Small Bus Econ (2008) 31:363–377
DOI 10.1007/s11187-007-9063-0

Does securities regulation constrain small business finance? An empirical analysis

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Received: 4 June 2006 / Accepted: 24 April 2007 / Published online: 4 July 2007

Abstract In November 2001, the Canadian province of Ontario amended the private placement regulations considerably to facilitate access to equity financing by small and medium sized enterprises (SMEs). To determine the extent to which securities regulation is an effective constraint on financing of growth corporations, we analyze issue activity before and after this change took effect. We note an increase in the number of issues, but only a slight increase in the total amounts raised on the private market following the reform. The average size of the issues has thus decreased. Some of the observed changes can be traced to concurrent events, namely the burst of the technology bubble and the strong increase in the prices of natural resources, which represent a major sector in Canada. When we control for various factors that influence issue activity, we observe a statistically significant effect only on the number of issues by closed corporations, which seems to originate from the non-resource companies. These results do not rule out the conclusion that the reform eased the issue of small amounts of money by private companies. However, our results do not confirm the argument that securities regulation is a major constraint to small business finance.

Keywords Small business finance · Constraint · Securities regulation · Private placement

JEL Classifications K22 · G38 · G32 · L26

1 Introduction

Small and medium sized enterprises (SMEs) face financial constraints (Kim 1999), which are particularly imposing on technology firms (Giudici and Paleari 2000). Oliveira and Fortunato (2006) summarize an extensive body of literature that generally concludes that financial constraints impede the growth of SMEs, and illustrate this negative impact in Portugal. Several authors contend that these constraints are partially explained by securities regulation requirements. In Canada, as in Europe (Chiu 2003) and in the US (Cohn 1999), securities regulation is often perceived as a major obstacle to small business finance. The president of the US Congress sub-committee opened the hearings on the

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SEC's role in capital formation[1] by stating: *I am greatly distressed by the concerns that fundamental regulatory obstacles are inhibiting the flow of capital to and investor participation in the small and middle market business sector. This hearing is the sub-committee's first step in determining how we, in Congress and the Commission, can effectively eliminate those obstacles for all participants in our Nation's capital markets*. Moreover, Huffman (2000) argues that *the past century of regulation has significantly disadvantaged small and emerging business relative to big and established business, resulting in significant losses in innovation and economic productivity* (United States G.P.O. 2001, p. 1). In Canada, MacIntosh (1994) identified legal and institutional barriers to financing innovating companies. Notably, he cites the proportionately higher cost of initial disclosure of information during initial public offerings (IPOs), the constraints caused by regulatory escrow requirements[2] and the costs associated with disclosure requirements imposed on public companies.

It is generally acknowledged that the securities laws have an enormous impact on the ability of start-up companies to obtain private equity. Nonetheless, empirical evidence of the real effects of regulatory constraints is sparse. According to Eckbo et al. (2007), *additional research is needed to increase our understanding of the impacts of national securities laws (…) for firm issuance decisions*. As Cohn asserts (1999, p. 365), *statistical evidence does not exist regarding the extent to which small and developing companies have been impeded by federal and state securities laws from raising capital in a timely and sufficient manner*. The only way to efficiently test the effects of such constraints is to examine the behavior of issuers around major changes in the pertinent regulation. Investigating such effects in the US is problematic, because, as Cohn notes (p. 317), *the SEC reforms have failed to alleviate significant regulatory problems for developing companies*. We consequently examine an alternative significant regulatory amendment put forth in Canada in 2001 to facilitate equity financing for SMEs. The purpose of this study is to analyze the impact of this significant regulatory change on the private equity activity of the companies concerned. We propose an original avenue for the analysis of financing constraints.

The next section presents the highlights of the regulatory changes and their anticipated effects. Section 3 describes the model and discusses control variables. Section 4 presents the data. Section 5 contains the results of the empirical models. Section 6 is devoted to an in-depth analysis of industry and size interactions, to explain the post-regulation changes in private equity activity. Lastly, we present concluding remarks.

2 Regulatory amendments and their effects

Growing private companies can be financed either by private placements or by IPOs[3]. Issuers of public placements become reporting issuers, subject to the securities regulation requirements[4]. They must abide by disclosure requirements and issue a prospectus during IPOs. Becoming a reporting issuer following an IPO eliminates a large portion of the financing constraints (Kim 1999), but imposes considerable costs and delays, even on junior markets (Martin 2001). These high-flotation costs are seen as a barrier to small business financing. The costs are higher for small issues because of fixed issuing costs. This situation has led small issuers to use the private market more frequently. On the exempt market, closed corporations can thus raise funds without a prospectus or registration. Open companies can also issue private placements (Private Investment in Public Equity or PIPEs) instead of proceeding with Seasoned Equity Offerings (SEOs). Disclosure requirements are then fewer, time frames are shorter and trading can take place without an intermediary.

[1] "The SEC's role in capital formation: Help or Hindrance" is available online at: http://commdocs.house.gov/committees/bank/hba73742.000/hba73742_0f.htm.

[2] These rules, that limit the resale of shares acquired by exemption, rest on the concept that large shareholders and executives will tend to act consistently with other shareholders if they are obliged to hold their shares for a long period.

[3] See Chiu (2003) for a comparison of the issue systems available to growth companies in the UK.

[4] In terms of securities regulation, a reporting issuer is an issuer that has issued securities in respect of which a prospectus was filed and a receipt was issued. Some reporting issuers do not have stocks listed on an exchange, but a publicly traded corporation should be a reporting issuer. We thus distinguish the two categories of issuers in this study, an approach we consider more relevant than the classic distinction of traded versus non-traded securities.

