The Political Business Cycle in Ontario:

An Empirical Analysis of Financial and Demographic Data across Medium to Large-Sized Ontario Municipalities

MPA Research Report

Submitted to

The Local Government Program
Department of Political Science
The University of Western Ontario

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July 2010

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Abstract

This research empirically examines whether or not there is a political business cycle in Ontario municipalities from 2000 to 2006. First, an overview of the research on political business cycles that has come before this is undertaken. Following this, a research method is proposed and results of this research are described. Analysis of the data revealed that there is weak evidence for the existence of a political business cycle in Ontario municipalities from 2000 to 2006. Additionally, conclusions are drawn with regards to the relation between employment and election years, as well as what constitute visible expenditures.

Acknowledgements

I would like to thank my thesis advisor Tim Cobban for all of his help in preparing this research project. I would also like to thank my parents for their support during my time at school, and my long-time girlfriend Kristy for always being there to bounce ideas off of.

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Chapter One - Introduction

The idea of a political business cycle is not new. It was first described in detail and brought to popular attention by Nordhaus in 1975. However, the idea behind it is reasonably obvious and has probably existed for as long as elections have. The idea behind the political business cycle is, in its most basic form, as follows. Politicians want to get re-elected. The re-election of politicians depends largely on economic conditions. Politicians have at least some control over economic conditions. From this situation, which occurs in every democracy around the world, it is not too much of a stretch to assume that in some places, some politicians will seek to use their influence to manipulate the economy to maximize their chances of re-election (Schultz, 1995, 79).

The most famous example of a political business cycle comes from the 1972 United States Presidential election. In this election, the incumbent, Richard Nixon, was justifiably seen to be engaging in significant pre-electoral manipulation of the economy (Drazen, 2000, 75). This situation is regarded by some commentators as being a catalyst for research into the topic (Drazen, 2000, 75). As Nordhaus' influential work which would go onto stimulate much more research into the topic was published in 1975, this seems quite possible.

However, despite the above example and many others like it, the theory and study of political business cycles owe more to the intuitive plausibility of the issue rather than to its empirical track record (Schultz, 1995, 79). Nordhaus' work was able to lay the theoretical groundwork for the issue, however, the empirical results from Nordhaus' study showed that empirically finding evidence of political business cycles may be more difficult than initially thought. Much of the research that followed led to similar conclusions.

There are many theoretical arguments for why political business cycles do exist or why they should exist. However, empirically finding evidence of political business cycles has proven to be quite difficult (Drazen, 2000, 76). A number of reasons for this will be suggested later. However, the state of the research on political business cycles is as follows. There is much academic support for the theory that underlies political business cycles. That is not to say that everyone agrees on every detail of the theories, just that there is relative agreement about why political business cycles occur. However, on whether or not political business cycles exist empirically, and to what extent they exist if they do, there is much less agreement (Drazen, 2000, 76). Many studies into the empirics of the political business cycle find that there is little to no evidence that political business cycles actually exist. However, there is also research that suggests that political business cycles do exist on somewhat of a wide scale.

This research project was designed in this context. The theory underpinning political business cycles is relatively established. However, whether or not they exist is open to much debate. This research seeks to examine the latter within the limited context of Ontario municipalities.

The purpose of this research is to attempt to replicate the results of a study by Veiga & Veiga which was published in 2007. The study examines all mainland Portuguese municipalities from 1979 to 2001 and found strong evidence to support the notion that political business cycles exist and are influential at the local level, at least in Portugal. This study was chosen for a number of reasons. It is a recent study. As well, it features strong findings on the issue. Finally, the methodology of the study seemed to be well developed and thoughtful. For these reasons it seemed appropriate to use the study by Veiga & Veiga as a base for this research.

There are many implications that follow from the existence of political business cycles. The existence of political business cycles may lead to inefficiencies in the

economy (Veiga & Veiga, 2007, 63). As well, the existence of political business cycles undercuts democracy as the electorate is manipulated by politicians. With such serious consequences, whether or not political business cycles exist in any democratic context is an important question.

This research will study whether or not there is empirical evidence of political business cycles in Ontario municipalities with populations over 20,000 over the time period of 2000 to 2006. The limited scope of this study, in comparison to the study it will attempt to replicate the results of, is due to a number of factors including limited data, the difference in context between Portugal and Ontario, and the limited research capacity of those involved with this project.

The rest of this paper will be organized as follows. The following chapter reviews scholarly literature. As well, a number of previous studies into the empirics of the political business cycle will be reviewed. In the third chapter the research design of this study will be presented, and a number of hypotheses will be put forward. The fourth chapter will present the results of the research. The fifth chapter will briefly discuss some of the limitations of the results. The sixth chapter will be an analysis of the results. Finally, the seventh chapter will overview implications for the theory of the political business cycle that arise from this research, and opportunities for future research will be discussed.

This research project comes to the conclusion that there is some empirical evidence for the existence of a political business cycle in Ontario municipalities. The evidence is not overpowering, however, it also is not insignificant.

Chapter Two - Literature Review

The academic study of political business cycles was initiated by Nordhaus with his 1975 article entitled “The Political Business Cycle.” In the original model, national governments use monetary policy to improve their chances of re-election by making an employment/inflation trade-off. Specifically, leading up to an election expansionary monetary policy is used to produce a pre-election boom, of which one result is lower unemployment. The inflationary consequences of these actions are not felt until after the election (Nordhaus, 1975, 184). Nordhaus’ model was highly influential in setting the stage for early research into the issue of political business cycles. However, there were a number of issues with his model which soon became problematic.

Nordhaus’ model relied on voters who were repeatedly tricked again as their expectations regarding inflation were wholly past-looking. Voters in his model did not anticipate the future at all. The presence of a public who had experienced political business cycles before and would not anticipate future inflation to rise in the face of high current expenditures led to criticisms of irrationality (Drazen, 2000, 80). Since its initial formulation, the theory behind political business cycles has become well grounded in micro-economic theory, and has dispensed with irrationality. The explanations for political business cycles that are driven by monetary policy manipulations have largely been discredited (Drazen, 2000, 95). However, the theory is alive and well and now focuses on fiscal policy manipulations (in some cases along with monetary policy manipulations) in an environment where irrationality is not an option (Baleiras & Santos, 2000, 122; Drazen, 2000, 96). As a result, the current theoretical models that argue that political business cycles will be created by politicians in democratic systems now have much explanatory power and form a strong ground for empirical research into the subject.

The theory behind the political business cycle is that politicians, seeking to maximize their chances of re-election, strategically manipulate the public economy (Veiga & Veiga, 2007, 46). How politicians are said to influence the economy depends on what level of government is being studied, as this theory can be applied to national, regional, or local governments.[1] At the local level the manipulations can involve incumbent politicians lowering taxes, raising expenditures, and manipulating the composition of expenditures. In the manipulations, highly visible forms of expenditures are preferred (Veiga & Veiga, 2007, 46; Sakurai & Menezes-Filho, 2008, 310). Capital expenditures are more easily varied than operational expenditures and thus there should be more variation in capital expenditures. Specifically, highly visible investment expenditures such as streets and complementary works are relevant to political business cycles (Veiga & Veiga, 2007, 46). The election year represents the most opportune time for increased spending or decreased taxes as the length of time that most voters recollect is short (Drazen, 2000, 82). Finally, it is argued that political business cycles are more likely to succeed in less advanced democracies as the electorate will be less likely to understand what is occurring (Drazen, 2000, 96). However, there is also reason to suspect that some democratic experience is required to have politicians that are capable of forming political business cycles.

