0.09% of the sector's GDP), and between 10 and 20 jobs could be lost. The broader economic impact could represent a decline in GDP in the range of \$4 million and \$9 million and employment losses of between 20 and 45.

**Table 5: Potential Economic Impacts of the Select Luxury Items Tax (in 2022 dollars)**

	GDP (\$000)		Employment	
	Lower Bound	Upper Bound	Lower Bound	Upper Bound
<b>Subject Vehicles</b>				
Direct Impact	18,555	31,144	152	254
Indirect Impact	8,555	14,359	52	87
Induced Impact	8,981	15,074	49	82
<b>Total Impact</b>	<b>36,091</b>	<b>60,577</b>	<b>253</b>	<b>424</b>
<b>Subject Vessels</b>				
Direct Impact	8,691	27,374	76	238
Indirect Impact	4,394	13,841	27	85
Induced Impact	4,531	14,271	25	78
<b>Total Impact</b>	<b>17,616</b>	<b>55,486</b>	<b>127</b>	<b>401</b>
<b>Subject Aircraft</b>				
Direct Impact	2,063	4,390	10	22
Indirect Impact	1,095	2,330	6	14
Induced Impact	865	1,840	5	10
<b>Total Impact</b>	<b>4,023</b>	<b>8,559</b>	<b>21</b>	<b>46</b>
<b>All Subject Luxury Items</b>				
Direct Impact	29,309	62,907	238	515
Indirect Impact	14,044	30,530	85	186
Induced Impact	14,377	31,186	79	171
<b>Total Impact</b>	<b>57,730</b>	<b>124,623</b>	<b>401</b>	<b>871</b>

Source: Department of Finance calculations based on STC IOM. Totals may not add due to rounding.



**Table 6: Potential Direct Economic Impacts of the Select Luxury Items Tax by Type of Commodity and Sector (in 2022 dollars)**

	GDP (\$000)		Employment		As a share of Sector Activity (%)**	
	Lower Bound	Upper Bound	Lower Bound	Upper Bound	Lower Bound	Upper Bound
<b>Subject Vehicles</b>						
Manufacturing	26	43	*	*	0.0004	0.0006
Retailers	12,167	20,422	120	202	0.2142	0.3595
Wholesalers	5,037	8,455	23	38	0.1083	0.1817
Transportation Services	1,325	2,224	8	14	0.0727	0.1220
<b>Total</b>	<b>18,555</b>	<b>31,144</b>	<b>152</b>	<b>254</b>	<b>0.0955</b>	<b>0.1603</b>
<b>Subject Vessels</b>						
Manufacturing	2,919	9,193	21	66	1.10	3.48
Retailers	4,975	15,669	49	156	2.15	6.78
Wholesalers	691	2,175	4	13	1.70	5.36
Transportation Services	107	336	1	3	1.58	4.97
<b>Total</b>	<b>8,691</b>	<b>27,374</b>	<b>76</b>	<b>238</b>	<b>1.60</b>	<b>5.04</b>
<b>Subject Aircraft</b>						
Manufacturing	1,526	3,246	7	15	0.0359	0.0764
Wholesalers	310	660	2	4	0.1623	0.3454
Transportation Services	227	483	1	3	0.1157	0.2462
<b>Total</b>	<b>2,063</b>	<b>4,390</b>	<b>10</b>	<b>22</b>	<b>0.0445</b>	<b>0.0946</b>
<b>Total Direct Impacts</b>						
Manufacturing	4,470	12,483	28	82	0.0379	0.1059
Retailers	17,142	36,092	170	358	0.2899	0.6104
Wholesalers	6,038	11,290	29	56	0.1236	0.2312
Transportation Services	1,658	3,043	10	19	0.0819	0.1502
<b>Total</b>	<b>29,309</b>	<b>62,907</b>	<b>238</b>	<b>515</b>	<b>0.1191</b>	<b>0.2556</b>

Source: Department of Finance calculations based on STC IOM.

Note: A "\*" indicates that less than 1 FTE is lost. Totals may not add due to rounding.

\*\* The calculations of the shares are based on the industry-level GDP related to producing vehicles, vessels or aircraft.

## 5. Concluding Remarks

The policy objective of the LT is to improve the fairness of the tax system by ensuring that those who can afford to buy luxury goods contribute slightly more to the tax system.

As with any other taxes, raising revenues to finance government expenditures create an efficiency loss in the economy. The magnitude of the economic loss from taxation depends on several factors, including the level of the tax rates being imposed, the size of the tax base, and the extent consumers and businesses respond to taxation by changing their level of consumption and/or investment.

