

An Economic Evaluation of the Proposed Luxury Boat Tax

By

Jack Mintz

School of Public Policy, University of Calgary and EY Canada

and

Fred O'Riordan

EY Canada

September 27, 2021

“It was a hard-working stiff who sanded the teak decks of those yachts who eventually lost his job because yacht sales and ownership plummeted.” The tax on luxuries, that is, had not stuck on the rich as intended, but had at least in part been shifted to others.

Michael Keen and Joel Slemrod, (Rebellion, Rascals, and Revenue, 2021, p. 150)
on the 1990 U.S. luxury tax on boats.

I. Introduction

In the April 2021 Budget, the federal government proposed a new luxury tax on automobiles, personal aircraft and recreational boats to come into force on January 1, 2022. This paper is focused solely on the luxury boat tax that would be applied to those yachts costing over \$250,000. The proposed tax is equal to the lesser of (i) 20 percent of the cost of the boat above \$250,000 or (ii) 10 percent of the total value of the purchased boat. Effectively, those boats under \$500,000 in price would be taxed at 20 percent on the amount in excess of the threshold and those over \$500,000 would be taxed at 10 percent on the full price (see the appendix for further details of the legislation).

Taxation of luxury goods is premised on the idea of raising revenue from those most able to afford paying tax. Luxury taxes on boats typically raise limited amounts of revenue, which is why few countries apply them as discussed below. To the extent the tax is difficult to administer and can be easily avoided, the revenue generated could be much smaller than expected. It could also have unintended effects. As the above quotation indicates from two internationally known tax policy experts, it is possible for a tax to drive down sales resulting in significant employment losses rather than raising more revenue that is borne by the wealthy.

The latter point related to tax incidence is particularly relevant to the taxation of boats. Boats are a highly mobile tax base – if one jurisdiction attempts to tax boats, the boats can easily move to other jurisdictions that have no similar tax.¹ This can result in less demand for those workers servicing the boat and thus lead to employment losses. Thus, instead of taxing the rich, the tax falls on “hard-working stiff”. As we discuss below, we suggest that a substantial share of the luxury boat tax in Canada can be easily avoided by purchasing and keeping boats moored in the United States or Caribbean Islands, resulting in little revenue being collected with some hardship imposed on workers in the industry. There is some evidence in the literature that supports a highly sensitive tax base to boat tax rates.

The balance of this paper is focused on our economic evaluation of the luxury boat tax. We begin with a description of the boat industry in terms of its size, operations and employment. This is followed by a theoretical discussion of underlying tax policy principles – public revenues, efficiency, fairness and simplicity – relevant to our boat tax analysis. We then turn to

¹ When governments tax highly mobile tax bases, such as boats, it leads to the under provision of public goods and services since the tax base shifts to low tax jurisdictions. See the comment by David Wildasin (National Tax Journal Vol. XXXIX, 1982, p. 353-56) on a Gloucester tax on fishing boats that lead to a substantial loss in the tax base. Gloucester later eliminated the tax in 2015. <https://www.gazettejournal.net/gloucesters-budget-adopted-boat-tax-repealed/>.

international experience with luxury boat taxes. This is followed by our assessment of revenues and potential employment effects – the former found to be roughly similar to estimates made by the Parliamentary Budget Office – before taking into account international tax avoidance. We conclude with a view that there is a good reason so few countries apply yacht taxes – and Canada should not do so given associated economic losses and little revenue involved.

II. Background

The core recreational boating industry in Canada consists of boat, accessory, engine and dock manufacturers, boat dealers and service stores, marina operators, transportation and storage facilities, repair and maintenance shops, schools and boat clubs, rentals and charters, as well as various other related companies.

The core industry consists of about 4,800 companies that provide goods and services to Canadian and international boaters. In 2016, the core industry had direct sales of \$4.9 billion and employed 45,000 people. In addition to the core industry, related industries such as fishing, outfitters and tourism are strongly influenced by boating.²

TABLE 1
Subsector Size and Regional Distribution of Boating Organizations

Subsector	Ontario	BC	Quebec	Atlantic	Prairies	North	Total
Engine Wholesalers	3	3	0	0	0	0	6
Other	2	13	0	0	0	0	15
Publications	4	8	3	1	0	0	16
Transportation and Storage	0	18	0	3	2	0	23
Dock Manufacturers	15	9	10	3	4	1	42
Brokerages	28	48	1	6	1	0	84
Schools	50	25	19	4	8	0	106
Accessory Manufacturers	31	59	16	16	5	0	127
Rentals and Charters	46	53	11	10	16	2	138
Boat Accessory Stores	219	112	117	62	90	0	600
Repairs and Maintenance	77	71	14	24	70	0	256
Boat Manufacturers	99	117	55	108	17	0	396
Boat Clubs	172	58	54	42	22	0	348
Boat Sales and Service Stores	416	252	178	110	204	3	1163
Marinas	691	284	321	137	39	0	1472
Total	1853	1130	799	526	478	6	4792

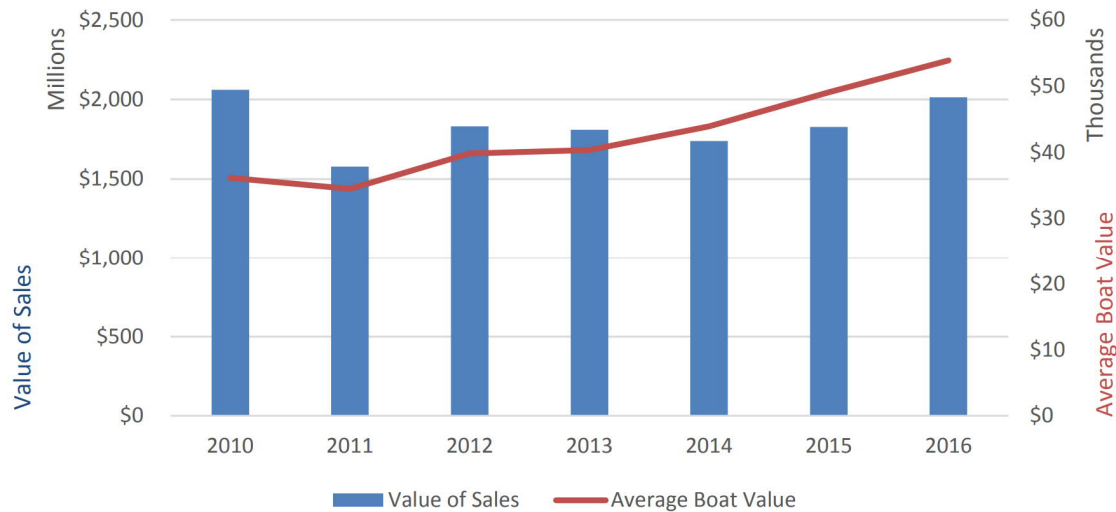
Source: Hickling Arthurs Low, page 6.