Issues raised under this plan are known as exempt public offerings. Before the 2001 changes, the conditions that allow a company to use the exempt market were seen as unclear and very restrictive, according to the Ontario Securities Commission (OSC) Task Force on Small Business Financing (Ontario Securities Commission 1996). The rules and the interpretation issued by the Courts limited sales on the exempt market (1) to people that do not need a prospectus disclosure to invest (knowledgeable people) and that have common bonds of interest or association with the seller (friend or relative) (2) to stocks for amounts > $150,000. Moreover, shares issued under these conditions were restricted to resale. According to the OSC (1996, p. 45) *The restrictions inherent in some of the exemptions, and the restrictive manner in which the scope of certain of the exemptions have been interpreted, have in our view unduly restricted SME capital formation*.

The final report of the Task Force on Small Business Financing (Ontario Securities Commission 1996) formulates several recommendations to facilitate equity financing for SMEs, which were implemented in 2001. The changes initially had two main components. On November 30, 2001, significant changes to Rule 45–501, Exemption and Private Placements, took effect in Ontario. The new rules introduce the concept of "accredited investor" and allow securities to be issued to such investors exempt from the prospectus requirement. Moreover, a new concept of company was created. The "closely held issuer" can raise up to C$3,000,000 from a limited number of persons (25) regardless of the sophistication or other qualifications of those persons. This number does not include employees, certain former employees, and accredited investors. Issuers are only required to provide investors with a short generic document explaining what to look for when assessing a small business investment. These changes significantly eased the usage conditions of exempt private placements. Moreover, Multilateral Instrument 45–102 (MI 45–102)[5], implemented concomitantly, reduced the retention periods applicable to these placements from 4 to 2 months. The Finance Minister of Ontario justified the effort to facilitate the use of private placements as follows: *the OSC's rule, Rule 45–501 Exempt Distributions, introduces new private placement exemptions to make it easier to raise money in Ontario capital markets (…). Private placements allow businesses to issue stock without going through these full securities procedures. Private placements offer significant financial savings and are useful for start-up companies seeking to attract "angel" investors*.[6]

According to the OSC, Rule 45–501 was adopted to facilitate equity financing for SMEs. Indeed, the regulatory changes impacted both reporting and non-reporting issuers, but are mainly intended to affect the latter. Rule 45–501 allows non-reporting issuers to issue significant amounts from several shareholders, outside of the prospectus, and registration requirements. In terms of disclosure requirements, the regulatory changes do not modify the situation of reporting issuers that already disclose complete information. The main effect of the changes for this category of issuer was to allow them to place securities with investors that, prior to the reform, did not meet the exemption criteria. The main effect of the changes should thus be observable among non-reporting issuers.

To our knowledge, only one study analyzes the impact of these modifications on issue activity (Ontario Securities Commission 2003). This study concludes that, overall, the value of investments increased from an annual average of C$6.2 billion during the 1995−1998 period to C$20.97 billion for the 11 months after Rule 45–501 came into force in late 2001. Confirmation of this result would indicate that regulatory constraints have a significant effect on SME financing. However, to demonstrate such an effect of a regulatory change, all the factors that influence issues must be taken into consideration. It is also crucial to distinguish the activity of the three categories of issuers that use private placement, namely reporting issuers, non-reporting issuers, and funds, which were not affected by the reform. Therefore, this study tests the following hypothesis: regulatory changes that occurred in Ontario are not

[5] In Canada, the securities regulation falls under provincial jurisdiction. Rule refers to a provincial disposition. Multilateral Instrument corresponds to a disposition implemented in several provinces, and follows a proposal by the Canadian Securities Administrators.

[6] At: http://www.fin.gov.on.ca/english/media/2001/bk-osc-rule.html.

associated with a significant increase in private financing of closed companies.

3 Methodology

Public stock issues are highly volatile. Researchers have documented hot and cold issue market phases for both IPOs (Helwege and Liang 2004) and SEOs (Bayless and Chaplinsky 1996). The two cycles seem to be related but are neither simultaneous nor explained in the same way (Howe and Zhang 2004). In the case of initial issues, hot issues markets are associated with greater initial undervaluation, abnormally high-issue volumes, and oversubscription of the issues. Lowry and Schwert (2002) acknowledge that the factors that drive these fluctuations are little understood. Three hypotheses explain changes in public issuing activity: informational asymmetry and adverse selection, relative optimism of investors (investor sentiment), and demand for capital.

Private placement activity is also variable, and seems to be partly linked to the activity and valuation of the public market (Gompers et al. 2005). To our knowledge, no model of the variations in private placement activity exists. We therefore use the main explanatory factors of public issuing activity to produce an explanatory model of private placement, in order to capture the effect of regulatory change.

Choe et al. (1993) underline the importance of the adverse selection problem. They demonstrate that issue activity is inversely related to market uncertainty concerning the value of firms' assets in place. Consistent with these authors we use the standard deviation of daily market returns within the previous month as a proxy for asymmetric information. We anticipate a negative relationship between this variable and issuing activity.

Demand for capital is often associated with economic conditions. We have introduced variations in the economic indicator of GDP computed by Statistics Canada, with one to three lags. Because we did not observe a significant relationship between this indicator and the issues, the results are not reported. It is possible that this period is too short for significant relations to emerge, especially because economic growth was constant during the 8 years examined. This result is similar to the findings of Bayless and Chaplinsky (1996), who also observed that the relationship between issue activity cycles and economic conditions is not very significant[7].

The IPOs are more frequent when the market conditions are favorable for issuers (Helwege and Liang 2004). SEOs also take place when the company valuation is maximal (Bayless and Chaplinsky 1996) and after periods of high-stock market returns. Pástor and Veronesi (2003) develop a model of IPO market timing and predict that IPO waves should be preceded by high-market returns, followed by low-market returns accompanied by high-stock prices. They contend that their model might also be applied to public firms, although the relationship between market returns and private placement has not been specified. Private placement issuers may be less sensitive to market conditions than are public placement issuers. It is also possible that issuers prefer to raise public issues when stock markets are favorable and private placements when they are not. This assertion is borne out by the stylized facts presented by Carpentier et al. (2005) regarding placements of open companies. Public issues are largely dominant in 1999 and 2000, a period associated with the technology bubble, while private placements predominated in 1994 and 1995, a period of lackluster stock market returns. Consistent with Bayless and Chaplinsky (1996), we develop a performance indicator of the market based on the Canadian stock market index[8]. Because the private equity market concerns the small and medium sized companies more than larger ones, we use the Nesbitt Burns Canadian Small Caps Index[9].

