Differences in government accounting conservatism across jurisdictions, their determinants, and consequences: the case of Canada and the United States

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Abstract

We use the year-end adjustments to the provisions for student loan losses of state and provincial governments in the United States and Canada to study government accounting conservatism and how it varies between these adjacent and highly integrated countries. Building on Canada's more conservative cultural attributes, we hypothesize and find that Canadian provincial governments report more conservative provisions for student loan losses than U.S. state governments. Moreover, the year-end adjustments to the provisions in Canada are excessively conservative; they are larger than the audit materiality threshold. We further find that the political ideology of the government, government reporting incentives, government debt, and political competition are important determinants of government accounting conservatism. Finally, we find a negative association between the year-end adjustment to the provision and future student lending. This result suggests that government accounting conservatism leads to credit rationing and significant societal consequences for students. Overall, our study highlights important aspects of the determinants and consequences of government accounting conservatism. To the best of our knowledge, this study is the first to examine government unconditional accounting conservatism.

Keywords Student loan loss provision · Government accounting conservatism · Excessive conservatism · Year-end adjustments · Credit rationing

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1 Introduction

A broad literature examines accounting disclosures in the public sector. Most of those studies aim to identify the factors that motivate bureaucrats to disclose public financial information (e.g., Ingram 1984; Cheng 1992). Studies further examine the timeliness of the information disclosure (e.g., reporting lag, Dwyer and Wilson 1989) and the quality of the disclosure in terms of the information disclosed (Robbins and Austin 1986). Separately, since the seminal work of Basu (1997), empirical research on accounting conservatism has prospered (Zhong and Li 2017) by primarily examining publicly listed companies. Researchers also examine accounting conservatism in other settings, such as family firms (Chen et al. 2014; Raithatha and Shaw 2019), privately held firms (Ball and Shivakumar 2005; Cano-Rodriguez 2010; Haw et al. 2014; Baik et al. 2020), and across countries (Ball et al. 2000; Bushman and Piotroski 2006). While the literature has examined many aspects of conservatism, accounting conservatism in the public sector remains unexplored. (For a comprehensive discussion of accounting conservatism and a review of the literature, see Watts 2003a, 2003b; Ryan 2006; Ruch and Taylor 2015; and Zhong and Li 2017.)

In this study, we examine differences in government accounting conservatism between the United States and Canada, countries that share a long border, have highly integrated economies, and employ mostly similar accounting rules and auditing practices but maintain unique national cultures. Studies have established links between the specific dimensions of national culture and accounting choices (Gray 1988; Schultz and Lopez 2001; Salter et al. 2013). International studies have shown that cultural aspects, such as individualism, uncertainty avoidance, and masculinity, affect financial reporting dimensions, most notably earnings management (Nabar and Boonlert-U-Thai 2007; Doupnik 2008; Han et al. 2010), benchmark beating (Kanagaretnam et al. 2011), and conservatism (Kanagaretnam et al. 2014) in banks and other for-profit corporations. We argue that those cultural differences will also extend to government accounting. In addition, we examine the determinants of government accounting conservatism to gain a deeper understanding of its causes. Finally, we examine its economic consequences, as government actions may have a significant societal impact. We choose this subject because accounting conservatism is an important property of financial reporting that has been widely studied (Sterling 1967; Sterling 1970; Kanagaretnam et al. 2014; Zhong and Li 2017). More important to our context, government accounting conservatism directly affects the reported budgetary balance (surplus or deficit) and, as a result, can have significant economic, social, and policy implications (Corsetti and Roubini 1996) and may even affect electoral outcomes (Kido et al. 2012). Furthermore, government accounting conservatism may have a broad societal impact but is largely unexplored; we are unaware of any study that explicitly examines it.

David Vaudt, chairman of the Government Accounting Standards Board (GASB), recognized that government accounting can be challenging, particularly the notion that "applying accounting standards can sometimes be complex" (Tysiac 2015). Traditional measures of conservatism developed to study for-profit corporations make

measuring government accounting conservatism a challenge. Therefore, to examine government unconditional conservatism, we analyze a single account that is arguably large and socially important: the student loan loss provision.[1] Focusing on this account is advantageous for several reasons. First, clear government guidelines regarding the expected student loan losses exist. This in turn allows us to infer the discretionary year-end adjustments for the account and develop measures of government accounting conservatism. We can even compute *excessive* government accounting conservatism, a new accounting measure we introduce in this paper. In addition, student loan programs are relatively similarly structured across provinces and states and are a part of a similar subnational governmental loan program (in Canada, provincial departments of education and, in the United States, state-supported student loan authorities). This makes student loan programs suitable for a cross-country comparison. Furthermore, student loans are economically significant: the annual student loans of the loan authorities in our sample in 2018 were $6.9 billion in Canada and $19.7 billion in the United States.[2] Finally, our focus on a single account, instead of entity-level aggregate accruals, which is similar to the approach of Kido et al. (2012), allows us to generate a clean measure of conservatism. This helps minimize the confounding influence of other factors, such as the entity's innate characteristics, which can also affect financial reporting quality (Francis et al. 2005; Lennox et al. 2016). This in turn should increase the reliability of our findings.[3]

To conduct our analysis, we hand collect data for the period 1999–2019 and develop measures of both *conservative loan loss provisioning* and *excessive conservative loan loss provisioning*. We consider loan loss provisions to be conservative when the actual provision is significantly larger than the expected provision. We consider the provision to be excessively conservative when the difference is larger than the component materiality threshold.

Our analysis comprises three stages. Building on findings from studies on the effect of culture on conservatism, in the first stage, we draw on the commonly used Hofstede six-dimension society model (Hofstede 1980, 1997) to hypothesize that provincial Canadian governments will report more conservatively than their U.S.

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[1] Unconditional conservatism is the tendency to understate assets or overstate liabilities, independent of the economic outcome (Ball et al. 2008). Examples of unconditionally conservative accounting practices within the private sector include the adoption of accelerated depreciation methods, the immediate expensing of research and development costs, and the use of the method of last in, first out (LIFO) for inventory valuation during high inflation situations (Cano-Rodriguez 2010). Conditional conservatism, on the other hand, refers to the practice of requiring a higher degree of verification for the recognition of good news than for the recognition of bad news (Basu 1997). For more details, refer to Beaver and Ryan (2005).

[2] The figures in the paper are presented in U.S. dollars using a foreign exchange rate of par as per the 2012 annual foreign currency rate from the U.S. Federal Reserve. This exchange rate limits noise related to foreign currency rate fluctuations over time. Nonetheless, as a robustness check we repeated our tests using the annual foreign exchange rate available from the U.S. Federal Reserve and the results continue to hold (untabulated).

[3] An alternative research design would be to compare total provincial/state loan loss provisions. However, at that level, loan compositions will vary considerably in their risk profiles across provinces and states, based on the major industries in each of them, which will introduce additional noise. We therefore believe that a focus on a single large and standard account is more advantageous.

counterparts. We find evidence consistent with our conjecture. Canadian provincial governments report provisions for student loan losses that are more conservative than those of U.S. states. This result comports with the overall greater conservatism in Canada with respect to fund management (Brean et al. 2011; Bordo et al. 2015). Moreover, we find that the student loan loss provisions in Canada are *excessively conservative*; that is, they exceed the component materiality threshold on average by $53.4 million.[4] Consistent with the adjustments to the provision being excessive and uninformative of future losses, we find that they do not predict future student loan write-offs.

In the second stage, we aim to identify factors that contribute to government accounting conservatism to better understand what determines the degree of conservatism within the framework of government accounting reporting, and what contributes to the differences in it between the two countries. In our analysis, we examine four potential determinants: government ideology (left versus right political affiliation),[5] government reporting incentives, the level of government debt, and political competition. Consistent with left-leaning governments easing lending restrictions, we find evidence of more student loans under left-leaning governments, likely attributable to borrowers that pose a greater credit risk and greater losses. In addition, we find that the level of government debt motivates governments in both countries to report more conservatively. We also find a positive association between government accounting conservatism and the pre-provision balance in Canada, which suggests that Canadian provincial governments adjust the provision for student loan losses to minimize their deficit or surplus. In other words, they smooth their balances. In the United States, we find some evidence of a negative association, probably because a larger surplus and a smaller provisioning both occur in periods of positive economic conditions.[6] With regard to political competition, we find some evidence of a positive (negative) association between political competition and government accounting conservatism in Canada (the United States). The results for Canada suggest that political competition plays a monitoring role, leading governments to report more conservatively. In the United States, on the other hand, in response to political competition, governments choose to report more aggressively by reducing their expenses. Nonetheless, even after identifying certain factors that affect government accounting conservatism and controlling for the economic growth, size, strength of budgetary balance regulations, and election year, differences in conservative reporting between the two countries remain. Thus a fundamental difference in government accounting conservatism between Canada and the

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[4] Component materiality refers to a threshold set for a component to guide auditors in planning and performing audit procedures to achieve the desired audit-risk level for that component (Glover et al. 2008). Audit adjustments exceeding the materiality threshold attest to the significance of the adjustment in relation to the component (item) audited.

[5] In this paper, the term "conservative" is used with reference to conservative accounting and not a government's political ideology. When speaking about a government's ideology, we use the terms "left" and "right" to avoid confusion with the notion of accounting conservatism.

[6] Consistent with this interpretation, we find a positive association between GDP growth and the pre-provisioning budgetary balance (untabulated).

United States appears to exist. Beyond the determinants we identify, we also survey the legal system, accounting and auditing standards, and peer review process in the two countries and find them to be very similar, thus reducing the likelihood that they may explain our findings. We also consider the possibility that economic factors affect our results. While we control for economic factors in our tests, we also examine the economic growth at the country level and find the two economies' economic growth to be highly correlated, which should not come as a surprise, given that they are highly intertwined. To further ease concerns of an economic explanation, for robustness, we match U.S. states and Canadian provinces on industry similarity, and our results remain unchanged.

In the third stage, we examine whether government accounting conservatism (with respect to the provision for student loan losses) affects future student lending or, in other words, whether it leads to credit rationing. Such a finding would entail real adverse economic consequences of excessive conservatism.[7] We find a negative and significant association between the year-end adjustments to the student loan loss provisions and future student lending. This is consistent with higher government accounting conservatism leading to lower levels of future student lending, which bears detrimental consequences for students' access to education and indirectly affects the economy at large. This result may suggest unintended consequences of government accounting conservatism, especially for left-leaning governments that aim to advance social programs.