As Table 1 shows, there are 396 boat manufacturers in Canada and 1,163 boat dealers and service stores. Boat manufacturers are concentrated in BC, the Atlantic Provinces and Ontario. That said, most are small operations providing custom work. There are only about a half dozen remaining large-scale manufacturers of recreational boats in Canada and the bulk of that

² This section draws heavily upon Hickling Arthurs Low: Innovation Policy Economics, "The Economic Impact of Recreational Boating in Canada: 2016", prepared for the National Marine Manufacturers Association Canada (NMMA Canada), May 9, 2017.

production is in Quebec.³ Boat sales and service stores are spread somewhat more evenly across the five regions of Ontario, BC, Quebec, Atlantic Provinces and Prairies than are boat manufacturers.

TABLE 2
Value of New Boat Sales by Year



Source: Ibid., page 17, and 2015 NMMA Statistical Abstract

It should be noted that the luxury tax will only impact a small percentage of recreational boats being manufactured, imported and sold in Canada. As Table 2 shows, the average value of recreational boats sold has been rising, but is far below the threshold value above which the tax would be imposed.⁴

This is not to say that the impact of the tax will not be significant on those dealers whose sales include high-end luxury boats. Because of the high price per vessel, it may be quite significant even if it applies to relative few sales, depending on the size distribution of sales by value for any given dealer.

We note that 45 percent of the value of new boat sales were inboard cruisers and sailboats, which cost more than \$250,000 on average, thus making this category particularly important to determining the impact of the luxury tax on sales. If inboard cruisers and sailboat sales (average price of \$729,000 in 2018) shift by being purchased and moored in the United States, the potential loss in total sales revenue would be significant⁵, as much as 40 percent of the revenue from all new boat sales.

³ Hickling, Arthurs and Low, page 8.

⁴ The sales figures shown in Table 2 come from Transport Canada boat registration data.

⁵ In 2018, total inboard cruiser and sailboat sales was equal to \$982 million of which sales of inboard cruisers accounted for 87 percent of 2018 sales. We do not have the price distribution, but the average price of inboard cruisers was \$933,000 (913 units) and sailboats \$297,000 (434 units). See NMMA Canada, Retail Markets, Sales Trends 2009-2018. While many sailboats might not be subject to the luxury tax, inboard cruisers will likely be the primary source of luxury sales tax.

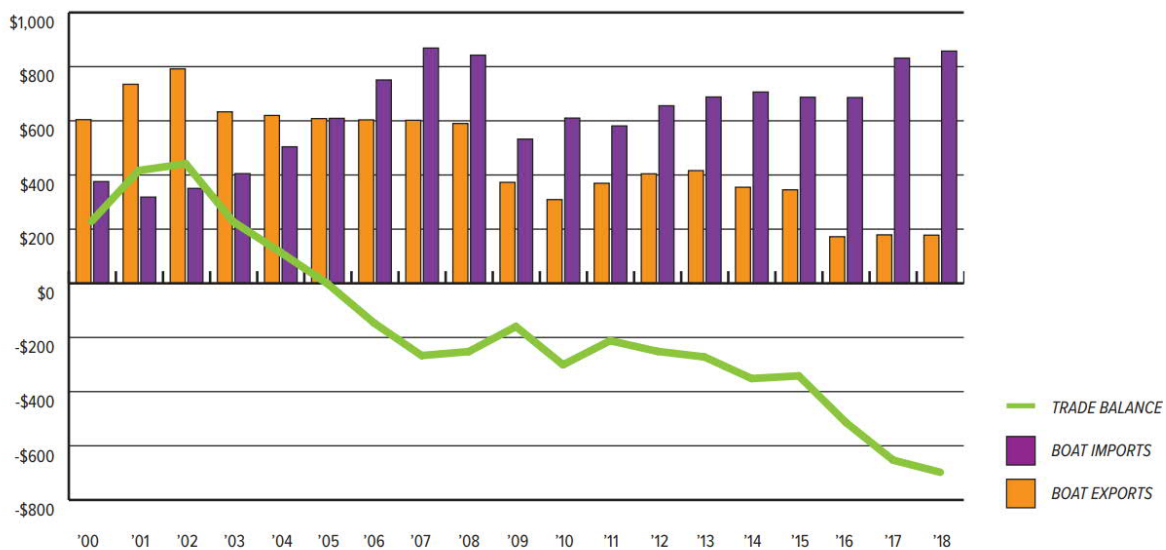
As shown in Table 3, Canada is a net importer of recreational boats and the gap between imports and exports has been rising in recent years, reflecting the declining competitiveness of the Canadian industry. Between 2002 and 2007, exports were falling whereas imports were rising, a reflection of the fact that Canadian firms were losing in both foreign and domestic markets, mostly to US competitors.

TABLE 3
Import and Export Time Series



Source: Ibid, page 23, and 2015 NMMA Statistical Abstract

TABLE 4
Recreational Boats: Exports, Imports and Trade Balance
(\$ million Canadian)



Source: NMMA Canada, Boat & Engine Exports and Imports 2000 – 2018, page 3

Despite the declining Canadian dollar after 2014, this trade imbalance has continued to increase since that time as shown in Table 4. Recreational boat imports into Canada totaled \$857.5 million in 2018, up 3.1% since 2017, while exports decreased 0.7% to \$177.8 million.

It is not yet clear at this point what, if any, long-term impact COVID-19 will have on the core recreational boating industry in Canada.

III. Tax Policy Principles

In some countries, governments have adopted luxury good taxes as part of the excise tax system. The role of any tax is to help fund public services, so the amount of revenue raised is critical to evaluate. Given the revenue requirement of a government, the second question to ask is which taxes should be raised? This is a matter of evaluating the tax structure.

The best tax structure is based on three general principles. First, taxes should be efficient in the sense of distorting as least as possible the allocation of resources in the economy. Second, taxes should be fair in terms of “horizontal” equity (equal tax burdens on people with similar resources) and “vertical” equity” (the ability to pay taxes). Third, taxes should be applied at the lowest administrative and compliance costs as possible.

When considering a luxury boat tax, it is useful to consider these principles. How much revenue will it raise? What is the economic, administrative and compliance cost involved with the tax in comparison with other taxes? Is the tax fair?

An efficiency argument in favour of luxury taxes is its impact on conspicuous consumption. As Thorstein Veblen argued, some goods with higher prices are in greater demand by the wealthy since they signal increased social status to the purchaser. If the luxury tax is applied to the prices in excess of the cost of producing the good, the luxury tax is akin to a rent tax on the markup of prices over costs.⁶ However, this argument depends on an assumption that luxury goods advertise social status.⁷

A selective luxury tax that only applies to some luxury goods and not others could distort markets. If only certain luxury products are taxed and others not, the untaxed luxury items will be favourably treated. The new federal luxury tax applies to only three products: automobiles, private airplanes and boats. It does not apply to luxury housing and secondary homes, jewelry, clothing or vacations. Thus, if not all conspicuous consumption is taxed, the luxury tax loses its ability to tax economic rents from luxury goods.

⁶ Laurie Simon Bagwell and Douglas Bernheim, “Veblen Effects in a Theory of Conspicuous Consumption. The American Economic Review, Vol. 86, No. 3 (June 1996), pp. 349-373.

