THE STRUCTURE OF TORONTO CITY COUNCIL ROLL-CALL VOTES

JANINE GILES AND PAUL FAIRIE
UNIVERSITY OF CALGARY

THIS IS A DRAFT. DO NOT CITE WITHOUT PERMISSION

Abstract. This analysis of Toronto City Council roll-call votes between 2006 and 2010 sets out to explain the determinants of councillors' voting behaviour. We examine the personal, ward-level, regional and external factors that shape the legislative behaviour of the 44 city councillors and the mayor. The use of cluster bloc analysis and multi-dimensional scaling to analyze roll-call data provides a more systematic analysis of their behaviour than the more commonly found journalistic accounts in local newspapers. The Toronto case provides several opportunities for analysis, as data are available to test multiple explanatory factors such as ward-level factors taken from the 2001 census and personal characteristics such as gender, region of Toronto represented, and external-to-council partisan leanings of individual representatives. Furthermore, unlike major cities such as Vancouver and Montreal, no municipal parties have emerged; however, institutional factors such as membership on the Executive Committee will be examined to see if this structures the vote to reflect the preferences of the mayor. Finally, the role of campaign finance will be considered by accounting for the percentage of donations from the developers comprises the total money raised for each candidate.

1. Introduction

The election of Rob Ford as mayor of Toronto in 2010 surprised many observers, as he seemed to represent a sudden shift in the city's politics. Ford consistently opposed many of David Miller's (the incumbent mayor) proposals. Such an impression could be gathered by occasionally observing Toronto politics; it was not, however, one based on regular empirical observation. The substitution of academic study of a city council's politics by journalistic impression of is not uncommon in Canada. While studies of legislator behaviour are central to the study of many types of legislatures (Poole and Rosenthal, 2000; Morgenstern, 2004), like much of the municipal politics literature in Canada, this issue is largely neglected (Taylor and Eidelman, 2010).

This paper intends to subject Toronto City Council's last term (2006-2010) to such an academic analysis. By analyzing a complete dataset of roll-call votes on city council between 2006 and 2010 scraped from the city council minutes, we

can for the first time systematically analyze determinants of councillor's voting behaviour. We can test three hypotheses:

(1) In non-partisan councils, the partisanship of a councilor outside of city council determines votes on council.
(2) Personal characteristics such as gender and ward characteristics structure votes on council.
(3) In Toronto specifically, the introduction of the Executive Committee, which is much akin to a cabinet, will have many of the same effects as a cabinet, and promote vote cohesion between the members.

In testing these hypotheses, we find that each are supported by the evidence present in the roll-call data. To whit, the partisanship outside of city council appears to have a large impact on city council roll call votes, while personal characteristics, and in particular gender, appear to have some cohesive effects. Finally, the pseudo-cabinet Executive Committee further seems to structure city council voting. In all, it appears that the non-partisan Toronto city council is subject to many of the same pressures as a legislature with partisanship, particularly with respect to the effects of partisanship outside city council and also the Executive Committee. However, the analysis suggests that greater room for ward-level and councillor-level characterstics to influence vote patterns exists in parliaments and legislatures lacking formal political parties.

2. The Toronto case

The former City of Toronto and its surrounding metropolitan area (1953-1997) have been notable innovators in the style and structure of municipal government (Tindal and Tindal, 2008). To accommodate the post-WWII population explosion the former City of Toronto and 12 surrounding municipalities embraced a federal municipal government in 1953 that could meet the increasing demand for water and sewage services, the need to create arteries to increase traffic flow, address welfare needs within each community and facilitate industrial and business-related growth. The lower tier of government in the two-tier structure allowed the 13 municipalities to maintain their original boundaries. The upper-tier Metro Council was comprised of an indirectly elected council from the lower tier council. Tensions in the municipal government often reflected fears about excessive growth from residents of established neighbourhoods, the concentrated power of industry and the unprecedented population growth in the suburbs (Tindal and Tindal, 2008, p. 100).