Our paper makes several contributions to the literature. First, it extends two streams of literature. We extend the literature of public-sector financial information disclosure, which has not yet examined the use of accounting conservatism by governments. We also extend the literature on accounting conservatism, which has extensively examined the use of conservatism in the private sector but not in the public sector. Second, while some studies examine opportunistic government actions employed to achieve specific reporting goals, such as avoiding reporting a deficit (Ferreira et al. 2013; Felix 2015; Costello et al. 2017), our study is probably the first to examine the reporting preferences of governments in terms of aggressiveness versus conservatism. We document a greater preference for conservative reporting in Canada than in the United States with regard to expected student loan losses. Third, we link government financial reporting choices to social welfare. Our finding that excessive conservatism harms future student lending, which suggests that government accounting choices have real societal consequences. Fourth, the new excessive conservatism measure we introduce—excessive adjustments to student loan loss provisions—allows us to distinguish between conservative adjustments that may be interpreted as a prudent approach and adjustments that are excessive and may render financial statements less informative.

The remainder of the paper proceeds as follows. In Section 2, we provide background information on government accounting, review the literature, and develop our hypotheses. We describe our research design in Section 3 and present the main

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[7] We sincerely appreciate the suggestion from an anonymous referee to examine the issue of credit rationing.

results in Section 4. In Section 5, we present supplementary analyses and robustness checks and, in Section 6, conclude.

2 Background, literature review, and hypothesis development

2.1 Background on government accounting reporting

CPA Canada's Public Sector Accounting handbook serves as the basis for the Canadian Public Sector Accounting Standards (PSAS). This handbook prescribes the accounting standards that apply to all public sector entities (e.g., governments, government components, government organizations, and certain government partnerships) that issue general purpose financial statements. In the United States, state and local governments follow the Government Accounting Standards (GAS), which are issued by the Governmental Accounting Standards Board (GASB). The standards of both countries are broadly consistent with the International Public Sector Accounting Standards (IPSAS). Additionally, given the paper's focus on loan loss provisions, it is important to ensure that the methodology prescribed by the accounting standards for this item in both countries is in fact similar. Over the course of our sample period, both PSAS and GAS require that preparers calculate loan loss provisions using the *incurred* loan loss methodology (GASB 2016; CPA Canada 2020a, para. 39), which delays recognition of the losses until they are probable (FASB, ASU 2016–13).[8] The use of similar loan loss methodologies limits the possibility that differences between the two countries are attributed to differential accounting standards. Regarding conservatism, there is a small difference between American and Canadian standards, which potentially reflects the cultural differences between the two countries. The U.S. GASB intentionally refrains from mentioning prudence. The FASB (FASB 2008) states that "… describing prudence or conservatism as a qualitative characteristic or a desirable response to uncertainty would conflict with the quality of neutrality." The Canadian PSAB (CPA Canada 2020b, para. 4), on the other hand, mentions the importance of practicing prudence but, at the same time, emphasizes that prudence should not conflict with neutrality.

The auditing standards in both countries are also quite similar. Canadian Auditing Standards adopt their standards from the International Auditing and Assurance Standards Board (IAASB). The United States uses its own Government Auditing Standards, which are mostly similar to international auditing standards. In addition, the United States' standards permit auditors to apply international standards set by the IAASB. To ensure that government auditors and audit firms are supplying the audit quality required by the profession, both jurisdictions require auditors to submit to a peer-review process. In Canada, the assurance work of government auditors is inspected by their board of accountancy and is peer-reviewed by government auditors from other jurisdictions. In the United States, audit firms are subject to the

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[8] Starting in 2019, the Financial Accounting Standards Board (FASB) requires SEC filers to switch their loan loss provisioning methodology from the *incurred* loan loss method to the *expected* loan loss method.

American Institute of Certified Public Accountants' (AICPA) peer-review process when providing assurance services related to Government Auditing Standards. In Canada, student loans and the provision for student loans are audited by the government audit agency.[9] In the United States, state student loan programs, which are administered by Student Loan Authorities, are primarily audited by regional non-Big Four audit firms.

2.2 Literature review

A large body of literature examines public-sector accounting disclosure choices. The literature argues that accounting policy choices are not a mere function of economic or political factors. Rather, both institutional and environmental factors may affect the provision of information by bureaucrats (e.g., as a way of limiting conflict between citizens and politicians). Studies identify forces, such as voter preferences, interest group pressures, party competition, institutional forces, and external demands, that affect government financial reporting (Cheng 1992).[10]

   Early studies focused on specific measures of disclosure, such as the length of the financial report and the size of the state audit budget, and developed more comprehensive indices for the extent of the disclosure and the perception of the disclosure quality (e.g., Baber 1983; Evans and Patton 1983; Ingram 1984; Robbins and Austin 1986; Cheng 1992). Later studies examined specific government accounting reporting objectives and the means to achieve them. For example, Beck (2018) argues that municipal managers face pressure from citizens to avoid both deficits and surpluses. In line with this argument, Felix (2015) presents evidence that municipalities try to report break-even income in the general fund. Peltzman (1992) and Brender and Drazen (2008) find that avoidance of reporting a deficit increases the incumbent's probability of re-election. In this context, Kido et al. (2012) show that, in an election year, the liability for compensated absences and the unfunded pension liability (two liabilities that allow for the use of discretion) of state governments are abnormally small. Ferreira et al. (2013) find a high tendency to use discretionary accruals to avoid reporting a small deficit in municipalities with high political competition. Costello et al. (2017) find that governments manage both accruals and real earnings to ensure that their financial statements comply with balanced-budget laws. Specifically, they provide evidence of government fund transfers as well as the sale of public assets to cover shortfalls.

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[9] In Canada, national and subnational governments grant monopoly power over the audits of their consolidated financial statements to the government audit agency and, through this authority, a monopoly over the audit of the student loan program. Certain provincial agencies and corporations are generally granted legislative power that allows them to appoint an auditor other than the government auditor if they wish to do so.

[10] For a comprehensive review of this literature, please refer to the meta-analysis by Rodríguez Bolívar et al. (2013).

2.3 Hypothesis development

In his seminal work, Hofstede (1980) defines culture as "the collective programming of the mind that distinguishes the members of one category of those of another. Culture is composed of certain values, which shape behavior as well as one's perception of the world" (Hofstede 1980, p. 25). He proposes that societal values will have institutional consequences on the legal, political, and economic systems. Licht et al. (2005) further contend that, even though societies confront similar basic issues and problems, how they regulate them may vary due to different societal value emphases. This in turn shapes the society's dimensions. In other words, we can characterize the cultures of different societies through the unique prevailing value emphasis on these key dimensions. Gray (1988) developed a model that maps Hofstede (1980)'s cultural patterns to societal values expressed within the accounting subculture. Gray (1988) argues that, through their influence on the norms and values of the actors involved, cultural values will affect the development of social systems, including the accounting system. In other words, shared cultural values lead to shared accounting values, which in turn impact the nation's accounting system.

According to Hofstede (1980), individualism represents the preference for a social framework in which individuals are expected to take care of themselves and their families only, as opposed to collectivism, which indicates a more interdependent society. Hofstede (2001) asserts that individualistic societies emphasize individual achievements and autonomy. Risk-taking incentives are also likely to be greater in highly individualistic societies. According to Gray (1988), accountants within an individualistic society should be predisposed to report the most optimistic numbers allowed by institutions (negative conservatism). Chui et al. (2010) link individualism to overconfidence. Kanagaretnam et al. (2014) argue that, in a society with higher levels of overconfidence and risk taking, companies will report less conservative and more volatile earnings. Uncertainty avoidance, according to Hofstede (1980), is the extent to which people are uncomfortable with uncertainty, ambiguity, and an unknown future. Higher uncertainty avoidance is likely to lead to lower risk taking. Kwok and Tadesse (2006) argue that uncertainty avoidance affects the investment preferences of individuals and provide evidence in support of this argument. They show that countries scoring high on uncertainty avoidance are also relatively more risk-averse and maintain a bank-based financial system, whereas those scoring low on uncertainty avoidance rely on a relatively less risk-averse market-based financial system. Gray (1988) argues that strong uncertainty avoidance leads to a preference for conservative measurements. According to Kanagaretnam et al. (2014), if higher uncertainty avoidance leads to a preference for less risk and ambiguity, then we are more likely to observe higher accounting conservatism. Hofstede (1980) defines masculinity in a society as a preference for achievement, heroism, assertiveness, and material success, as opposed to a preference for relationships, modesty, caring for the weak, and quality of life. Highly masculine societies are characterized by an emphasis on performance (Hofstede 2001), suggesting that achieving

performance targets and high risk taking are more likely in societies with relatively higher masculinity traits.[11]

Empirical studies have found cultural traits to affect earnings aggressiveness and accounting conservatism. Regarding aggressive reporting, Han et al. (2010) find individualism (uncertainty avoidance) to be positively (negatively) associated with earnings management. Kanagaretnam et al. (2011) find individualism and masculinity (uncertainty avoidance) to be positively (negatively) related to benchmark-beating behavior in banks. As for conservatism, Salter et al. (2013) find uncertainty avoidance (masculinity) to be positively (negatively) associated with unconditional conservatism and masculinity to be negatively associated with conditional conservatism.[12] Kanagaretnam et al. (2014) find that individualism is negatively (positively) related to conditional conservatism (risk taking) and uncertainty avoidance is positively (negatively) related to conditional conservatism (risk taking) in banks.

The United States and Canada share the world's longest common border, the world's largest flow of bilateral trade and cross-border investment; moreover, they enjoy such similarities as language, law, and new world heritage (Brean et al. 2011). Yet they differ on some salient societal aspects. We follow Kanagaretnam et al. (2014) to argue that those cultural differences may lead to different levels of accounting conservatism between the two societies, which may extend to government accounting reporting. With regard to the dimensions that have been found to affect accounting choices, the American society (as compared to Canadian society) is relatively more individualistic and masculine and has less preference for uncertainty avoidance. Thus we expect Canada to be more conservative than the United States. Accordingly, we predict greater government accounting conservatism in Canada. With regard to our study, we expect provincial governments in Canada to have greater provisions for student loan losses than the loan authorities in the United States.

Canada's more conservative practices were highlighted during the financial crisis, as Canada's conservative banking practices allowed its economy to outperform the U.S. economy during the crisis (Brean et al. 2011).[13] Many economists and policy analysts have identified Canada's innate conservatism and superior regulation as the two main elements accounting for the superior performance of the Canadian banking system over that of the United States during the crisis (Bordo et al. 2015).