What drives the politicians to create political business cycles?

Since the original research on political business cycles, there have been many investigations that look at the theory and motivations that drive political business cycles. Many of these are evaluations of the behaviour of politicians. While some studies argue that the motivating force of politicians is simply to be re-elected, more recent studies

[1] As the focus of this study is on local governments, the majority of arguments and examples provided will revolve around local governments. However, as the theory was developed largely looking at national governments some examples from the national level will be used. As the local level is the level of chief concern here, when it is mentioned that politicians can influence the economy, at the local level this refers to the local public economy.

have argued that politicians have a utility function[2] that relies on not only their probability of re-election, but also what their utility will be if they do not get re-elected (Baleiras & Santos, 2000, 123). Every analysis of the motivating factors of political business cycles concludes that politicians in democratic systems have an incentive to spend more in the current period (that is the period before the next election). That theoretical examinations into the issue predict that there should be empirical results is very important. In the absence of a strong theory, empirical evidence that supports the existence of a political business cycle would be less convincing. This is because in the absence of established theory, alternative explanations for the existence of political business cycles may prove more convincing. However, the theory behind political business cycles is established and provides a strong base for empirical research into the subject. Understanding the theory is essential to understanding empirical research. There are a number of important factors that drive the theoretical result that politicians will engage in the creation of political business cycles.

The most often mentioned, and easiest to understand, is that politicians will discount the utility that they gain from the period that they spend in office after their re-election by the chances that they are re-elected (Martinez, 2009, 1175). The intuition behind this is simple. Politicians care less about what they can do in office if they are re-elected because they do not know that they will be re-elected.

The other two driving forces of the result that politicians will engage in the creation of a political business cycle are effort smoothing and experience gained on the job (Martinez, 2009, 1175 and 1167). The latter is important for the following reason. The best indicator for the future performance of a politician is their past performance. Their current performance is a better indicator than performance in the more distant past, as

[2] A utility function is basically a formula that is used to measure the satisfaction level of a given person. Utility basically equals satisfaction.

politicians, like all employees, gain experience as they work their jobs. Thus, current performance is a more accurate indicator of future performance than is performance in the more distant past (Martinez, 2009, 1175). This is one of the reasons why the public can be tricked by politicians.

The argument regarding effort smoothing is more complicated and the implications regarding this will not be presented in detail here. However, a quick comparison will be made between politicians seeking re-election and the motivations of a tenure-track professor whose contract has come up for renewal, that will present some of the implications that result from effort smoothing.

Tenure-track positions have been shown to suffer from renegotiation cycles. A renegotiation cycle occurs when performance improves the year before the signing of a new multi-year contract, and declines after the contract is signed. Consider a tenure-track professor who begins with an average reputation. The optimal strategy for this professor is to choose an intermediate level of effort early in the term of their contract. When the renegotiation period nears the professor then observes their current reputation. If their reputation is still average then it is optimal for them to exert more effort. However, if their current reputation is very high or very low then a lower effort level should be chosen (Martinez, 2009, 1167). This example shows how effort smoothing can lead to cycles in performance.

The argument regarding consumption smoothing, while complicated, is important as it can be used to derive the result that politicians will create political business cycles even if they do not discount post-election utilities and if the ability of politicians does not grow over time (Martinez, 2009, 1175). This is important as the discounting argument may not be true of all politicians. As well, the idea that the ability of politicians develops over time, while intuitively plausible, depends on what the functions of politicians are

considered, and to what extent they could develop their skills with regards to those functions.

This section provides a number of arguments why politicians would create political business cycles. Some of the explanations revolve around selfish politicians who wish to simply maximize their own welfare. These explanations point to a more sinister and calculating cause of political business cycles. However, other explanations, such as the one which argues that increased experience plays a role, are more passive in their assertions into what drives political business cycles.

Does the economy matter to voting?

The theory behind the political business cycle entails that voters view seemingly better economic conditions, at least their own personal economic conditions, and that these conditions play an influential role in the determination of who the public will vote for (Johnston, 1999, 517; Drazen, 2000, 82). The political business cycle strongly relies on this occurring as if the public either does not notice economic conditions, or does not vote based on them, then political business cycle theory does not make sense. However, not only does the idea that the economy plays a role in elections intuitively make sense as one of the main functions of government is to regulate the economy and their performance should thus be judged at least partially on its ability to fulfill that role, but it has been shown empirically. Many studies have confirmed the importance of economic conditions in voting (Johnston, 1999, 517 for the Canadian context, Drazen, 2000, 82, recommends Kramer, 1971, Tufte, 1974, and Fair, 1978 for the American context).

Political business cycle theory also relies on the fact that voters care more about what politicians do at the end of their term (Drazen, 2000, 83). If this was not true then election year manipulations would have less of an effect than is proposed by those who argue that the political business cycle exists. However, the importance of recent events

has been shown empirically (Drazen, 2000, 83, recommends Fair, 1978). This result also intuitively makes sense as many people do not follow politics very closely on a regular basis, but will be exposed to more political information in the period leading up to an election.

How can voters repeatedly being tricked be rational?

One of the most common criticisms of political business cycle theory is that for it to be true, voters must repeatedly fall for the same trick. This criticism was highly problematic in the early stages of the development of political business cycle theory, and remains an important issue. However, while voters repeatedly being tricked may be perceived by some as irrational, explanations have been developed for how voters can be repeatedly tricked, while remaining rational.

The main factor at play is information asymmetry (Baleiras & Santos, 2000, 121). Included in this is voter's rational ignorance (Baleiras & Santos, 2000, 121). At the local government level, the efficient provision of basic services is a principal activity. Thus, the notion of productivity in the public sector stresses the administrative skills of the policy maker. A situation in which taxes are fixed or decreasing with higher levels of spending could be seen as a sign of greater competency[3] (Veiga & Veiga, 2007, 49). This is especially true where municipal output or performance figures are hard to find. Taxes and spending are often the best available information to the public (Veiga & Veiga, 2007, 50). Even if a member of the public wants to become informed it can be quite difficult to do. For these reasons it is hard to blame those who base their vote on simple indicators, for example lower taxes and more visible spending in areas that concern them.

That voters would be susceptible to manipulations in election years is also not entirely surprising. As stated above, it seems likely that many people receive a high proportion of their political news in election years. Also, if voters are going to examine

[3] This situation is made possible by the ability to use reserves or to accumulate capital deficits.

the government's record en masse, this would be most likely to occur in election years. This, combined with the argument that the best indicator of future performance is current, not past, performance, indicates that it should not be that surprising that voters are more susceptible to manipulations in election years.

A final factor at play in election year fiscal manipulations is transfers to specific groups or constituencies (Drazen, 2000, 101). This kind of politics, while potentially being seen as politicians satisfying their constituencies, is also akin to bribery if the motivation of the politician is purely re-election. However, there is reason to suspect that election year manipulation of this kind occurs, either as a result of increased focus on politics and what can be gained on the part of constituencies, or by increased focus on constituencies by politicians.

There are a number of reasons that have been presented which show that voters can be rational, while still falling victim to the same manipulations over and over again. Most of the explanations revolve around the fact that voters do not have useful information on who they are voting for, and as a result are forced to use indicators that are easily manipulated.

