Who Elected Rob Ford, and Why?
An Ecological Analysis of the 2010 Toronto Election

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The techniques employed in this paper are exploratory and the analysis preliminary.
The author welcomes comments and suggestions in order to improve and extend the
research.

The 2010 municipal election in the City of Toronto was a watershed in a number of respects. For only the second time since the 1997 amalgamation of the former Metro Toronto municipalities the mayoral race did not feature an incumbent. The victor, councilor Rob Ford, trounced two high profile and well-resourced opponents: former provincial cabinet minister George Smitherman and longtime downtown councilor and deputy mayor Joe Pantalone. Smitherman ran as a centrist, adopting policy positions from both right and left. Pantalone ran as the continuity candidate, proposing to extend the policies of Mayor David Miller, who in seven years in office had presided over an expansion of the City's budget and had championed government-led solutions to various civic ills, not least traffic congestion, suburban ethnic poverty, and deteriorating public housing.

Ford's platform constituted an almost systematic repudiation of Miller's legacy. Arguing that the City's perennial fiscal problems stemmed from excess spending rather than insufficient revenues, Ford pledged to shrink the size of government by eliminating waste and introducing private sector competition to provide services. In a populist appeal he promised to put money back into residents' pockets by reducing or eliminating taxes and fees. In addition, Ford promised to "end the war on the car" by cancelling the previous mayor's ambitious multi-billion-dollar plans to extend light rail transit into outer suburban areas, curtail on-street bicycle lanes, and eliminate a City surtax on vehicle registrations.

Rob Ford was an unlikely winner. Long a marginal member of council, his public profile entering the race was defined by gaffes and personal indiscretions: a drunk driving charge in Florida in 1999; referring to Asian people in a 2008 council speech as "Orientals [who] work like dogs … they're slowly taking over"; charges of assault and uttering death threats to his wife in 2008 (later withdrawn); calling fellow councilor Gloria Lindsay Luby "a waste of skin" in a 2005 council debate; being forcibly removed by security guards from a Maple Leafs hockey game for drunkenly verbally assaulting other spectators; expressing opposition to immigration and homeless shelters; and arguing that when cyclists are killed by cars, it is their own fault.[1]

The success of an outsider like Ford was certainly a surprise to Toronto's chattering classes. His candidacy was initially not taken seriously by Bay Street powerbrokers and downtown-oriented middle class opinion leaders who had envisioned a match-up between Smitherman and former provincial Conservative Party leader and defeated 2003 mayoral candidate John Tory. By June, however, Ford had permanently eclipsed Smitherman in the polls. After Tory definitively ruled out running in August, business support coalesced around Smitherman.[2] The closing days of the campaign featured an "anyone-but-Ford" effort. Second-tier candidates Rocco Rossi and Sarah Thompson were persuaded to quit and throw their support behind Smitherman.

[1] Jill Mahoney, "In quotes: Rob Ford and a decade of controversy," *Globe and Mail*, 19 August 2010; "Ford in His Own Words" website, <www.fordonford.ca>.

[2] David Rider, "John Tory is officially out of the mayoral race — again," *Toronto* Star, 6 August 2010; Royson James, "What happens now? Four turbulent years," *Toronto Star*, 26 Oct. 2010.

Ultimately, Ford did not need the financial support or public endorsement of business leaders. Ford funded the early stages of his campaign with loans from his family business and incurred substantial debts. While Smitherman ended his $2.2 million campaign with a small surplus, Ford finished with an $800,000 deficit on a total budget of $1.7 million. Donations to Smitherman's campaign doubled Ford's in total value and were on average larger.[3] Had Ford been anointed by Bay Street, he would have had much more money at his disposal. Smitherman's financial advantage did not help him. Ford received 47.1% of the vote on election day, Smitherman 35.6%, and Pantalone 11.7%. Minor candidates accounted for 5.5% of votes cast.

Ford's transformation from council gadfly to mayor of one of North America's largest municipalities signals a profound change in leadership style and policy priorities, the long-term impact of which remains to be seen. This paper employs an ecological analysis to make inferences as to the basis of Ford's support.

The study of local elections

In *City Limits* (1981), American political scientist Paul Peterson famously argued that municipal politics are by definition limited; that we should not mistake them for complete and relatively self-contained polities. In his view, municipalities are not nation-states in miniature. They have little to no control over flows of capital and labour, and, due to competition from rival jurisdictions for investment, have only limited control over the use of land and the revenues that can be extracted from it. In the Canadian context, it has been argued that municipalities, as wholly owned subsidiaries of the provinces, have limited policymaking autonomy and discretion over spending (Dupré 1968).

More recent scholarship, however, has emphasized the potential for municipal governments to creatively maximize their own-source revenues and capacities while channeling other-government resources in ways that serve their interests. At the same time, some provincial governments have disengaged from historical controls over municipal activities, affording them greater discretion. Recent amendments to the City of Toronto Act and the Municipal Act in Ontario have expanded the ambit of municipal jurisdiction. British Columbia and Ontario have also signed memoranda of understanding with municipal associations recognizing municipalities as an order of government and pledging meaningful consultation before undertaking actions with impacts on municipal affairs. The downloading of responsibilities (with or without cash attached) from provincial governments has also enlarged the field of what municipalities do. At the same time, the amalgamations of municipalities in the Halifax (1996), Toronto (1997), Hamilton and Ottawa (2001), and Montreal (2002) areas have created municipalities that are territorially extensive, contain large populations, and have large bureaucracies. Each

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[3] See City of Toronto Candidate Financial Statements for Ford and Smitherman, <http://app.toronto.ca/EFD/efdFormSearch.do?DIALOG-EVENT-searchCandidatePDF=true#45>. See also David Rider, "Dining for dollars: 'Harmony Dinner' helps retire debts," *Toronto Star*, 27 January 2011; Patrick White, "Rob Ford's campaign expenses range from Oreos to office space," *Globe and Mail*, 25 March 2011.

of these mayors can claim a mandate from a larger pool of voters than any federal or provincial politician. On this basis, "mega-city" mayors possess a powerful bully pulpit. This enlargement of municipal power and responsibility means that municipal politics matters more than previously (Andrew 2001). Who wins mayoral elections, especially in the largest Canadian cities, can lead to meaningful changes in policy direction, the incidence of taxes and fees on residents and businesses, and levels of social and property-oriented services.

Despite the increasing salience of municipal elections, they have received little attention from Canadian political scientists. There have been only a handful of recent analyses of local elections, each pursuing different goals and employing different methods (Cutler and Matthews 2005; Kushner, Siegel, and Stanwick 1997; Stanwick 2000). Municipal elections pose significant methodological challenges. Information about voting intentions and motivations is not easy to acquire. Without detailed rolling polls akin to those used in national election studies, the voter remains a black box.

Even if we could mount regular municipal election studies, the potential for understanding the motivations of voters is confounded by several factors. First, there is the fact that that local races are "vertically disintegrated" from provincial and federal contests (Milner 1997: 100–01). Most Canadian municipal elections are non-partisan, and, where parties do exist, they are not extensions of provincial and national parties. When mayoral and ward candidates lack party labels, there are limited cues for the voter as they make electoral choices. As a result, it is often difficult for analysts and voters alike to identify the political orientation of individual candidates, especially at the ward level. Local elections also occur at different times and pertain to different geographical boundaries than provincial and federal races. All of these factors inhibit cross-level effects that are common in the United States and Britain, where local elections can function as venues to reward or punish parties for their actions at higher levels.