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[11] Many studies use Hofstede's six-dimensions of society model to examine the role of national cultural differences. See, for example, Schultz et al. (1993), Kachelmeier and Shehata (1997), Nabar and Boon-lert-U-Thai (2007), and Kanagaretnam et al. (2011, 2014). For the most current version of the data, refer to http://geert-hofstede.com/

[12] Those results are based on the Basu (1997) measure of conservatism. They also find all three cultural traits to be associated with conditional conservatism when using the measure suggested by Givoly and Hayn (2000).

[13] While the Federal Deposit Insurance Corporation (FDIC) closed hundreds of failed banks in the United States from 2008 to 2012, Canada markedly weathered the crisis without experiencing a single bank failure during that period (Brean et al. 2011). This is consistent with the more general results of Kanagaretnam et al. (2011), who found that 39 countries with cultures characterized by higher risk taking experienced more bank failures during the financial crisis.

However, there are at least two reasons as to why we might not find the provisions for student loan losses being more conservative in Canada than in the United States. First, provincial governments in Canada and student loan authorities in the United States are provided with clear guidance as to the accounting for student loan losses. If governments follow this guidance, cultural differences will not be reflected in the creation of the provision for student loan losses. Second, governmental institutions are subcultures and might develop their own unique values and norms that might differ to some degree from the national culture. Thus, even in the presence of cross-country cultural differences that may affect accounting conservatism, student lending institutions in the two countries might have their own unique cultural aspects such that their effects on accounting conservatism will be difficult to predict.

Studies have established a strong link between national culture and accounting conservatism in banks and other for-profit industries (e.g., Nabar and Boonlert-U-Thai 2007; Kanagaretnam et al. 2011, 2014). We argue that national culture is also likely to be an important determinant of accounting choices in governmental organizations and can similarly affect government conservatism. Thus our first hypothesis is as follows.

H1: Government accounting conservatism is higher in Canada than in the United States.

Our second hypothesis concerns the determinants of this conservatism. The literature of public choice argues that factors in the environment influence the policy decisions of government bodies (Cheng 1992). We therefore consider the environment and how may shape government accounting conservatism. We develop four sub-hypotheses in that regard (hypotheses 2a, 2b, 2c, and 2d). We first consider the effect of government political ideology on conservatism over the provision for student loan losses. Ideology-induced governmental policies are prevalent. At the state level in the United States, Democratic governments implement more expansionary and liberal policies than do Republican ones (Potrafke 2018). Accordingly, we expect left-leaning governments to promote and expand social programs, including student loans. Consistent with this idea, we find larger student loan assets under left-leaning governments (untabulated). On the one hand, if left-leaning governments lend generously without carefully assessing students' ability to repay, this will lead to more students failing to repay and larger provisions for student loan losses. On the other hand, right-leaning governments might report more conservative provisions for losses on student loans to justify stricter fiscal policies and reduce future lending that they may find excessive and unnecessary. Furthermore, if left-leaning governments provide student loans that are too generous, this may result in many students failing to repay. These governments might attempt to conceal the mismanagement of funds and of taxpayers' money by under-accruing for expected loan losses. Given these opposing views, it is an empirical question whether and how government ideology affects the provisioning for student loan losses. We state our hypothesis regarding the effect of government ideology in the null form as follows.

H2a: The political ideology of the government does not affect the level of government accounting conservatism.

Governments face strong pressure from citizens and legislation to avoid reporting deficits and, to a lesser degree, surpluses (e.g., Kido et al. 2012; Ferreira et al. 2013; Beck 2018). Studies have shown that, as a result, governments strive to balance their budgets, including fund transfers, discretionary accruals, and asset sales (Costello et al. 2017; Ferreira et al. 2013). Another motivation to balance the budget is the effect it can have on credit ratings and the cost of servicing government debt (FAO Ontario 2020). We postulate that, in the face of various pressures to balance their budgets, governments will apply some discretion over the provision for student loan losses to achieve their reporting objectives. In other words, we expect that a more negative projected budgetary balance will lead governments to use more aggressive accounting and record a smaller provision for student loan losses (i.e., we will observe a downward year-end adjustment to the provision). Similarly, a more positive projected balance will make governments act more conservatively and adjust the provision upward. As a result, we will observe positive relations between the pre-provision balance and our measure of conservative reporting with respect to the provision for student loan losses.

H2b: There is a positive association between the pre-allowance balance and government accounting conservatism.

Studies on accounting disclosure in the public sector find the financial condition of the government (using debt as the principal unit of measure) to be positively associated with the motivation to act more transparently (Baber 1983; Ingram 1984; Robbins and Austin 1986; Evans and Patton 1987). More recently, Laswad et al. (2005) find that leverage is positively associated with the likelihood of the local government posting its financial statements on the Internet.

Debtholders face asymmetric payoffs and therefore prefer accounting conservatism. Conservative accounting has evolved to improve the efficiency of debt contracting by triggering covenant violations through a timely loss recognition and by requiring higher verifiability of gains (Watts 2003a; Ball and Shivakumar 2005). Studies show that entities that carry debt can derive benefits from creditors by reporting more conservatively. Ahmed et al. (2002) show that the cost of debt is lower for companies with more conservative financial reporting. Zhang (2008) shows that, for borrowers, more conservative reporting can reduce lenders' downside risk, and lenders would then require lower interest rates, which benefits borrowers ex ante. In addition to the direct benefits obtained from creditors for reporting more conservatively, entities carrying debt can benefit from reporting conservatively indirectly through its positive effect on credit ratings. Evidence suggests that creditors and credit rating agencies pay attention to government financial reporting (Wilson and Howard 1984; Henke and Maher 2016; Edmonds et al. 2017). Henke and Maher (2016), for example, find that delayed reporting by municipalities results in lower bond ratings and a higher bond yield. Conservatism can signal to bond investors and bond-rating agencies high commitment to transparent financial reporting

because of the existence of information asymmetry. It can also signal the bureaucrat's competence and professionalism (Evans and Patton 1987). Thus, as the level of government debt increases, we expect an increase in government accounting conservatism to address debtholders' demand for conservative reporting. On the other hand, higher conservatism has negative effects on the government deficit and net assets. The negative consequence of conservatism on the image of the entity's financial position, in turn, might discourage governments with high debt from reporting conservatively. Nonetheless, strong evidence on the benefits for both lenders and borrowers from conservative accounting leads to the following hypothesis.

H2c: The level of government debt is positively associated with government accounting conservatism.

Finally, political competition constitutes another factor motivating public managers to satisfy citizens' demands and demonstrate prudent management (Baber 1983; Baber and Sen 1984; Ingram 1984). Baber (1983) argues that political competition puts pressure on the political system to affect accounting disclosure. In addition, political competition can be considered as a proxy for internal monitoring (within the political system) to pressure the government for more disclosure. Yet results on the effect of political competition on government disclosure are mixed (Baber 1983; Baber and Sen 1984; Evans and Patton 1987). In response to these mixed results, Carpenter (1991) finds a positive influence of political competition on a government's decision to adopt generally accepted accounting principles. Because accounting conservatism is a means to reduce information asymmetry between the government and external parties, we can expect that, in the face of increased political competition, public managers will implement more conservative reporting. On the other hand, government accounting conservatism may increase the reported deficit and amplify the government's financial problems. Thus, in the face of strong political pressure, the government may prefer to report more aggressively. Therefore we state our hypothesis regarding political competition in the null form as the following.

H2d: Political competition is not associated with government accounting conservatism.

Our third hypothesis concerns the impact of government accounting conservatism on future lending. Beatty and Liao (2011) show that banks respond ex ante to clients' ability to repay their loans during economic cycles. We similarly expect governments to be sensitive to ex ante information about expected changes in students' ability to repay. Specifically, we expect governments to respond to changes in the provision for student loan losses and adjust the extent of their lending to students. Thus we hypothesize that the level of year-end adjustment to the provision will affect future student lending. A large provision for losses can reduce future lending through two channels. First, higher expected losses on lending may cause the government to reevaluate its lending portfolio and reassess certain profiles as too risky

for further lending. Second, larger loss provisions increase the budget deficit, and, to combat this deficit, the government might choose to cut some lending. However, student lending is one of many government social programs. Those programs are put in place to accomplish important social objectives. Optimization of the lending portfolio can conflict with such objectives. As a result, it is not clear that a reduction in lending due to higher provisions for student loan losses would be a priority for the government. In such a case, the government might choose not to adjust the lending portfolio; therefore there would be no association between the two. Our third hypothesis is as follows.

H3: There is a negative association between the provision for student loan losses and future student lending.

3 Research design

3.1 Sample selection

We choose to focus on Canadian provincial governments and U.S. state governments for several reasons. First, the two economies are highly interrelated. Over the period 1999–2018, the correlation of GDP growth (based on World Bank data) of the two countries was 87.0%. Each country is the other country's largest export market, with Canada accounting for nearly 18% of U.S. total exports (World Integrated Trade Solutions 2019). In addition, the two countries are very similar in terms of their business and investment environments (Baginski et al. 2002) and regulations (Bargeron et al. 2010). Despite the similarities, some differences do exist, such as the cultural ones discussed above. Moreover, litigation risk is higher in the United States than in Canada (Baginski et al. 2002). However, in the context of government accounting, the difference in litigation risk is unlikely to have much of an impact, given that governments are unlikely to be brought to court over financial reporting issues. In addition, in both countries, government failure is extremely low. The last time a U.S. state declared bankruptcy was in 1933 (Federal Reserve Bank of Cleveland 2016). The only provincial bankruptcy in Canadian history occurred in 1936 (Bird and Tassonyi 2003).[14,15] Not surprisingly, some studies use Canadian companies as control groups for their U.S. samples (e.g., Baginski et al. 2002; Khurana and Raman 2004; Bargeron et al. 2010; Singer and You 2011; Baloria et al. 2017)

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[14] While both countries use a common-law legal system, in Canada, the province of Quebec uses a civil-law legal system. To ensure that this institutional difference does not affect our results, we repeat all our tests after removing Quebec, and the results remain unchanged.