The Province of Ontario started the amalgamation process in the latter part of 1996 when it announced that the lower tier municipalities and the Metro-level council would be combined to form a new City of Toronto. Canada[s first modern-day megacity became official on January 1, 2008. The provincial City of Toronto

Act took effect exactly one year prior. It was the legislation that led to the amalgamation and allowed the City of Toronto the authority to introduce new taxes relating to alcohol, motor vehicle ownership, land transfer, tobacco, entertainment, and parking and road tolls (Lightbody, 2005). These new avenues for revenue generation have been important to the municipality which has found that revenue sources such as property taxes have not been able to keep pace with budget increases. The most recent City of Toronto budget indicates that the municipal government spends approximately $10.37 billion a year (Toronto, 2010). The largest portion of the money is spent on provincially mandated programs (31% of total budget) while the remainder is spent on other programs and services such as fire and emergency medical service, solid waste and water treatment, affordable housing, parks and recreation and social services, amongst others (City of Toronto Operating Budget 2008).

The amalgamation was initiated by the provincial government to streamline spending and program administration within at the municipal level. This initiative was part of Premier Mike Harris Common Sense Revolution which sought to reduce municipal bureaucratic redundancy and scale back budgetary expenditures. A non-binding referendum was on the question of the merger across the lower tier municipalities which failed by a large majority (Tindal and Tindal, 2008, p. 102). This did not prevent Premier Harris from following through on the merger. The NDP and the Liberal imposed a filibuster on the proposed amalgamation legislation which turned out to be the longest filibuster in Canadian history for any level of government (Lightbody, 2005).

Some of the most vociferous opposition within the Ontario Provincial Parliament and in the public accused the Conservatives of submerging the former City of Toronto into a larger municipality that could be controlled by predominately conservative suburban representatives (Tindal and Tindal, 2008). From this perspective, Harris was following the approach of a rational choice institutionalist. Rational choice institutionalism suggests the rules of the institution can be changed to benefit certain participants in the institution. In other words, a set of rules can be imposed to establish the bounds of acceptable behaviour by providing incentives for some actions while curtailing others (Peters, 2005, p. 49). If Harris approached the merger from this perspective, rational choice institutionalism suggests the Harris government set up a municipal government for the metropolitan area of Toronto to provide institutional incentives to strengthen the voice of conservative representation from the suburbs and reign in the left-leaning council of the former City of Toronto (Tindal and Tindal, 2008). This cross-sectional analysis will indicate whether a conservative faction is at odds with a left-leaning faction. A longitudinal analysis, however, would diagnose whether there is a change in favour of the conservative side and whether Harris alleged design in having its intended impact on the Council.

3. Explanatory Factors

4. Method & Measures

4.1. **Explanatory factors.**

4.1.1. *Membership on the executive committee.* The first institutional variable under scrutiny is membership on the Executive Committee. The Executive Committee is formed by the Mayor and Deputy Mayor along with the seven Chairs of the Standing Committees (for whom the Mayor appoints) and the four other members who are elected by Council. This committee sets long term policy and budgetary goals for Council and also deals with intergovernmental relations. Membership on the committee is intended to capture the strength of the relationship between councilors and the mayor since the mayors role as appointing most of the positions is a sign that he can work with those councilors and that they generally support his budgetary and policy positions. While committee members are not bound to vote with the mayor, there is still reason to believe that most people on the committee will share many of the same positions as Mayor Miller on fiscal and social issues.

4.1.2. *Partisanship outside of city council.* The second institutional variable is partisanship outside city council. While there are no parties at the municipal level, demonstrated partisanship at the federal and provincial levels may provide a useful indication of Councillors' political beliefs and values. It may also shape coalition building with other councilors. Most councilors have a public history or running in a provincial or federal nomination contest for a party. Many have also publicly endorsed provincial and federal candidates. While there has been a strong anti-party sentiment in Toronto in recent memory Lightbody (2005), ideological similarities may structure fiscal and social issues that face Council. Councillors who have not run as a candidate or supported a specific party are coded as "unknown". There is one such councillor coded as such. Partisanship is equally divided on council with 14 councillors with NDP leanings and 15 councillors with Conservative and Liberal leaning, respectively.

4.1.3. *Region.* The first representational variable is the political representation of the four regions. Prior to the amalgamation, many in the metropolitan Toronto area voted against the proposed merger because it posed problems for political representation and local democracy (Tindal and Tindal, 2008). Given the sensitivity to local representation, the region for which the councilor represents may be an important factor in bringing other councilors from that region together during a Council vote. While the regional factor may be more salient for some issues than others, it still poses a possible structuring feature of councillors votes. Region is not expected to be the primary factor determining voting habits because the different social, economic, and political values between regions may not be enough to drastically affect councillors voting habits. Therefore, controlling for ward-level factors such as home ownership, median household income, first year

immigrants and education level will indicate to what extent the regional factors shape councillor behaviour.

