

# **Economic Determinants of Multiple Accounting Method Choices in a Swiss Context**

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## **Abstract**

This article investigates economic determinants that may affect multiple accounting method choices made by Swiss listed companies. It intends to make a contribution to the accounting choice literature for at least four reasons. This is, to our knowledge, the first study to investigate the economic determinants of Swiss accounting method choices. Second, Swiss firms provide an interesting sample for testing accounting method choices because they can choose from a much wider range of accounting methods than their American counterparts. Third, this study examines the balance sheet effect as well as the income statement effect. Lastly, multiple accounting methods are used instead of individual choices. The empirical results exhibit that income-accelerating accounting method choices is positively associated with the recourse to bank and private loans, the extent of assets specificity and the ownership dilution of the firm and negatively with labour force. Additionally, firms that select leverage-ratios decreasing accounting methods, make higher recourse to debt and especially bank loans to finance their activities and exhibit a higher proportion of specific assets than other corporations. Overall, this result suggests that in a Swiss context, managers may select accounting methods to decrease both debt and political costs as well as to increase their own compensation to some extent.

## **1. Introduction**

A host of articles investigate managers' rationale underlying their accounting method choices. International insights have been provided by articles focused on non-US firms (e.g., Inoue and Thomas, 1996; Cullinan, 1999). However, only a few authors have examined the accounting policy choices in a European environment (e.g., Lin and Peasnell, 2000). This study fills the gap with an empirical examination of the potential economic factors which may affect multiple accounting method choices of Swiss listed firms. To my knowledge, it is the first

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attempt at investigating the economic consequences effects of accounting method choices in a Swiss context.<sup>1</sup>

The focus on Swiss firms is particularly interesting because the Swiss regulatory system authorizes company managers to choose from a much wider range of accounting methods than their American counterparts. The accounting choice of Swiss corporations must comply with the legal regulations of the Code of Obligations<sup>2</sup> (hereafter CO – *Code Fédéral des Obligations*). However, the CO contains only a minimum set of rules applicable to the publication of information and stipulates very few accounting principles. In theory, this absence of legal constraints allows firms to choose from a wide array of accounting procedures. In practice, some firms seem to take into account the pressure of international markets. They try to present financial statements that apply established standards or comply with generally accepted practices. In Switzerland, as long as companies comply with the country's rather lax national regulations, they are free to use a number of accounting standards, including the International Accounting Standards (IAS), the Swiss GAAP FER,<sup>3</sup> or the European Directives. However, the IAS, the Swiss GAAP FERs, and the European Directives allow discretionary choices in the accounting methods. Consequently, the Swiss system's lack of any real constraint over the choice of accounting and reporting standards and the extent of the choice left open by international standards, combine to create an economic and institutional environment which offers a unique opportunity to examine the rationale underlying corporate accounting policy choices.<sup>4</sup>

Many articles have provided empirical support on managerial incentives to choose accounting policies based on the relationships among a corporation's stakeholders, including managers, stockholders and creditors (Bowen *et al.*, 1981; El-Gazzar *et al.*, 1986; Malmquist, 1990; Gupta, 1995; Cotter, 1999). They have generally evidenced that the presence of bonus plans, restrictive debt covenants, and political costs affect accounting procedure choices. Yet, their results afford only partial insights in our understanding of managers' motives as they focus on a single isolated accounting choice at a time. In their review article, Fields *et al.* (2001, p. 290) suggest that focusing on managers' multiple accounting method choices would improve the research, i.e. to simultaneously consider several accounting method choices (i.e., following in the wake of Zmijewski and Hagerman, 1981). This study extends the very few prior studies on the determinant of accounting method strategies that investigated a maximum combination of four different choices (e.g., Zmijewski and Hagerman, 1981; Skinner, 1993; Bowen *et al.*, 1995; Inoue

and Thomas, 1996), by including up to ten accounting methods in the firm's accounting strategy.

Most of the empirical studies focus almost exclusively on the effect on income when investigating managers accounting choices. Very few formulate hypotheses in terms of the effect on leverage ratios (e.g., Whittred and Chan, 1992; Cotter, 1999) and even then only for specific accounting methods (i.e., assets revaluation). As there is no *a priori* reason to assume that managers will prefer to alter the income statement over the balance sheet, the accounting method choices considered in this paper are expressed in terms of income effect as well as leverage-ratios effect.

