Consultant Expenditures and Fair Allocation in Toronto*

An assessment of Toronto's capital allocation

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The Canadian federal government has been under scrutiny since the widely reported ArriveCAN scandal, which brought to light a severe misappropriation of funds through contractors. In light of these events, I investigate the allocation of funds to consultants by the City of Toronto. Exploring expenditure, I find an increasing budget allocation to consultants, and a tendency to allocate to a few key consultants. I suggest future work which could lead to a more complete evaluation and a possible investigation into the bidding process.

1 Introduction

The CBSA (Canadian Border Security Agency) and Public Health Agency of Canada spent over $53 Million Dollars on an app which was created using 23 subcontractors. The contract process was unfair and non-competitive, with an internal report finding that the government criteria preferred one contractor over others Canada (2024). The people of a city benefit from fair and efficient markets, as such the allocation of its tax dollars should follow a transparent and robust tender process.

In this paper we explore the City of Toronto's consultant expenditure data, sourced from Gelfand (2022). We looked for any abnormal concentration of funds, or systematic patters that could suggest a biased tender process. We use R Core Team (2023), Wickham (2016), Zhu (2024) and Wickham et al. (2019) in the process of my analysis, and arrive to a few simple conclusions.

Through illustrative plots, we find that consultant expenditure has been growing steadily over the last few years, across a variety of verticals. We then observe the data and notice

*Code and data are available at: https://github.com/Aman-Rana-02/STA304_starter_folder/tree/Toronto-Consultant-Expenditure

that two consultants dominate expenditure; Deloitte and Ernst & Young. We then look at their allocation as a fraction of total yearly expenditure and observe their share of the City's expenditure to be growing over time.

We consider a few possible driving factors and reccomend future work that could enable more robust conclusions on the competitive nature of the City's tender process.

The remainder of this paper is structured as follows:

Section 2 Walks through the Data collection and cleaning.

Section 3 Introduces a few plots which illustrate evidence of concentration.

Section 4 Discusses the possible driving processes for this concentration.

Section 5 Discusses possible future work that could lead to a more robust conclusion.

2 Data

I grab the data from Gelfand (2022), which returns excel workbooks for the years 2012-2016, 2022-2023, and 2017-2021. I then merge the data to a single large dataset to make it easier to manipulate, dropping to only the following columns:

year - Year of the expenditure (2012-2023),

budget_type - Type of Budget which is Operating or Capital,

city_abc - City Specification,

expense_category - Type of Expenditure, IT/Transportation/Management etc.,

division_board - Which division of the City incurred the expense,

consultants_name - Consultant on the project,

description_of_the_work - Brief free-text explanation of the work,

expenditure - Dollar amount of the project,

We had to rename some columns to standardise the merge across the three different data files, and these details can be found in the repository.

We now have the table (**data-head?**).

Upon inspection, there are a few non-standardised naming schemes in the divison_board and expense_categories, 'operating' also exists as 'Operation' and a few spelling mistakes/variations in the Toronto Police Service's naming. To account for this, I manually standardise these naming schemes and sort through the dsata to make sure no large expenses are unaccounted for due to a spelling mistake or variation.

Table 1: Data Sample

Here is a sample of the table

3 Results

The first establishing point we notice is that expenditure has been increasing year on year as seen in (**yearly-cat-expenditure?**).