Region, however, has been shown to be particularly important in other cases. In the United States with the development of the latter-day Republican and Democratic Parties, region played an important role because of the distinct regional differences in political and social values, economics and attitudes toward the relationship between the United States and Britain. This manifested itself as a regional federalist/anti-federalist divide. The solidification of the two parties took place in the period between 1789 and 1803. In this time frame, Congressmen became more polarized and created systematic factions that represented notable differences between the North and South (Hoadley, 1980). The final stage of the parties development resulted in the institutionalization of the parties in which permanent linkages were created by Congressional representatives and electoral committees (Hoadley, 1980, p. 759).

4.1.4. *Gender.* The second representational variable is the sex of the councilor. In the absence of party discipline the unique experiences women councilors bring to office may affect the way they vote. While this affect is not expected to be as strong as the other explanatory factors in this analysis, it may be used in future research to pay particular attention to the impact of councillors biological sex on the way they vote on welfare and affordable housing issues citepBarnello 2001. There are 10 women on council, making up 22.2% of councillors.

4.1.5. *Developer donations.* Developers play a potentially important role in politics in Toronto, contributing more than 10% of the campaign funds, which accounts for nearly half of all non-individual contributions (Young and Austin, 2008). Suburban developers particularly play an important role in urban politics where new businesses and residential areas are planned and developed (Blais, 2010). We code developers as corporate donations from companies who appear on the membership of the Building Industry and Land Development Association. As well, corporate donations are coded as developers if the company has names that include words that would indicate they either developers or builders. However, we do not consider individual donations that come from people in the development industry. Therefore, the measurement of developers' campaign contributions will be conservative. There is considerable variation in the values of developers' contributions because 11 members of council did not accept donations including the mayor. The councillor with the largest total developers' contribution received $26,150.

4.2. **Roll call voting.** The roll call votes were drawn from Toronto City Council minutes. We used various text functions in Excel to automatically code the votes. It includes all votes where there were recorded divisions (which, in Toronto, appears to be all votes on council). The four years of council meetings, which took place in David Miller's second term in office, incorporates 1,668 votes in all.

Missing votes were simply disregarded when undertaking the statistical analysis, in accordance with general practice.

4.3. **Census data.** A number of ward-level characteristics are used as control factors to test the impact of region on political representation. The first control variable is percentage of home ownership. The average value is 54% and the range is 28-85%. In cities, paying property taxes may result in areas that are more sensitive to the issue of raising taxes. The median household income is included as an indicator of the general socio-economic status of the community. It was preferred over the average household income variable because some wards had high incomes that skewed the average value. The range of median household income is $38,300 to 86,900. The percentage of first generation immigrants was included to take into account the cultural diversity of the ward and the city has played an important role in providing vital social services to immigrants. In general, 59.1% of Toronto comprises first generation immigrants. The range across the wards is 31.7% to 82.8%. Finally, the education level is measured by the percentage of completed university degrees in each ward. Within Toronto, 29.5% of the population has completed a university degree. The range is 10.1% to 58.2%. Factors such as employment rate did not vary sufficiently across the city to warrant inclusion in the analysis. Furthermore, manufacturing employment was omitted to avoid inflated standard errors because of its high correlation with first generation immigrants ($R = 0.80$).

4.4. **Coding.** The explanatory factors are coded as either dummy variables or left as numeric variables. Membership on the executive committee and gender are both dummy variables. Executive committee members are coded '1' while all else are coded '0'. Female councillors are coded '1' and men '0'. Each party was coded as a dummy variable and the Conservative party was left out as the reference category. The four regions – York, Etobicoke, Scarborough and Downtown Toronto – are all dummy variables with Downtown Toronto left out as the reference category. The value of developer's campaign contributions and median household incomes are coded as dollar values. Home ownership, first generation immigrants and university degrees are coded as percentages.

4.5. **Cluster analysis.** Cluster bloc analysis is a common technique for studying roll call voting. Its method is quite simple. First, using the roll call votes, one must figure out the rate of agreement, which is calculated by counting how many times each pair of councillors voted together (either both for or against), and divide it by the number of votes in which both participated (in order to not over or under count rates of agreement due to one or both missing many meetings). Once this is done, one must select a cut-off (usually 75%, as it is here), and councillors are said to group if the each agree more than 75% with one another.