Second, the ostensible "low temperature" of local politics — the relative absence of make-or-break issues and stark policy choices — militates against voting based primarily on assessments of incumbent performance and the desire for particular policy changes. Although, as argued above, political choices in Canada's major cities are increasingly consequential, local politics remains less visible to the voter than federal or provincial politics. The impact on motivation is apparent in relatively low turnout in local elections. It also means that voters make electoral choices with less information. The embedding of the local state within a complex web of provincial mandates and agreements clouds accountability and sows confusion regarding the limits of municipal jurisdiction. Candidates may make promises that are beyond the powers of the office or the municipality itself, while voters may blame local politicians for outcomes that are outside of municipal control.

A potentially positive aspect, however, is the direct election of the mayor on a citywide basis (Rowat 1983). As the determination of the mayor is not contingent on the composition of council and, without parties, the potential for councilor "coat-tailing" on mayoral candidate popularity is limited, it is possible to comprehend the distribution of

voter support over a broad yet socially differentiated territory and, on this basis, infer the basis of that support.

The geography of the 2010 vote: an urban/suburban divide

One of the starkest outcomes of the 2010 Toronto election was a clear spatial divide in candidate support. (See **Figure 1**.) Smitherman's margin over Ford was greatest in the core of the former City of Toronto, while Ford's margin over Smitherman was greatest in the former Metro suburbs of Etobicoke, western North York, and western Scarborough. (From 1954 until amalgamation in 1997, municipal government in what is now the single-tier City of Toronto was organized into a two tiers, with Metro operating in parallel with six lower-tier municipalities, including the former City of Toronto.) As **Table 1** shows, over 80% of Ford's support came from the Metro suburbs outside the former City of Toronto — as a result, some commentators have taken to referring to the suburbs as "Ford Country" and suburban residents as "Ford Nation." However, Ford was not shut out of the former City and Smitherman was not shut out of the suburbs: each received a little less than 30% in the other's zone of strength. Few parts of the City were competitive. In only 16% of polling divisions (180 out of 1110) was the gap in support between Ford and Smitherman less than 10%. (See **Figure 2**.)

Table 1: Election-day results by former Metro municipality

Percentages by candidate

Former City	Ford		Smitherman		Pantalone		Other		Total	
Etobicoke	67,900	65%	24,500	23%	8,100	7%	4,400	4%	**105,000**	**100%**
East York	15,400	43%	14,000	39%	4,800	13%	2,000	6%	**36,200**	**100%**
North York	84,200	53%	47,000	29%	16,900	11%	11,300	7%	**159,400**	**100%**
Scarborough	92,800	57%	45,100	28%	13,600	8%	11,300	7%	**162,700**	**100%**
Toronto	67,600	29%	121,600	51%	38,400	16%	8,600	4%	**236,200**	**100%**
York	18,300	48%	11,800	31%	5,600	15%	2,500	7%	**38,200**	**100%**
Total	*346,200*	*47%*	*264,000*	*36%*	*87,400*	*12%*	*40,100*	*5%*	***737,700***	***100%***
Suburbs*	278,600	56%	142,400	28%	49,000	10%	31,500	6%	**501,500**	**100%**

Percentages by municipality

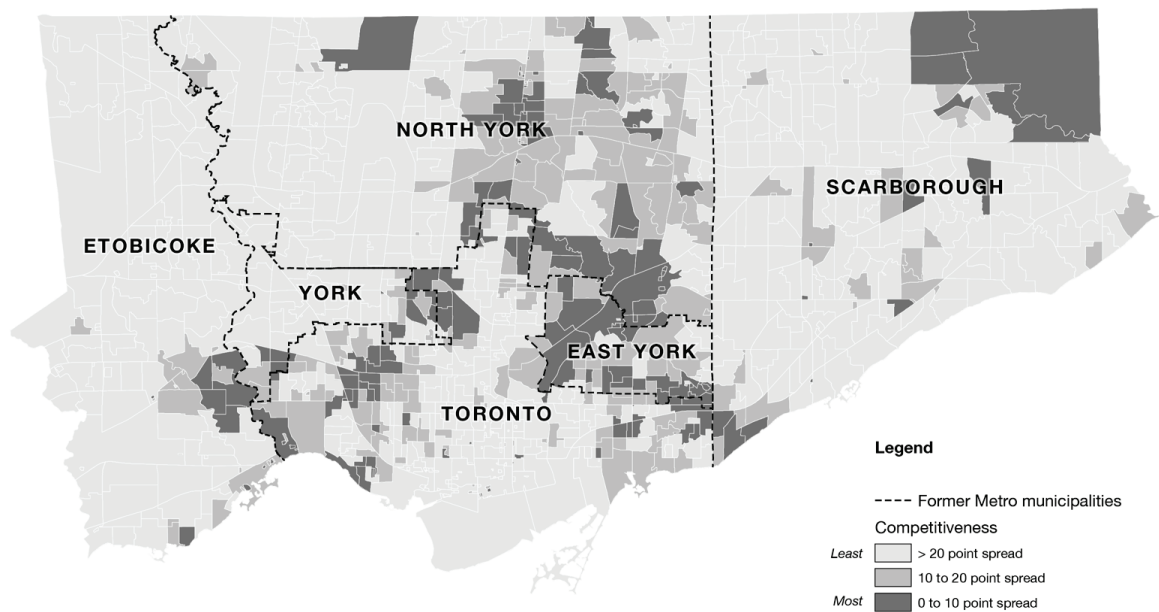| Former City	Ford		Smitherman		Pantalone		Other		Total	
Etobicoke	67,900	20%	24,500	9%	8,100	9%	4,400	11%	105,000	14%
East York	15,400	4%	14,000	5%	4,800	5%	2,000	5%	36,200	5%
North York	84,200	24%	47,000	18%	16,900	19%	11,300	28%	159,400	22%
Scarborough	92,800	27%	45,100	17%	13,600	16%	11,300	28%	162,700	22%
Toronto	67,600	20%	121,600	46%	38,400	44%	8,600	21%	236,200	32%
York	18,300	5%	11,800	4%	5,600	6%	2,500	6%	38,200	5%
Total	***346,200***	***100%***	***264,000***	***100%***	***87,400***	***100%***	***40,100***	***100%***	***737,700***	***100%***
Suburbs*	278,600	80%	142,400	54%	49,000	56%	31,500	79%	501,500	68%

The winning candidate's cells are shaded. Totals for former municipalities were created by aggregating votes allocated to census tracts. All values rounded to the nearest 100.
* Suburbs = former municipalities other than the former City of Toronto

Figure 1: Margin of election-day support, Ford versus Smitherman, by polling division

Legend

---- Former Metro municipalities

Vote margin

Smitherman over Ford
- 40 to 100 points
- 30 to 40 points
- 20 to 30 points
- 10 to 20 points
- 0 to 10 points