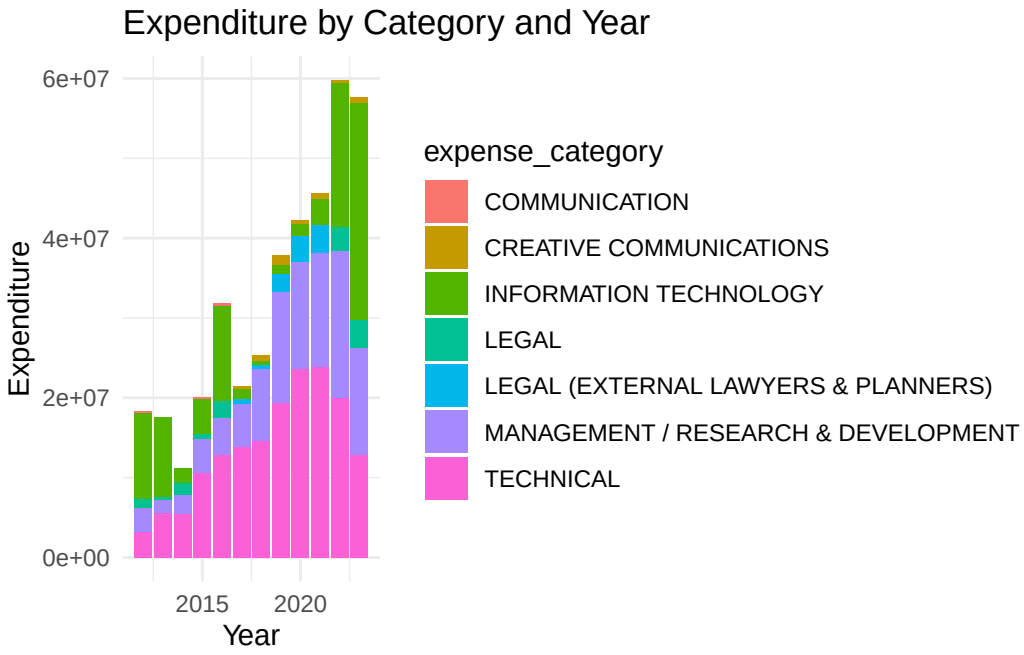

Figure 1: Yearly Expenditure by Category

We also see in the figure (**top-consultants?**) that Deloitte and Ernst and Yonge take the lion's share of the projects form the City.