The period under analysis is characterized by the technological bubble and by the strong increase in

[7] Howe and Zhang (2004) explore other proxies for investment opportunity, namely analysts' expected future earnings growth and the discount rate (1-year T-bill rate). These indicators do not explain a significant portion of issue activity and they are not considered here. They also introduce the aggregate market-to-book ratio as a measure of investment opportunities. We treat this variable as a measure of stock market sentiment.

[8] The Canadian index is strongly influenced by natural resources, whereas private placement mainly occurs in technology sectors. We tested the model by replacing the global index with the technology stock sub-index, without observing significant differences.

[9] Nesbitt Burns Canadian Small Cap Index includes common shares of all Canadian companies trading on the Toronto and Montreal stock exchanges with a total capitalization at the beginning of each month which does not exceed 0.1% of the total capitalization of the TSE 300 index.

resource and energy prices. Both events should influence the activity and characteristics of the issuers of private equity. In Canada, using the market-to-book equity ratio, we can reasonably establish that the technology bubble began in November 1999 and finished in January 2001: the market-to-book ratio for the information technology sector was close to 2.4 in October 1999, reaches 6.3 in March 2000 and was back to 2.2 in February 2001. The resources sector is very important in Canada, according to the Thomson's Cancorp Financial Database. In 2005, 38% of listed companies can be classified as resource based. The prices of oil, natural gas, and several other natural resources increased continuously during the period under analysis, but the increase was particularly sharp during the post-45–501 period. The value of the resources index of the TSX climbed from 1,020 (November 2001) to 3,235 by the end of 2005. It was at 872 in November 1997. In Canada, private equity seems to be largely clustered in resources and technology equity (Carpentier et al. 2005), and the changes in valuation in these sectors probably explain the number and size of private equity issues. Controlling for the effects of these contemporaneous events is required. We introduce an indicator for the performance and expectations in the three following sectors, Oil and Gas, Materials and Information Technology[10], by using the changes in their aggregate market-to-book ratios. In each case, following the method used by Bayless and Chaplinsky (1996), we express the ratio in month t relative to the average ratio of the 36 previous months. A positive relationship is anticipated between these indicators and issue activity. We supplement the control for the contemporaneous market movement with a dummy variable for the months characterized as the technology bubble.

Private placement does not concern the stock market exclusively, but also institutional investors whose activity cycles are not synchronized with those of the market. We thus take into account the activity of institutional investors when attempting to explain variations in private placement[11].

Most of the studies of issue cycles show that the process is strongly autoregressive. We include in the model the number (or amount) of issues of the same kind observed at time t - 1.

Using a time-series analysis to explain the number of placements and gross proceeds raised, we estimate the following models:

$$\begin{aligned}\mathrm{PPN_t} &= \alpha_0 + \alpha_1 \mathrm{D501} + \alpha_2 \mathrm{DB} + \alpha_3 \Delta \mathrm{NBFU_t} \\ &\quad + \alpha_4 \Delta \mathrm{PBEN}_t + \alpha_5 \Delta \mathrm{PBMAT_t} + \alpha_6 \Delta \mathrm{PBIT_t} \\ &\quad + \alpha_7 \Delta \mathrm{PEC_t} + \alpha_8 \mathrm{MVOL}_{t-1} + \alpha_9 \mathrm{AR}(1)_t + \varepsilon_t,\end{aligned} \quad \text{(Model 1)}$$

$$\begin{aligned}\mathrm{Log}(\mathrm{PPGP})_t &= \beta_0 + \beta_1 \mathrm{D501} + \beta_2 \mathrm{DB} \\ &\quad + \beta_3 \Delta \mathrm{NBFU}_t + \beta_4 \Delta \mathrm{PBEN}_t \\ &\quad + \beta_5 \Delta \mathrm{PBMAT}_t + \beta_6 \Delta \mathrm{PBIT}_t \\ &\quad + \beta_7 \Delta \mathrm{GPPEC}_t + \beta_8 \mathrm{MVOL}_{t-1} \\ &\quad + \beta_9 \mathrm{AR}(1)_t + \varepsilon_t.\end{aligned} \quad \text{(Model 2)}$$

Where:

PPN_t: number of private placements in month t;
PPGP_t: logarithm of total gross proceeds raised by issuers at month t;
D501: dummy variable that has the value of 1 if the placement is issued after November, 2001; and 0 otherwise;
DB: dummy variable that has the value of 1 if the placement is issued during the December 1999−January 2001 period; and 0 otherwise;
$\Delta\mathrm{NBFU}_t$: variations in the Nesbitt Burns Canadian Small Caps index measured as the average level of the index for the 3 months prior to the issue

[10] Materials include companies that manufacture chemicals, construction materials, glass, paper, forest products and related packaging products, metals, minerals, and mining companies, including producers of steel. The Toronto Stock Exchange has not defined High Technology as a group, and we use the group Information Technology as a proxy for this market segment.

[11] These investors were considered accredited in the former version of the regulation, and their status has not changed. As there is no limit on the amounts they can invest, Rule 45-501 does not change the conditions of their placements. These investors are considered holders of controlling blocks, and are thus not affected by the easing of restriction periods, except in the case of eligible corporations, i.e., corporations that publicly disclose information. Few companies that raise private institutional placements are eligible corporations. This estimator therefore did not influence the regulatory change studied and can therefore be used as a dependent variable.