Ford over Smitherman
- 0 to 10 points
- 10 to 20 points
- 20 to 30 points
- 30 to 40 points
- 40 to 100 points
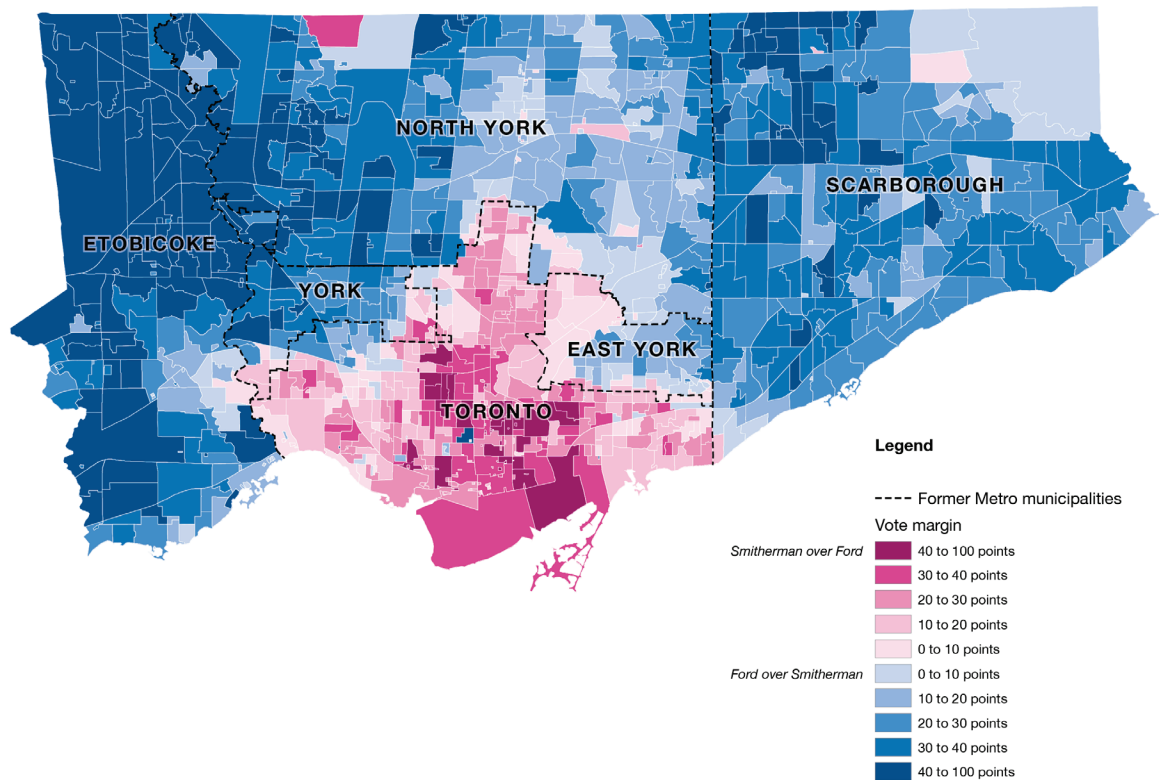
Figure 2: Competitiveness – spread between Ford and Smitherman by polling division

Legend

---- Former Metro municipalities

Competitiveness

Least — > 20 point spread

10 to 20 point spread

Most — 0 to 10 point spread

An urban/suburban divide in candidate support in the City of Toronto is not a new phenomenon. The 1997, 2003, and 2006 elections were also essentially two-way races

between candidates identified with core and suburban areas, and whose support was strongest in those areas.[4] In each case, the election was decided in the middle, inner suburban zone.

Four potential explanations

There are at least four possible explanations for Ford's victory over Smitherman. First, Ford may have run a more effective campaign. Although Smitherman outspent Ford, there is some evidence that Ford ran a more disciplined campaign. Commentators have remarked on the simplicity of Ford's message and his use of innovative campaign techniques such as automated telephone polling and town halls. Smitherman, by contrast, failed to advance a concise and focused platform and campaign narrative.[5] The impact of messaging and issue framing cannot be assessed with available information. We do know, however, that there is little evidence that Ford's campaign was more organizationally effective on election day. Analysis of the election returns shows that turnout was lower in polling divisions carried by Ford (43%) than those won by Smitherman (49%). Had turnout rates been the same in all polling divisions, Ford would have won by a larger margin.

Second, we might hypothesize that the winner had a more positive image. As discussed, however, Ford entered the campaign with a great deal of negative baggage, all of which was aired extensively in print and electronic media. His campaign compensated by presenting him as a straight-shooting, fiscally conservative man of the people. For his part, Smitherman's image was hobbled by his association with a botched "e-Health" scheme to digitize medical records. His reputation as a short-tempered taskmaster, encapsulated by the sobriquet "furious George," was spun positively by his campaign as a can-do attitude. His sexual orientation may or may not have had an impact. At the close of the campaign, Smitherman was the target of informal posters and a radio ad, both targeting religious and ethnic voters, that positively contrasted Ford's heterosexuality with Smitherman's homosexuality — the slogan: "at least his [Ford's] wife is a woman."[6] Ultimately, it seems that Ford's supporters were unaware of or willing to overlook his indiscretions, while the impact on voters of Smitherman's provincial career, lifestyle, and leadership approach are unclear.

Third, it may be that Ford's victory was preordained by exogenous events, not least recession-induced populism. Some have argued that Ford rode a more generalized

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[4] In the 2000 election incumbent mayor Mel Lastman ran essentially unopposed and won with 80% of the vote.
    [5] On Ford's campaign techniques, see Kelly Grant, "The mighty engine behind the Rob Ford campaign," *Globe and* Mail, 30 July 2010; Patrick White, "Taking a page from the Ford manual," *Globe and Mail*, 1 April 2011.
    [6] Jessica Hume, "Tamil radio station airs Smitherman smear ads," *National Post* Posted Toronto Blog, 25 October 2010, <http://news.nationalpost.com/2010/10/25/tamil-radio-station-airs-smitherman-smear-ads/>; "Smitherman the target of 'homophobic' ads," CTV Toronto News website, <http://toronto.ctv.ca/servlet/an/local/CTVNews/20101024/nasty-signs-101024/20101024/?hub=TorontoNewHome>.

recession-fueled, anti-government, anti-incumbent wave, drawing comparisons to the Tea Party movement's activism in the American midterm election that occurred a week previously.[7] While the defeat of incumbent mayors in several larger Ontario cities could be interpreted as evidence of discontent,[8] columnist Jeffrey Simpson argues on the basis of attitudinal polling by Bruce Anderson that candidates of the populist right did poorly in most Ontario cities. He concludes that "Ford's win had everything to do with the particular circumstances of Toronto [and] nothing to do with anything else in Ontario or Canada, let alone some kind of ersatz Canadian version of a Tea Party."[9]

Given this weak or contradictory evidence, we cannot interpret any of these potential explanations as decisive. These factors also cannot explain the urban/suburban divide in voter support, as we would expect each to apply equally across the city, not to only part of it. A fourth possible explanation is that urban and suburban voters behave differently because they operate in different incentive environments and possess different interests. Of course there is nothing new in the idea that voters are in some way motivated by their social and economic characteristics and contexts. Election surveys at the national level have long sought evidence for class-based, economic, or religious voting. In Canada, religion and region have proved consistently salient predictors of party support, while socio-economic status has not (Gidengil 1992).

Given the focus on property-related matters in municipal politics, we might expect to see a stronger relationship between socio-economic context and candidate support at the local level. After all, property taxes and fees for services related to property constitute the bulk of municipal revenues. Moreover, policing, solid waste management, parks and recreation, schools, and transportation systems — all of which have profound impacts on the enjoyment of property — constitute the bulk of municipal expenditures. As Fischel (2005) describes, homeowners are particularly attentive to municipal politics because of the impacts local policies have on their property values.