Additional theoretical issues

While most of the above has argued that there are many factors that are enabling political business cycles to be created, there are some factors that limit the scope or size of political business cycles. First, these manipulations are not expected in every locality for every election. Indeed, there are potential costs for a politician creating a political business cycle. These costs involve either being caught directly manipulating the economy for one's own personal gain (certainly not a good situation for any politician), or manipulating the economy in a harmful way so that one develops a reputation as a bad manager of the economy (also a bad situation for any politician to be in). Thus, there exist costs to enacting policies that will create political business cycles (Schultz, 1995,

85). It can therefore be expected that only politicians in close races will choose to attempt to opportunistically manipulate the economy (Schultz, 1995, 87). This can lead to issues in attempting to empirically find a political business cycle. The relationship between election years, taxes, and expenditures may rely on whether the election will be closely fought.

If this is true, then whether or not an election will be close must be known far in advance of the election. Whether or not an election will be close is not always known far in advance, and some of the policies that are used to create political business cycles must be enacted well in advance of an election. This implies that either politicians who are not completely sure of their positions may attempt to create a political business cycle, or that many politicians will not know whether or not they will be popular and so refrain from opportunistic tactics.

Another issue with political business cycles is that they involve both lowering taxes and raising spending before an election, and raising taxes and lowering spending after an election to offset the cost of the opportunistic policies. However, creating spending and lowering taxes is usually more politically acceptable then eliminating spending and raising taxes, both of which can alienate some of the electorate (Schultz, 1995, 87).

There is another way in which political business cycles may operate. It is possible that taxes are lowered and expenditures are raised in election years, and that there is no corresponding increase or decrease after the elections. In the absence of countering effects in non-election years, the long-run effect of this type of political business cycle would be increased spending and lower taxes.

A final note is that a number of other factors have been suggested as affecting the relationship between elections, spending, and taxes. Whether or not the incumbent candidate is running for re-election should change their motivations; however the

empirics of this are less clear then would be imagined (Veiga & Veiga, 2007, 63). As well, ideology has been suggested as having an effect on how opportunistic politicians seek to gain electoral advantage. Specifically it is suggested that left-wing incumbents have greater incentives to create political business cycles (Veiga & Veiga, 2007, 63), although again the empirics of this are debatable.

Literature Review (Empirics)

Many studies have been performed that attempt to analyse whether there is empirical support for the political business cycle. These studies have been performed across and within nations, over all levels of government. The results of these empirical analyses are highly mixed. A number of previous findings will be discussed to give some context to the present research that will then be discussed.

One recent and particularly well developed study was conducted by Veiga & Veiga (2007). They found that there was clear evidence of rational opportunistic behaviour by mayors in Portugal over the time period of 1979-2001. This included a 10.5% decrease in taxes in election years and a 4% increase in total expenditures, with an 8.2% rise in investment expenditures. As well, it was concluded that left-wing mayors were more opportunistic. The dependent variables analysed were budget balances, total municipal taxes per capita, and real per capita expenditures broken down into a number of sub-groupings. The explanatory variables were lagged values of the dependent variables, total real per capita transfers, an election year dummy variable, and an ideological dummy variable. The controlling factors were the percentage of the population under 15 and over 65, population density, a dummy variable that deals with proximity to the coastline, and a population category that dealt with city size. This study and its methodology form the basis for this research, however, it had to be tweaked in quite a number of ways to make it more applicable to the Ontario case. A related study by Coelho, Veiga, & Veiga (2006) found employment increases in election years and

pre-election years relative to others. That the mayor was running for re-election was crucial to the result. These studies point out a number of factors recognized in the theory behind political business cycle, notably that running for re-election can be significant. As well, that the result was obtained that political business cycles existed is consistent with other results which indicate that they are more likely to exist in newer democracies.[4]

Akhemedov & Zhuravskaya (2004) find that pre-electoral manipulation increased the chance of re-election in Russia. As well, Sakurai & Menezes-Filho (2008) find that higher spending leads to greater chances of re-election in Brazil, as did higher opportunistic spending. Gonzalez (1999b) surveys 43 countries and finds that political business cycles affect countries with intermediate levels of democracy most (Drazen, 2000, 98). Shi and Svensson (2000) examine 123 countries and come to the conclusion that political business cycles are especially strong in developing countries (Drazen, 2000, 98).

Blais & Nadeau (1992) examined Canadian provinces from 1951-84 and found evidence for a short-electoral cycle, only in the year before elections (that is there is no corresponding tax increase in the year after elections), and mainly in social services and roads (Veiga & Veiga, 2007, 48).

In his seminal article on the issue, Nordhaus (1975) finds empirical evidence for political business cycles at the federal level in Germany, New Zealand, and the United States, while not finding any evidence with regards to Canada, Japan, Australia, and New Zealand. He also finds modest evidence for political business cycles in France and Sweden.

Ginsburgh & Michel (1983) argue that political business cycles are more likely to occur where there are fixed election dates, and that they are more likely to be detected with fixed election dates. The endogenous nature of non-fixed elections not only reduces

[4] Portugal had been governed by a military-civilian provisional administration as recently as 1976.

the incentives that politicians have to engage in the creation of political business cycles, it also makes detecting political business cycles where they do exist more difficult. Drazen (2000) is highly critical of models that rely solely on monetary policy explanations and finds that fiscal policy is a more informative avenue for study. Schultz (1995) confirms that governments who are far ahead in the polls will not engage in manipulation while those in close races are more likely to do so.

The preceding section has highlighted some of the empirical research into political business cycles. However, this section has focused on research that has resulted in findings of political business cycles. The purpose of this was to illustrate what can be looked for, and what has been successfully found regarding the political business cycle. This section should not mislead any readers into thinking that most research into political business cycles finds associations between relevant variables and election years, as this is certainly not the case.

In summation, the state of the research is mixed. There is a solid theoretical foundation for research on political business cycles that suggests valid reasons why they might occur and what that process might operate like. However, empirical results have been mixed with results coming from developing countries being more likely to have found evidence of political business cycles.

Chapter Three - Research Design

The research design of this project will be adapted from that of the Veiga & Veiga (2007) study to suit the Ontario municipal context. As well, the scale of the project was reduced to accommodate the data available, as well as the research capacity of those involved with the project.

Why study Ontario municipal government?

There are a number of features of municipal government which make the study of political business cycles uniquely suitable to that level of government. Where municipalities are forced to or choose to record financial information in detail and make that information available to the public, there exists data that cannot be found at other levels of government. This is because the institutional structure and policy instruments available at the municipal level are constant across regions or countries. As well, the number of localities within a given region provides many cases to compare (Veiga & Veiga, 2007, 46).

For example, to study municipalities within Ontario, there exist data sets that include 444 municipalities. In contrast, there exist only 10 provinces in Canada which could be studied. The analysis could be extended across countries, for example studying Canadian provinces and American states. However the institutional structure and policy instruments available to provinces are different from those available to states and this can lead to issues in analysis.

Ontario municipalities also have fixed election dates. The presence of fixed election dates increases both the chances of political business cycles occurring, as well as the chances of research detecting political business cycles (Ginsburgh & Michel, 1983, 156). Fixed election dates have this effect because they make politicians certain that an election will occur at a given time. This means that if they wish to enact policies

that will result in a political business cycle, then they can do so knowing exactly when they must enact those policies to achieve the desired result. The vagueness associated with non-fixed election dates injects uncertainty into the process which diminishes the returns that a given politician could expect from policies that cause a political business cycle. Similarly, the endogenous nature of non-fixed election dates injects more uncertainty into the empirical study of political business cycles (Ginsburgh & Michel, 1983, 156).