(including month t) relative to the average value of the index over the last 36 months (excluding month t);[12]

$\Delta PBEN_t$: average level of the aggregate market-to-book equity ratio (Compustat) of the energy sector for the last 3 months prior to the issue (including month t) relative to the average level of the aggregate market-to-book ratio over the last 36 months (excluding month t);

$\Delta PBMAT_t$: average level of the aggregate market-to-book equity ratio (Compustat) of the material sector for the last 3 months prior to the issue (including month t) relative to the average level of the aggregate market-to-book ratio over the last 36 months (excluding month t);

$\Delta PBIT_t$: average level of the aggregate market-to-book equity ratio (Compustat) of the information technology sector for the last 3 months prior to the issue (including month t) relative to the average level of the aggregate market-to-book ratio over the last 36 months (excluding month t);

ΔPEC_t: average number of institutional private placements issued during the last 3 months (including month t) according to Thomson MacDonald[13] divided by the average number of placements issued over the last 36 months (excluding month t);

$\Delta GPPEC_t$: average investments in venture capital issued during the last 3 months (including month t) according to Thomson MacDonald divided by the average investments over the last 36 months (excluding month t);

$MVOL_{t-1}$: standard deviation of the daily market return index of the month t - 1 (Datastream);

$AR(1)_t$: value of the dependent variable–number of private placements or logarithm of total gross proceeds raised by issuers–at month t - 1;

Classic tests of multicollinearity indicate that AR(1) is strongly linked to the market variables. We do not observe differences in the level of significance of the coefficients when this variable is omitted, and the results are not reported.

4 Data

The original source is the Weekly Bulletin published by the OSC[14]. This bulletin reports each of the private placements raised in the province. We extracted each placement reported in the section entitled Reports of Trades Submitted on Form 45–501F1. For each record, we obtained the transaction date, the purchaser identity (for the post-45–501 period only), the security description, the total purchase price and the number of securities. We added to the database the issuer status, industry and, for traded securities, the main stock exchange. We defined the following status, based on the financial statements available in the electronic document filing system called System for Electronic Analysis and Retrieval ("SEDAR"):

- Reporting issuers registered in Canada or abroad (mainly in the US). Generally listed on a stock exchange.
- Funds, including trusts and real estate funds.
- Subsidiaries of reporting issuers. These entities are generally not traded separately; they are controlled by a public company.
- Governments and government entities or corporations.
- Limited Partnerships. Often intermediaries between issuers and investors during a placement. They frequently raise private placements in their behalf and are thus similar to the funds defined above.
- Non-reporting issuers: closed corporations or closely held corporations (after 45–501).

In the rest of the study, we consider only placements made by reporting and non-reporting issuers. Transactions by investment funds or limited partnerships are not considered. The study period ranges from October 1, 1997 to December 31, 2005, to allow analysis of the 4 years before and after the

[12] This measure was defined by Bayless and Chaplinsky (1996) in a similar context. The sign of the coefficients is not sensitive to whether 12 or 24 months are used as the benchmark, although the significance levels vary in some cases.

[13] http://www.canadavc.com/files/public/Washington-Sept29th2005.pdf.

[14] We used the electronic version of the Bulletin, as provided by Carswell. Carswell publishes each weekly issue of the OSC Bulletin and a complete archive of every issue in CD-ROM and online formats. http://www.carswell.com/eproducts/training_guides/OSCQRC.pdf.

change[15]. A substantial effort was made to ensure the reliability of the database, because of numerous inaccuracies and a lack of standardization. We have verified each of the 35,369 records reported in the various editions of the Bulletin, to detect errors, duplications and information irrelevant to our study, such as the numerous private placements originating from investment funds. The initial survey identified records of various categories of private placement in the form of common shares, preferred shares, warrants, and debt. The latter two categories were excluded following the analysis. The records were standardized to allow systematic processing[16]. Often, placement capital is raised in the form of successive placements that are staggered over several weeks or months. In many cases, the principal placement is followed by a second one, of a lesser amount, which is issued as payment for brokerage services. The OSC Bulletin does not report these situations homogeneously. Occasionally, the Bulletin reports a single placement that extends over several weeks or months. Alternately, various amounts are reported as distinct placements in one or more issues of the Bulletin. For instance, Discovery Biotech Inc. raised 62 placements in 2003, for a total amount of C$221,850. To ensure homogeneous treatment of the diverse situations, the following rules were applied: (1) when a placement is deemed to extend over several months, it is included only once, on its starting date; (2) placements by the same issuer that appear in the same edition of the OSC Bulletin are grouped into a single placement. Because these rules are arbitrary, the number of placements reported must be interpreted prudently. Therefore, our analysis mainly rests on the amounts raised. After grouping and omission of duplicates, we obtained 15,750 different placements. Of these placements, 3,018 were made by non-reporting issuers and 7,150 by reporting issuers.

Table 1 presents the amounts and number of private placements reported in the successive issues of the OSC Bulletin for each quarter, from year-end 1997 to year-end 2005, for each category of issuer, along with the average quarterly numbers and proceeds issued before and after the amendment. Non-reporting issuers are relatively inactive. On average, for the entire period we observe 30.48 placements per month, for monthly gross proceeds of C$70.20 million[17] The median amount of placements is C$500,000. Thus, the transactions we studied largely correspond to modest sized placements. Reporting issuers raise a total of C$32.55 billion. Nonetheless, six large placements (over C$500 million each) represent 25.55% of the total amount. On average, we observed 72.22 placements per month, for monthly gross proceeds of C$328.80 million. Private placement activity by reporting issuers is thus considerable, especially when amounts of limited size are required.

Prior to the regulatory changes, we note a decrease in the number of placements and amounts raised. There were 24 placements of non-reporting issuers during the last quarter of 2001, versus 113 and 93 during the corresponding quarters of the previous years. Many issuers could have deferred issues projected for 2001 until the application of the regulatory amendment. However, this reduction of activity corresponds to the period of sharp decline in technology stocks, following the burst of the Internet bubble in spring 2000.