At the same time, research suggests that increasing social, economic, and ethnic polarization in Canadian cities may have political consequences (Hulchanski 2010; MacDonnell et al. 2004; Walks 2010). In an analysis of provincial and federal electoral behaviour, Walks (2004a, 2004b, 2005a) demonstrates the emergence, especially since 1980, of divergent patterns of party support among inhabitants of core and suburban areas. While residents of core areas have increasingly supported parties of the centre-left, suburban areas have increasingly supported parties of the centre-right. Other research has revealed a similar transformation in the United States (Gainsborough 2001) and the United Kingdom (Walks 2005b). While to date these patterns have been observed and

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[7] In particular, EKOS pollster Frank Graves argued that "the old progressive elite politics" was being swept aside by a populist surge across North America. See Jane Taber, "What Rob Ford's victory means for Stephen Harper," *Globe and Mail*, 26 October 2010. See also, Gary Mason, "Rob Ford tapped into a zeitgeist that goes beyond Toronto, *Globe and Mail*, 28 October 2010.

[8] For example, incumbent mayors were defeated in Vaughan, Burlington, Oshawa, Ottawa, Hamilton, London, and Sudbury.

[9] Jeffrey Simpson, "A tempest in Toronto's teapot," *Globe and Mail*, 3 November 2010.

tentatively explained in the context of provincial and federal elections (Walks 2006), no similar analysis has been undertaken of municipal elections.

Ecological analysis

The preferred method of assessing potential relationships between the characteristics of voters and their voting behaviour is the survey. Individual-level information certainly has many advantages, as it enables direct assessment of individual voters' psychology — what they think and why. As pre-election surveys do not exist at the municipal level, an alternative approach is post-hoc ecological analysis of election results in relation to neighbourhood-level social and economic characteristics. (Originating in the Chicago School of Sociology, this use of the word "ecological" long predates its present association with the natural environment. Rather, an ecological model of social relations presumes that the world can be divided into discrete territorial units whose residents possess distinctive characteristics.) Ecological analyses study territorially defined aggregations of individuals. Although rare in political science, research of this type is commonplace in sociology, geography, economics, criminology, and epidemiology. Ecological analysis is appropriate for testing the potential effect of location and neighbourhood context on behaviour. The principal methodological pitfall is known as the "ecological fallacy" — the assumption that territorial units are homogeneous and equivalent, when in fact data pertaining to them is an average and the number of people within each unit may vary. To protect against the ecological fallacy, studies should employ the smallest possible territorial units of more or less equal population.

The remainder of this paper provides an ecological analysis of the 2010 Toronto mayoral election. A series of OLS regression models test the relationship between candidate support on election day and several social, economic, and location variables. The unit of analysis is the voting subdivision (VSD), each of which contains one or more polling stations to which to which registered electors are uniquely assigned. In the 2010 election there were 1,110 VSDs, each containing an average of 2,300 residents and 1,475 registered eligible electors. (To be eligible, a resident must be a Canadian citizen over the age of 18.)[10]

To seek correlations with census variables, the election results were aggregated in a Geographical Information System (GIS) to census tracts, the smallest territorial unit for which a full range of social, demographic, and economic data are available. There are 531 census tracts in the City of Toronto. As VSD boundaries and census tract boundaries do not always align, the election returns were apportioned to census tracts in a three-step process. First, returns from polling stations pertaining to single buildings such as apartment or condominium towers were assigned directly to their associated census tract. The VSDs were then decomposed into census blocks and the voting results for polling stations drawing from the VSD as a whole were distributed among the blocks in

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[10] The author is grateful to the City of Toronto for providing election returns data.

proportion to their share of the total population of the VSD.[11] The blocks were then aggregated up to census tracts and the primary and secondary poll data summed.[12]

Determinants of candidate support

Given the paucity of research on Canadian municipal electoral behaviour, there is little guidance in the determination of expected relationships. Kushner, Siegel, and Stanwick's (1997) study of ward councilor elections in 135 Ontario municipalities tested the effects of city size, incumbency, gender, levels of campaign spending, and the number of candidates in the race on the candidate's chance of winning in the 1982 and 1988, and 1994 elections. They found incumbency to be a powerful effect in large cities, the number of candidates to exert a greater influence in small municipalities, and little to no impact for gender and campaign spending. As we saw, there was no incumbent in the 2010 Toronto election, all candidates were male, and we saw that Smitherman's losing campaign raised and spent more money than Ford's winning one.

More recently, and taking a different approach, Cutler and Matthews (2005) drew on Miller and Shanks' (1996) model of vote choice in a survey of 310 voters after the 2002 City of Vancouver election. Survey respondents reported demographic characteristics, provincial party identification, left-right ideological leaning, their assessment of the local economy, their approval of the provincial government, and their perceptions of four local policy issues. They found some evidence that voters held the local government responsible for the health of the local economy and linked local party support to party identification at the provincial level (provided they were aware of the affinity between local and provincial parties). While they detected some evidence that socio-demographic characteristics influenced vote choice, there was little evidence of retrospective voting — vote choice in support of or in opposition to actions of the previous council.

The only recent example of an ecological analysis (although she does not use the term) of a Canadian local election is Stanwick's (2000) analysis of support for the two leading candidates in the 1997 Toronto mayoral election in relation to the aggregate socioeconomic characteristics of residents in the 28 wards.[13] She concluded that tenancy rates and levels of education and immigrant population were significant factors, and more so in wards where no incumbent was on the ballot. The small number of wards, however, raises questions of whether her findings are valid. (Indeed, the use of polling station-level data in the present study is intended to get around this problem.)

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[11] Ideally voting data would have been allocated to blocks in proportion to the number of registered voters in each block rather than total population, but this information is not available.

[12] Manual adjustments were made in the case of three census tracts (0003.00, 0205.00, and 0376.06) where polling stations were located in institutional buildings across tract boundaries from the neighbourhoods with which they were associated. Also, Statistics Canada has suppressed data for five census tracts that contain few residents (0006.00, 0009.00, 0033.00, 0056.00, and 0061.00).

[13] In the 1997 election, the City of Toronto had 28 wards, each electing two councilors. Starting in 2000, council was reorganized into 44 wards, each electing one councilor.

The analysis is organized around three hypotheses. The first looks for evidence of *policy voting* — that voters selected a candidate on the basis of their most visible policy commitments. The second seeks evidence of *retrospective voting*; voting in relation to policies promoted by Mayor Miller with impacts on specific geographical areas of the city. Finally, the analysis tests the strength of the *urban/suburban cleavage* identified by Walks.

Hypothesis 1: Policy voting[14]

Saying that "streets are for cars, trucks, and buses," Ford pledged to end what he characterized as the "war on the car" — the promotion by Mayor Miller of policies that sought to modify travel behaviour by promoting transit use and cycling at the expense of automobile use. First, Ford promised to abolish the Vehicle Registration Tax, a $60 surtax on automobile license plate renewals and $30 for mopeds and motorcycles. The tax was expected to bring in $64 million in 2011. Second, he promised to renegotiate Miller's signature Transit City plan, which would have added 120 km of surface light rail in suburban areas by 2030, its multi-billion-dollar cost to be largely funded by the provincial government. Characterizing surface rail transit as a cause rather than a reliever of traffic congestion, Ford instead proposed that all new rail transit should be in the form of subways. Ford's second major plank was "respect for taxpayers" and "stopping the gravy train" at City Hall. Before his election, he committed to cancelling the aforementioned Vehicle Registration Tax and a Land Transfer Tax on property sales. At the same time, he pledged to cut costs by eliminating unspecified waste at City Hall and contracting out garbage collection and potentially other services. (Only after the election did he commit to a property tax freeze, but this is consistent with his campaign message.) These planks are the basis of several expectations:

- Voters in areas featuring higher automobile use are expected to be more susceptible to Ford's message of "ending the war on the car."
- Consistent with Fischel's "homevoter" thesis, the "respect for taxpayers" agenda is expected to resonate in areas featuring households with the greatest interest in the taxation of property and services provided to it. Ford support is therefore expected to vary positively in relation to the rate of home ownership and the proportion of the total housing stock made up by detached dwellings.[15]
- Economically precarious residents — those with high housing costs in proportion to income — are also expected to be susceptible to a message of lower taxes and stopping the government "gravy train." This is measured in three ways. Median

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[14] For Ford's policy commitments see his campaign website: <http://www.robfordformayor.ca/issues/>.
[15] Average property value was tested but ultimately dropped from the regression models because it correlated highly with median household income.

household income is a basic indicator of economic status.[16] Change in average dwelling value is expected to be consequential as appreciating home values translate into higher property taxes.[17] In addition, candidate support is also analyzed in relation to territorial zones defined by Hulchanski (2010). In an analysis of neighbourhood change in Toronto, he divides Toronto into three "cities," the first in which average individual income rose by 20% or more between 1971 and 2006, the second in which the increase or decrease was by less than 20%, and the third in which income declined by more than 20%. This polarizing trend is associated with gentrification of the core and the decline of the middle class. It is expected that support for Ford's low-tax message would be strongest in areas with lower median household incomes and of long-term downward income trajectory (City #3).

The spatial distribution of the strength of the census variables, as well as Hulchanski's three zones, are mapped in **Figure 3**.
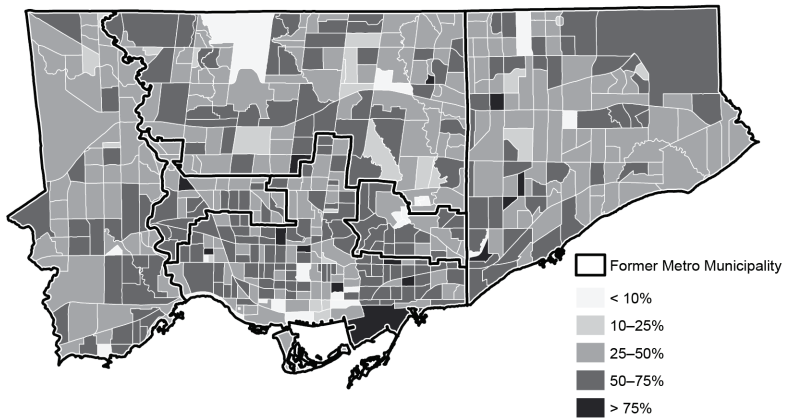
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[16] Household rather than individual income is chosen because members of households are collectively responsible for costs associated with dwellings, including property taxes, rent, and mortgage payments. Note that *average* household income correlates highly with *median* household income; using the former rather than the latter would produce similar results.
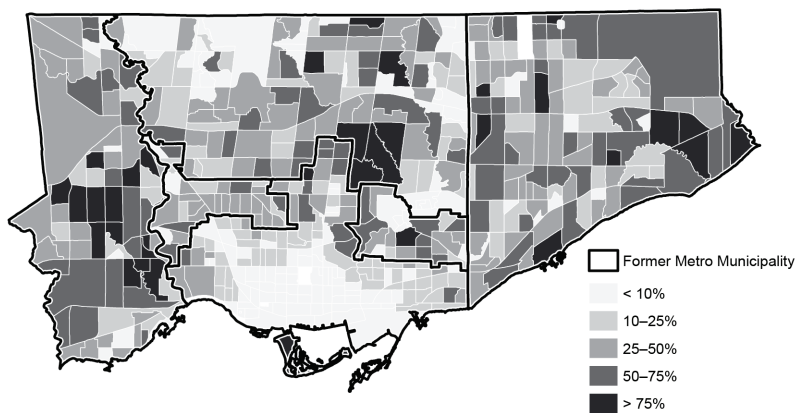
[17] Although the most recent census data pertain only to 2006, the process of neighbourhood change is slow. It is therefore reasonable to assume that areas of economic vulnerability identified in the last census would be at least as worse off in the context of the 2008–09 recession.
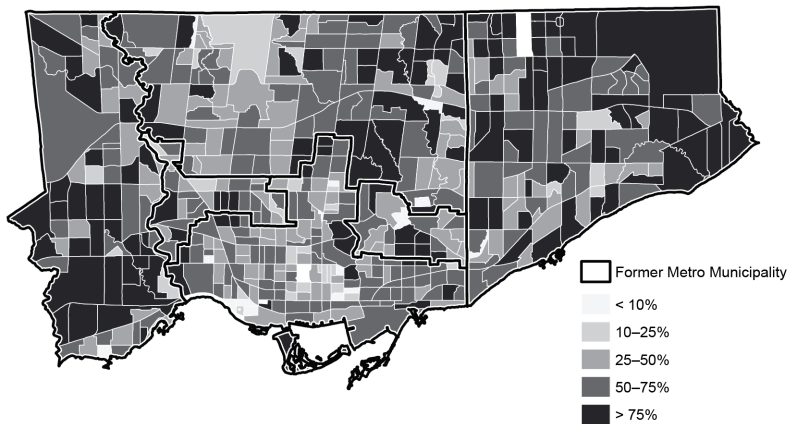
Figure 3: Maps of variables

Increase in Average Home Value, 2001–2006

Legend:
- Former Metro Municipality
- < 10%
- 10–25%
- 25–50%
- 50–75%
- > 75%

% Detached Housing, 2006

Legend:
- Former Metro Municipality
- < 10%
- 10–25%
- 25–50%
- 50–75%
- > 75%

Home ownership rate, 2006

Legend:
- Former Metro Municipality
- < 10%
- 10–25%
- 25–50%
- 50–75%
- > 75%

Figure 3 (continued)

Commute by automobile to work (%), 2006

Legend:
Former Metro Municipality
< 10%
10–25%
25–50%
50–75%
> 75%
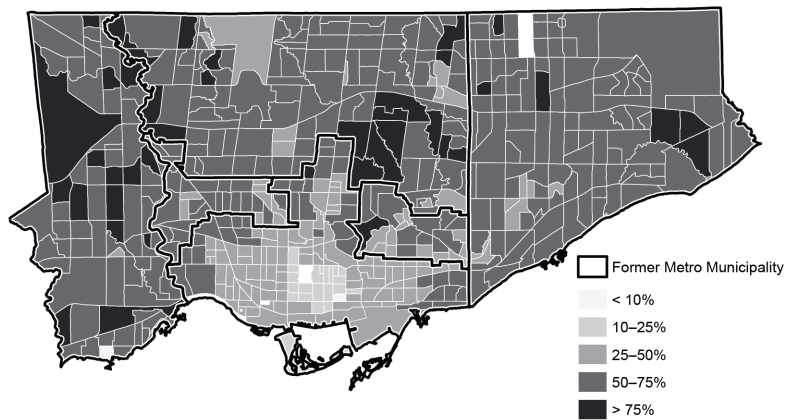
Hulchanski's "Three Cities within Toronto"

Legend:
Former Metro Municipality
City #1: Increase > 20%
City #2: Change < ± 20%
City #3: Decrease > 20%
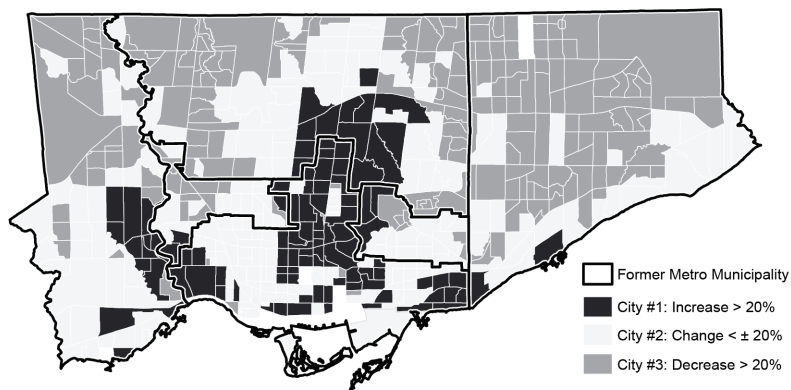
The three "cities" areas of change in average individual income by census tract relative to the Toronto CMA average, 1971–2006. Data courtesy of Richard Maaranen, Cities Centre, University of Toronto.