Canada is a democracy, and all levels of government within Canada have democratic elections. Ontario municipalities, like most around the world, promote social and economic development by organizing and supplying public goods. Also importantly, municipalities are financially autonomous. They have their own employees and assets, and they define their local budget. However, Ontario's municipalities are not completely autonomous. They are creations of the Ontario government and are subject to many rules and regulations that are imposed upon them. This can limit their access to revenue as well as their expenditure choices. However, on the whole Ontario's municipalities are fairly autonomous and there certainly exists the potential for political business cycles to be created within them (Veiga & Veiga, 2007, 48, sets out similar criteria for Portuguese municipalities).

Hypotheses

The research question that this project seeks to answer is: Is there a political business cycle in Ontario municipalities? Stemming from this as well as the theory above, a number of hypotheses have been developed that will be tested. The main hypothesis is that taxes, capital spending, and municipal employment will be significantly related to election year.

It must be noted that the relationship, while significant, is not hypothesized to be extremely significant, and in fact there were many reasons to suspect that the results

obtained by this study may not be significant at all. As stated previously, the expectation with political business cycles is not that they will occur in every municipality for every election. As such, the relationship that is being searched for is not one that will hold in all cases. This can lead to issues in finding empirical results that support a political business cycle.

Hypotheses can be made not just on whether or not there will be a relationship between the variables named and election year, but also what direction that relationship will be in. It is hypothesized that taxes will be negatively related to election year. Political business cycle theory proposes that politicians allow for lower taxes relative to other years in election years to build support amongst the public.

It is hypothesized that capital expenditures and municipal employment will be positively related with election year. For employment this relationship is also hypothesized for the year before elections. The theory behind this hypothesis is that capital expenditures and employment, particularly in highly visible areas, will go up in election years as politicians attempt to make themselves appear more competent or as politicians support key constituencies.

Methodology

The top 70 municipalities in Ontario by population excluding upper-tier entities were studied. This accounts for roughly all of the municipalities that are over 20,000 in population. This sample was chosen for a number of reasons.

Firstly, there are reasons to suspect that the politics of small municipalities will be substantially different from that of larger municipalities. One way in which this is the case is that in smaller municipalities one large expenditure item might lead to a large variation in expenditures. Secondly, this sample size was chosen to allow for the research to take place in a timely fashion. Finally, this sample size represents over 15% of the total municipal population. While this is not a large percentage of the municipal population,

these municipalities do make up a large percentage of the total Ontario population. In the year 2006, the top 70 municipalities in Ontario by population contained 10,426,724 people. This represents over 82 percent of the 12,665,300 people in Ontario (Statistics Canada, 2009*)*.

This represents a reasonable sample size. Also, for statistical purposes with a population size of 500, to achieve analysis with a confidence level of 95% 19 times out of 20, a sample size of 78 is required (O`Sullivan, Rassel, & Berner, 2008, 171). The sample selected is large enough for meaningful statistical analysis to be conducted, and did not result in numerous delays as might have occurred with a larger sample size.

The following data was collected for the top 70 lower or single-tier municipalities by population for the years 2000 to 2006[5]: total municipal employment, including sub-sections for full-time, part-time, and seasonal; total own purpose lower-tier taxation; capital expenditures including sub-sections for protection services, recreation and culture, transportation, and planning and development; provincial unconditional grants, provincial conditional grants, and federal conditional grants; population density; the percentage of people under age 15 and over age 65; and Ontario unemployment and employment rates. All financial data and employment data were converted into per capita measures. As well, all financial information was converted into real figures using the base-year 2000, using an inflation calculator made available by the Bank of Canada (Bank of Canada, 2010). Annual percentage changes were also calculated for all variables where possible.

All data was obtained from the Ontario Financial Information Return / Municipal Performance Measurement Program website, with the exception of the percentages of population under 15 and over 65, as well as population density which were obtained from Statistics Canada community profiles. As these were only available for census

[5] For reasons as to why certain variables were selected, see the section entitled “Measurement.”

years, the 2006 figures were used as they are most recent and relevant to this research. The Ontario employment percentages were obtained from Human Resources and Skills Development Canada. With the exception of the Statistics Canada data, all data was gathered where available for all of the relevant years.

The time frame was chosen for a number of reasons. The Ontario Financial Information Return / Municipal Performance Measurement Program data that was so crucial to this project is available starting for the year 2000. The year 2006 was chosen as an end date as when the project was initially designed that was the last election year for which there was data. This time frame contains three election years (2000, 2003, 2006) and four non-election years (2001, 2002, 2004, 2005). This gives adequate data on numerous election and non-election years, and makes sure that data from one year is not being given a disproportionate amount of weight as could be possible if only one election year was chosen. As well, similarly to why the top 70 municipalities by population were chosen as the sample, the years selected allowed for data collection to proceed in a timely fashion and the sample size was deemed large enough to conduct meaningful statistical analysis.

Measurement

The following regressions are used in this analysis:

Real own purpose lower-tier taxation per capita = Election year + Real Canada conditional grants per capita + Real Ontario unconditional grants per capita + Real Ontario conditional grants per capita + population density + % population over 65 + % population under 15

Real capital expenditures per capita = Election year + Real Canada conditional grants per capita + Real Ontario unconditional grants per capita + Real Ontario conditional grants per capita + population density + % population over 65 + % population under 15

Real capital expenditures per capita: recreation and culture = Election year + Real Canada conditional grants per capita + Real Ontario unconditional grants per capita + Real Ontario conditional grants per capita + population density + % population over 65 + % population under 15

Real capital expenditures per capita: planning and development = Election year + Real Canada conditional grants per capita + Real Ontario unconditional grants per capita + Real Ontario conditional grants per capita + population density + % population over 65 + % population under 15

Real capital expenditures per capita: transportation = Election year + Real Canada conditional grants per capita + Real Ontario unconditional grants per capita + Real Ontario conditional grants per capita + population density + % population over 65 + % population under 15

Real capital expenditures per capita: protection = Election year + Real Canada conditional grants per capita + Real Ontario unconditional grants per capita + Real Ontario conditional grants per capita + population density + % population over 65 + % population under 15

Municipal employment per capita = Election year + Year before election year + population density + % population over 65 + % population under 15 + Ontario unemployment rate

Municipal employment per capita: part-time = Election year + Year before election year + population density + % population over 65 + % population under 15 + Ontario unemployment rate

Municipal employment per capita: seasonal = Election year + Year before election year + population density + % population over 65 + % population under 15 + Ontario unemployment rate

The above regressions will allow for all of the proposed hypotheses to be tested. The reasons for choosing the variables that were chosen will now be given.