The regulatory amendment appears to coincide with an increase in the number of private placements of reporting (non-reporting) corporations: from 46.96 (23.43) placements per month before the change to 98.22 (37.92) after the change. This increase in the number of issues is statistically significant. It reaches 61.84 and 109.16%, for non-reporting and reporting issuers, respectively. The increase in the amounts is lower: 23.65% for non-reporting issuers and 11.76% for reporting issuers. The change in total amount

[15] Our analysis requires that we characterize each of the issuers, which the database does not necessarily allow. This information must then be obtained from other sources. Obtaining it was problematic before the System for Electronic Document Analysis and Retrieval (SEDAR), a filing system developed for the Canadian Securities Administrators, and put in place in 1997. It was consequently difficult to extend the period of analysis.

[16] Some placements appear in the Bulletin with values of zero or of a few dollars. Because we cannot explain these placements, we omit from the analysis 494 placements involving amounts of less than C$50. Several identical placements are reported in successive issues of the Bulletin, sometimes with a considerable lag. These duplicates are also eliminated.

[17] During the same period, the Financial Post-Infomart database reports a monthly average of 13 IPOs, for monthly gross proceeds of C$182.93 million. The corresponding values are 21 and C$1,009.06 million for SEOs.

Table 1 Quarterly changes in placements of reporting and non-reporting issuers, from the fourth quarter of 1997 till the last quarter of 2005

Quarter	Non-reporting issuers			Reporting issuers		
	Number	Total GP ($M)	Median GP ($M)	Number	Total GP ($M)	Median GP ($M)
1997_4	86	101.18	0.35	181	1,272.04	0.66
1998_1	63	208.64	0.43	132	330.30	0.65
1998_2	48	112.10	0.65	129	413.55	0.77
1998_3	38	25.67	0.34	102	270.21	0.51
1998_4	53	121.35	0.45	124	637.22	0.24
1999_1	49	97.75	0.65	118	382.08	0.38
1999_2	60	233.76	0.33	148	729.32	0.45
1999_3	73	111.62	0.50	141	890.88	0.47
1999_4	113	233.58	0.48	191	1,111.01	0.46
2000_1	102	273.29	0.63	208	1,071.18	0.48
2000_2	98	378.05	0.79	153	2,526.18	0.50
2000_3	101	347.38	0.75	152	461.56	0.42
2000_4	93	237.69	1.00	168	2,299.68	0.80
2001_1	60	190.68	0.68	99	1,456.85	0.60
2001_2	64	282.38	0.79	110	674.23	0.96
2001_3	41	129.01	1.66	113	534.83	0.47
2001_4	**24**	**44.19**	**0.78**	**88**	**608.48**	**0.64**
2002_1	49	93.37	0.50	92	310.54	0.42
2002_2	82	364.45	0.77	224	359.05	0.31
2002_3	90	236.40	0.73	123	246.00	0.17
2002_4	127	365.99	0.77	250	481.94	0.32
2003_1	92	123.66	0.36	214	326.00	0.24
2003_2	109	150.81	0.22	235	369.86	0.21
2003_3	105	221.95	0.30	330	1,221.45	0.26
2003_4	178	276.93	0.50	540	1,054.87	0.42
2004_1	94	117.57	0.25	321	842.31	0.29
2004_2	112	132.52	0.55	254	446.58	0.50
2004_3	94	131.97	0.49	272	585.52	0.27
2004_4	137	162.54	0.32	458	4,878.49	0.42
2005_1	133	244.87	0.56	307	862.01	0.40
2005_2	142	207.76	0.40	291	875.47	0.35
2005_3	138	281.12	0.46	361	847.50	0.29
2005_4	170	709.48	0.97	521	3,173.61	1.05
Total	3,018	6,949.71	0.50	7,150	32,550.78	0.43
Analysis of the monthly average number of placements and amount issued before and after the reform (November 2001)						
	Number	Amount		Number	Amount	
Before	23.43	63.22		46.96	311.63	
After	37.92	78.17		98.22	348.27	
Variation (%)	+61.84	+23.65		+109.16	+11.76	
Test	5.78**	1.34		6.59**	0.35	

Total GP (median GP) are gross proceeds (median gross proceeds) in C$ million ($M)
Source: OSC Base and Sedar

**At the 5% significance level

raised is not statistically significant. The more than proportional increase in the number of placements implies that the average amount of each issue decreases after the change. However, it is worth noting that the increase in total proceeds is observed mainly after the fourth quarter of 2004, 3 years after the regulatory change. During this period, monthly total proceeds peak, for both categories, at $107.05 million (non-reporting issuers) and $709.14 million (reporting issuers), more than twice the average number for the previous 84 months. For both categories, a few huge placements by resources companies and private consortiums engaged in infrastructure projects largely explain the increase, including $4 billion issued for an infrastructure project. During the 3 years immediately following the 45–501 changes, average monthly proceeds remained almost unchanged, or fell below their level before the change, for both groups of issuers ($64.58 million and $302.44 million). It is therefore premature to establish a link of causality between the increase in the number of private placements by reporting issuers and the reform for two reasons. First, the reform has only a minor effect on reporting issuers, the segment of the private market where the more significant changes are observed. Second, the important changes in the market conditions during the period should be considered. In the multivariate analysis that follows, we examine whether the average changes observed subsist when we control for the effect of various parameters linked to issue activity.

5 Results

Table 2 presents the results of Models (1) and (2) for non-reporting and reporting issuers. The variables explained are the number of private placements and the total amount of private placements observed each month for each issuer category. The coefficient of the dichotomous variable D501, which takes the value 1 (0) if the placement was issued after (before) the regulatory change, indicates the average effect of the reform on issue activity.