Median Household Income, 2006

Legend:
Former Metro Municipality
< $25,000
$25,000-$50,000
$50,000-$75,000
$75,000-$100,000
> $100,000
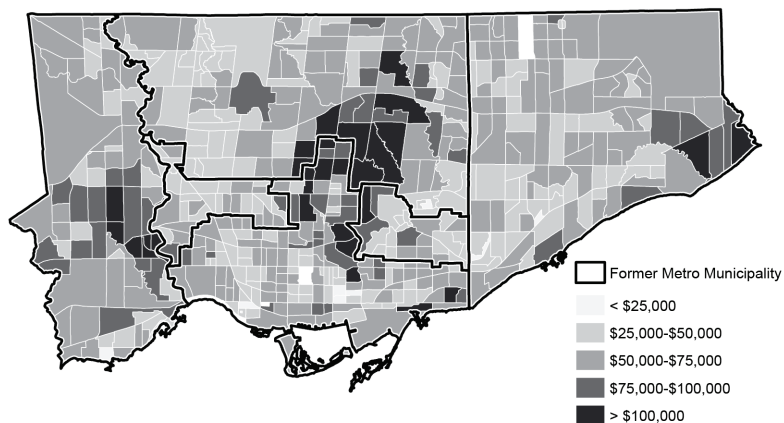
Hypothesis 2: Retrospective voting

The second hypothesis is that residential location in areas directly affected by Mayor Miller's signature location-specific policies would exhibit distinctive voting behaviour. The first policy, already described, is the Transit City surface light rail plan. If Ford is correct in his assumption that voters supported him in order to oppose Transit City, then we might expect stronger support for him in areas adjacent to the proposed lines. (See **Figure 4**.) We can do the same for a second policy known as Priority Neighbourhoods. In response to the report of the Strong Neighbourhoods Task Force (Harding, Hoy, and Lankin 2005), the City designated 13 of its 110 neighbourhoods as "Priority Areas" to which additional community investments are focused. Most of these are located in the former Metro suburbs. (See **Figure 5**.) While Ford made no firm promises regarding the program, he said in debates that he has seen no benefits and would cancel it if none could be demonstrated.[18] If priority area residents supported Ford out of disappointment with the program, we might expect to find stronger support for him in these areas.

Figure 4: Transit City lines and associated VSDs

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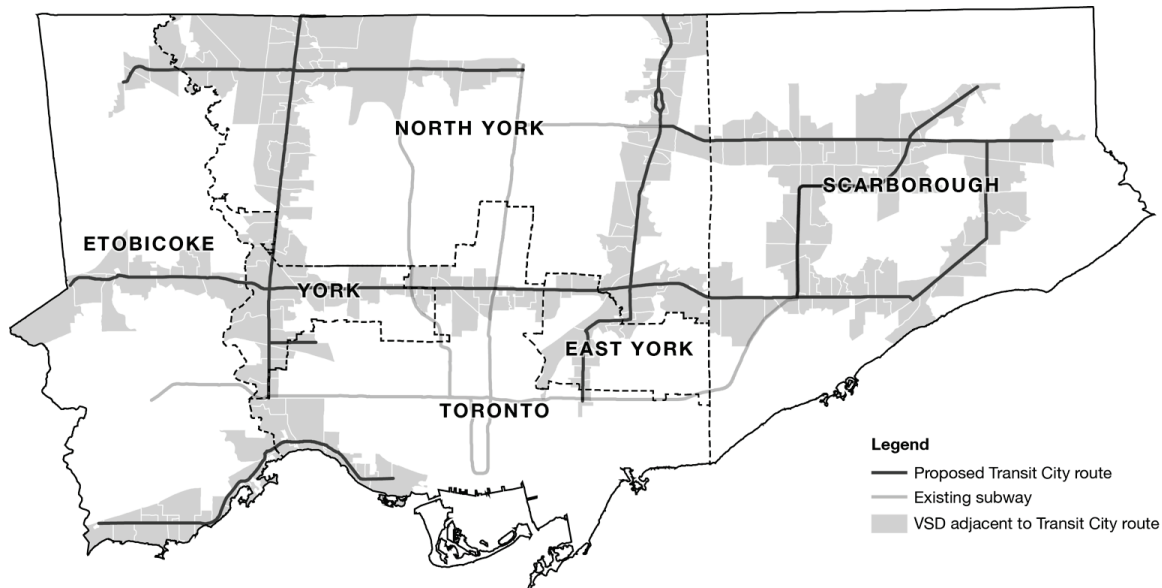
[18] Robyn Doolittle, "Candidates share their stance on priority neighbourhoods," *Toronto Star*, 7 October 2011.

Figure 5: Priority Areas
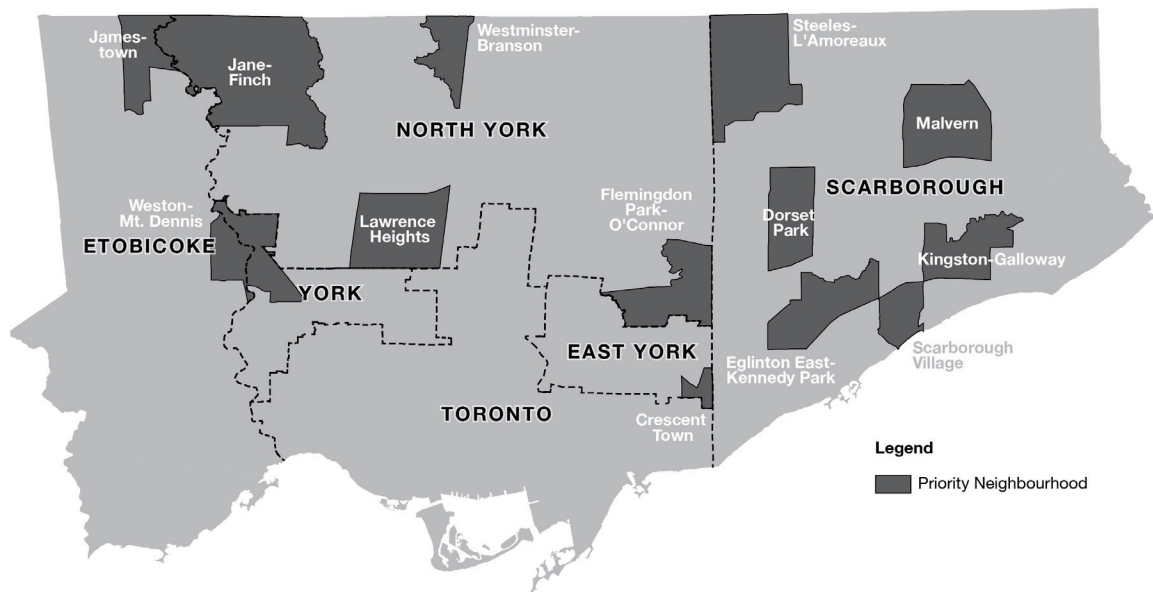
Hypothesis 3: The urban/suburban divide

A third hypothesis flows from Walks' work on divergent electoral behaviour in urban and suburban areas. Research suggests that parts of metropolitan areas developed in different eras possess different physical and social characteristics (Filion 2000). On this basis, Walks divides the metropolitan area into "urban" areas where the majority of housing was constructed before 1946, "inner suburbs" built out between 1946 and 1970, and "outer suburbs" built out after 1970. As mentioned above, he found that at the federal level, nationwide, the suburban and urban zones exhibited increasingly divergent patterns of political behaviour over time, with urban areas increasingly supporting centre-left parties, while suburban areas increasingly supported parties of the centre-right. We would therefore expect areas developed in the postwar period to support Ford over the other candidates. Census tracts were coded using maps in Harris and Luymes (1990) according to whether they corresponded to areas urbanized prior to World War II (see **Figure 6**).