In Toronto, we identified two such groups: coded as the main group, and the secondary group. Coded '0' and '1' for simplicity to note when a councilor was not

in or was in a certain group, this measure will establish any inter-group variation on council. This would be similar to identifying the major as one party, and the smaller group as a second party and determining if there are any systematic differences between the two caucuses, along the lines of extra-council partisanhip, gender, and so on. It is better than simply dividing up the councillors along these partisan lines initially because it allows the data to suggest the groupings rather than forcing the labels based on a factor such an extra-council partisanship.

4.6. **Multidimensional scaling.** Multidimensional scaling is a statistical technique that visualizes how similar to variables are, by using a dissimilarity matrix. A simple example involves distance. If we know that Paris is 23km from London, which itself is 45km from New York, which in turn is 38km from Paris (an obviously fictional example), we can then use this technique to figure out where each of these cities is in relation to one another. Similarly, if we know that Smith votes with Grant 23% of the time, and Grant votes with Jacobs 41% of the time and Jacobs votes with Grant 62% of the time, we can use the same techinique to provide a visual representation in two (or more, if desired) dimensions. For more technical details, see Kruskal and Wish (1977); Everitt and Hothorn (2010). This technique has been used to explain phenomena as the structure of votes in the United Nations Assembly (Holloway, 1990).

In contrast to the cluster analysis, which compared groups to each other, multidimensional scaling compares councillors to each other. By placing them on a two-dimensional map, a visualization of council is possible, and then by performing a linear regression on the co-ordinates, it is possible to determine what factors are associated with positions on the visualization and, therefore, what the major factors deciding the groupings of councillors are. This is quite an appropriate method because it is excellent for determining clusters in data, and this research is more generally trying to figure out how councillors themselves cluster.

5. Results

5.1. **Multidimensional scaling.** Figure 1 shows the spatial organization of roll call voting. Certainly, members of the Executive Committee and NDP supporters are found farther to the left of the graph and Conservative councilors are found conveniently farther to the right.

The councilors on the left side of the graph appear to be placed closer together than those on the right. Most strikingly, though, is the lonely placement of Councilor Ford on the top right hand side, clearly an outlier to the main group. Because all procedural and substantive votes are considered, it is difficult to say exactly what makes Ford one-of-a-kind. He was on the winning side of the vote 33% of the time (445/1350) and on 68 occasions he was the only one supporting a motion. There were only 141 instances when a councilor voted on their own. Therefore,

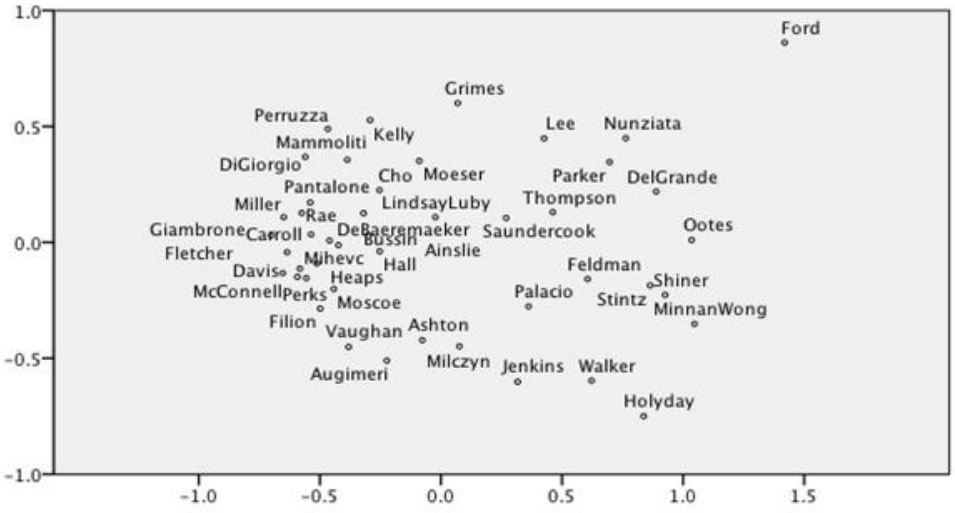

FIGURE 1. Multidimensional scaling

Ford was responsible for nearly half of these. There was an additional 82 times when he had the support of just one other councilor.