For the taxation variable, real own purpose lower-tier taxation per capita was chosen for a number of reasons. Alternative variables include total taxation not strictly at the lower-tier level or for own purposes, or municipal residential tax rate. The total taxation variable was not chosen as this could lead to debate as to which tier of government was responsible for the tax, and to what extent local councillors would be able to change the tax if they wanted to. These confounding factors would make the analysis less clear. Using own purpose and lower-tier taxation only, the chances that local politicians will be able to control these variables, and thus create a political business cycle is raised. Municipal tax rates were not chosen as a variable as the tax rates depend crucially on the assessment values of property within the municipality. As

this research is not intending to examine any effects that are caused by changes in assessed values of property this variable did not seem reasonable. As well, it seems legitimate to assume that local voters care more about the actual amount of property tax that they are paying rather than the exact rate which they are paying.

Real capital expenditures per capita are being examined as political business cycle theory predicts that politicians will spend additional funds in areas where high amounts of variation are more possible, and in highly visible areas (Veiga & Veiga, 2007, 48). Thus, operating expenditures are not an item that political business cycle theory predicts will be manipulated by politicians leading up to elections (Veiga & Veiga, 2007, 50; Beleiras & da Silva Costa, 2004, 657). The reasons for this have been touched on but are worth repeating. Operation expenditures are largely composed of things like salaries which are governed by unionized labour contracts which are exceedingly difficult to change or manipulate (Veiga & Veiga, 2007, 50; Beleiras & da Silva Costa, 2004, 657). As well, many operational expenses could not be classified as visible expenditures. A final note on operational expenditures is that they must be paid for in the time period in which they are consumed. This is not true of capital expenditures and is yet another reason why capital expenditures are easier to manipulate.

Capital expenditures as a whole are considered to be more variable and more visible than operational expenditures (Veiga & Veiga, 2007, 50). As well, with all capital expenditures the possibility exists that the expenditure is being made to satisfy a specific constituency. As discussed above, if these expenditures are made by politicians strictly because they wish to keep their jobs then these expenditures would be akin to bribery. Political business cycle theory predicts that capital expenditures may be manipulated by politicians as elections grow closer.

While capital expenditures as a whole could be expected to be manipulated, there are many capital expenditures which could not be considered visible. For this

reason the capital expenditure variable has been disaggregated into several sub-categories which provide more specific measures for testing the existence of political business cycles. These sub-categories are recreation and culture, planning and development, transportation, and protection.

Capital expenditures in protection would be visible in a municipality where crime was to be a large election issue. As this analysis examines the larger municipalities in Ontario and as crime is often perceived to be a problem in urban areas, expenditures on protection could be considered visible. Planning and development, as well as transportation, are visible expenditures because citizens inevitably run into these capital projects in their daily life in a municipality. Construction tends to be highly visible, especially to people who have long commutes or live in highly urban areas (Spafford, 1981, 135). Finally, recreation and cultural expenses allow for politicians to satisfy certain constituencies in highly visible ways. For these reasons, these variables are important to examine in the context of political business cycles.

There is evidence political business cycles are possible in municipal employment (Coelho, Veiga, & Veiga, 2006, 86). For this reason it was important to study the employment variables. While it is possible that total municipal employment would change, it seemed more likely that part-time or seasonal employment would be easier to manipulate. This is due to the restrictive union contracts that municipalities face. As more variation is expected in part-time and seasonal employees, these variables were important to study.

Chapter Four - Results

Linear regressions were performed on all of the data mentioned above. The results indicate that the hypotheses are partially confirmed. For most variables the regression coefficient was the expected sign; however, in most cases the results were not significant at the 5% level. For theories on why the following results were obtained see the chapter entitled “Analysis.”

Before the results of the regressions are discussed, a cursory examination of the data pulled a number of interesting issues that seem to point towards the existence of political business cycles. 27 of the 30 largest negative annual changes in real own purpose taxation occurred in 2006. Five of the 30 largest positive changes in this variable occurred in election years. Of the 30 largest positive changes in capital expenditures, 15 occurred in election years. However, of the 30 largest negative changes in that variable, 10 occurred in election years. Of the 30 largest values for part-time municipal employees, 22 come from years before election years. 20 of the top 30 values for seasonal employment also come from years before election years.

Table One: Summary of Regression Results

Variable (all real and per capita, where applicable)	**Adj. R^2**	**Election year coefficient**	**Year before election coefficient**	**t-value: election year**	**t-value: year before election**	**Sig.: election year**	**Sig.: year before elec.**
Own purpose lower-tier taxation	.607	-23.842	N/A	-1.603	N/A	.11	N/A
Capital expenditure	.140	8.795	N/A	.565	N/A	.573	N/A
Transportation capital expenditure	.104	7.798	N/A	1.432	N/A	.153	N/A
Recreation and culture capital expenditure	.059	6.116	N/A	.840	N/A	.401	N/A
Protection services capital expenditure	.035	1.869	N/A	1.205	N/A	.229	N/A
Planning and development capital expenditure	.025	-0.727	N/A	-.268	N/A	.789	N/A
Employment - Total	.245	See appendix [6]	See appendix	-.738	.443	.461	.658
Employment- Part-time	.232	See appendix	See appendix	-2.761	4.613	.006	.000
Employment- Seasonal	.114	See appendix	See appendix	-3.046	2.033	.002	.043

[6] For coefficients for the employment regressions, consult the more detailed results in the appendices. The figures are very small and would require more space for decimal places.

Table Two: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
REALTAX/CP	486	165	1271	593.28	254.133
REALCAPEXP	486	49.9460	1308.6866	325.402778	180.0667567
REALPROCAP	486	.0000	159.7855	16.644511	16.4092202
REALPLANDEVEL/CP	486	-.5586	286.1657	14.631258	28.3126908
REALTRANSCAP/CP	486	-3.2519	450.0945	101.395780	60.2234324
REALRECCULTURECAP	486	2.29066	685.66119	65.1211952	77.40048994
EMP/CAP	478	.00363	.03500	.0132638	.00596681
PARTTIMECAP	486	.0000	.0180	.003721	.0034497
SEASONALCAP	486	.0000	.0150	.001868	.0022228
Valid N (listwise)	478				

The regression that examined the real own purpose lower-tier taxation per capita had the highest explanatory value of any of the regressions that were conducted. The adjusted R-squared value of .607 shows that the explanatory and control variables were relatively powerful in explaining variation in the tax variable. The regression coefficient associated with the election year dummy variable was -23.842. This suggests that real own purpose lower-tier taxation per capita is over $23 lower in election years. This corresponds to a t-value of 1.603 and is significant at the 11% level. With the exception of the regressions featuring employment variables as dependent, this is the highest degree of significance recorded for an explanatory variable in any of the regressions. While this result is not statistically significant at the standard 5% level, it is interesting for a number of reasons which will be discussed further in the analysis chapter.

The results from the regressions on capital variables held less explanatory power than the regression regarding taxes. However, the results are still interesting. With respect to the regression on total real capital expenditures per capita, the adjusted R-

squared value was .14. The regression coefficient associated with the election year dummy variable was 8.795. This implies that in election years over $8 per person more is spent compared to other years. This corresponds to a t-value of 0.565, and is not statistically significant. However, the regression coefficient is in the right direction.

The regression on real transportation capital expenditures per capita had an adjusted R-squared of .104. The election year coefficient was 7.798, implying that almost $8 per person more is spent in election years compared to other years. This corresponds to a t-value of 1.432 and is significant at the 16% level. While not statistically significant, the regression coefficient is again in the hypothesized direction and there does appear to be some association that would be surprising if arising out of coincidence or bias.

The regression on real recreation and culture capital expenditures per capita had an adjusted R-squared of .059. The election year coefficient was 6.116 which corresponds to a t-value of .84. This is not statistically significant, however, the regression coefficient is yet again in the hypothesized direction.