In his analysis, Walks found that residence in the urban or suburban zone (the "morphological hypothesis") was a stronger predictor of vote choice than residence in the core versus suburban municipality (the "jurisdictional hypothesis"), suggesting that the lifestyles associated with the different zones were more important than municipal identity. We might however expect the recentness of the 1997 amalgamation of the former City of Toronto with its suburbs to reverse this finding, as identification with the former municipality of residence persists. There remains a narrative (depending on where one lives) of the city having taken over the suburbs, or the suburbs having taken over the city. To this end, former municipality of residence (City of Toronto versus Metro suburbs) is also tested as a predictor of vote choice. To further assess the impact of

location, these two categorical variables are applied as controls in the analysis of socio-economic variables in Hypothesis 1.

Figure 6: Pre-World War II urbanized areas
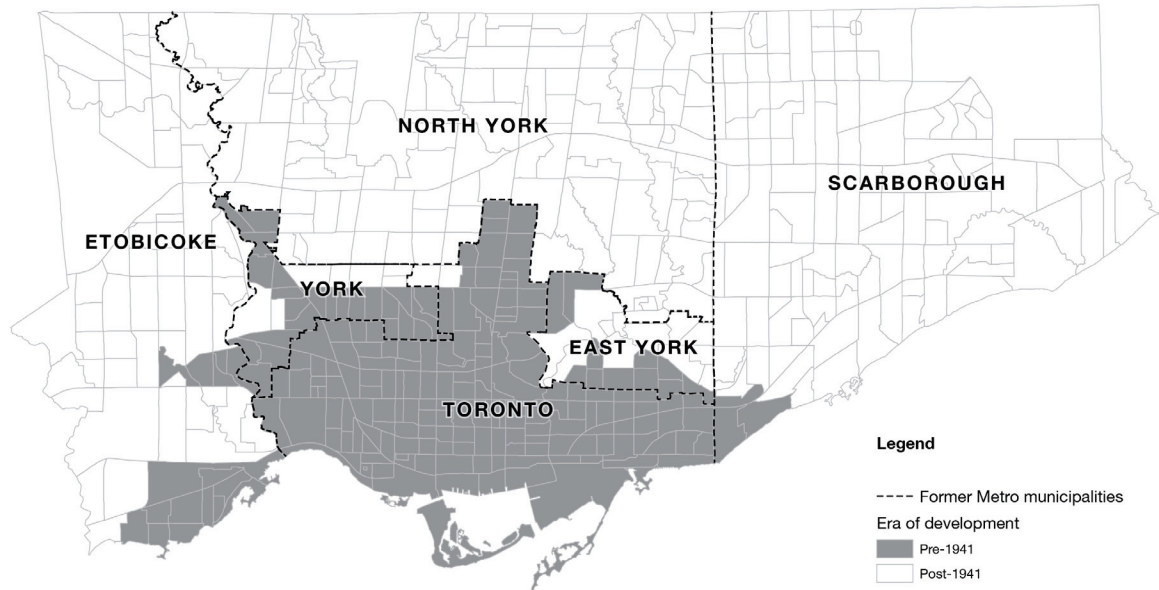
Table 2 summarizes the variables and expected correlations by theme.

Table 2: Summary of variables and expectations by theme

Hypothesis	Variable	Expected correlation
1. POLICY VOTING		
"War on the car"	Journey to work, mode of transportation – car, truck, or van as driver or passenger (%)	Higher support for Ford
"Respect for taxpayers" /	Home ownership rate (%)	Higher support for Ford
"Stop the gravy train"	Appreciation in dwelling value, 2001–2006 (%)	Higher support for Ford
	Housing stock in the form of detached dwellings (%)	Higher support for Ford
	Located in "City #1" as defined by Hulchanski (2010)	Lower support for Ford
	Located in "City #3" as defined by Hulchanski (2010)	Higher support for Ford
2. RETROSPECTIVE VOTING		
Transit City	Located adjacent to proposed Transit City route	Unknown
Priority areas	Located in designated Priority Area	Unknown
3. URBAN/SUBURBAN DIVIDE		
Era	Located in areas built out after World War II	Higher support for Ford
Amalgamation	Located in Metro suburbs vs. City of Toronto	Higher support for Ford

Analysis

Table 3 displays the output of four regression models, each of which controls for a different geographical variable while including the same socio-economic variables. The geographical variables are tested separately because they spatially overlap. All four models feature high R-squared values, indicating that the included variables predict between 75% and 80% of Ford support. Beta statistics are also shown in order to indicate the relative strength of the variables.[19] The signs (if not the magnitude) of the coefficients are the same in all models, indicating that the socioeconomic variables are reliable predictors of the direction of candidate support.

Only Ford support is analyzed for two reasons. First, as the victor, the goal is to understand how he won, not how his opponents lost. As mentioned earlier, this is reinforced by the fact that by the end of the campaign, the public narrative was one of a referendum on Ford's candidacy. Second, Smitherman accounted for a large proportion of the residual, and so incorporating both candidates would add little to the analysis.

Hypothesis 1: Policy voting

The results suggest that voting was to some degree motivated by Ford's platform commitments. Travel behaviour is the strongest predictor of Ford support, suggesting that automobile commuters, perhaps motivated by frustration over long commute times and traffic congestion, were receptive to Ford's message of "ending the war on the car." The impact of property-oriented variables is smaller. While areas with a higher proportion of detached dwellings tended to support Ford, home ownership rates had only a small influence, and in a negative direction. The notion of a ratepayer's tax revolt consistent with Fischel's "homevoter hypothesis" would not seem to be operative in this election.

The strength of the automobile commuting variable should be interpreted with care as car use is generally understood to be linked to urban form (Cervero 1998; Taylor and Van Nostrand 2008). Lower population densities combined with suburban street layouts and land use arrangements militate against transit use, walking, and cycling. While automobile use and Ford support are statistically related, transportation behaviour may be a proxy for more fundamental motivations of the suburban voter. Still, the fact that travel behaviour was a much stronger predictor than the property-oriented variables suggests an independent effect.

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[19] This is germane to the geographical variables and median household income, which are expressed in terms different than the other variables, which are expressed in percentages.