[15] If anything, the higher litigation risk in the United States is likely to cause U.S. governments to be more prudent and the provisions for losses there to be larger. This will work against us finding higher conservatism in Canada.

or group together U.S. and Canadian companies in international tests (e.g., Ali and Hwang 2000).[16,17]

Our sample is for the period 1999–2019. We start in 1999 because this is the year the Canadian government (the later of the two countries) began using accrual accounting. To construct the Canadian sample, we read the audited financial statements for all 10 Canadian provinces. We exclude three provinces (British Columbia, Manitoba, and Newfoundland) because their student loan loss provisions are aggregated with other loan loss provisions. This leaves us with seven provinces and 105 government-year observations. For the U.S. sample, we similarly read the audited financial statements of the student loan authorities for the same period. We start with a list of 35 governmental and nongovernmental student loan authorities. To ensure that our U.S. sample matches the institutional setting of the provincial governmental student loans in the Canadian sample, we exclude 10 student loan authorities that are either nongovernmental or affiliated with municipal governments. Two additional authorities are excluded due to a lack of data, leaving us with 23 student loan authorities,[18] 18 (5) of which are audited by non-Big Four firms (Big Four firms). We then hand collect each of the available audited financial statements, and we obtain a sample of 284 government-year observations for the U.S. sample. In total, our sample has 389 observations. Table 1 presents the yearly distribution of observations. The number of yearly observations is very small in the early years of the sample period and then gradually increases. No single year accounts for more than 7% of the observations.

3.2 Conservatism and excessive conservatism measures

We measure conservatism using the following formula.

$$Conservatism\ (YE\_adj) = \frac{(Actual\ Provision - Estimated\ Provision)}{Total\ Population} \tag{1}$$

We extend our measure of conservatism by including the materiality in the formula, which allows us to measure excessive conservatism using the following formula.

$$Excessive\ Conservatism\ (EC) = \frac{(Actual\ Provision - Estimated\ Provision) - Materiality}{Total\ Population} \tag{2}$$

YE_Adj is the difference between the loan loss provision, as reported in the financial statement, and the estimated loan loss provision based on governmental guidelines, scaled by the total provincial (state) population for the Canadian (U.S.)

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[16] Baginski et al. (2002) explain that U.S. and Canadian companies are similar on many dimensions, and Khurana and Raman (2004) note that "… the role of the auditor in other Anglo-American countries is similar to that in the U.S."

[17] In Section 5.3, we further control for potential differences between the two economies.

[18] The states used in the sample are Alaska, Arizona, Arkansas, Connecticut, Georgia, Iowa, Kentucky, Maine, Massachusetts, Michigan, Minnesota, Missouri, Montana, New Jersey, New Mexico, North Carolina, North Dakota, Oklahoma, Pennsylvania, Rhode Island, South Carolina, Utah, and Vermont.

sample.[19] To derive *EC*, we also subtract from the denominator the materiality threshold. We obtain the actual accounting provision from the financial statements. To measure the estimated student loan loss provision for the Canadian sample, we obtain the Canadian government student loan loss provisioning rate, which is used by the government to prepare statutory reports. This rate is prepared by the Chief Actuary of Canada, which is independent from the provinces and is therefore unlikely to be biased. The rate uses the past collection experience of the national student loan pool to determine future expected losses. The rate varies over time and during our sample period, ranging from 9.0 to 14.2%. We then multiply the outstanding year-end student loan amount by the loan loss rate. The estimated provision represents the expected student loan loss provision, given the government guidelines, or the pre-adjusted provision. We then calculate the year-end adjustment to the provision as the difference between the actual and estimated provisions. A positive (negative) difference between the actual and estimated provisions will suggest a process to adjust the provision upward (downward), relative to the government's guidance. This finding will indicate whether the adjustment was conservative or aggressive.

To determine *EC*, we compare the difference between the actual and estimated provision to materiality, the quantitative threshold the auditor uses to assess the materiality of the errors detected in the financial statements during the audit. The comparison to materiality allows us to assess the significance of the year-end adjustments. A positive difference (that is, a difference greater than the materiality threshold) implies that the adjustments deviated significantly from the government methodology, which we view as *excessive conservatism (EC)*. In our tests, we also use the binary variable *EC_DUM*, which takes the value of 1 when *EC* is positive and 0 otherwise. We also report unscaled excessive conservatism, *EC_UNSC*, so that we can assess the economic significance. For the calculation of the materiality, note that the loan loss provision is disclosed within the government's consolidated financial statements. These financial statements combine financial information from all government departments. In the planning stage, the auditor first determines the consolidated financial statements' group materiality level, the maximum tolerated error/misstatement allowed for all the consolidated financial statements. A proportion of the group-level materiality is then assigned to each government department, which is referred to as the component-level materiality. For the Canadian loans, we use the group materiality of 0.5% of expenditures, consistent with government auditors' testimony (Public Accounts of Canada 2006) and documentary submissions to legislators (OAG Ontario 2012). The component materiality of the relevant Department of Education is calculated in accordance with Stewart and Kinney's (2013) software, using their component materiality calculator: GUAMcalc.[20] In Appendix 2, we provide a numerical example of an output of the calculation using GUAMcalc.

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[19] Population is the recommended deflator in the government accounting literature (Beck 2018). In Section 5.2, we describe our results using student population as the deflator.

[20] For group audits, the software calculates the component materiality amount for each component entity, using guidance from the International Standard on Auditing 600 Special Considerations – Audits of Group Financial Statements.

Table 1 Frequency of observations by year

Fiscal Year	Observations	%
1999	3	0.77
2000	7	1.80
2001	9	2.31
2002	9	2.31
2003	10	2.57
2004	13	3.34
2005	13	3.34
2006	15	3.86
2007	18	4.63
2008	21	5.40
2009	22	5.66
2010	24	6.17
2011	26	6.68
2012	25	6.43
2013	25	6.43
2014	25	6.43
2015	25	6.43
2016	27	6.94
2017	26	6.68
2018	26	6.68
2019	20	5.14
Total	389	100

We follow a similar process for the U.S. sample. The U.S. student loan authorities grant two types of loans: those guaranteed by the federal government (in our sample, for authorities that issue both types of student loans, 88% of the loans are guaranteed) and those that are not. To determine the estimated student loan loss provision for the guaranteed loans, we multiply the outstanding student loans by the annual student loan cohort default rate provided by the U.S. Department of Education for each state.[21] We then multiply it by the loss given default rate, which is equal to one minus the federal government's guarantee percentage (97% or 98%, depending on the year the loan was granted). For nonguaranteed student loans, we first obtain the student loan default rate from the U.S. Department of Education or from credit rating agencies, when available. Then we multiply the default rates by the loss given default rate, which ranges from 18.2% to 85.0% during our sample period. These rates are obtained from the Federal Reserve (Federal Reserve Bank of Kansas City 2013), bond offering information, and credit rating agency disclosures.[22] To

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[21] For the 2018 and 2019 financial years, we use the 2017 three-year cohort default rate. Results (untabulated) do not change if we exclude these two years.

[22] When the loan authority does not disclose the volume of the insured student loan data, we apply the uninsured loss given default rate.

determine the materiality level for U.S. loans, we use 3% of total assets, excluding the loan amount guaranteed, a threshold consistent with the guidance from the Financial Audit Manual of the U.S. General Accounting Office. Appendix 3 provides an example of the calculation of excessive conservatism for the Vermont Student Assistance Corporation, an entity that has both guaranteed and nonguaranteed student loans receivable.

3.3 Empirical models

To empirically examine the difference in conservatism between Canada and the United States (Hypothesis 1), we regress our measures of conservatism (*YE_Adj*) and excessive conservatism (*EC* and *EC_DUM*) on a country indicator and other control variables. The model is as follows.

$$
\begin{aligned}
YE\_Adj_{i,t} \text{ OR } \left(EC_{i,t}\right)_{\text{OR}} \left(EC\_DUM_{i,t}\right) = {} & \beta_0 + \beta_1 CAN_i + {}_+ \beta_2 SIZE_{i,t} \\
& + \beta_3 BUDGET_{i,t} + \beta_4 ELECTION_{i,t} + \beta_5 GDP\_GROWTH_{i,t} \\
& + \beta_6 UNEMPLOYMENT_{i,t} + \Upsilon_t + \varepsilon_{i,t}.
\end{aligned}
\tag{3}
$$

CAN, our variable of interest, is a binary variable set to 1 for observations from the Canadian sample and to 0 for observations from the U.S. sample. A positive and significant coefficient on *CAN* in both specifications will indicate not only a higher degree of conservatism in Canada but also the existence of excessive conservatism. We include a set of control variables that may affect the level of conservative reporting. *SIZE* is the natural logarithm of the total province or state population (Beck 2018). We control for size because studies find a positive association between population size and government accounting disclosure (Evans and Patton 1983; Christiaens 1999; Ryan et al. 2002). In addition, client size can affect the degree of conservatism (Reynolds and Francis 2000). *BUDGET* is a scaled measure of the jurisdiction's institutional disciplinary mechanisms requiring governments to run balanced budgets. The scale ranges from 0 (no institutional controls) to 10 (strict budgetary controls).

The U.S. Advisory Commission on Intergovernmental Relations (ACIR) uses the Balanced Budget Stringency Scale (U.S. Advisory Commission on Intergovernmental Relations (ACIR) 1987) to measure the strength of the jurisdiction's balanced budget legislation; thus we use the ACIR score for the U.S. observations. For the Canadian observations, we apply the ACIR's criteria to calculate the strength of each province's balanced budget legislation. We expect higher levels of institutional control over a government's fiscal management to be associated with conservative financial reporting. *ELECTION* is an indicator variable for an election year, which we include because, in an election year, governments have a stronger incentive to manipulate financial statements for political purposes (Kido et al. 2012). Consequently, we expect more pressure on governments in an election year to avoid deficits and consequently a negative relationship between *ELECTION* and the dependent variables. We also account for macroeconomic effects by including in the model *GDP_GROWTH*, the change in gross domestic product (Bargeron et al. 2010), and

UNEMPLOYMENT, the change in the state/province unemployment rate. All variables are described in detail in Appendix 1. Υ_t are year indicators that control for year fixed effects.