⁷ Luxury goods are often purchased by the wealthy, but they could also be bought by those seeking to look wealthy. Thus, luxury goods may not be a signal of wealth if lower income individuals also purchase the product. In economic terms, a luxury good conveys social status if the wealthy incur a lower economic cost to purchase the signal. For example, lower income individuals may be hesitant compared to the wealthy to give up other goods and services to purchase the boat.

The effect of selective luxury taxes is that they will also discourage business to supply a certain product. The luxury boat tax can be avoided by simply substituting other exempt luxury goods like a cottage or jewelry that still provide conspicuous consumption value to the household.

Luxury taxes can also be complicated to administer.

- Luxury taxes are intended to apply to consumer goods only, not those for business purposes. Boats can be used for business, not just consumption. In some cases, like fishing boats, it would be easy to exempt from a luxury tax. However, some luxury boats might be used to carry on business. When the United States introduced a luxury tax in 1990, it took great pains to exclude a product if it was intended for business purposes. This can make administration more complex. The administrative complexity of the luxury tax is well illustrated in the technical paper that Finance Canada released⁸ as part of its formal consultation process on the proposed luxury tax and invitation for submissions that closes on 30 September 2021.⁹ In order to address the question of business versus recreational usage of a boat in the determination of whether it falls inside the base subject to the tax, new definitions of “specified boat” and “select specified boat” are proposed to be added to the Excise Tax Act. A “Luxury Tax-Paid” certification process will be designed, administered and enforced by the Canada Revenue Agency (CRA) and the Canada Border Services Agency (CBSA). Dealers of specified boats will have to become “registered vendors” and they will have to file “luxury tax returns” with the CRA each “reporting period” (every calendar quarter), calculate their total luxury tax payable, remit that amount to the Receiver General on (or before) the day their return is due. In addition, they may be required to post security in an amount determined by the Minister of National Revenue and they will be subject to “modern elements of an enforcement regime” (keeping books and records and retaining them for up to six years, subject to interest, penalties, offences and specific anti-avoidance rules). These new requirements will impose substantial administrative burdens and costs on dealers and their sole purpose is to administer the proposed luxury tax. They will also impose significant one-time and ongoing costs to the CRA and CBSA to administer and enforce the rules.
- In principle, it will be possible to remain below the price threshold of the tax, or avoid the application of some of the tax, by adding enhancements or postponing certain features for the boat until after it is purchased. To address this type of strategic avoidance of the tax, Finance Canada’s technical paper sets out proposed “modifications in respect of a select good” rules. These rules require any modifications to the boat made within the first year of ownership that would establish or increase a luxury tax liability to be self-assessed by the owner, who would be required to remit the

⁸ See Department of Finance Canada, News Release, “Government of Canada launches consultations on proposed Luxury Tax”, 10 August 2021. <https://www.canada.ca/en/department-finance/news/2021/08/government-of-canada-launches-consultations-on-proposed-luxury-tax.html>

⁹ See Department of Finance Canada, Technical Paper, “Consultation on the Select Luxury Goods Tax”, <https://www.canada.ca/en/department-finance/programs/consultations/2021/consultation-proposed-luxury-tax/select-luxury-goods-tax.html>

tax together with a luxury tax return. It is obvious that the tax still could be avoided by postponing expenditures beyond one year.

- In principle, as being proposed here, the tax should be applied to both domestic and imported purchases. For luxury automobiles that must be registered to be driven domestically, the luxury tax is relatively simple to apply to both domestic and imported products. However, in the case of boats, it is possible for a boat not to be imported at all. Instead, the boat can be purchased abroad and moored in another country, avoiding the excise tax altogether. For Canadian purchasers, a luxury boat tax could be avoided if boats are purchased and moored in the United States or Caribbean islands¹⁰ rather than purchased in or imported into Canada. Finance Canada's technical paper sets out restrictions on the temporary importation of boats for international non-commercial transportation by residents of Canada, making them subject to the luxury tax unless they are exported from Canada within 30 days of importation and are not used in Canada for purposes of touring or other leisure activities. It also sets out restrictions on the temporary importation of "select goods" including boats for maintenance, overhaul, repair or temporary storage.

This proposed new regulatory regime and all of its associated rules and restrictions are extremely intrusive. It will impose costs and regulatory paper burdens on businesses and individuals. It will also be costly for government agencies to administer and enforce.

The strongest motivation for the luxury tax is fairness (vertical equity) by taxing higher income Canadians who are most likely to purchase luxury items. However, by only taxing selective luxury products, only some rich will be caught by the tax and not others. Further, the luxury tax might be intended to fall on the purchasers especially if imported goods are subject to tax, but its incidence may instead fall on employees if domestic demand for yachts is scaled back. In this scenario, to the extent that the tax is avoided by shifting yacht purchases abroad due to the luxury boat tax, the incidence of the tax will not fall on the purchaser but instead on employees.

It is also possible that some or all of the tax will be absorbed by dealers instead of being passed on in whole or in part to purchasers. This could happen, for example, if dealers adjust their sales prices downward in an effort to sustain their pre-tax sales volumes. In that scenario, their profit margins would fall as they, rather than their wealthy customers, bear all or a portion of the tax burden. Their employees may, in their turn, bear a portion of that burden to the extent that they may face layoffs or a reduction in wages, salaries, bonuses or benefits.

Even if a tax has some useful attributes in terms of fairness, the question is whether there are other taxes which are better used to achieve the same objective at a lower economic, administrative and compliance cost. The most efficient tax used to support fairness objectives is the personal income tax since it does not apply selectively to some goods and not others unlike the luxury tax.

¹⁰ The marina developments are quite extensive across Caribbean islands. See Willard Phillips, "Towards Diversification of the Tourism Sector: A recreational demand study of yachting and marine services in the Caribbean", ECLAC, United Nations, 2014.

This is not to say that a personal income tax increase on the wealthy is being advocated here. The individual income tax can have its own undesirable economic impacts, particularly on the incentive to work, the choice between work and leisure and labour productivity. In addition, any motivation to raise more revenue by increasing the highest personal marginal tax rate or creating new tax brackets instead of imposing an excise tax on select luxury goods that is based on fairness presupposes a belief that existing income tax rates (already over 50 percent in eight out of ten Canadian provinces) are not sufficiently high. A perception that some wealthy individuals are not paying their fair share would be more appropriately addressed by closing loopholes and combatting aggressive tax avoidance to broaden the personal income tax base than by further increasing existing rates and the associated tax burden on those taxpayers who are compliant and already paying their fair share.

IV. International Experience

Luxury taxes are used selectively around the world (see Table 5). Some countries, like Australia and Denmark, only apply a special tax or duty to expensive automobiles. Others such as South Korea and Taiwan apply the tax more widely to a number of products. Overall, six countries, excluding Canada, apply a luxury tax to boats: China, Croatia, Israel, Slovenia, South Korea and Taiwan.

Some countries have applied luxury taxes on boats in the past but later withdrew them due to lost sales. Turkey exempted boats from the luxury tax since it could be easily avoided by holding the boat in a foreign jurisdiction. Private vessels became exempt in 2017.¹¹

The most prominent example, as mentioned above, was a US luxury tax introduced on January 1, 1991 and later withdrawn. A tax rate of 10 percent applied to the sale price in excess of a minimum threshold for automobiles (\$30,000), boats (\$100,000), aircraft (\$250,000), jewelry (\$10,000) and furs (\$10,000). A report¹² by the US General Accounting Office in 1992 found that the luxury tax collected US\$168 million, incurring US\$500,000 in administrative expenses according to IRS estimates (0.3 percent of revenues).