Model 1, which focuses on the number of issues, obtains a higher adjusted coefficient of determination than Model 2 which focuses on the dollar amounts issued. The adjusted coefficient of determination is 52% in the case of non-reporting issuers and 54% for reporting issuers. These coefficients are similar to those observed in explanatory studies of the number of IPOs. The coefficients range from 15 to 24% when amounts issued are explained. Major fluctuations in the amounts issued, associated with large placements, can explain the lesser explanatory power of Model 2.[18]

The number of private placements is inversely related to variations in the stock market index. This result is robust to various measurements of the variations in the index. However, the coefficient is significant only for non-reporting issuers. In addition, we observe strong and significant sector effects. The coefficients of the change in the aggregate price-to-book ratio in the Energy and Information Technology industries are highly significant and explain both the number and the amounts of issues. This result shows that the private equity activity is largely driven by the relative valuation in a few sectors. The only exception is the bubble period. The dummy associated with these few months is negatively associated with the number of private equity issues for both categories of issuers. The technological bubble was highly favorable for public offerings and is regarded as a hot issue period. In Canada, Harris (2006) shows that during this period the Toronto Stock Exchange lowered its listing requirements to ease access for new firms. The negative relation between the dummy and the number of issues is consistent with the hypothesis that Canadian companies opted for public versus private offerings during the bubble.

The activity of institutional investors is significantly and positively linked to the number of private placements, but the level of significance is low for the reporting issuers. The relation with the gross proceeds is non-significant. The proxy for the asymmetry of information is positively associated with the number of issues by reporting issuers, at the 10% level of significance.

After factoring in various explanatory factors of placements, the coefficient associated with the dichotomous variable D501 remains positive and significant to explain the number of issues. The average variation is 16.32 for non-reporting issuers

[18] We have nonetheless omitted the six largest placements—>C$500 million—of reporting issuers, which weakens the level of significance of the model by increasing the volatility of the dependent variable.

Table 2 Effect of the regulatory change on the number of placements and on the gross proceeds (GP), for non-reporting and reporting issuers

Independent variables	Non-reporting issuers		Reporting issuers	
	Number	GP	Number	GP
Intercept	−14.15 (−1.22)	6.67 (5.26)***	−66.88 (−1.82)*	11.21 (8.28)***
D501	16.32 (3.54)***	−0.48 (−1.13)	31.35 (2.27)**	−0.23 (−0.66)
DB	−2.64 (−0.52)	1.20 (1.91)*	−35.49 (−2.20)**	0.07 (0.13)
ΔNBFU	−25.96 (−2.01)**	−0.20 (−0.18)	−62.88 (−1.57)	−1.17 (−1.28)
ΔPBEN	31.25 (3.67)***	1.47 (2.02)**	88.64 (3.51)***	1.84 (3.07)***
ΔPBMAT	3.93 (0.82)	0.38 (0.91)	28.50 (1.87)*	−0.04 (−0.12)
ΔPBIT	10.00 (2.39)**	0.12 (0.32)	38.95 (2.91)***	0.74 (2.39)**
ΔPEC	14.84 (2.10)**		41.62 (1.93)*	
ΔGPPEC		−0.63 (−1.59)		−0.27 (−0.81)
MVOL	−0.72 (−0.24)	0.20 (0.73)	−15.45 (−1.66)*	0.01 (0.04)
AR(1)	0.12 (1.11)	0.27 (2.60)***	0.09 (0.80)	−0.01 (−0.05)
Adjusted R^2	51.59	24.01	54.12	14.82
F-value	12.49***	4.40***	13.71***	2.88***

Sources: OSC Base, FPinfomart.ca, Sedar, Datastream, Compustat, Nesbitt Burns, and Thomson MacDonald

t-values are in parentheses; *, **, and *** indicate that the parameters are significant at the 10, 5, and 1% level, respectively. The explained variables are the number of private placements, PPN, and the logarithm of total gross proceeds, log(PPGP), raised by non-reporting and reporting issuers in month t

$$PPN_t = \alpha_0 + \alpha_1 D501 + \alpha_2 DB + \alpha_3 \Delta NBFU_t + \alpha_4 \Delta PBEN_t + \alpha_5 \Delta PBMAT_t + \alpha_6 \Delta PBIT_t + \alpha_7 \Delta PEC_t + \alpha_8 MVOL_{t-1} + \alpha_9 AR(1)_t + \varepsilon_t \text{ (Model 1)}$$

$$Log(PPGP)_t = \beta_0 + \beta_1 D501 + \beta_2 DB + \beta_3 \Delta NBFU_t + \beta_4 \Delta PBEN_t + \beta_5 \Delta PBMAT_t + \beta_6 \Delta PBIT_t + \beta_7 \Delta GPPEC_t + \beta_8 MVOL_{t-1} + \beta_9 AR(1)_t + \varepsilon_t \text{ (Model 2)}$$

and 31.35 for reporting issuers. Omitting the lagged variable does not change the estimated coefficients materially.

The coefficients associated with the variable D501 are non-significant when the dependent variable is the dollar amount issued. The regulatory change does not correspond to a statistically significant increase in amounts raised by private placements, regardless of the nature of the issuers. It seems that the regulatory change has caused the amounts issued to be divided among a larger number of issuers, and affects the total amounts raised by exemption only marginally. The empirical tests therefore do not allow us to reject the hypothesis that change in the regulation does not have an impact on the amounts raised by private placements, which is consistent with the results of the univariate analysis. The results are robust to the various specifications of the model. We have tested the possibility of interaction effects between the regulatory change and the other dependent variables. Such effects exist for the market return and for the growth opportunity indicators. Given that the conclusions relative to the effects of the regulatory change are not modified by this specification, the results are not reported.

Our results indicate changes in the structure of the private equity market between the two sub-periods: the number of placements increases but the amount levied by each of these placements decreases. Two simultaneous events occur during the period under study; both the burst of the technology bubble and the increase in resources prices could have modified the structure of the private equity market. In the next section, we attempt to disentangle these effects to better understand the changes in private equity in Canada.

6 Industry, size, and regulatory effects

Because of contemporaneous events, several hypotheses can explain the trends described in the previous section. We cannot rule out the hypothesis that the changes observed in the size of private equity issues could be explained by changes in the nature of the issuers. To verify this point, for each month, we sort the issues by three main sectors: Resources (Oil and Gas and Mining), High Tech (including Biotech), and Other. Figure 1 reports the proportion of private placements in each industry. This figure illustrates the sharp decline in the issuing activity of technology companies by the end of 2001, and the steady growth of private placements in the resources sector, beginning in 2000. At the beginning of 1998, each group accounted for a third of the issues. At the end of 2005, 70% of private equity issues originate from resources companies, and the technological sector accounts for <15% of the issues. Although the picture of the private equity market has transformed dramatically during the 8 years under analysis, these changes are probably not linked with regulation.