The regression on real protection capital expenditures per capita had an adjusted R-squared of .035. The election year coefficient was 1.869 which corresponds to a t-value of 1.205 and is significant at the 23% level. While not being statistically significant the regression coefficient is indeed in the hypothesized direction.

The regression on real planning and development capital expenditures per capita had an adjusted R-squared of .025. The election year coefficient was -0.727 which corresponds to a t-value of -0.268. This is not statistically significant and the regression coefficient is not in the hypothesized direction, although it is only slightly negative.

The regressions on employment variables hold more explanatory value than the regressions on capital expenditure variables. As well, generally the results hold more statistical significance. Regression coefficients will not be reported for employment

variables. They are all incredibly small as municipal employment per capita figures are minute to begin with.

With respect to the regression on total municipal employment per capita the adjusted R-squared was .245. The t-value for the election year coefficient is -0.738. This is not in the hypothesized direction and is not significant. The t-value for the year before election dummy variable was 0.443. This is in the hypothesized direction and is not significant.

The regression on part-time municipal employment per capita had an adjusted R-squared of .232. The t-value for the election year variable was -2.761. This is not in the hypothesized direction and is significant at the 1% level. The t-value for the year before election year variable was 4.613. This is in the hypothesized direction and is significant at the 1% level.

The regression on seasonal municipal employment per capita had an adjusted R-squared of .114. The t-value for the election year variable was -3.046. This is not in the hypothesized direction and is significant at the 1% level. The t-value for the year before election year variable was 2.033. This is in the hypothesized direction and is significant at the 5% level.

The results from the municipal employment regressions were not as anticipated. However, they do feature an interesting result that, while not being initially hypothesized, can potentially be explained given other results.

In summary, the regression coefficients for the election year variable were in the hypothesized direction for every variable with the exception of all of the employment variables, as well as real planning and development capital expenditures per capita. Interestingly, the hypothesized result was confirmed for the employment variables with respect to the year before election variable.

A final interesting result concerns the correlation between real own purpose lower-tier taxation per capita and real capital expenditures per capita. These two variables have a Pearson correlation coefficient of .467. This correlation is positive which implies that these variables move in the same direction. As well, this correlation is significant at the 1% level. Of the 30 largest decreases in real own purpose lower-tier taxation per capita (as stated 27 of which occurred in 2006 an election year), 17 cases had real capital expenditures per capita also falling while 13 had that variable increasing.

Most of these results were not statistically significant, although some were substantially more significant than others. The most significant non-employment factor was real own purpose lower-tier taxation per capita. This regression also had by far the highest adjusted R-squared on any of the regressions. However, some of the regressions on the employment variables led to findings which are significant at the 1% level. These results provide an ample amount of information to be analysed.

Chapter Five - Limitations

There are a number of issues that may be a threat to the validity of this research and limit the ability for generalizations to be made across the Ontario sample and to outside of this sample.

Causal issues are always an issue with any research. Correlations can be made, but it is always difficult to say with certainty that one thing leads to another. The study of political business cycles is no exception to this issue. As governments do not have perfect control over the economy, other factors may be driving the result. The limited understanding by politicians of economic problems and the lags in their ability to control the economy lead to scepticism by some that politicians could even create a political business cycle (Ginsburgh & Michel, 1983, 156). However, there exist no other explanations that would justify a systemic lowering of taxes by municipalities in election years, nor do explanations exist for higher capital spending or employment. Until an alternative explanation is given as to why these variables would systematically shift according to whether it is an election year or not, it should be believed that the election year is causing the politicians to make these choices if this result is found empirically.

The selection of the sample may lead to some issues in bias. It is possible that by leaving out small municipalities the selection may be biased in some way. However, as generalizations will not be made regarding small municipalities this is not an issue. Similarly, while the research at hand indicates what the case is for Ontario in the given years, generalizations outside of Ontario and the given years may not be entirely accurate. However, the results of this research will be applicable to the Ontario case unless something changes that would give reason to believe the situation faced by Ontario municipal politicians has been made substantially different.

Maturation might be an issue within the selected sample. For instance, the Ontario ranges of fairness that limit increases to residential taxes may lead to more decreases in at least residential tax rates, and might be having an effect on own purpose lower-tier taxation that is biasing the numbers. However, this research examines total, not residential, taxes. Unless a valid reason is suggested, there appears no reason why this data should be biased in any way by natural changes occurring within Ontario's municipalities.

There were a number of amalgamations or mergers that occurred in the sample over the relevant time period. While this has the potential to lead to issues of experimental mortality, the data was analysed in a way which did not present an issue for this research.

Issues with instrumentation may be possible if municipalities were not recording data in a consistent way. However, there are no large issues with respect to this that have come to attention.

Chapter Six - Analysis

The results obtained in the course of this research project suggest that there is some evidence for the existence of political business cycles in Ontario municipalities. Before the results of the regressions are analyzed, the results of the initial data examination will be discussed.

Of the 30 largest negative annual changes in real own purpose lower-tier taxation per capita, 27 are from 2006. This indicates one of two things. It is possible that this indicates that the political business cycle exists as it appears that municipalities are lowering the amount of taxes that they are collecting for their own purposes in election years. However, the fact that 27 out of 30 are from one particular election year may indicate that there is some systemic change that led to many municipalities taking the same action in this year which just happened to be an election year. If this is the case then this systemic change may be driving the result that real own purpose lower-tier taxation per capita seems to be an important variable. Exactly what is going on here is not known, however, it certainly warranted mention.

Of the 30 largest positive changes in real own purpose lower-tier taxation per capita, only five are from election years. As two of the six years for which change data is available studied are election years, this value would have been expected to be 10 in the absence of a political business cycle. This result, combined with the result that the vast majority of the 30 largest negative changes come from election years, indicates that political business cycles seem to be occurring.

Of the 30 largest values for part-time municipal employees, 22 come from years before election years. Similarly for seasonal municipal employees, 20 of the top 30 values come from years before election years. As only two of the seven years sampled are years before election years, the expected values would have been roughly 8.5 in the

absence of a political business cycle. This seems to indicate that something is occurring in the year before elections with regards to employment. However, as stated above the idea that politicians would try to strategically enhance their image in anticipation of a close election two years in the future is not an intuitively plausible scenario. The explanation that election year employment is kept artificially low to keep taxes low seems to make some intuitive sense. However, that explanation has little to say about why employment would be high in the year before elections. While the low employment in election years would make employment seem high in all other years, it should not have as drastic an effect on the year before elections as is being seen in the data.

The regression coefficients were in the hypothesized direction in all cases with the exception of the employment variables and real planning and development capital expenditures per capita. The regression coefficient in the latter case was only slightly negative and not significant. As well, this regression had the lowest explanatory power of any of the regressions conducted. Thus, it seems safe to assume that those who wish to create a political business cycle do not attempt to manipulate planning and development in any substantial way, at least in the Ontario case. This result is interesting as it contradicts previous research findings.