To give meaning to each axis on the graph, the x values and y values were regressed using the variables from the main explanatory model. The values of the x-axis prove are better than values on the y-axis at explaining councilors placement on the graph. The R^2 value for the x-axis is 0.616. The greatest contributing factors to a positive score are wards with high levels of university educated individuals, councilors who identify with the conservatives and councilors who represent Etobicoke. Smaller values on the x-axis are attributed to membership on the Executive Council, representing areas with low median incomes and high concentrations of first generation Canadians. The y-axis explains less than the x-axis because it has a R^2value of 0.301. However, it shows that vertical placement is positively related to councilors Conservative affiliation, representing a high percentage of first generation and having membership on the executive council. Councilors were given a lower value if the represented wards with high levels of education, received higher amounts of donations from developers and represent North York.

5.2. **Cluster bloc analysis.** Cluster bloc logistic regression is used to see which characteristics are associated with membership in the main group. The regression correctly placed individuals in the main group 88.9% of the time. The values in show that a coefficient of 1.00 means there is no relationship with membership in the main group. This is certainly the case for the first generation, median income and home ownership ward-level control variables and developers contributions. In fact, the coefficient for the developers campaign contribution is precisely 1.00 which means that its does not explain coucilors group membership. This supports the

TABLE 1. Multidimensional scaling: x-axis

	B	**s.e.**	**Beta**	**t**	**Sig.**
(Constant)	-.674	.935		-.721	.476
firstgen	.000	.009	-.010	-.048	.962
ownhome	.003	.013	.070	.258	.798
university	.011	.012	.225	.930	.359
medianincome	-.005	.020	-.079	-.229	.820
con	.682	.291	.543	2.342	.026
lib	.095	.271	.075	.350	.728
female	.035	.193	.024	.181	.858
execcomm	-.456	.204	-.321	-2.233	.033
etobicoke	.327	.422	.237	.774	.445
northyork	.118	.310	.085	.380	.707
scarborough	-.004	.362	-.003	-.012	.991
develop	6.028×10^{-5}	.000	.219	1.372	.180
ward	.003	.012	.065	.247	.807

Cox & Snell $R^2 = 0.319$

TABLE 2. Multidimensional scaling: y-axis

	B	**s.e.**	**Beta**	**t**	**Sig.**
(Constant)	-.254	.737		-.344	.733
firstgen	.009	.007	.341	1.166	.252
ownhome	-.002	.010	-.067	a-.184	.855
university	-.004	.009	-.153	-.470	.641
medianincome	-.001	.016	-.026	-.055	.956
con	.166	.230	.226	.724	.475
lib	.010	.213	.014	.047	.963
female	-.029	.152	-.035	-.190	.850
execcomm	.109	.161	.131	.678	.503
etobicoke	.067	.333	.083	.201	.842
northyork	-.202	.244	-.250	-.825	.415
scarborough	-.009	.286	-.011	-.031	.976
develop	-1.157×10^{-5}	.000	-.072	-.334	.741
ward	.000	.009	.012	.034	.973

$R^2 = 0.301$

conclusion that councilors were not affected directly by the development industrys fundraising support.

A coefficient less than one indicates that certain characteristics have a smaller chance of being affiliated with the main group. Indeed, representatives from wards with higher levels of education are slightly less likely to belong to the main group. The coefficient of 0.93 can be interpreted to mean that the more educated the riding, the less likely the representative will be found in the main group. The partisanship and region played and even stronger role in explaining group membership. Councilors supporting Conservatives and Liberals were much less likely to belong to the main group compared to councilors with NDP affiliations with coefficients of 0.47 and 0.66 respectively. However, the effect of region is even larger. Councilors from Etobicoke, North York and Scarborough were much less likely than councilors from the downtown area of Toronto to be in the main group. The coefficients ranged from 0.04 for Etobicoke to 0.18 for Scarborough. This lends evidence to support the hypothesis that local representation resembling the former structure of the city affects political representation even after accounting for specific ward characteristics.