Most of these revenues were raised on car sales (\$151.5 million) with only \$7.3 million realized from sales of boats. The GAO did not have adequate data to test for the impact of the price increase from the tax on demand responsiveness, or on the cyclical effects to separate this impact from that of the luxury tax on boat sales. That said, sales of luxury boats declined by 70 percent from 1990 to 1991 after the adoption of luxury tax compared to 18 percent for overall sales.¹³ The GAO did point out that the impact on boat sales could be more significant in the

¹¹ See <https://www.internationaltaxreview.com/article/b1f7n6xnyx6013/turkey-tax-exemption-introduced-for-private-vessels>.

¹² General Accounting Office, Tax Policy and Accounting, "Luxury Excise Tax Issues and Estimated Effects" February, 1992.

¹³ See <https://www.nytimes.com/1992/02/07/business/falling-tax-would-lift-all-yachts.html>. The GAO reported sales dropping 30 percent from 1989 to 1991 for both luxury and non-luxury boats although they did not include imported boats.

short run than the long run since owners could hold older boats for a longer time rather than buy a new one subject to the luxury tax.

TABLE 5
Luxury Taxes by Various Countries 2021

Country	Products Covered	Thresholds	Tax Rate	Standard VAT Rate**
Australia*	Autos only	Separate threshold for fuel-efficient cars	33% (Boats exempt)	10%
Canada	Proposed luxury tax on autos, planes and boats	Boats \$250,000 (other \$100,000)	Lesser of 20% on excess or 10%	5% federal 0-10% by province
Chile	Jewelry, fireworks and other		15%-50%	19%
China	Luxury and non-essential goods including yachts		10%	17%
Croatia	Tourist Tax	Amount depends on size and time in Croatia up to HRK 4800 (annual)	Various amounts	25%
Denmark	Registration duty on autos	DKK 220,200	85% up to threshold and 150% on excess	25%
Israel	Autos, yachts, furs, large refrigerators, jacuzzies		15% on imported yachts	17%
Korea	Acquisition tax on real estate, vehicles, golf memberships, villas and yachts	KRW 500,000	12%	10%
Panama	Imported, automobiles, jewelry and other goods such as cable/satellite TV, guns		Various rates (Boats exempt)	10%
Taiwan*	Autos, yachts, private jets, helicopters, ivory, furniture	NT 3 million (\$US\$100,000)	10% on yachts	5%
Turkey*	Special consumption tax on auto, motorcycles, planes, helicopters	Private yachts exempt but subject to registration duty	0% on boats	18% (imported yachts exempt)
Slovenia	Water Vessel tax	Annual fee plus fees related to length and kwh power	EUR 20 annual fee	22%
South Africa*	Electronic equipment, cosmetics, vehicles, electronic goods.		9% (Boats exempt)	15%

*Also subject to VAT.

**Standard rate applying to purchases by residents. Rates typically reduced for essential and other selected goods and services.

Although some concerns have been raised that luxury taxes impede sales and employment¹⁴, few studies have looked at the impact of luxury taxes or prices on boat sales. However, some studies have estimated the effect of price increases on the demand and supply for boats. One estimate for boat building and repair estimates found the elasticity to be -1.2 (the price

¹⁴ For example, (<https://rodriguezconsulting.com/taiwan-yacht-builders-appeal-put-end-luxury-tax/>) and Ivica Urban, "Some Characteristics of the Boat Tax in Croatia", Institute of Public Finance, August 2009.

elasticity is the percentage change in quantity demanded divided by the percentage increase in prices) In a well-known paper estimating imported demand price elasticities used in many trade models, the estimated price elasticity for ships, boats and yacht demand was -25.85¹⁵ while the imported demand elasticity at ports for yachts was estimated to be -5372.74.¹⁶ These latter two elasticities reflect the earlier point made that boats are a very mobile commodity.

V. Economic and Revenue Effects

Static calculation of revenue yield

In this section, the revenue yield from this tax for the federal government is estimated in a series of steps beginning with a simple calculation of its likely static impact. This assumes there is no reduction in demand by purchasers of recreational vessels in response to the price increase caused by the imposition of the luxury tax and there is no behavioural response by buyers or sellers in order to avoid the tax. We then further refine this estimate, incorporating more realistic assumptions regarding consumer reaction to the tax to derive a revenue yield that takes into account such behavioural effects.

Our initial static calculations are based on actual 2020 sales data compiled from the responses to the Canadian dealer survey described in Section II that was administered in July 2021 by NMMA Canada.

The 49 respondents to this survey reported sales of 4,025 recreational vessels in 2020. Of these total sales, 3,427 vessels representing 85% of their total sales were sold at lower prices than the \$250,000 threshold below which the tax would not be imposed. The remaining 15% of sales, representing a total of 598 vessels, would be subject to the tax.

These sales data, as well as the results of our initial static calculations for this sample of respondents, are summarized in Table 6, below. Survey respondents provided their sales data for each price range shown in the table. It was assumed that the average selling price within each range was the midpoint within that range.

Consistent with the luxury tax proposal in federal budget 2021 (see APPENDIX 1), we assume for vessels priced over \$250,000 would be subject to the tax, set as the lesser of 10 per cent of the full value of the boat or 20 per cent of the value above \$250,000.

Using the formula $t_1 = t_2(x - \$250,000)$ where t_1 is 0.1 and t_2 is 0.2 and solving for x , we find that vessels priced between \$250,000 and \$500,000 will be taxed at a rate of 20 per cent of their value above the \$250,000 threshold and vessels priced above \$500,000 will be taxed at 10 per cent of their full value.

¹⁵ Shiells, Clinton R., Robert M. Stem, and Alan V. Deardorff. "Estimates of the Elasticities of Substitution between Imports and Home Goods in the United States." *Weltwirtschaftliches Archiv Review of World Economics* 122 (1986), p. 513

¹⁶ J. deSalvo and D. Fuller, "The Role of Price Elasticities of Demand in the Economics of a Port" *The Review of Regional Studies*, 25(1), 1995, 12-35.

TABLE 6
Luxury Tax: Static Impact using sales reported in Canadian Dealer Survey

Price Range	Average Price per Vessel	Tax per Vessel	Effective Tax Rate ¹	Number of Vessels Sold	Luxury Tax Revenue
Less than \$100,000	-	0	0	2,812	0
\$100,000 to \$250,000	-	0	0	615	0
\$251,000 to \$300,000	\$275,500	\$5,100	1.85%	283	\$1,443,300
\$301,000 to \$400,00	\$350,500	\$20,100	5.73%	129	\$2,592,900
\$401,000 to \$500,000	\$450,500	\$40,100	8.9%	66	\$2,646,600
\$501,000 to \$750,000	\$625,500	\$62,550	10%	52	\$3,252,600
\$751,000 to \$1,000,000	\$875,500	\$87,500	10%	30	\$2,626,500
\$1,001,000 to \$1,500,000	\$1,250,500	\$125,050	10%	19	\$2,375,950
\$1,501,000 to \$2,000,000	\$1,750,500	\$175,050	10%	5	\$875,250
\$2,001,000 to \$3,000,000	\$2,500,500	\$250,050	10%	7	\$1,750,350
Over \$3,000,000	\$6,000,000	\$600,000	10%	4	\$2,400,000
Total				4,025	\$19,963,450

¹ Note: Since GST and any applicable provincial tax is applied on the retail boat price inclusive of the luxury tax ("tax on tax") the price increase will be higher than the effective tax rate.