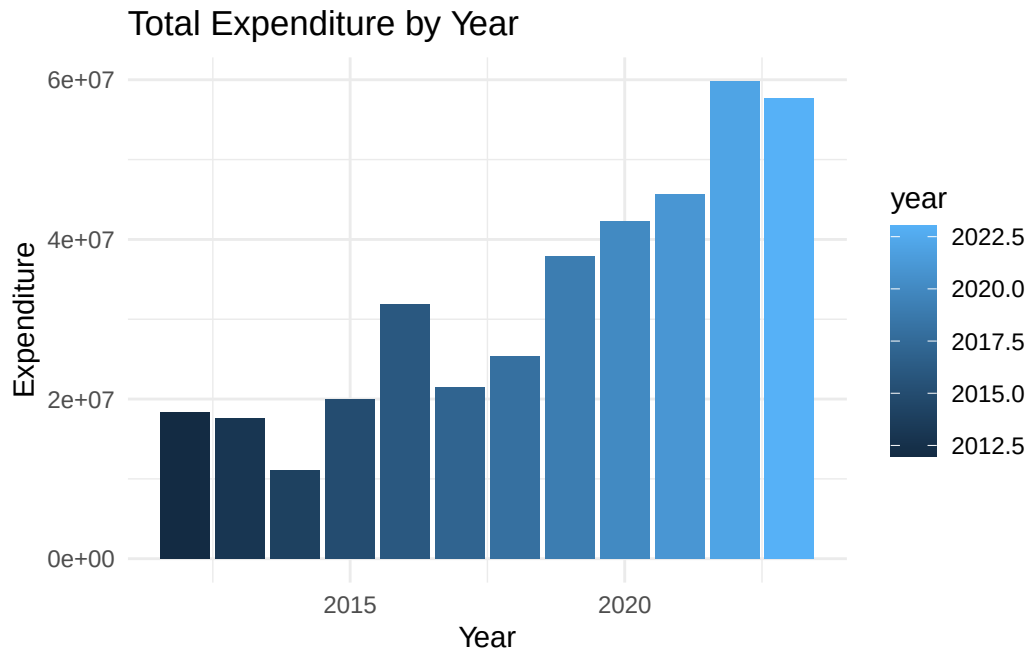

Figure 2: Expenditure by Consultant

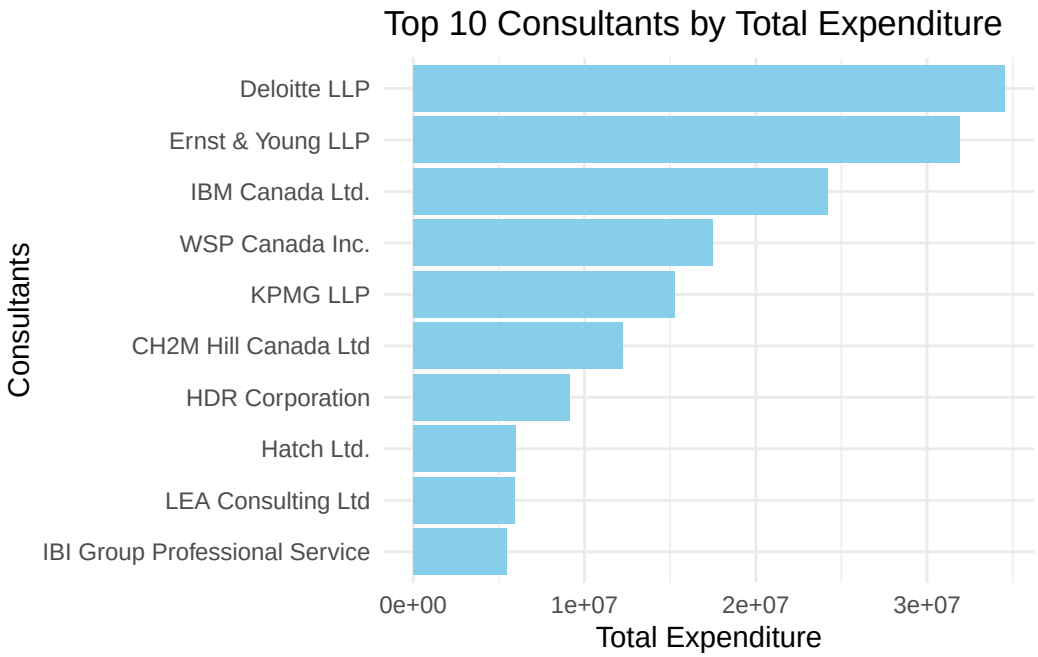

Figure 3: Expenditure by Consultant

Finally, we plot their share over time, which is their yearly portion of the total consultant expenditure.

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`summarise()` has grouped output by 'year'. You can override using the
`.groups` argument.
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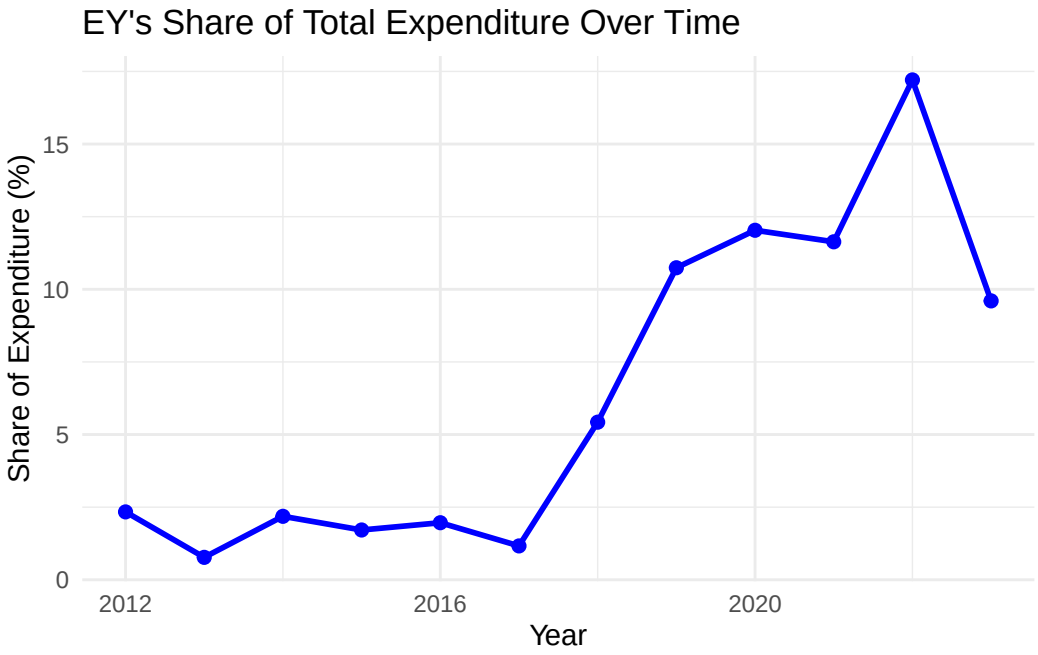