To test our second hypothesis about the determinants of government accounting conservatism, we augment the model with the following four variables corresponding to hypotheses 1a–2d: *PARTY* is an indicator variable set to 1 for right-leaning governments and to 0 for left-leaning governments. *BALANCE_PRE* is the budgetary balance, excluding the provision for student loan losses. *DEBT* is the state or province debt, scaled by GDP. *POL_COMP* is a measure of political competitiveness found in the political science literature based on the proportionate votes for each party (Endersby et al. 2002). We measure it using the general elections in Canada and the gubernatorial elections in the United States. We limit the analysis to political parties that have received more than 10% of the vote.[23]

We then run the model separately for the U.S. and Canadian samples to examine the effect of each variable separately in each country.[24] The model is the following.

$$
\begin{aligned}
YE\_Adj_{i,t\ OR}\ (EC_{i,t})_{OR}\ (EC\_DUM_{i,t}) = {} & \beta_0 + \beta_1 PARTY_{i,t} \\
& + \beta_2 BALANCE\_PRE_{i,t} + \beta_3 DEBT_{i,t} + \beta_4 POL\_COMP_{i,t} \\
& + \beta_5 SIZE_{i,t} + \beta_6 BUDGET_{i,t} + \beta_7 ELECTION_{i,t} + \beta_8 GDP\_GROWTH_{i,t} \\
& + \beta_9 UNEMPLOYMENT_{i,t} + \Upsilon_t + \varepsilon_{i,t}.
\end{aligned}
\tag{4}
$$

To test our third hypothesis that the year-end adjustments to student loan loss provisions harm future student lending, we regress student lending in year $t+1$ on year-end adjustments in year t and the other control variables as follows.

$$
\begin{aligned}
S\_Loans_{t+1,t} = {} & \beta_0 + \beta_1 YE\_Adj_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 BUDGET_{i,t} \\
& + \beta_4 ELECTION_{i,t} + \beta_5 GDP\_GROWTH_{i,t} + \beta_6 TUITION_{i,t} \\
& + \beta_7 UNEMPLOYMENT_{i,t} + \Upsilon_t + \varepsilon_{i,t}.
\end{aligned}
\tag{5}
$$

S_Loans_{t+1} is the outstanding loan assets by the end of year $t+1$. Our variable of interest is *YE_Adj*, the adjustment to the provision for student loan losses by the end of year t. A negative coefficient will indicate that adjustments to the provision influence future student lending. In other words, it will show that accounting choices have real-life consequences. We add to the model the variable *TUITION*, the average provincial undergraduate tuition fees for all fields of study. We also follow Beatty and Liao (2011) and include an indicator variable for the recession periods. The remaining control variables are those from the previous models.

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[23] The formula for the calculation of the level of political competition is: $c_{kj} = K^K \Pi_{t=1}^{k} p_{ij}$,
where c is the political competition, k is number of political parties, and p is proportion of political party votes.

[24] We do not use a single model with a country indicator interaction because the inclusion of multiple interaction terms results in multiple variables having a VIF greater than 10, an indication of multicollinearity.

4 Main results

Table 2 presents information on the distribution of the scaled and unscaled year-end adjustments to the provision and the three measures of excessive conservatism. The table also presents the distribution of the potential determinants of government accounting conservatism (hypothesis 2) and the control variables. The mean of the year-end adjustment to the provision is $27.7 million. The positive value suggests that, on average, the provision is adjusted upward. The mean year-end scaled adjustment to the provision is 8.6. The mean *EC*, the scaled measure for excessive conservatism, is equal to −5.203. The negative balance indicates that, for the entire sample, on average, the upward adjustment to the provisions is smaller than the materiality threshold and thus is not excessively conservative. We also observe that the binary variable *EC_DUM* is equal to 0.278, which means that, for 27.8% of the observations, the year-end adjustments are larger than the materiality threshold.

The mean for *PARTY* is 0.524, which means that the government is right-of-center for 52.4% of the observations. The mean of the financial operations before the provision for student loan losses (*BALANCE_PRE*) is 228.054. The mean of the debt-to-GDP ratio (*DEBT)* is 0.153. The mean of *POL_COMP* is 0.800, which indicates that a high level of political competitiveness for the bounds of the index is from zero to one. As for the control variables, the average state and province population is 4.2 million. The mean value for *BUDGET* is 6.224. The mean *ELECTION* is 0.278, which is expected, given that elections occur about every four years. The average GDP growth is 3.3%, and the average change in the unemployment rate is −0.039%.

Table 3, Panel A, presents the actual and estimated provisions for student loan losses. For the Canadian sample, the average actual and estimated student loan loss provisions are $159.1 million and $65.3 million, respectively. The $93.8 million difference (the year-end adjustment) is statistically significant (t-value = 3.852). This result shows that, in Canada, the year-end adjustments to the provision are conservative. For the U.S. sample, on the other hand, the actual and estimated provisions are much closer to each other ($19.2 million and $15.9 million, respectively) and are not statistically different (t-value = 1.370). In Panel B of Table 3, we present the actual and estimated provisioning rates for the expected student loan losses. For both samples, the actual rate is significantly larger than the estimated rate. This is consistent with conservative financial reporting, as the upward adjustments are significant.[25] We can see that, in Canada, there is a higher degree of conservatism, as compared to the United States. While the adjustments for the U.S. sample increase the provision by 2.4%, the adjustments for the Canadian sample increase the provision by 17.4%. However, we cannot make a direct inference about excessive conservatism, given that materiality is not considered in Panels A or B of Table 3. Panel C shows that the unscaled means of the year-end adjustments are $93.8 million in Canada

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[25] The default rates in the United States are lower simply because a large portion of U.S. loans are guaranteed by the federal government. In Canada, the federal government does not provide a similar guarantee to the provinces for their outstanding student loans.

Table 2 Descriptive statistics

	N	Mean	STD	P1	P25	P50	P75	P99
YE_Adj	389	8.625	22.928	−67.579	−0.492	0.238	7.907	96.335
YE_Adj UNSC	389	27.743	85.736	−46.509	−1.476	0.777	15.743	429.574
EC	389	−5.203	43.971	−264.463	−5.449	−2.247	0.939	85.247
EC_DUM	389	0.278	0.448	0.000	0.000	0.000	1.000	1.000
EC_UNSC	389	0.618	72.331	−196.532	−17.637	−5.539	2.149	342.721
CAN	389	0.270	0.444	0.000	0.000	0.000	1.000	1.000
PARTY	389	0.524	0.499	0.000	0.000	1.000	1.000	1.000
BALANCE_PRE	389	228.054	1556.955	−3363.550	−59.497	74.161	255.970	8019.141
DEBT	385	0.153	0.148	0.013	0.054	0.094	0.165	0.626
POL_COMP	389	0.800	0.231	0.149	0.766	0.890	0.943	0.995
SIZE	389	0.900	1.159	−1.988	−0.050	1.103	1.797	2.639
BUDGET	389	6.224	4.088	0.000	1.000	8.000	10.000	10.000
ELECTION	389	0.278	0.448	0.000	0.000	0.000	1.000	1.000
GDP_GROWTH	389	0.033	0.037	−0.089	0.021	0.034	0.046	0.164
UNEMPLOYMENT	389	−0.039	1.050	−1.800	−0.650	−0.200	0.200	4.120

This table presents the univariate statistics for the variables used to test H1 and H2. All variables are described in Appendix 1

and only $3.3 million in the U.S. The means of the scaled year-end adjustments are 32.927 and −0.359, respectively, and the difference is statistically significant (t-value = 16.581). The mean of *EC* is 18.487 for the Canadian sample and −13.962 for the U.S. sample, with the difference between the two samples being statistically significant. *EC_UNSC*'s values indicate that, on average, the provision adjustments *exceed* materiality by $53.4 million for the Canadian sample and are $18.9 million *below* materiality for the U.S. sample. Thus the difference between the two groups is both statistically and economically significant. The *EC_DUM* values indicate that, for 68.6% of the Canadian observations, the year-end adjustment to the student loan provision exceeds the materiality threshold or, in other words, is excessive, while this frequency is only 12.7% for the U.S. sample. The mean value of *PARTY* is 45.7% in Canada and 54.9% in the United States. This means that, in Canada (the United States), the government is slightly more often left (right) of center, but the difference between the countries is insignificant. The *BALANCE_PRE* is −125.485 in Canada and 358.765 in the United States, and the difference is significant. We also observe that Canadian provinces carry close to five times the level of debt of the U.S. states. *POL_COMP* obtains a significantly higher value for the U.S. observations, which means that there is more political competitiveness in the United States. *SIZE* is larger for the United States, indicating that the average state in our sample is larger than the average province. Budgetary control is stricter in the United States. The proportion of election year observations and GDP growth are not statistically different between the two countries. The insignificant difference in GDP growth speaks to the similarities of the two economies. Overall, the results reported

Table 3 Univariate analysis by country

Panel A: Actual and Estimated Provisions for Student Loan Loss by Country

Variable	Actual Provision	Estimated Provision	Difference	t-value
	Mean	Mean	Mean	
Canadian Sample	159.101	65.343	93.758	3.852***
U.S. Sample	19.214	15.878	3.336	1.370

Panel B: Annual Actual Default Rates and Estimated Provisioning Rates for Student Loan Loss by Country

Variable	Actual Provision Rate	Estimated Default Rate	Difference	t-value
Canadian Sample	28.8%	11.4%	17.4%	11.838***
U.S. Sample	7.8%	5.4%	2.4%	2.063**

Panel C: Univariate Statistics by Country

Variable	Canadian Sample	U.S. Sample	Difference	t−/z-value
	Mean	Mean	Mean	
Conservatism Measures				
YE_Adj	32.927	−0.359	33.286	16.581***
YE_Adj UNSC	93.758	3.336	90.422	10.423***
EC	18.487	−13.962	32.449	6.821***
EC_UNSC	53.437	−18.911	72.348	9.749***
EC_DUM	0.686	0.127	0.559	10.928***
Determinant Variables				
PARTY	0.457	0.549	−0.092	−1.616
BALANCE_PRE	−125.485	358.765	−484.250	−2.742***
DEBT	0.355	0.077	0.278	30.161***
POL_COMP	0.645	0.857	−0.212	−8.775***
Control Variables				
SIZE	0.187	1.163	−0.976	−7.931***
BUDGET	0.762	8.243	−7.481	−27.414***
ELECTION	0.276	0.278	−0.002	−0.039
GDP_GROWTH	0.037	0.032	0.005	1.035
UNEMPLOYMENT	0.001	−0.054	−0.053	0.459

Panel A presents the difference between the average actual and estimated student loan loss provisions. Panel B compares the actual and the estimated default rates for nonguaranteed student loans. Panel C provides a univariate comparison of the measures of conservatism, the determinants, and the control variables between the United States and Canada. *, **, and *** denote statistical significance at the 10%, 5% and 1% levels, respectively

in Table 3 provide initial evidence of more conservatism in Canada and even excessive conservatism by the Canadian provincial governments.