Other things equal (assuming no change in consumer behaviour), this means that if the tax were imposed on the sales volume and values of vessels sold by dealers included in the survey, shown in Table 6, it would raise a total of \$20 million in annual federal luxury tax revenue. Since it is proposed that the GST/HST will be applied inclusive of this tax (i.e., tax on tax), the luxury tax would also raise an additional \$1 million in federal GST. Additional provincial tax revenue would be raised as well, the amount depending on the applicable rate of tax (HST or PST) in a given province (except in Alberta, which does not levy a general sales tax).

Since detailed published sales statistics are not available for the industry as a whole, estimated total industry sales were instead then extrapolated from these survey sample results.¹⁷ Absent any reason to believe the contrary, it was assumed that the sales profile by value of vessel for dealers not surveyed is the same as that for the dealer sample surveyed.

NMMA Canada estimates that there are 92 dealers nationally who sell vessels that would be subject to the luxury tax. To obtain an estimate for total industry sales, these sales by survey respondents were therefore grossed up by a factor equal to the ratio of total dealers to dealers included in the survey to arrive at a best proxy for total sales that would be subject to the tax for the entire recreational boating industry (i.e., $92/49 = 1.87755$).

¹⁷ Industry sales data are available for various boat categories, but they are not disaggregated by price. See NMMA Canada, Retail Markets, Sales Trends 2009-2018, op cit. For this reason, we relied on the dealers' survey and its sample of respondents to construct an accurate data base of boat sales that would be subject to the tax. Survey respondents only included dealers who sold at least some high-value boats that would be subject to the tax. These dealers obviously also sold boats at price levels below the tax threshold. But the survey did not include dealers who only sold those boats. For that reason, our population of sales includes all the boats subject to the tax, but only a subset of the population of boats below the threshold.

As shown in Table 7, this results in estimated annual industry sales of 1,116 recreational vessels that would be subject to the tax and a static estimate of \$37.1 million in annual federal luxury tax revenues, as well as \$1.9 million in additional GST revenue.

TABLE 7
Luxury Tax: Static Impact using Grossed-up Sales Representing the Entire Industry

Price Range	Average Price	Tax per Vessel	Effective Tax Rate	Estimated Number of Vessels Sold ¹	Tax Revenue
Less than \$100,000	-	0	0	5,280	0
\$100,000 to \$250,000	-	0	0	1,155	0
\$251,000 to \$300,000	\$275,500	\$5,100	1.85%	531	\$2,708,100
\$301,000 to \$400,00	\$350,500	\$20,100	5.73%	242	\$4,864,200
\$401,000 to \$500,000	\$450,500	\$40,100	8.9%	124	\$4,972,400
\$501,000 to \$750,000	\$625,500	\$62,550	10%	98	\$6,129,900
\$751,000 to \$1,000,000	\$875,500	\$87,500	10%	56	\$4,900,000
\$1,001,000 to \$1,500,000	\$1,250,500	\$125,050	10%	36	\$4,501,800
\$1,501,000 to \$2,000,000	\$1,750,500	\$175,050	10%	9	\$1,575,450
\$2,001,000 to \$3,000,000	\$2,500,500	\$250,050	10%	13	\$3,250,650
Over \$3,000,000	\$6,000,000	\$600,000	10%	7	\$4,200,000
Total				7,551	\$37,102,500

¹ The number of vessels in each price range is rounded up or down to the nearest whole number

It should be noted that the luxury tax would apply to new recreational vessels imported into Canada as well as those manufactured and sold in Canada. In the case of imports, application would be either at the time of importation (in cases where there will not be a further sale of the goods in Canada) or at the time of the final point of purchase in Canada following importation. It is the authors' understanding that almost all such vessels are sold by dealers and not directly imported by final purchasers. For that reason, the above national sales and tax revenue estimates are assumed to capture sales of and revenue from new vessels that are imported into Canada as well as those that are manufactured in Canada.

Revenue yield taking into account behavioural effects

The post-tax retail price of boats subject to the luxury tax will rise following its imposition. We assume that retailers will pass the tax on to consumers rather than lowering their pre-tax prices to absorb part or all of the tax, so that the so-called "incidence" of the tax falls entirely on purchasers and that they will pay the full amount of the tax.

When the price of a good increases, the quantity of that good that is demanded by consumers decreases for almost any type of good. The quantity demanded will fall by more for some goods than for others. Typically, for a given price increase, the quantity demanded of basic necessities (for which there are few substitutes) falls less than for nonessential goods, such as recreational vessels in this case (for which there are more substitutes).

A good's "price elasticity of demand" is a measure of how sensitive the quantity demanded is to changes in its price. Price elasticity of demand is calculated as the percentage change in quantity divided by the percentage change in price. If the resulting elasticity is less than one (unitary elasticity), the demand is said to be relatively "inelastic" meaning the change in quantity demanded is small relative to the price increase. If the elasticity is greater than one, it is said to be relatively "elastic", meaning that the change in quantity demanded is relatively large in relation to the price increase that triggered it.

Our expectation here is that the demand for these boats is quite elastic. The Parliamentary Budget Office (PBO) assumed an elasticity of demand for goods subject to the tax of -2.40, meaning the quantity demanded would fall by 2.4% for every 1% increase in price. PBO used this same elasticity estimate for recreational motor vehicles, planes and vessels "based on academic studies of consumers of recreational vehicles".

As shown in Table 8, using this -2.4 elasticity estimate and recalculating the expected luxury tax revenue more realistically based on a reduced number of vessels that would be sold subject to the luxury tax once this behavioural response is taken into account results in estimated annual revenue of only \$29.2 million instead of the initial static estimate of \$37.1 million. Incorporating this behavioural impact also reduces expected additional GST revenues from \$1.9 million to only \$1.5 million.