Figure 4: Increasing Share of Total Expenditure

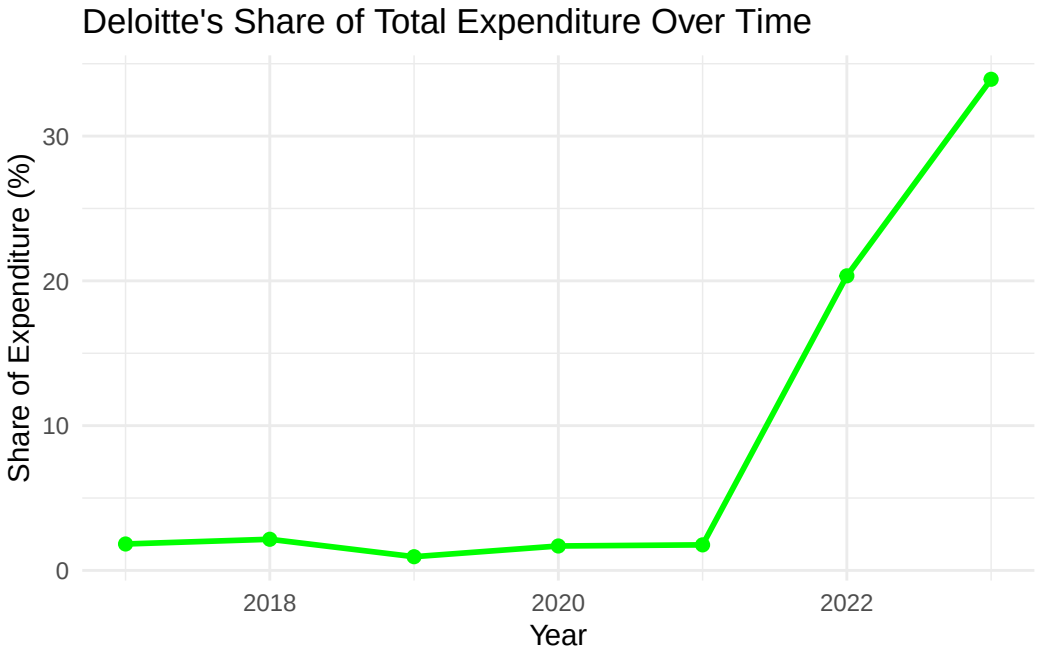

Figure 5: Increasing Share of Total Expenditure

4 Discussion

We find that Deloitte and EY have a growing share of the City of Toronto's capital allocation, and this is apart from the fact that the City's consultant budget has been increasing. Showing a proportional increase gives rise to questions of tender robustness and capital allocation. If this trend was to continue, Deloitte and EY would form a duopoly, taking more of the contracts, until they get bargaining power over the government. It may even be a sign of preferential treatment.

5 Weaknesses and next steps

The results I have shown are somewhat naive. The increasing share could be becuase of more competitive pricing as these larger more established firms get more sophisticated and are able to better price their contracts. They could also be follow-ups on prior contract, leading to a cumulative effect of greater allocation. Further work would involve looking at these trends across industries, and seeing where any outliers in expenditure exist, if there are smaller firms taking on a few high paying contracts, those might be better examples of preferential treatment. However, the data is sound and the results do still show a proportional increase in expenditure,

and an investigation into the tender procedure could be warranted shoudl the future work show more systematic abnormal allocation.

References

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