Table 4 presents the Pearson correlation matrix for all the variables for testing hypotheses 1 and 2. We find that *YE_Adj*, *EC*, and *EC_DUM* are positively and significantly correlated with *CAN* (correlation coefficients of 0.644, 0.328, and 0.554, respectively). Consistent with the results in Table 3, this finding suggests that the adjustments to the provision for student loan losses in Canada are more

Table 4 Pearson correlation matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13
1 YE_adj	1												
2 EC	0.572***	1											
3 EC DUM	0.691***	0.386***	1										
4 CAN	0.644***	0.328***	0.554***	1									
5 PARTY	−0.199***	−0.237***	−0.145***	−0.082	1								
6 BALANCE_PRE	−0.228***	−0.278***	−0.080	−0.138***	0.133***	1							
7 DEBT	0.662***	0.351***	0.509***	0.839***	−0.095	−0.096*	1						
8 POL_COMP	−0.362***	−0.109**	−0.410***	−0.407***	0.083	0.040	−0.458**	1					
9 SIZE	−0.188***	0.127**	−0.041	−0.374***	−0.044	−0.151***	−0.364***	0.133**	1				
10 BUDGET	−0.488***	−0.196***	−0.354***	−0.812***	0.099*	0.075	−0.731***	0.336***	0.444***	1			
11 ELECTION	−0.021	−0.007	−0.013	−0.002	0.004	0.015	0.017	0.008	−0.016	−0.056	1		
12 GDP GROWTH	−0.040	−0.121**	0.044	0.053	0.114**	0.241***	0.012	−0.002	−0.091*	−0.020	0.029	1	
13 UNEMPLOY-MENT	−0.028	0.002	−0.018	0.023	−0.062	−0.083	−0.006	0.013	0.069	−0.025	−0.092*	−0.333***	1

This table presents the Pearson correlation matrix for the variables used to test H1 and H2. *, **, and *** denote statistical significance at the 10%, 5% and 1% levels, respectively

Table 5 Determinants of government conservatism

Panel A: Multivariate Examination of Cross-Country Conservatism – Dependent Variable YE_Adj

		(1)	*(2)*	*(3)*	*(4)*	*(5)*
		YE_Adj	*YE_Adj*	*YE_Adj_CAN*	*YE_Adj_USA*	*YE_Adj*
CAN	H1	33.910***	37.237***			21.128***
		(12.964)	(11.861)			(4.175)
PARTY	H2a			−16.011***	−4.133***	−5.957***
				(−3.325)	(−3.137)	(−3.416)
BALANCE_PRE	H2b			0.014***	−0.002*	−0.002
				(4.173)	(1.865)	(−1.545)
DEBT	H2c			72.475***	26.818	57.371***
				(3.699)	(1.420)	(3.645)
POL_COMP	H2d			34.357***	−11.956***	−2.159
				(2.646)	(−2.816)	(−0.506)
SIZE			0.806	−1.278	1.928	0.237
			(0.852)	(−0.569)	(1.496)	(0.235)
BUDGET			0.354	5.653	0.489***	0.699***
			(1.534)	(1.167)	(2.600)	(3.060)
ELECTION			−1.147	2.952	0.652	−1.379
			(−0.462)	(0.483)	(0.478)	(−0.594)
GDP_ GROWTH			−3.953	77.171	−13.006	27.124
			(−0.118)	(1.266)	(−0.412)	(0.860)
UNEMPLOYMENT			1.827	5.032	2.274	2.229
			(1.246)	(0.937)	(1.199)	(1.531)
Intercept		6.314*	4.143	10.847	9.078**	3.030
		(1.728)	(0.858)	(0.727)	(2.349)	(0.555)
YEAR FIXED EFFECTS		YES	YES	YES	YES	YES
Adj R-Sq.		0.459	0.459	0.394	0.265	0.533
N		389	389	105	280	385

Panel B: Multivariate Examination of Cross-Country Conservatism – Dependent Variable EC

		(1)	*(2)*	*(3)*	*(4)*	*(5)*
		EC	*EC*	*EC_CAN*	*EC_USA*	*EC*
CAN	H1	32.350***	52.281***			26.398***
		(8.596)	(8.580)			(3.583)
PARTY	H2a			−19.144***	−11.042***	−15.667***
				(−3.746)	(−3.108)	(−4.349)
BALANCE_PRE	H2b			0.013***	−0.003*	−0.004**
				(3.582)	(−1.673)	(−2.194)
DEBT	H2c			63.831***	347.915***	104.808***
				(3.082)	(2.972)	(4.205)
POL_COMP	H2d			33.619**	−0.566	17.589
				(2.420)	(−0.044)	(1.632)
SIZE			10.115***	−0.086	21.414***	8.756***
			(3.792)	(−0.036)	(4.301)	(3.454)
BUDGET			1.232***	0.445	1.799***	1.881***
			(2.658)	(0.088)	(2.812)	(3.946)
ELECTION			0.367	3.134	1.381	0.032

Table 5 (continued)

		(1)	(2)	(3)	(4)	(5)
			(0.060)	(0.477)	(0.165)	(0.006)
GDP_ GROWTH			−192.027	76.756	−226.607	−114.453
			(−1.223)	(1.329)	(−0.945)	(−0.732)
UNEMPLOYMENT			−4.313	4.769	−3.583	−3.604
			(−1.317)	(0.825)	(−0.770)	(−1.153)
Intercept		−9.755	−30.847**	5.422	−68.684**	−47.985**
		(−0.979)	(−2.228)	(0.347)	(−2.475)	(−2.585)
YEAR FIXED EFFECTS		YES	YES	YES	YES	YES
Adj R-Sq.		0.065	0.152	0.333	0.241	0.237
N		389	389	105	280	385

Panel C: Multivariate Examination of Cross-Country Conservatism – Dependent Variable EC_DUM

		(1)	(2)	(3)	(4)	(5)
		EC_DUM	EC_DUM	EC_DUM_CAN	EC_DUM_USA	EC_DUM
CAN	H1	3.126***	11.237***			14.854***
		(9.084)	(7.588)			(5.811)
PARTY	H2a			−1.150	−1.157**	−0.989***
				(−0.986)	(−2.483)	(−2.639)
BALANCE_PRE	H2b			0.002***	−0.000	0.001***
				(3.057)	(−0.033)	(3.505)
DEBT	H2c			6.954*	−12.395	6.260**
				(1.873)	(−1.580)	(2.378)
POL_COMP	H2d			−0.633	−8.619***	−3.131***
				(−0.285)	(−3.191)	(−3.190)
SIZE				0.410**	0.949*	1.275**	0.796***
SIZE				(2.198)	(1.913)	(2.310)	(2.814)
BUDGET				0.867***	1.449	3.046**	1.415***
				(5.395)	(1.547)	(2.343)	(4.863)
ELECTION				−0.080	0.025	0.556	0.055
				(−0.199)	(0.031)	(0.919)	(0.137)
GDP_ GROWTH				6.261	−8.367	−6.338	6.388
				(1.056)	(−1.122)	(−0.537)	(1.162)
UNEMPLOYMENT				0.079	−1.201	0.895**	0.244
				(0.330)	(−1.464)	(2.033)	(0.981)
Intercept		−1.866***	−10.678***	−2.126***	−25.494**	−14.143***
		(−4.990)	(−6.607)	(−0.851)	(−2.291)	(−4.747)
YEAR FE		YES	YES	YES	YES	YES
Pseudo R-Sq.		0.211	0.283	0.090	0.116	0.346
N Obs.		389	389	105	280	385
Correctly Predicted		86.1%	87.4%	86.7%	91.4%	87.3%

This table presents the multivariate results of an OLS regression on the effect of the jurisdictions, determinants and control variables on the provision for student loan losses. In Panels A, B, and C, the dependent variables are *YE_Adj*, *EC*, and *EC_DUM*. Column 1 reports the results with only *CAN* included. In column 2, the control variables are added. In columns 3 and 4, the determinant variables are added for Canada and the United States, respectively. Column 5 reports the results for the entire sample, including the determinants and control variables. t-values are presented in parentheses. No individual VIF exceeds 10, the threshold suggested by Kennedy (2008). See Appendix 1 for variable definitions. *, **, and *** denote statistical significance at the 10%, 5% and 1% levels, respectively

conservative than in the United States and are even excessively conservative. We also find that those three measures of conservatism are negatively correlated with *PARTY*, *BALANCE_PRE*, and *POL COMP* and positively correlated with *DEBT*. Their correlation with *BUDGET* is negative, indicating that the governments are less conservative when the budgetary legislation is stricter. The levels of correlation among the explanatory variables are moderate, thus alleviating multicollinearity concerns. Nonetheless, we check the variance inflation factor (VIF) in all our tests, and we find that each individual variable VIF and mean VIF for each model are below the threshold of 10, as suggested by Kennedy (2008). Overall, the correlation matrix provides further evidence of more conservatism in Canada.

Table 5 presents the multivariate results of testing our first two hypotheses on cross-jurisdiction differences in government conservatism (H1) and on the determinants of government conservatism (H2).[26] Panels A, B, and C report the multivariate results with *YE_Adj*, *EC*, and *EC_DUM* as the dependent variables, respectively. Column 1 presents the results on the association of the binary variable *CAN* with each of the dependent variables without the control variables. In Column 2, we repeat the tests after adding the control variables. In both columns and across the three panels, *CAN* is positive and statistically significant. For example, from Panel C, Column 2, when using a logit regression and *EC_DUM* as the dependent variable, we observe a positive and significant coefficient for *CAN*, and the model correctly predicts the dependent variable 87.4% of the time. These findings support hypothesis 1 and suggest that, for the entire sample period, student loan loss provisions in Canada are significantly more conservative than in the United States and are also excessively conservative. As for the control variables, *SIZE* and *BUDGET* are positively associated with the dependent variable in both excessive conservatism models. In Columns 3 and 4, we add to the model *PARTY*, *BALANCE_PRE*, *DEBT*, and *POL_COMP* to test our second hypothesis about the determinants of government accounting conservatism separately for the Canadian and U.S. samples. In both Columns 3 and 4, the coefficient of *PARTY* is negative and significant (except for the Canadian sample when *EC_DUM* is used). These results suggest that, with regard to hypothesis 2a, in both countries, left-of-center governments report larger provisions for student loan losses. One potential explanation for this result is that the more generous social programs of left-leaning governments lead to greater debt levels of financially weaker students, resulting in greater loan default rates. With respect to the balance before accruing for student loan losses, the coefficient of *BALANCE_PRE* is positive and significant in Column 3 across the three panels. This suggests that Canadian governments try to smooth their budgets toward a balanced budget using the provision for student loan losses. In Column 4, the coefficient is negative and marginally significant in two out of the three specifications. This provides some evidence of a negative correlation in the United States between the provision and the budgetary development, which is more consistent with economic explanation: during bad economic times, the government is more likely to report larger deficits (higher spending, lagging tax collections, or both) and higher

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[26] We use robust standard errors because clustering by robust standard errors will result in biased standard errors due to too few clusters (Cameron and Miller 2015).

expected losses on outstanding student loans. Overall, the results are consistent with hypothesis 2b for Canada but not for the United States. The coefficient of *DEBT* is positive and significant for the Canadian sample. This suggests that higher debt motivates Canadian provincial governments to report more conservatively, which is consistent with hypothesis 2c. The coefficient of *DEBT* for the U.S. sample is only positive and significant in Panel B but not in Panels A or C. Thus, for the most part, we fail to find evidence consistent with hypothesis 2c for the U.S. sample. Canadian provincial governments carry much more debt than do U.S. state governments (refer to Table 3, Panel C); thus this might explain the existence of relationship between conservatism and debt in Canada but not in the United States. With respect to the effect of political competition on government accounting conservatism (hypothesis 2d), the coefficient of *POL_COMP* is positive and significant in Canada in two out of the three specifications, whereas, in the United States, it is negative and significant in two out of the three specifications. Thus the results provide some evidence that, in Canada, more competition from the opposition party leads the government to report more conservatively. The results also provide some evidence that, in the United States, in the face of political competition, the government chooses to reduce expenses and report more aggressively, potentially to improve its fiscal position. Finally, in Column 5, we report the results for the entire sample, including *CAN* and the determinants. In all panels, *CAN* obtains a positive and significant coefficient. Thus, even after controlling for government accounting conservatism, we continue to observe more conservative reporting in Canada. Overall, we find evidence that all the determinants we examine affect government financial reporting but not always in the same way.