TABLE 8
Luxury tax: Industry Impact assuming -2.4 Price Elasticity of Demand

Price Range	Average Price	Tax per Vessel	Effective Tax Rate	Estimated Number of Vessels Sold ¹	Tax Revenue
Less than \$100,000	-	0	0	5,280	0
\$100,000 to \$250,000	-	0	0	1,155	0
\$251,000 to \$300,000	\$275,500	\$5,100	1.85%	507	\$2,585,700
\$301,000 to \$400,00	\$350,500	\$20,100	5.73%	209	\$4,200,900
\$401,000 to \$500,000	\$450,500	\$40,100	8.9%	98	\$3,929,800
\$501,000 to \$750,000	\$625,500	\$62,550	10%	74	\$4,628,700
\$751,000 to \$1,000,000	\$875,500	\$87,500	10%	43	\$3,762,500
\$1,001,000 to \$1,500,000	\$1,250,500	\$125,050	10%	27	\$3,376,350
\$1,501,000 to \$2,000,000	\$1,750,500	\$175,050	10%	7	\$1,225,350
\$2,001,000 to \$3,000,000	\$2,500,500	\$250,050	10%	10	\$2,500,500
Over \$3,000,000	\$6,000,000	\$600,000	10%	5	\$3,000,000
Total				7,415	\$29,209,800

¹ The number of vessels in each price range is rounded up or down to the nearest whole number

This revenue impact is very similar to the estimate the PBO calculated in its legislative costing note published in May 2021 following the tabling of the 2021 federal budget (viz. \$31 million in annual luxury tax revenue in 2022/23, rising to annual revenue of \$33 million in 2025/26. For details, see APPENDIX 2). This is despite the fact that our data source for the derivation of total industry sales was different from theirs. Our industry sales estimate was derived from the

survey of actual dealer sales in 2020, whereas their annual industry sales estimates were derived from Transport Canada registration and licensing data for new vessels. Achieving similar results using different data sources increases the confidence level we have in the accuracy of our tax revenue estimate.

Table 8 incorporates a behavioural response for recreational vehicles assuming the price elasticity of demand is -2.4 , yet the demand and supply for imported boats could both be much more elastic, and imports account for a four-fifths share of the Canadian market. With a demand elasticity of -25.85 , as calculated by Shiells et al for trade, the tax base and associated revenue would virtually disappear. We are not sure this elasticity rather than -2.4 would apply to luxury boats at the lower price ranges, where the effective tax rate is below 10 percent, but if it does apply for boats worth more than \$1 million and these boats are no longer imported to avoid the luxury tax, instead of raising \$29.2 million, the luxury boat tax may only raise \$10.7 million.

The NMMA estimates that approximately 85 percent of the boats subject to the tax are imported by the dealers selling them as opposed to domestically manufactured. The small domestic manufacturing base for these boats might survive if sufficient numbers are still sold despite the imposition of the tax, but their survival is certainly threatened by it. One path to survival may be if instead of being sold domestically they are exported and sold in other jurisdictions, presumably principally in the United States. Domestically made boats are permitted to be exported without the luxury tax being imposed, consistent with the treatment of other taxes.

Other considerations: Employment impact, incidence

As noted in the Background section, the core recreational boating industry consists of about 4,800 companies that provide goods and services to Canadian and international boaters. In 2016, the core industry had direct sales of \$4.9 billion and employed 45,000 people.

In addition to its direct economic contribution to the Canadian economy, the sector relies upon and contributes to related sectors. In an economic contribution analysis conducted in 2016 used a regional input-output model and economic multipliers to determine the total economic contribution of the Canadian recreational boating industry, the direct, indirect and induced impacts were calculated.¹⁸

Direct effects are those associated with revenues from core recreational boating products and services (e.g., the sale of a recreational boat). Indirect effects (or “upstream” effects) are those from industries supplying the goods and services to the core industry, whereas induced effects result from household spending of the income earned in the core recreational and supporting industries (“downstream” effects). Employment includes those workers engaged in boat sales and service, marinas, manufacturing of boats, engines and accessories and other services. Of 45 thousand people employed directly by the boating

¹⁸ Hickling, Arthurs and Low, op cit.

industry, sales, marinas and manufacturing including engines account for over 80 percent of this direct employment.¹⁹

TABLE 9
Economic Contribution of the Recreational Boating industry in Canada, 2016

	Direct	Indirect	Induced	Total
Revenues (\$000)	\$4,884,144	\$2,679,871	\$2,451,494	\$10,015,510
GDP (\$000)	\$2,719,293	\$1,437,055	\$1,441,853	\$5,598,201
Employment (FTE)	44,666	15,754	15,014	75,434
Wages & Salaries (\$000)	\$1,573,846	\$728,214	\$604,567	\$2,906,627
Taxes & Subsidies (\$000)	\$420,821	\$233,230	\$214,301	\$868,353

In other words, the impact of the core recreational boating industry ripples out into the Canadian economy in significant ways. Overall, as summarized in Table 9, the direct recreational boating revenues of \$4.9 billion relate to further indirect and induced revenues for a grand total of \$10.0 billion. The core industry contributions \$2.7 billion to Canada's GDP and further indirect and induced contributions result in a cumulative total of \$5.6 billion. The direct employment for the industry was about 45,000, while total employment influenced by the industry is estimated at approximately 75,000. Wages and salaries earned by those workers totaled \$2.9 billion and taxes and subsidies remitted to governments totaled \$868 million.²⁰

As outlined in the previous section, we estimate that in principle based on our extrapolated 2020 sample survey results, the luxury tax would be imposed on the sale of about 1,200 boats annually in Canada. However, in reality the number of boats sold and taxed (and, accordingly, the associated tax revenue) would be reduced by the behavioural response that we expect the tax to trigger from consumers.

As shown in Table 10, if we conservatively assume a price elasticity of demand of -2.4, dealers will lose sales of 136 boats totalling over \$90.5 million in revenue as a direct result of the imposition of the luxury tax. This revenue loss, plus the additional compliance costs imposed by the tax on the industry, will reduce the operating margins of affected dealers and will likely have knock-on effects and repercussions in terms of sales staff employment and remuneration. As the input/output study referenced above demonstrates, because of the economic interrelationship of the recreational industry to other upstream and downstream industries, these impacts will not be contained to the boating industry alone.

This income that is not spent on the purchase of luxury boats in Canada because of the tax will no doubt be spent on the purchase of substitutes, including other goods and services in Canada. Much of it, however, will likely be spent on the purchase of comparable boats outside Canada (in the US in particular, for example) and the recreational industry itself, already ailing economically, will further suffer and bear the lion's share of the burden of this loss.

¹⁹ See NMMA Canada, The Economic Impact of Recreational Boating in Canada, 2016, Table 4.2.3, page 35.

²⁰ Ibid., page 27.

The impact that the luxury tax would have on employment is somewhat harder to predict and therefore harder to estimate. That said, even using a conservative price elasticity of demand estimate of -2.4, leaves little doubt that the tax would result in a lower level of direct employment in the boating industry, particularly in the boat sales and maintenance sectors due to the reduction in sales in response to the imposition of the tax. To the extent this occurs, there would no doubt be further ripple effects in other sectors of the economy because of the indirect (upstream) and induced (downstream) impacts, as shown in the 2016 economic contribution analysis cited earlier.