This study indicates that the introduction of the LT could lower overall Canadian GDP by between \$58 million and \$125 million (which, given the very narrow tax base, is negligible as a share of total Canadian GDP), and could result in employment losses of between 400 and 870 jobs. About half of the total economic impact would likely be absorbed by the sectors of the economy directly impacted by the LT – in particular, retailers of subject luxury vehicles and vessels, and boat manufacturers.

It is important to note that the results presented in this report, as well as those used in other studies examining the impact of the LT, offer only a partial equilibrium view of the economic impacts and rely on several fairly strong assumptions that mostly lead to an overestimation of the economic impacts. In particular, the model does not account for the fact that the amount that may no longer be spent on a given product as a result of the imposition of the LT could instead be spent on other goods or services in the economy. As such, the results should be interpreted with some caution.

## 6. References

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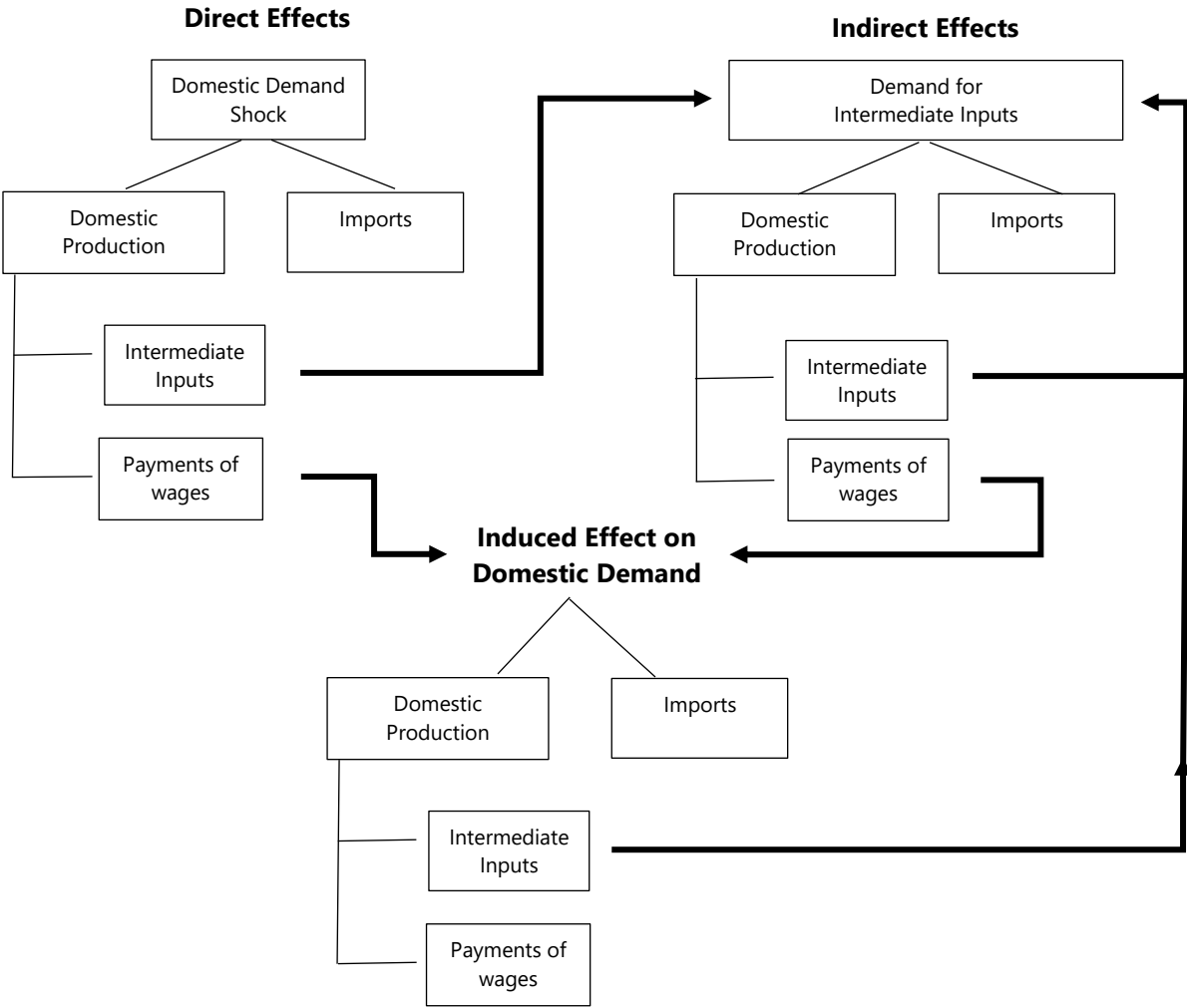
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# 7. Annex : Supplementary Information

**Figure A1: Direct, indirect and induced impacts**



Note: The darker arrows represent the transmission of the initial demand shock to other sectors of the economy.