Capital infrastructure projects such as roads and overpasses have been suggested as highly visible expenditures which are likely to be manipulated by politicians who wish to create a political business cycle for their own advantage (Veiga & Veiga, 2007, 46). However, the results of this research indicate that transportation capital expenditure[7] per capita is not significantly related to election years. However, there does appear to be some relationship and it is in the hypothesized direction. This weakly confirms the result that capital expenditures in highly visible areas are the most affected. However, this result is not as strong as it has been in previous studies. There are a

[7] Transportation capital expenditures is the variable that would contain things such as roadways, etc.

number of reasons why this could be possible. It could be that the type of expenditures that are considered visible, or that are seen as positive by the public is different from place to place. Thus, it could be that in Portugal citizens see investment in roads and infrastructure as essential or valuable, whereas Ontario citizens see capital projects that have to do with infrastructure as causing excessive traffic problems and as a less valuable use of public funds. This is just a possible example; however the point is that what is considered visible and positive by the public likely changes in different contexts.

The fact that the regressions on employment variables led to the conclusion that municipal employment goes down in election years was surprising given the theory behind the political business cycle. However, a number of theories help to understand what might be driving this result. Crucial to the idea that there is a political business cycle is that employment was higher the year before elections. The result that real own purpose lower-tier taxation per capita was down in election years might also help to explain the result with respect to employment in election years.

In election years if taxes are being manipulated to be artificially low, and capital expenditures are increasing slightly, these funds must come from somewhere. Cuts to employment or less hiring relative to other years could potentially be a tactic used by some politicians to help to contain costs in election years. As well, the fact that all types of employment are up in the year before elections implies that it is possible that politicians attempt to gain favour through higher employment the year before elections. However, there are some issues with parts of this explanation. It seems unlikely that a politician would know two years before an election in what state they would be regarded by the public come election time. The idea that political business cycles are started two years in advance by politicians who can predict what their situation will be like in the future is not an intuitively plausible scenario. However, this does not alter the first part of this argument which is that it appears that employment may be manipulated in Ontario

municipalities in election years, however the manipulation was different than originally hypothesized. It may be the case that employment is kept suppressed in election years and that this corresponds with artificially low real own purpose lower-tier taxation per capita.

While most of the regression coefficients are in the hypothesized direction, some explanations for how political business cycles are created are more believable given the data. As stated it certainly appears that real own purpose lower-tier taxation per capita is lower than would be expected in election years. The relative power of this regression and relative significance of the election year coefficient seem to confirm the theory that taxes are manipulated in election years in some places. The regression coefficient for election years is only significant at the 11% level. While this certainly is not proof that there is a political business cycle, it would be surprising to obtain this result out of sheer chance. As well, the theory of the political business cycle does not imply that election year manipulations will take place in every municipality in every election. This has been suggested as a reason why the political business cycle has been hard to empirically isolate. The regressions conducted for this research did not control for factors such as the closeness of the elections or whether or not incumbents were running for re-election. Political business cycle theory argues that having incumbents running for re-re-election in competitive races may be necessary to find evidence of a political business cycle. The reasons for this were mentioned in the initial exploration of political business cycle, however they bear re-mentioning.

While policies that result in a political business cycle supposedly give some benefit to those that enact them, that benefit may be countered by a cost. If one is seen to be manipulating the economy for their own purposes this could lead to negative reactions by the public regarding that candidate (Schultz, 1995, 85). As politicians face decreasing returns to scale on the amount of votes that they get, this implies that the

incentive for politicians who are doing better in the polls to engage in the creation of a political business cycle is smaller than for those who face competitive races (Schultz, 1995, 87). As well, if the incumbent politician is not running for re-election then the incentives to engage in the creation of a political business cycle are also quite different and these politicians should be less likely to lead to the creation of a political business cycle. For these reasons it is not expected that every municipality will have a political business cycle for every election year. Whether or not one is created depends on the interplay of many factors. This is why it should not be expected that extremely strong results will be obtained when looking for political business cycles.

The correlation between real own purpose lower-tier taxation per capita and real capital expenditures per capita should not be surprising as less taxation revenues imply less funds to spend on capital projects. Similarly, more taxation revenues imply more funds to spend on capital projects. However, political business cycle theory predicts that politicians who wish to appear more competent will lower taxes and raise capital expenditures in election years. However, the fact that these two variables are highly correlated implies that this may not be the case. As well, of the 30 largest annual decreases in real own purpose lower-tier taxation per capita (of which 27 were from 2006 an election year), real capital expenditures per capita were falling in 17 of those cases and rising in 13. This indicates an interesting result. Is seems as if politicians may strategically choose to affect either taxation or capital spending, depending on which will be considered more visible or positive by the public. It is possible that a politician who was seen to be decreasing taxes while engaging in a large amount of spending would be regarded as an irresponsible manager of the local public economy. Thus, politicians may choose to affect one variable or the other, however maybe not both at once.

This result may seem to be unsupportive of the finding of a political business cycle. However, the fact that real own purpose lower-tier taxation per capita is lower in

election years compared to other years and that capital expenditures are higher in election years, despite the fact that these two variables are highly correlated is a surprising result, and one which seems to indicate the presence of a political business cycle.

Some who read this may wish for certain specific cases to be mentioned as possible municipalities where political business cycles were created. However, as stated above it can be difficult to imply causation from statistical analysis and to do so with a cursory look at data alone would be irresponsible. There certainly are cases where taxes are going down and capital expenditures are going up in election years. While cases where these values are going in different directions at magnitudes that could be considered irresponsible could be mentioned, to do so without more knowledge of each situation and exactly what the underlying causes were would be irresponsible. However, while this is the case, the results obtained from this study indicate that taxes are lower in election years compared to other years and capital expenditures are higher in election years. Without need to analyse specific cases, the results obtained in this research would be surprising if obtained by chance and there is an indication of political business cycles in Ontario municipalities.

All of the above analysis indicates that there is some evidence for political business cycles in Ontario municipalities from 2000 to 2006. While the results are not statistically significant in most cases, the results seem to point in the direction of political business cycles occurring. As has been mentioned, the fact that this result is not overly strong or statistically significant should not be taken to mean that political business cycles are not occurring. Indeed, political business cycle theory would suggest that empirically it is difficult to find.

Chapter Seven - Implications for Theory

This study provides weak support for the existence of political business cycles in Ontario municipalities. This conclusion makes sense given the research that has come before it. Political business cycles are more likely to exist in younger democracies, and are not expected to occur in every municipality in every election. Thus weakly confirming the existence of political business cycles would seem to make theoretical sense.

Future empirical research should focus on isolating exactly in what situations political business cycles can be expected, and in what situations they will not be expected. As has been stated previously, the current argument is that close elections with incumbents running for re-election are situations where political business cycles are most likely. However, the extent to which politicians know much in advance of elections whether they will be competitive and whether they will be running again is unclear. While these variables may be helpful in determining the likelihood of political business cycles, this is most likely not the entire explanation.

Future theoretical research should focus on a problem that revolves around the budget constraint that many theoretical examinations of political business cycles use. In many cases a standard two period budget constraint of a set value is used (Baleiras & Santos, 2000, 123). However, the person who is said to face that budget constraint actually has the power to change the budget constraint. A set budget constraint may not be the most realistic budget constraint facing politicians. It is likely that an endogenous budget constraint would greatly complicate these models and that the results may very well be the same. Nevertheless, an endogenous budget constraint would be a more realistic depiction of the situation actually facing politicians who must make decisions of whether or not to engage in the creation of a political business cycle.