Table 3: Predictors of support for Ford (OLS regressions, four models)

	I			II		
N =	513			513		
R-squared (all variables)	.7976			.7873		
	Coef.	**Sig.**	**Beta**	**Coef.**	**Sig.**	**Beta**
Constant	39.50	***		37.90	***	
Geographical variables						
Former City of Toronto	−13.20	***	−0.40			
Prewar developed area				−9.83	***	−0.32
Socioeconomic variables						
Drive to work (%)	0.52	***	0.53	0.59	***	0.60
Home ownership (%)	—			−0.05	*	−0.07
Median household income ($10,000s)	−1.28	***	−0.22	−1.63	***	−0.28
Detached dwellings (%)	0.07	***	0.12	0.11	***	0.19
Change, avg. dwelling value, 2001–06 (%)	−6.68	**	−0.06	−6.87	**	−0.07

	III			IV		
N =	513			513		
R-squared (all variables)	.7434			.7810		
	Coef.	**Sig.**	**Beta**	**Coef.**	**Sig.**	**Beta**
Constant	30.76	***		28.00	***	
Geographical variables						
Priority neighbourhood	3.49	***	0.09			
City #1 (upward income trajectory)				−5.96	***	−0.16
City #3 (downward income trajectory				5.87	***	0.19
Socioeconomic variables						
Drive to work (%)	0.79	***	0.80	0.66	***	0.67
Home ownership (%)	−0.07	***	−0.11	−0.07	*	−0.10
Median household income ($10,000s)	−2.09	***	−0.36	−1.17	***	−0.20
Detached dwellings (%)	0.14	***	0.25	0.16	***	0.27
Change, avg. dwelling value, 2001–06 (%)	−10.59	***	−0.10	−8.39	***	−0.08

Sig. = * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

The expectation that financially squeezed voters tended to support Ford is borne out. Areas of lower median household income tended to support Ford (all models), as did those located in Hulchanski's zone of long-term decline in average individual income (model IV). The opposite was true in areas located in his zone of long-term growth in income; these areas tended to support Ford's opponents. The expectation that appreciating house values would translate into support for Ford does not hold, however. There are several potential reasons for this. First, it may be that pressure exerted on personal finances by rising property taxes due to rising property values may not be sufficient to motivate support for a low-tax agenda. Second, it may be that home value appreciation is an indicator of gentrification by middle-class professionals inclined to support centre-left candidates (Ley 1994).

Hypothesis 2: Retrospective voting

Location adjacent to a proposed Transit City route is a modest predictor of Ford support. (See **Table 4**.) Support for Ford was higher in these areas than elsewhere in the City. Location within a Priority Area (model III) is similarly weak in its effect compared to the other variables. That these variables are weak predictors is not surprising as the Transit City routes are not yet constructed and the clients of Priority Area initiatives are likely a minority of the voting population.

Table 4: Location adjacent to proposed Transit City routes as a predictor of Ford support (OLS regression)

N =	1109		
R-squared	.0278		

	Coef.	Sig.	Beta
Constant	45.54	***	
Located adjacent to Transit City route	6.17	***	0.1669

Sig. = * p < 0.05; ** p < 0.01; *** p < 0.001

Hypothesis 3: The urban/suburban divide

Recall that Walks found that era of development was a marginally stronger predictor of voting behaviour than central city location, suggesting that, for a variety of reasons, the political attitudes of residents of postwar suburban areas were distinct from inhabitants of areas built out prior to World War II.[20] Models I and II, however, display the reverse

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[20] Walks (2006) identifies six potential "mechanisms" explaining the rise of distinctive suburban political orientations: neighbourhood segregation by race and class; the move into homeownership from tenancy; private-individual versus public-collective modes of consumption; self-selection based on values, taste, and lifestyle preferences; attitude formation through social interaction with other neighbourhood residents; and attitude formation through personal experience formed through daily routines.

effect. Being located in the former City of Toronto is a slightly stronger predictor of support for Ford's opponents than being located in the postwar suburban zone. With the exception of travel behaviour, residence in the former City of Toronto is the strongest predictor. This adds support to the hypothesis that the differences in urban and suburban political attitudes identified by Walks are reinforced by, or filtered through, the experience the 1997 amalgamation — the sense that the creation of the "mega-city" constituted a suburban takeover and dismantling of central-city institutions and practices. This consistent with Boudreau's (1999) interpretation of amalgamation as a conflict between distinctly urban and suburban versions of middle class political values.

Conclusion

This paper is a first on a number of fronts. It is the first ecological analysis of a Canadian municipal election to use polling station-level rather than ward-level election returns data. It is also the first to use GIS techniques to allocate polling station-level voting results to census tracts. In the absence of voter surveys, the approach holds promise as a way to test hypotheses regarding the social, economic, and geographic foundations of candidate support.

Perhaps the most important finding is that location of residence — urban versus suburban — is the strongest predictor of Ford support. The underlying factors driving this effect only partially conform to expectations. The propensity to commute by automobile is a strong predictor of Ford support, while property-oriented variables (the home ownership rate and percentage of housing in detached form) are shown to have a negligible influence on candidate support. The latter suggests that, at least in this election, there is little evidence for "homevoter" behaviour as described by Fischel. Automobile use and home ownership have long been associated with suburban values that emphasize privacy and privilege individual over collective consumption. That fact that automobile use is a strong predictor for Ford support while property-oriented variables are not requires further analysis and explanation.

The finding that lower household income and residence in areas of long-term decline in household income predict Ford support fits with the expectation that low-income residents living in depressed areas would be susceptible to a low-tax message, even if they stand to benefit the most from government services. But again, it is intriguing that appreciation in home values does not predict Ford support — in fact the influence is in the opposite direction. The literature on gentrification suggests that neighbourhood-scale uplift in home values produces a corresponding increase in property taxes, which in turn squeezes the finances of low- and fixed-income residents. The analysis shows that this effect, if indeed it occurred, does not translate into support for Ford and his message of lower taxes and less government waste.

Finally, there is only limited evidence for the existence of retrospective voting. Residence in a Priority Area or adjacent to a Transit City line was a modest predictor of

Ford support, but the fact that these areas are located almost entirely in the suburban zone may render this finding spurious.

Next steps

This analysis was an exploratory exercise. Instead of taking an "everything-but-the-kitchen-sink" approach to the inclusion of variables, the modest objective was to test three hypotheses grounded in the literature. A useful next step would be to increase the explanatory power of the models by adding other variables shown to be influential in other studies: size of age cohorts, educational attainment, and immigration, religiosity, and employment by sector.

Considering a single case affords limited potential for generalization. This analysis should be considered a "plausibility probe" (George 1979). To understand whether socio-demographic characteristics or location of residence predict support for left- and right-of-centre candidates over time would require repetition of the analysis for multiple elections.[21] The degree to which the findings in the City of Toronto are generalizable could be tested by analyzing whether similar relationships exist in other municipalities

The data and approach could also be used to analyze the determinants of voter turnout. Hicks (2006) conducted a ward-level ecological analysis of turnout the 2000 and 2003 City of Toronto elections. Siemiatycki (2006) performed a similar analysis for the 2003 election using the City's 140 designated neighbourhoods. Repeating these analysis using polling station-level data and adding the 2006 and 2010 elections would be a worthwhile exercise.

Implications

Does the election of Rob Ford and the persistence, and perhaps sharpening, of the urban/suburban cleavage in Toronto foreshadow the breakdown of centre-left political hegemony in Toronto at the federal and provincial levels? This paper was completed prior to the May 2, 2011 federal election. It will be interesting to see to what extent the spatial distribution of the Ford vote is mirrored by the Conservatives in the imminent federal election and October's provincial election. If so, it would add strength to the argument that urban and suburban voters possess divergent political values that transcend the municipal level.

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[21] The City provided the author with data for the 2003 and 2006 elections. The quality of the data is poor, however.

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