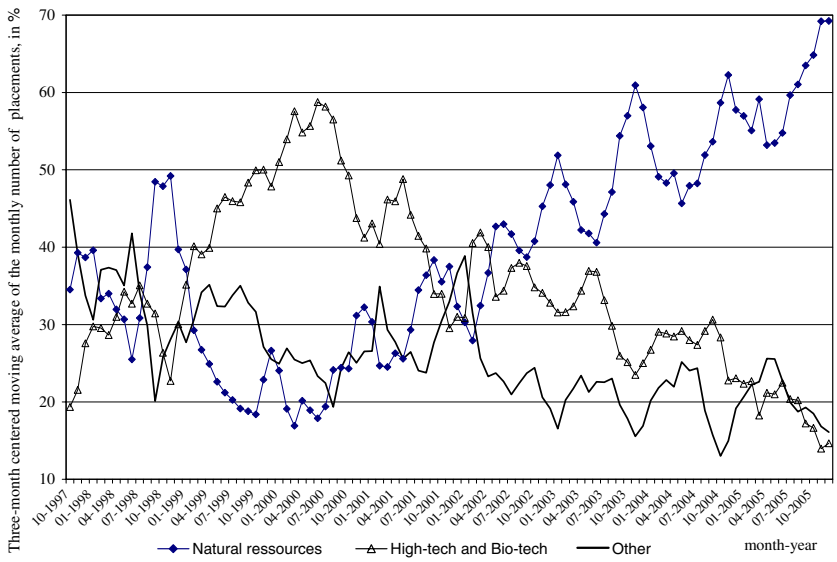

Fig. 1 Industrial distribution of the monthly number of placement. Sources: OSC Base, FPinfomart.ca, and Sedar

This change in the industrial weighting in issuing activity could have altered the global picture if these industries had acted differently in terms of private equity issues. To verify this point, we estimate the quintiles of the distribution of gross proceeds and we report, for the three industries, the proportion of issues in each quintile. Panel A of Table 3 illustrates that, for the whole period, there are significant differences in the distribution of gross proceeds, depending on the sector. 23.45% of the resources issues are located in the first quintile (amounts lower than $75,000) versus 16.61% (18.48%) of High Tech (Other) issues. In contrast, High Tech and Other issues are more numerous in the fourth and fifth quintiles (large issues). A chi-square test confirms that these differences are statistically significant, at the 1% level. We also report the average and median gross proceeds which confirm the smaller size of private issues in the resources industry. Consequently, an initial explanation for the change in the size of the private placements could be the increase in the proportion of issues originating from resources companies, which generally issue smaller amounts. However, because changes could have occurred in each industry, we analyze this possibility.

Panel B presents the industrial distribution of the issues before and after the regulatory change. In the resources industry, we note an increase in the proportion of smaller issues after November, 2001 but we observe the predominant changes for the largest issues. The proportions in medium sized quintiles decrease while the proportions in issues with gross proceeds higher than $762,000 increase significantly. The two distributions differ statistically, and the median and average gross proceeds increase after the regulatory changes. The distributions have changed in the opposite direction in the two other industries. The proportion of High Tech (Other) issues in the first quintile jumped from 9.71 to 22.52% (from 12.15 to 23.33%). The proportion of issues in the three higher quintiles decreases markedly, and the average and median gross proceeds

Table 3 Industrial distribution of the number of placements by gross proceeds quintiles

Quintile	1	2	3	4	5	Total	Average gross proceeds, in $M	Median gross proceeds, in $M
Upper breakpoint, in K$	75	53	762	2,700				
Panel A: industrial distribution of the number of placements by gross proceeds quintiles								
	Number of placements							
Resources	1,064	929	915	824	806	4,538	2.27	0.35
High Tech	528	614	614	715	707	3,178	3.35	0.56
Other	432	452	477	471	506	2,338	7.88	0.50
	In %							
Resources	23.45	20.47	20.16	18.16	17.76	100.00	2.27	0.35
High Tech	16.61	19.32	19.32	22.50	22.25	100.00	3.35	0.56
Other	18.48	19.33	20.40	20.15	21.64	100.00	7.88	0.50
χ^2						90.17		
Panel B: industrial distribution of the number of placements by gross proceeds quintiles before and after the regulatory changes, in %								
Resources, before	20.39	27.50	24.10	15.96	12.05	100.00	1.52	0.30
Resources, after	24.27	18.55	19.09	18.78	19.31	100.00	2.48	0.39
χ^2						70.17		
High Tech, before	9.71	18.85	21.37	24.44	25.63	100.00	5.02	0.77
High Tech, after	22.52	19.57	17.54	21.02	19.34	100.00	1.88	0.44
χ^2						101.12		
Other, before	12.15	18.78	22.39	21.49	25.20	100.00	9.71	0.67
Other, after	23.33	19.64	18.81	19.11	19.11	100.00	6.57	0.42
χ^2						53.48		

Placements for which the industry is not available are omitted
Sources: OSC Base, FPinfomart.ca, and Sedar

decrease sharply after November, 2001. In each industry, statistical tests confirm that the pre- and post-45–501 distributions differ.

Changes observed in the size and the number of issues at the aggregate level can thus be traced to two movements. The first is a marked increase in the activity of the resources companies, which raised, on average and for the whole period, smaller amounts. The second movement is a higher frequency of small issues (lower than $75,000) in the High Tech and Other industries. This effect may be associated with the regulatory change, but it is unlikely that a regulatory change could affect different industries in opposite directions.