To provide further evidence regarding the excessive nature of the year-end adjustments by the Canadian governments, we examine the relationship between the student loan loss provision adjustments and future loan write-offs. If the adjustments capture economic reality, they should predict losses. In other words, we should observe a positive association between the adjustments and future student loan write-offs. On the other hand, if the adjustments are excessively conservative, the write-offs will not be sensitive to the adjustments. Actual losses on student loans are often not reported separately from other loan losses. However, for 43 out of the 105 observations or approximately 40% of our Canadian sample, we find information on student loan write-offs. For this reduced sample, we then regress the student loan write-offs, scaled by population, in year $t + 1$, on the year-end adjustments (*YE_Adj*) in year t. We also include in the regression *Est_Allowance*, the estimated provision per the guidelines, and the control variables.

We report the results in Table 6. The first column shows a positive and significant association between the write-off and the estimated provision but an insignificant association with the year-end adjustments. These results suggest that the adjustments to the loan loss provisions are excessively conservative. Because of the relatively small number of observations and the effect on the degrees of freedom, we

run a second specification without controlling for year fixed effects,[27] and instead we add to the model *RECESSION*, a binary variable set to 1 for the years 2008 and 2009 and 0 otherwise, to reflect the Canadian recessions (Beatty and Liao 2011). As we show in the second column, the results we obtain are very similar.

The results of testing our third hypothesis on the association of government conservative reporting over the expected student loan losses and future student lending are presented in Table 7. Column 1 shows the results for the entire sample. We observe that the coefficient of *YE_Adj* is negative and significant. This is consistent with hypothesis 3 that government accounting conservatism harms future student lending. Governments are more likely to react to large changes in expected student loan losses than to small changes, given the societal effect of such changes. We therefore partition the sample into large and small adjustments at the median value of the absolute value of the adjustment. As expected, we find that, for large adjustments, *YE_Adj* is negative and significant (Column 2), while, for small adjustments, we find no such relationship (Column 3). Overall, the results show that government conservatism leads to credit rationing. Thus, within the government setting, we show that accounting choices have societal consequences.

5 Supplementary analysis

5.1 Refinement of the U.S. sample

Given that the United States is a much larger country, it is not surprising that its economy is more diverse than Canada's, with large economic differences across its regions. If the U.S. lending authorities in our sample are concentrated in regions with economies that differ significantly from those in Canada, this will reduce the comparability of the two samples. Thus, to further reduce the economic differences between the two countries, we identify the top two industries in each province and state, using data from Statistics Canada and the U.S. Bureau of Economic Analysis. We then match U.S. states to Canadian provinces if they have the same two leading industries and remove the unmatched U.S. observations. This sample of 124 U.S. observations better matches the Canadian sample in terms of economic similarity. We then re-perform our government accounting conservatism tests and continue to find that the Canadian provincial governments report more conservatively (untabulated).

5.2 Scaling by the student population

To be consistent with public-sector research, we scale our nonratio measures by the total population. However, because our study focuses on student loan loss provisions, for robustness, we scale those variables by the student population to create a more meaningful ratio: the expected student loan loss per student.

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[27] Because most of the write-off data are from the later years, there are only 12-year fixed effects in the model.

Table 6 Association between year-end adjustments to student loan loss provisions and future student loan write-offs

	WRITE-OFF	WRITE-OFF
Est_Allowance	**0.524***	**0.458***
	(3.926)	**(2.936)**
YE_Adj	**0.083**	**0.115**
	(1.178)	**(1.331)**
SIZE	−1.272	−2.273***
	(−1.203)	(−3.003)
BUDGET	−0.757	−3.103*
	(−0.308)	(−1.780)
ELECTION	0.850	0.802
	(0.209)	(0.177)
GDP_GROWTH	39.457	55.709
	(0.753)	(1.373)
UNEMPLOYMENT	1.295	3.790
	(0.254)	(0.875)
RECESSION		3.646
		(0.399)
INTERCEPT	−18.091*	−3.080
	(−1.656)	(−0.469)
YEAR FIXED EFFECTS	YES	NO
Adj. R-sq.	0.538	0.404
N	43	43

This table presents the multivariate results of an OLS regression on the association between student loan write-offs in year $t+1$ and the estimated student loan loss provisions and year-end adjustments to the provisions in year *t*. Column 1 incudes year fixed effects, whereas column 2 includes the variable *RECESSION* instead. t-values are presented in parentheses. No individual VIF exceeds 10, the threshold suggested by Kennedy (2008). See Appendix 1 for variable definitions. *, **, and *** denote statistical significance at the 10%, 5% and 1% levels, respectively

We then repeat our tests. For brevity, we only tabulate the main tests in Table 8, Panels A–C.[28] The results are highly consistent with the results of testing our hypotheses. Another potential concern is that we make various assumptions for our measure of the dependent variable when testing hypotheses 1 and 2. To address this concern, we repeat these tests using the natural logarithm of the actual provision for student loan losses as the dependent variable and the natural logarithm of the unscaled estimated provision as one of the explanatory variables. The untabulated results are consistent with our results reported in Table 5.[29]

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[28] The remaining untabulated tests are also consistent with the main results.

[29] We thank an anonymous reviewer for proposing this test.

Table 7 Association between future student loans and year-end adjustments

	(1)	(2)	(3)
	S_Loans_{t+1}	S_Loans_{t+1}	S_Loans_{t+1}
YE_Adj	−6.437***	−7.480***	−5.223
	(−4.363)	(−4.956)	(−0.059)
SIZE	−131.578***	−154.012***	43.163
	(−4.147)	(−4.307)	(0.615)
BUDGET	−7.579	5.523	2.525
	(−0.766)	(0.530)	(0.124)
ELECTION	69.032	27.417	82.525
	(0.957)	(0.258)	(0.931)
GDP_GROWTH	943.517	−48.423	4611.277**
	(1.061)	(−0.048)	(2.241)
TUITION	0.003	−0.004	0.042
	(0.425)	(−0.637)	(1.507)
UNEMPLOYMENT	55.743	88.713*	22.743
	(1.457)	(1.821)	(0.284)
INTERCEPT	585.608***	784.365***	−109.608
	(4.422)	(4.304)	(−0.375)
Fixed Effects	YES	YES	YES
Adj. R-sq.	0.114	0.155	0.112
N	370	191	179

This table presents the multivariate results of an OLS regression of the association between the year-end adjustments YE_Adj and student loans in year $t+1$. In column 1, the independent variable of interest is YE_Adj, and the full sample is used. Columns 2 and 3 report the results for the observations above and below the median value of the absolute adjustment, respectively. No individual VIF exceeds 10, the threshold suggested by Kennedy (2008). See Appendix 1 for variable definitions. *, **, and *** denote statistical significance at the 10%, 5% and 1% levels, respectively

5.3 Other determinants and additional robustness tests

We also considered two other determinants of government accounting conservatism. For brevity, these results are untabulated. Studies emphasize the importance of the characteristics of the bureaucrat for public policy decisions (Bendor et al. 1987; Abney and Lauth 1986). We follow Ingram (1984) and examine the CPA status of the chief accountant as a surrogate for financial ability. Because we find that, in Canada, all chief accountants have a CPA designation, we limit this analysis to the United States, where this rate is 68%. We find that financial ability is not associated with government accounting conservatism. We next examine the effect of auditor tenure (Jenkins and Velury 2008). Given that all audits in Canada are done by government auditors, we limit this analysis to the United States. We find that auditor tenure is significantly and positively associated with government accounting conservatism, thus indicating that, as tenure increases, auditors increasingly negotiate

Table 8 Results using student population as a scalar

Panel A: Multivariate Examination of Cross-Country Conservatism – Dependent Variable YE_Adj

		(1) YE_Adj	(2) YE_Adj	(3) YE_Adj_CAN	(4) YE_Adj_USA	(5) YE_Adj
CAN	H1	0.699***	0.767***			0.425***
		(11.643)	(10.367)			(3.386)
PARTY	H2a			−0.410***	−0.078***	−0.124***
				(−3.367)	(−2.785)	(−3.175)
BALANCE_PRE	H2b			0.012***	−0.002*	−0.002
				(4.067)	(−1.829)	(−1.380)
DEBT	H2c			2.224***	0.168	1.310***
				(3.945)	(0.482)	(2.871)
POL_COMP	H2d			0.529**	−0.176**	−0.009
				(2.098)	(−2.321)	(−0.108)
SIZE			−0.001	−0.129**	0.042	−0.009
			(−0.028)	(−2.639)	(1.549)	(−0.413)
BUDGET			0.009*	0.352***	0.007**	0.017***
			(1.957)	(2.768)	(2.078)	(3.347)
ELECTION			−0.032	0.055	0.019	−0.031
			(−0.630)	(0.406)	(0.690)	(−0.635)
GDP_ GROWTH			−0.030	1.397	−0.311	0.576
			(−0.041)	(1.122)	(−0.437)	(0.774)
UNEMPLOYMENT			0.032	0.129	0.052	0.042
			(0.995)	(1.078)	(1.262)	(1.274)
Intercept		0.131	0.092	−0.021	0.157**	0.010
		(1.491)	(0.892)	(−0.059)	(2.112)	(0.084)
YEAR FIXED EFFECTS		YES	YES	YES	YES	YES
Adj R-Sq.		0.434	0.431	0.392	0.253	0.502
N		376	376	105	268	373