Reported coefficient greater than one highlight those characteristics that positively affect main group membership. Members of the Executive Committee are more than twice as likely to be in the main cluster compared to those who are not (coefficient 2.336). This is the single strongest predictor of group membership and points to the institutional impact of the Executive Committee on voting outcomes. After accounting for region and partisanship, being appointed or elected to the Executive Committee appears to have the greatest effect because of its role in agenda-setting and budget making. Finally, female councilors are 1.6 times more likely, or 60% more likely, to be a member of the main group. Irrespective of their partisan leanings and the region they represent, women are more likely than men to vote in the same group. This finding is contrary to evidence from the New York State Assembly that suggests that there is no differentiation in the voting patterns of men and women (Barnello, 2001). The main difference between the two cases is that there is weak party discipline in the New York State Assembly while there are no parties in Toronto City Council.

6. Discussion

From our analysis, we can see that the hypotheses listed at the beginning are true. To re-iterate: the partisanship of a councilor outside of city council determines votes on council, personal characteristics such as gender and ward characteristics structure votes on council, and with regards to Toronto specifically, the introduction of the Executive Committee, which is much akin to a cabinet, will have many of the same effects as a cabinet, and promote vote cohesion between the members.

TABLE 3. Cluster bloc analysis: logistic regression

firstgen	.033	.051	.411	1	.522	1.033
ownhome	-.014	.074	.034	1	.853	.986
university	-.073	.067	1.182	1	.277	.930
medianincome	.011	.113	.010	1	.920	1.011
con	-.764	1.446	.279	1	.597	.466
lib	-.411	1.339	.094	1	.759	.663
female	.499	1.116	.200	1	.655	1.648
execcomm	.848	1.129	.565	1	.452	2.336
etobicoke	-3.202	1.992	2.584	1	.108	.041
northyork	-1.946	1.694	1.320	1	.251	.143
scarborough	-1.710	2.050	.696	1	.404	.181
develop	.000	.000	.825	1	.364	1.000
Constant	3.061	5.092	.361	1	.548	21.341

As all research, it also opens up a number of new questions. Does the pseudo-Cabinet nature of the Executive committee provide it with a cohesive power similar to that of a real cabinet in a parliament? If so, understanding why the executive committee has such an effect may go some way in understanding why cabinet also does, beyond just an institutional explanation.

Second, research into the mechanisms behind the influence of extra-council partisanship would help to distinguish between the effect being the result of ideological differences co-inciding with extra-council partisanship, or as the result of informal caucuses forming, or the result of social affinity outside the legislature.

Finally, given the impact of gender on the vote, research with the same data analyzed at a finer scale would reveal whether gender played a special role in structuring votes around issues such as child care, or whether the structuring was a broader process.

In all, in demonstrating the impact of various factors on Toronto City council, it is clear that both institutional and behavioural factors play important roles. However, akin to the arguments made in Taylor and Eidelman (2010), it is clear that there is much more research that can be done.

REFERENCES

M.A. Barnello. Gender and roll call voting in the new york state assembly. *Women and Politics*, 20(4):77–94, 2001.

Pamela Blais. *Perverse Cities*. UBC Press, 2010.

Brian S. Everitt and Torsten Hothorn. *A Handbook of Statistical Analyses Using R*. CRC Press, 2010.

John F. Hoadley. The emergence of political parties in congress, 1789-1803. *American Political Science Review*, 74(3):757–779, 1980.

Steven Holloway. Forty years of united nations general assembly voting. *Canadian Journal of Political Science*, 23(2):279–296, 1990.

J.B. Kruskal and M. Wish. *Multidimensional scaling*. Sage Publications, 1977.

James Lightbody. *City Politics, Canada*. University of Toronto Press, 2005.

S. Morgenstern. *Patterns of Legislative Politics: Roll-Call Voting in Latin America and the United States*. Cambridge University Press, 2004.

B. Guy Peters. *Institutional Theory in Political Science: The 'New Institutionalism'*. Continuum, 2005.

K.T. Poole and H. Rosenthal. *Congress: A Political-Economic History of Roll Call Voting*. Oxford University Press, 2000.

Zack Taylor and Gabriel Eidelman. Canadian political science and the city: A limited engagement. *Canadian Journal of Political Science*, 43:961–981, 2010.

Richard C Tindal and Susan Nobes Tindal. *Local Government in Canada*. Nelson College, 2008.

City of Toronto. 2010 city of toronto budget summary, 2010. URL `www.toronto.ca/budget2010/pdf/bb2010`*full.pdf*.

Lisa Young and Sam Austin. Political finance in city elections: Toronto and calgary compared. *The Canadian Political Science Review*, 2(3):88–102, 2008.