TABLE 10
Lost Boat Sales Due to the Introduction of the Luxury Tax
(assumed -2.4 price elasticity of demand)

Price Range	Average Price	Reduction in Number of Vessels Sold	Lost Sales Revenue
Less than \$100,000	-	0	0
\$100,000 to \$250,000	-	0	0
\$251,000 to \$300,000	\$275,500	24	\$6,612,000
\$301,000 to \$400,00	\$350,500	33	\$11,566,500
\$401,000 to \$500,000	\$450,500	26	\$11,713,000
\$501,000 to \$750,000	\$625,500	24	\$15,012,000
\$751,000 to \$1,000,000	\$875,500	13	\$11,381,500
\$1,001,000 to \$1,500,000	\$1,250,500	9	\$11,254,500
\$1,501,000 to \$2,000,000	\$1,750,500	2	\$3,501,000
\$2,001,000 to \$3,000,000	\$2,500,500	3	\$7,501,500
Over \$3,000,000	\$6,000,000	2	\$12,000,000
Total		136	\$90,542,000

In 2016, boat dealers and service stores earned just under \$2 billion in sales revenue and employed 19,702 full-time equivalent (FTE) employees.²¹ These revenues represent the gross output generated by the industry. Assuming a constant, fixed relationship between output and labour, a reduction of \$90.5 million in sales revenue would result in a reduction of 896 FTEs employed by boat dealers and service stores. As a general rule, labour markets respond relatively slowly to changes in market conditions and employment often responds by less than one-for-one with increases or decreases in output, so this might be considered to be an upper-bound estimate. However, workers would also be displaced in related sectors and higher price elasticities of demand would entail even higher employment losses throughout.

Regarding the latter, we conducted a sensitivity analysis to explore the potential implications of higher elasticities of demand on employment, among other things. The results are reported in the next section of the paper. At an assumed elasticity of -5.0 the reduction in revenue resulting from the tax could translate into 1,758 fewer FTE's employed by boat dealers and service stores. At an elasticity of -10.0 this reduction could be as high as 3,670 FTE's.

²¹ Ibid., Tables 4.2.1 and 4.2.3, pages 31 and 35.

VI. Sensitivity Analysis

Our results and conclusions are dependent on the assumptions we make concerning consumer responsiveness to the price increases. Different assumptions of their behavioural response will yield different quantitative impacts. To test for the sensitivity of our results to these assumptions, we ran the numbers for two additional assumed values of the price elasticity of demand: -5.0 and -10.0. The results are summarized in Table 11.

TABLE 11
Comparative Impact for Elasticities of -2.4, -5.0 and -10.0

Elasticity Value	Reduction in FTEs	Reduction in Number of Vessels Sold	Dealer Sales Revenue Lost ('000)	Luxury Tax Revenue Realized ('000)
-2.4	896	136	\$90,542	\$29,210
-5.0	1,758	272	\$177,659	\$21,540
-10.0	3,670	566	\$370,880	\$4,840

As the table shows, the more elastic the demand for boats, the worse will be the impact of the tax on the industry and the less revenue will be raised. The results are extremely sensitive to the assumed elasticity estimate.

VII. Conclusions

The international experience and empirical evidence from the imposition of luxury taxes strongly suggests that they raise less revenue than anticipated, impose significant compliance costs, distort purchasing decisions and have unanticipated behavioural responses.

There is no reason to expect a different outcome in that regard from the luxury tax that is being proposed for Canada. We find that it would impose an intrusive regulatory regime as well as substantial compliance costs on the impacted boat dealers and it would also entail significant administrative costs for the Canada Revenue Agency. As well as these impacts on employers, it would also displace a significant number of employees at least temporarily until they could find alternative employment.

In terms of the proposed tax base, we conclude, as does the Parliamentary Budget Office, that including luxury boats would only raise very modest incremental tax revenues. The PBO analysis included luxury vehicles and found that this is especially true in comparison to the revenues to be realized from their sale.

In these circumstances, should the government decide to proceed with the implementation of a luxury tax, consideration should be given to excluding boats from the tax base. Incurring the social and economic cost that would likely result from imposing this tax on boats hardly seems to make sense in relation to the revenue it would raise.

APPENDIX 1

Excerpts from 2021 Budget Plan

Tax on Select Luxury Goods

Budget 2021 proposes to introduce a tax on the retail sale of new luxury cars and personal aircraft priced over \$100,000, and boats priced over \$250,000, effective as of January 1, 2022. For vehicles, aircraft and boats sold in Canada, the tax would apply at the point of purchase if the final sale price paid by a consumer (not including the GST/HST or provincial sales tax) is above the \$100,000 or \$250,000 price threshold, as the case may be. Importations of vehicles, aircraft and boats would also be subject to the tax.

Tax Base

Boats

It is proposed that the tax apply to new boats such as yachts, recreational motorboats and sailboats, typically suitable for personal use. Smaller personal watercraft (e.g., water scooters) would be excluded from the base. For greater certainty, floating homes, commercial fishing vessels, ferries, and cruise ships would fall outside the scope of the tax.

Tax Rate

For vehicles and aircraft priced over \$100,000, the amount of the tax would be the lesser of 10 per cent of the full value of the vehicle or the aircraft, or 20 per cent of the value above \$100,000.

For boats priced over \$250,000, the amount of the tax would be the lesser of 10 per cent of the full value of the boat or 20 per cent of the value above \$250,000.

Point of Imposition

The tax would generally apply at the final point of purchase of new luxury vehicles, aircraft and boats in Canada. In the case of imports, application would generally be either at the time of importation (in cases where there will not be a further sale of the goods in Canada) or at the time of the final point of purchase in Canada following importation.

Upon purchase or lease, the seller or lessor would be responsible for remitting the full amount of the federal tax owing, regardless of whether the good was purchased outright, financed, or leased over a period of time.

Exports will not be subject to the tax, in line with their treatment under other taxation regimes.

Treatment under the GST/HST

The GST/HST would apply to the final sale price, inclusive of the proposed tax.

Department of Finance Revenue Estimate

Tax on Select Luxury Goods

2020–2021	2021–2022	2022–2023	2023–2024	2024–2025	2025–2026	Total
-	-34	-140	-140	-145	-145	-604

Source: 2021 Budget Plan, Annex 6

<https://www.budget.gc.ca/2021/report-rapport/p4-en.html#253>

APPENDIX 2

Parliamentary Budget Office Legislative Costing Note



OFFICE OF THE PARLIAMENTARY BUDGET OFFICER
BUREAU DU DIRECTEUR PARLEMENTAIRE DU BUDGET

Legislative Costing Note

This is an independent cost estimate of a budgetary measure contained in the federal government's Budget 2021. A list of the PBO's cost estimates of components of the Budget can be viewed on [its website](#).

Publication Date: 2021-05-20

Short Title: Luxury goods sales tax

Description: The introduction of a sales tax applied at the point of purchase of automobiles and aircraft valued over \$100,000 and vessels valued over \$250,000. The tax will only apply to new vehicles purchased for personal use. The tax rate will be the lesser of 10 per cent of the full value of the vehicle, or 20 per cent of the value above the threshold.

This tax will come into effect on January 1, 2022.

Data Sources:

Variable	Source
Aircraft registry	Transport Canada
Aircraft and vessel prices	Publicly available listings
Automotive prices	Publicly available MSRPs
Automotive sales	Publicly available manufacturer sales
Price inflation	PBO economic model
Vessel licenses and registry	Transport Canada

Estimation and Projection Method:

The total sales volume of automobiles and aircraft valued over \$100,000 and vessels valued over \$250,000 for personal use was approximated using publicly available data. Sales volumes were linked to the assumed corresponding vehicle prices to determine the potential tax base. PBO assumed an elasticity of -2.4 based on academic studies of consumers of luxury vehicles. The PBO assumed no impact on GST/HST revenues.