Chapter Eight - Conclusion

This essay began with an outline of the current state of political business cycle research. Following this a research model was set up, and the results of that research were reported. It appears that there is some evidence to support the notion that political business cycles do exist in Ontario municipalities. A number of directions for future theoretical and empirical research have also been suggested. Political business cycles affect democracy and the legitimacy that our democratic institutions hold. The legitimacy of our democratic institutions is essential to their proper functioning. Political business cycles are something that should be taken seriously, despite the fact that it can be difficult to come up with strong empirical results regarding their existence.

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Appendix

Regression – Real own purpose lower-tier taxation per capita

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.783[a]	.613	.607	156.862

a. Predictors: (Constant), Popo65, Election Year, REALCANCOND, Densqkm, REALONTUNCOND, REALONTCOND, Popu15

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	50.843	205.748		.247	.805
	Election Year	-23.842	14.877	-.047	-1.603	.110
	REALCANCOND	2.994	.580	.201	5.165	.000
	REALONTUNCOND	-.339	.148	-.118	-2.286	.023
	REALONTCOND	.718	.068	.613	10.620	.000
	Densqkm	.033	.012	.095	2.751	.006
	Popu15	823.170	770.917	.071	1.068	.286
	Popo65	1991.128	475.786	.272	4.185	.000

a. Dependent Variable: REALTAX/CP

Regression – Real capital expenditures per capita

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.391[a]	.153	.140	164.1985811

a. Predictors: (Constant), Popo65, Election Year, REALCANCOND, Densqkm, REALONTUNCOND, REALONTCOND, Popu15

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-225.485	215.372		-1.047	.296
	Election Year	8.795	15.573	.025	.565	.573
	REALCANCOND	.444	.607	.042	.733	.464
	REALONTUNCOND	-.469	.155	-.230	-3.024	.003
	REALONTCOND	.449	.071	.542	6.345	.000
	Densqkm	.000	.013	.001	.019	.985
	Popu15	2055.569	806.974	.249	2.547	.011
	Popo65	891.970	498.039	.172	1.791	.074

a. Dependent Variable: REALCAPEXP

Regression – Real protection services capital expenditures per capita

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.224[a]	.050	.035	16.3503158

a. Predictors: (Constant), Popo65, Election Year, REALCANCOND, Densqkm, REALONTUNCOND, REALONTCOND, Popu15

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	18.285	21.446		.853	.394
	Election Year	1.869	1.551	.055	1.205	.229
	REALCANCOND	.114	.060	.115	1.883	.060
	REALONTUNCOND	-.008	.015	-.040	-.502	.616
	REALONTCOND	.012	.007	.151	1.670	.096
	Densqkm	-.003	.001	-.117	-2.163	.031
	Popu15	33.206	80.356	.043	.413	.680
	Popo65	-66.632	49.593	-.137	-1.344	.180

a. Dependent Variable: REALPROCAP

Regression – Real planning and development capital expenditures per capita

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.199[a]	.040	.025	28.6507889

a. Predictors: (Constant), Popo65, Election Year, REALCANCOND, Densqkm, REALONTUNCOND, REALONTCOND, Popu15

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.579	37.580		.095	.924
	Election Year	-.727	2.717	-.012	-.268	.789
	REALCANCOND	.193	.106	.112	1.827	.068
	REALONTUNCOND	.046	.027	.137	1.691	.091
	REALONTCOND	-.009	.012	-.067	-.734	.463
	Densqkm	.005	.002	.113	2.075	.039
	Popu15	-3.452	140.808	-.003	-.025	.980
	Popo65	49.500	86.902	.058	.570	.569

a. Dependent Variable: REALPLANDEVEL/CP

Regression – Real transportation capital expenditures per capita

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.343[a]	.118	.104	57.4118072

a. Predictors: (Constant), Popo65, Election Year, REALCANCOND, Densqkm, REALONTUNCOND, REALONTCOND, Popu15

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	18.443	75.304		.245	.807
	Election Year	7.798	5.445	.063	1.432	.153
	REALCANCOND	.332	.212	.092	1.565	.118
	REALONTUNCOND	-.039	.054	-.055	-.711	.478
	REALONTCOND	.089	.025	.313	3.592	.000
	Densqkm	.010	.004	.113	2.165	.031
	Popu15	349.408	282.157	.124	1.238	.216
	Popo65	-39.728	174.139	-.022	-.228	.820

a. Dependent Variable: REALTRANSCAP/CP

Regression – Real recreation and culture capital expenditures per capita

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.271[a]	.074	.059	76.75846973

a. Predictors: (Constant), Popo65, Election Year, REALCANCOND, Densqkm, REALONTUNCOND, REALONTCOND, Popu15

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-128.355	100.680		-1.275	.203
	Election Year	6.116	7.280	.038	.840	.401
	REALCANCOND	-.338	.284	-.072	-1.193	.233
	REALONTUNCOND	-.043	.073	-.047	-.589	.556
	REALONTCOND	.007	.033	.019	.212	.832
	Densqkm	.013	.006	.117	2.186	.029
	Popu15	891.270	377.239	.242	2.363	.019
	Popo65	140.634	232.820	.061	.604	.546

a. Dependent Variable: REALRECCULTURECAP

Regression – Total employment per capita

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.503[a]	.253	.245	.00509383

a. Predictors: (Constant), YrB4Election, Popu15, Densqkm, Election Year, Popo65

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.034	.006		5.316	.000
	Election Year	.000	.001	-.036	-.738	.461
	Densqkm	1.649E-6	.000	.203	4.716	.000
	Popu15	-.123	.024	-.450	-5.140	.000
	Popo65	.005	.015	.029	.323	.747
	YrB4Election	.000	.001	.022	.443	.658

a. Dependent Variable: EMP/CAP

Regression – Part-time employment per capita

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.492[a]	.242	.232	.0029675
a. Predictors: (Constant), Popo65, Election Year, Densqkm, Ont. Unemployment, YrB4Election, Popu15				

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.000	.005		-.112	.911
	Election Year	.000	.000	-.138	-2.761	.006
	YrB4Election	.002	.000	.237	4.613	.000
	Ont. Unemployment	.133	.040	.157	3.296	.001
	Densqkm	5.049E-7	.000	.108	2.487	.013
	Popu15	-.029	.014	-.187	-2.127	.034
	Popo65	.004	.009	.036	.403	.687
a. Dependent Variable: PARTTIMECAP						

Regression – Seasonal employment per capita

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.355[a]	.126	.114	.0020604
a. Predictors: (Constant), Popo65, Election Year, Densqkm, Ont. Unemployment, YrB4Election, Popu15				

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.004	.003		-1.251	.212
	Election Year	.000	.000	-.164	-3.046	.002
	YrB4Election	.001	.000	.112	2.033	.043
	Ont. Unemployment	.088	.028	.161	3.142	.002
	Densqkm	1.435E-7	.000	.047	1.018	.309
	Popu15	.000	.010	.002	.026	.980
	Popo65	.001	.006	.009	.092	.927
a. Dependent Variable: SEASONALCAP						

Correlation – Real own purpose lower-tier taxation per capita and real capital expenditures per capita

Correlations

		REALTAX/CP	REALCAPEXP
REALTAX/CP	Pearson Correlation	1	.467**
	Sig. (2-tailed)		.000
	N	486	486
REALCAPEXP	Pearson Correlation	.467**	1
	Sig. (2-tailed)	.000	
	N	486	486

**. Correlation is significant at the 0.01 level (2-tailed).