The change in the industrial distribution over the study period could partially explain the change in the number and the size of the private equity issues. To test this hypothesis, we introduce the proportion of the issues raised by resources companies as an independent variable in our regression model, $PCNR_t$: the number of resources issues in month t divided by the total number of issues in month t. Results are reported in Table 4. The coefficient of the proportion of resources is statistically significant in three of the four models examined. This variable explains the changes in the number of issues by reporting and non-reporting issuers, and the total amount raised by reporting issuers. The coefficient of the dummy variable associated with the regulatory change is not significant in three of the four models. We observe a significant increase only in the number of placements of non-reporting issuers. This movement is consistent with the observation of a change in the distribution of the size of issues in the technology and other industries, shown in Table 3.

7 Conclusion

In November 2001, the rules surrounding placements issued as part of the exempt market were significantly

Table 4 Effect of the regulatory change on the number of placements and on the gross proceeds (GP), for non-reporting and reporting issuers

Independent variables	Non-reporting issuers		Reporting issuers	
	Number	GP	Number	GP
Intercept	−18.18 (−1.59)	6.57 (5.10)***	−103.38 (−3.27)***	11.23 (8.72)***
D501	12.78 (2.68)***	−0.52 (−1.20)	3.92 (0.31)	−0.43 (−1.29)
DB	−0.37 (−0.07)	1.15 (1.80)*	−23.64 (−1.72)*	−0.24 (−0.49)
ΔNBFU	−28.37 (−2.23)**	−0.28 (−0.25)	−71.51 (−2.11)**	−1.61 (−1.83)*
ΔPBEN	28.24 (3.35)***	1.39 (1.85)*	63.35 (2.91)***	1.48 (2.56)***
ΔPBMAT	6.01 (1.25)	0.42 (0.98)	46.14 (3.49)***	0.14 (0.45)
ΔPBIT	10.52 (2.57)***	0.12 (0.32)	45.56 (4.01)***	0.77 (2.63)***
ΔPEC	15.45 (2.23)**		43.34 (2.37)**	
ΔGPPEC		−0.54 (−1.26)		0.17 (0.51)
MVOL	−0.79 (−0.27)	0.19 (0.70)	−15.75 (−2.00)**	−0.03 (−0.13)
AR(1)	0.07 (0.62)	0.26 (2.54)***	−0.08 (−0.78)	−0.07 (−0.67)
PCNR	0.24 (2.25)**	0.01 (0.50)	1.76 (5.99)***	0.03 (3.19)***
Adjusted R^2	53.74	23.35	67.13	22.88
F-value	12.27***	3.96***	20.81***	3.88***

Sources: OSC Base, FPinfomart.ca, Sedar, Datastream, Compustat, Nesbitt Burns, and Thomson MacDonald

t-values are in parentheses; *, **, and *** indicate that the parameters are significant at the 10, 5, and 1% level, respectively. The explained variables are the number of private placements, PPN, and the logarithm of total gross proceeds, log(PPGP), raised by non-reporting and reporting issuers in month t

$$PPN_t = \alpha_0 + \alpha_1 D501 + \alpha_2 DB + \alpha_3 \Delta NBFU_t + \alpha_4 \Delta PBEN_t + \alpha_5 \Delta PBMAT_t + \alpha_6 \Delta PBIT_t + \alpha_7 \Delta PEC_t + \alpha_8 MVOL_{t-1} + \alpha_9 AR(1)_t + \alpha_{10} PCNR_t + \varepsilon_t \quad \text{(Model 1)}$$

$$Log(PPGP)_t = \beta_0 + \beta_1 D501 + \beta_2 DB + \beta_3 \Delta NBFU_t + \beta_4 \Delta PBEN_t + \beta_5 \Delta PBMAT_t + \beta_6 \Delta PBIT_t + \beta_7 \Delta GPPEC_t + \beta_8 MVOL_{t-1} + \beta_9 AR(1)_t + \beta_{10} PCNR_t + \varepsilon_t \quad \text{(Model 2)}$$

eased in the Canadian province of Ontario. The objective of the regulatory changes was to facilitate financing of small and medium sized businesses via placements raised on the exempt market. These changes ensued from the argument that securities regulation imposes a constraint on equity financing of growth companies. We use this major change to measure the effect of this constraint, particularly on non-reporting issuers.

The number of placements made by reporting and non-reporting issuers increases after the regulatory change. However, the increase in the total amount raised is slight, and seems to occur primarily in 2005, several years after the change. Issuers putatively modified their issuing practice by issuing smaller amounts more frequently. However, the analysis by industry and by size indicates that this change is largely part linked to the concomitant rise in resources prices. Companies in this sector generally issued smaller amounts than the Other, and their share of the private equity activity climbed from 33 to 70% during the period. The burst of the technology bubble, a few months before the regulatory change, could also partly explain the changes in the private equity issuing practices. The complexity of the period surrounding the change in regulation warrants diligent controlling for several concomitant events.

From an econometric point of view, we cannot reject the hypothesis that the change has not affected total amounts raised by private placements. It is possible that the new regulation has facilitated smaller placements in industries such as technology. However, the limited growth in the total amount raised and the lack of significance of the variable associated with the regulatory change are not consistent with the claim that the prevailing regulation had prevented numerous companies from financing profitable projects. Our results are in line with Ou and Haynes (2006), who observe that the importance of external equity financing for small firms seems to be overstated.

Our results therefore do not support the hypothesis of strong regulatory constraints on financing of closed companies. This hypothesis has been frequently invoked, but very rarely tested. Nonetheless, the regulatory change appears to have increased the frequency of smaller issues, which can be construed as a positive effect of that change.

Acknowledgments We thank two anonymous reviewers and the editor for very helpful comments. We also thank our research assistants, led by Sébastien Vallez and Serge Dumais, for their help in conducting this study. Jean-Marc Suret gratefully acknowledges financial support from the Autorité des marchés financiers du Québec. Cécile Carpentier and Jean-Marc Suret gratefully acknowledge financial support from the Social Sciences and Humanities Research Council of Canada (SSHRC). The views expressed in this article are those of the authors, and do not necessarily reflect the position of the Caisse de dépôt et placement du Québec or those of the Autorité des marchés financiers du Québec.

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