The following tax rates were applied to determine the potential tax revenues:

Automobiles and aircraft:

1. 20 per cent of the value above the threshold (\$100,000) for automobiles and aircraft valued over \$100,000 to \$200,000; and
2. 10 per cent of the full value of the automobile or aircraft valued above \$200,000.

Vessels:

1. 20 per cent of the value above the threshold (\$250,000) for vessels valued over \$250,000 to \$500,000; and
2. 10 per cent of the full value of the vessel valued above \$500,000.

The PBO assumed that the sales of luxury vehicles would recover from the economic impact of COVID-19 by 2022. For 2022 and beyond, potential tax revenues were grown in-line with inflation projections in PBO's economic model.



LEG-2122-005-S

1 of 3

Sources of Uncertainty: Actual sales volumes for vehicles in this tax base are not known. For vessels and aircraft, PBO used registry and license data as a proxy for sales volume. The estimated revenues are highly sensitive to the price distribution of the total volume of sales. PBO used publicly available listings and MSRPs to approximate the distribution of prices and sales volumes. Actual distributions could differ from these samples.

This cost estimate is dependent on the assumed recovery path of the sales of luxury goods. Due to the uncertainty surrounding COVID-19, the recovery path could differ. The estimate is also sensitive to exchange rates and uncertainty in the economic outlook.

A behavioural response is expected. The exact magnitude of this response is uncertain and depends on the price sensitivity of consumers.

Prepared by: Jill Giswold <Jill.Giswold@parl.gc.ca>



LEG-2122-005-S

2 of 3

Cost of proposed measure

\$ millions	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026
Total cost	-45	-150	-153	-156	-159

Supplementary information

\$ millions	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026
Automobiles	-33	-110	-112	-114	-117
Vessels	-9	-31	-32	-32	-33
Aircraft	-3	-9	-9	-9	-9
Total cost	-45	-150	-153	-156	-159

Notes

- Estimates are presented on an accruals basis as would appear in the budget and public accounts.
- Positive numbers subtract from the budgetary balance, negative numbers contribute to the budget balance.
- "-" = PBO does not expect a financial cost.
- Numbers may not add due to rounding.

Source: <https://distribution-a617274656661637473.pbo-dpb.ca/d0f4cd5558a7105a865303094a5389b37b014f7e5166a416d7ba69ad0bdc6d54>

APPENDIX 3

Additional Working Tables

TABLE 12
Luxury tax: Industry Impact assuming -5.0 Price Elasticity of Demand

Price Range	Average Price	Tax per Vessel	Effective Tax Rate	Estimated Number of Vessels Sold ¹	Tax Revenue
Less than \$100,000	-	0	0	5,280	0
\$100,000 to \$250,000	-	0	0	1,155	0
\$251,000 to \$300,000	\$275,500	\$5,100	1.85%	491	\$2,504,100
\$301,000 to \$400,00	\$350,500	\$20,100	5.73%	173	\$3,477,300
\$401,000 to \$500,000	\$450,500	\$40,100	8.9%	69	\$2,766,900
\$501,000 to \$750,000	\$625,500	\$62,550	10%	49	\$3,064,950
\$751,000 to \$1,000,000	\$875,500	\$87,500	10%	28	\$2,450,000
\$1,001,000 to \$1,500,000	\$1,250,500	\$125,050	10%	18	\$2,250,900
\$1,501,000 to \$2,000,000	\$1,750,500	\$175,050	10%	5	\$875,250
\$2,001,000 to \$3,000,000	\$2,500,500	\$250,050	10%	7	\$1,750,350
Over \$3,000,000	\$6,000,000	\$600,000	10%	4	\$2,400,000
Total				7,279	\$21,539,750

¹ The number of vessels in each price range is rounded up or down to the nearest whole number

TABLE 13
Lost Boat Sales Due to the Introduction of the Luxury Tax
(assumed -5.0 price elasticity of demand)

Price Range	Average Price	Reduction in Number of Vessels Sold	Lost Sales Revenue
Less than \$100,000	-	0	0
\$100,000 to \$250,000	-	0	0
\$251,000 to \$300,000	\$275,500	40	\$11,020,000
\$301,000 to \$400,00	\$350,500	69	\$24,184,500
\$401,000 to \$500,000	\$450,500	55	\$24,777,500
\$501,000 to \$750,000	\$625,500	49	\$30,649,500
\$751,000 to \$1,000,000	\$875,500	28	\$24,514,000
\$1,001,000 to \$1,500,000	\$1,250,500	18	\$22,509,000
\$1,501,000 to \$2,000,000	\$1,750,500	4	\$7,002,000
\$2,001,000 to \$3,000,000	\$2,500,500	6	\$15,003,000
Over \$3,000,000	\$6,000,000	3	\$18,000,000
Total		272	\$177,659,500

TABLE 14
Luxury tax: Industry Impact assuming -10.0 Price Elasticity of Demand

Price Range	Average Price	Tax per Vessel	Effective Tax Rate	Estimated Number of Vessels Sold ¹	Tax Revenue
Less than \$100,000	-	0	0	5,280	0
\$100,000 to \$250,000	-	0	0	1,155	0
\$251,000 to \$300,000	\$275,500	\$5,100	1.85%	433	\$2,208,300
\$301,000 to \$400,00	\$350,500	\$20,100	5.73%	103	\$2,070,300
\$401,000 to \$500,000	\$450,500	\$40,100	8.9%	14	\$561,400
\$501,000 to \$750,000	\$625,500	\$62,550	10%	0	0
\$751,000 to \$1,000,000	\$875,500	\$87,500	10%	0	0
\$1,001,000 to \$1,500,000	\$1,250,500	\$125,050	10%	0	0
\$1,501,000 to \$2,000,000	\$1,750,500	\$175,050	10%	0	0
\$2,001,000 to \$3,000,000	\$2,500,500	\$250,050	10%	0	0
Over \$3,000,000	\$6,000,000	\$600,000	10%	0	0
Total				6,985	\$4,840,000

¹ The number of vessels in each price range is rounded up or down to the nearest whole number

TABLE 15
Lost Boat Sales Due to the Introduction of the Luxury Tax
(assumed -10.0 price elasticity of demand)

Price Range	Average Price	Reduction in Number of Vessels Sold	Lost Sales Revenue
Less than \$100,000	-	0	0
\$100,000 to \$250,000	-	0	0
\$251,000 to \$300,000	\$275,500	98	\$26,999,000
\$301,000 to \$400,00	\$350,500	139	\$48,719,500
\$401,000 to \$500,000	\$450,500	110	\$61,299,000
\$501,000 to \$750,000	\$625,500	98	\$49,555,000
\$751,000 to \$1,000,000	\$875,500	56	\$49,028,000
\$1,001,000 to \$1,500,000	\$1,250,500	36	\$45,018,000
\$1,501,000 to \$2,000,000	\$1,750,500	9	\$15,754,500
\$2,001,000 to \$3,000,000	\$2,500,500	13	\$32,506,500
Over \$3,000,000	\$6,000,000	7	\$42,000,000
Total		566	\$370,879,500