Panel B: Multivariate Examination of Cross-Country Conservatism – Dependent Variable EC

		(1) EC	(2) EC	(3) EC_CAN	(4) EC_USA	(5) EC
CAN	H1	0.590***	0.911***			0.433***
		(8.315)	(8.321)			(2.990)
PARTY	H2a			−0.421***	−0.183***	−0.266***
				(−3.533)	(−3.074)	(−4.330)
BALANCE_PRE	H2b			0.011***	−0.003*	−0.003*
				(3.932)	(−1.765)	(−1.862)
DEBT	H2c			1.929***	4.948***	1.971***
				(3.539)	(2.811)	(3.981)
POL_COMP	H2d			0.515*	−0.062	0.246
				(1.953)	(−0.320)	(1.467)
SIZE			0.147***	−0.070	0.344***	0.130***
			(3.528)	(−1.407)	(4.425)	(3.157)
BUDGET			0.022***	0.173	0.030***	0.035***
			(2.766)	(1.421)	(2.904)	(4.057)
ELECTION			−0.005	0.062	0.059	−0.002

Table 8 (continued)

		(−0.055)	(0.451)	(0.513)	(−0.017)
GDP_ GROWTH		−2.275	1.424	−2.577	−1.108
		(−1.060)	(1.196)	(−0.820)	(−0.517)
UNEMPLOYMENT		−0.048	0.115	−0.017	−0.036
		(−0.916)	(0.939)	(−0.230)	(0.694)
Intercept	−0.108	−0.448**	−0.079	−1.016**	−0.744**
	(−0.689)	(−2.056)	(−0.230)	(−2.449)	(−2.581)
YEAR FIXED EFFECTS	YES	YES	YES	YES	YES
Adj R-Sq.	0.115	0.182	0.352	0.267	0.283
N	376	376	105	268	373

Panel C: Association between Future Student Loans and Year-End Adjustments

	(1)	**(2)**	**(3)**
	S_Loans_{t+1}	S_Loans_{t+1}	S_Loans_{t+1}
YE_Adj	−3.415***	−3.935***	−95.434
	(−2.709)	(−3.002)	(−1.246)
SIZE	−4.036***	−4.418***	−1.834
	(−7.232)	(−7.653)	(−1.463)
BUDGET	−0.180	0.086	−0.290
	(−1.085)	(0.492)	(0.681)
ELECTION	1.075	0.223	1.753
	(0.990)	(0.144)	(1.160)
GDP_GROWTH	7.298	−6.310	65.961**
	(0.588)	(−0.481)	(2.145)
TUITION	−0.014***	−0.016***	−0.001
	(−3.783)	(−4.507)	(−0.036)
UNEMPLOYMENT	0.811	1.399*	0.389
	(1.363)	(1.812)	(0.326)
INTERCEPT	13.998***	16.437***	7.677
	(6.171)	(5.474)	(1.482)
Fixed Effects	YES	YES	YES
Adj. R-sq.	0.145	0.191	0.086
N	367	189	178

Panels A and B of this table replicate the results of Table 5, Panels A and B, except that our measures of conservative accounting are scaled by the *student* population instead of the *total* population. Column 1 reports the results with only *CAN* included. In column 2, the control variables are added. In columns 3 and 4, the determinant variables are added for Canada and the United States, respectively. Column 5 reports the results for the entire sample, including the determinants and the control variables. Panel C replicates the results of Table 6, except that our measures of conservative accounting are scaled by the *student* population instead of the *total* population. In column 1, the independent variable of interest is *YE_Adj*, and the full sample is used. Columns 2 and 3 report the results for the observations above and below the median value of the absolute adjustment, respectively. t-values are presented in parentheses. No individual VIF exceeds 10, the threshold suggested by Kennedy (2008). See Appendix 1 for variable definitions. *, **, and *** denote statistical significance at the 10%, 5% and 1% levels, respectively

more conservative estimates with their climates. Finally, we account for the possibility that the government guidelines for the default rates are slow to incorporate macroeconomic changes. To account for this possibility, we use one-year-ahead (instead of current) default rates and repeat our tests. Our interpretation of the results remain unchanged under this specification.

6 Conclusion

Using the year-end adjustments to the provision for student loan losses, we examine differences in government conservatism in Canada and the United States. We also examine the within-country determinants of government accounting conservatism and their societal consequences.

American society is a more individualistic and masculine society and is less concerned about uncertainty avoidance, as compared to Canada. These cultural attributes have been shown to be associated with accounting choices (Schultz and Lopez 2001; Salter et al. 2013), earnings management (Nabar and Boonlert-U-Thai 2007; Han et al. 2010), and financial reporting practices, such as benchmark beating (Kanagaretnam et al. 2011). These cultural traits have also been found to be associated with less conservative accounting practices (Kanagaretnam et al. 2014). We therefore predict and find consistent evidence that the provincial governments in Canada exercise a higher degree of conservatism—and even excessive conservatism—over the provision for student loan losses than do state-run loan authorities in the United States.

We next examine the within-country determinants of government accounting conservatism. We find that government political ideology plays a role. Specifically, we find that the provisions are larger under left-leaning governments than under right-leaning ones. A plausible explanation is that left-leaning governments promote more social programs, including more accessible student loans, resulting in lending to financially weaker students and larger defaults. We also find evidence that, in both countries, higher levels of government debt encourage more conservative reporting. We also find that government financial reporting incentives and political competition affect government accounting conservatism differently in Canada and the United States. We then examine whether conservatism over the provision has a societal impact. We find a negative association between the provision and future student lending. Put differently, government accounting conservatism leads to credit rationing.

We contribute to the literature on public sector financial reporting by studying accounting conservatism, an important yet overlooked aspect of government financial reporting. Future research can extend this line of research by identifying other determinants and consequences of government accounting conservatism. For example, studies can examine whether greater conservatism eases accessibility to external funding and whether it allows governments to borrow at a lower interest rate. Finally, we introduce a new measure to the literature, excessive conservatism. While our measure is specific to our setting, we hope it will inspire researchers to adapt it to other settings.

Appendix 1: Variable definitions

Variable name	Definition
EC	The difference between the actual student loan loss provision and the estimated, pre-adjusted provision minus the materiality threshold amount, scaled by the province (state) population for the Canadian (U.S.) sample.
EC_UNSC	The difference between the actual student loan loss provision and the estimated, pre-adjusted provision minus the materiality threshold amount, in millions of dollars.
EC_DUM	A binary variable set to 1 if EC is positive and to 0 otherwise.
YE_Adj	The difference between the actual and estimated loan loss provisions, scaled by population.
YE_Adj_UNSC	The difference between the actual and estimated loan loss provisions, in millions of dollars.
CAN	A binary variable set to 1 for the Canadian observations and to 0 for the U.S. observations.
PARTY	A binary variable set to 1 when a right-of-center political party forms the government in the Canadian provinces and set to 1 in the U.S. when the governor of the state is a Republican and to 0 otherwise.
BALANCE_PRE	The province's operational balance before the year-end adjustment to the student loan loss provision, scaled by population.
DEBT	The annual ratio of provincial/state debt outstanding to provincial/state GDP.
POL_COMP	A measure of political competitiveness (Endersby et al. 2002): $c_{kj} = K^K \Pi_{t=1}^k p_{ij}$ where: c = political competitiveness; K = number of political parties participating in the election; p = political party proportion of the votes.
SIZE	The natural logarithm of the provincial or state population.
BUDGET	Ordinal ranking of budget-balanced legislation effectiveness, ranging from 0 (no legislative controls) to 10 (strict controls).
ELECTION	A binary variable set to 1 for election years and to 0 for non-election years.
GDP_GROWTH	The provincial/state GDP growth change rate.
WRITEOFF	The amount of student loan write-offs, scaled by population.
Est_Allowance	The expected student loan loss provision, calculated based on the government guidelines, scaled by population.
S_Loan	Student loans outstanding, scaled by total population.
UNEMPLOYMENT	The change in the provincial annual unemployment rate, multiplied by 100.
TUITION	The average provincial undergraduate tuition fees for all fields of study.
RECESSION	A binary variable set to 1 for the years 2008 and 2009 and 0 otherwise, to reflect the years of Canadian recessions.

Appendix 2: Component materiality calculation

The following is an output of the component materiality, as calculated by GUA-Mcalc (Stewart and Kinney 2013) for the Province of Ontario. Group materiality refers to the materiality level for group-level financial statements, and component materiality refers to the materiality level assigned to the component level (health, education, etc.).

Group Materiality: $708 million
Desired Group Assurance: 95%

Component Name	Component Expenses	Component Size	Component Materiality
Health	$56,025	40%	$267
Education	$26,204	18%	$200
Children's and Social Services	$16,006	11%	$165
Environment, Resources, and Economic Development	$12,714	9%	$151
Interest on Debt	$11,709	8%	$146
Post-secondary and Training	$10,131	7%	$138
Justice	$4618	3%	$100
General Government and Other	$4318	3%	$97

Appendix 3: Calculation of excessive conservatism

Panel A: Information from the 2017 Vermont Student Assistance Corporation Financial Statements (in millions)

Student Loans Receivable	$883
Allowance for Loan Loss	$(28)
Total Student Loans Receivable	$855
Total Assets	$1003
U.S. Department of Education Guarantee	$586

Panel B: Calculation of the Estimated Allowance (in millions)

	A	B	C	D = (A*B*C)
	Student Loans Receivable	Default Rate	Loss Given Default Rate	Estimated Provision
Insured by the Department of Education	$586	5.9%	3.0%	$1

Uninsured by the Department of Education	$297		
	11.0%	80.0%	$26
Total	$883			$27

Panel C: Calculation of Materiality (in Millions)

E	F	G = E*F
Total Assets	Quantitative Materiality Rate	Materiality
$435[30]	3%	$13

Panel D: Comparison of Excessive Conservatism (in millions)

G	H	G – H
Materiality	(Actual Provision – Estimated Provision)	Difference
$13	($28 - $27)	($12)

The Department of Education's insured student loan default rate is the 2015 Vermont three-year cohort default rate (2015–2017). The uninsured Department of Education's rates were obtained from the S&P Global Ratings.

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[30] 1003 – (586 * 0.97) = 435. This is because 97% of the loan is guaranteed.

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