The hypotheses development relies on the presence of explicit and implicit contracts and takes into account the specifics of the Swiss economic and institutional environment. This environment differs from the USA's, especially regarding the importance of banks in the firm's external financing. We argue that managers adopt accounting methods to decrease debt costs, loosen debt covenant constraints, reduce political costs, and increase their compensation. Hence, explanatory factors such as leverage, the nature of debt (i.e., private vs. public), recourse to short-term debt, the presence of investment opportunities, and assets specificity should be positively associated with accounting methods that accelerate the reporting of income and/or decrease leverage-ratios. Factors such as the firm size and labour force should be negatively associated with an income-accelerating set of accounting methods. Firm ownership diffusion should be positively associated with an income-accelerating set of accounting methods.

The results show the more a firm's reliance on bank and private loans to finance its activities, the higher the degree of assets specificity and the more diffused their ownership control, the more managers have an incentive to choose an accounting strategy that will accelerate the reporting of income. In addition, firms choose an income-delaying accounting strategy to reduce political costs from employee pressure. The results also exhibit the recourse to debt – especially the recourse to bank and private loans – and a higher degree of assets specificity encourages managers to choose a leverage-ratios decreasing accounting strategy.

The remainder of the paper is organized as follows. The second section develops the hypotheses and presents the specific features of the Swiss institutional environment. The third section presents the research design. The fourth section discusses the empirical results. Section five concludes the paper.

## **2. Hypotheses and the Swiss Environment**

A large number of contracts governing the relations between a firm and its stakeholders (i.e. creditors, managers, employees, customers, government, etc.) rely explicitly or implicitly on accounting information. Hence, accounting policy choices – via their impact on financial statements – may affect the decisions made by some of the firm's stakeholders (Zeff, 1978). To question whether this potential effect may influence accounting procedure choices, it may be relevant to investigate the rationale underlying manager's accounting policies (e.g. Gordon, 1964). Some accounting research has drawn on theories of agency and economic regulation to propose a series of hypotheses capable of explaining the accounting decisions made by executives, in line with the "positive accounting theory" approach initiated by Watts and Zimmerman (1978, 1986). It is generally argued that, to avoid debt covenants violation and to increase their own compensation when it is associated with company performance, managers will prefer income-accelerating accounting methods. Conversely, managers will choose income-delaying methods to reduce the firm's visible wealth and the related threat of political costs. This study follows this approach in examining the question of what factors affect Swiss listed firm's accounting policy choices.

### *Leverage*

The Swiss market's economic environment is characterized by the extent of the recourse to debt in financing the firms' activities. The stock market is highly concentrated and relatively illiquid (Cormier *et al.*, 2000; Hail, 2002; Faccio and Lang, 2002; Dimson *et al.*, 2002). Swiss firms use debt as their major source of finance. Creditors' use of accounting information in their loan agreements (i.e., with restrictive covenants) and in making lending decisions will likely influence the accounting decisions made by managers. Managers seeking to reduce debt financing costs may strive to adopt a set of accounting methods to report favourable financial statements in terms of creditworthiness<sup>5</sup> (Bowen *et al.*, 1995). Concurrently, they may also choose policies to loosen debt covenant constraints defined by generally accepted accounting principles (Missonier-Piera, 2001). In addition, managers may try to improve the firm financial flexibility (Easton *et al.*, 1993) in order to prevent them from reporting an "image of financial distress" in the case of exogenous disturbances (Malmquist, 1990, p. 177). These considerations become more relevant

as the firm recourse to financial debt increases, i.e. the higher the total of financial debt over total assets (Elliott *et al.*, 1984; Zimmer, 1986; Cullinan and Knoblett, 1994; Piot, 2001).

*H1:* The more the firm relies on financial debt the more likely its managers will choose accounting methods that accelerate the reporting of income and/or decrease leverage-ratios.

It may also be relevant to consider the nature of the debt (i.e. private vs. public), especially in an economy like that of Switzerland where most financing is provided by banks. Despite an active corporate bonds market, the extent of bank financing is much greater than in the USA or the UK (Schmid and Burkhard, 1997). The governance properties of debt contracts differ according to the nature of the debt (Lemke and Page, 1989; Haubrich, 1989; Neave, 1991), particularly in terms of control and negotiation costs. This leads to offsetting arguments in terms of accounting policy choices. On the one hand, private debts are held by a smaller circle of creditors than are public debts, lowering the costs of negotiating and re-negotiating contracts (Smith and Warner, 1979; Beneish and Press, 1993; Smith, 1993). The flow of information between the bank and the firm is greater than with most other creditors. Bank officers are on the board of numerous Swiss corporations, even the largest (Pratt and Behr, 1989). The firm's financial standing is appraised regularly by banks whereas numerous corporate bond issues in Switzerland are not rated (Benathan and Viola, 1999). Thus, for other "outside" creditors, the costs of the debtor's audit may be prohibitive. As a result, managers have more incentives to abide by the constraints of public as opposed to private debts financing. On the other hand, private loan agreements contain debt covenants that are more restrictive than in public debts. In Switzerland, and although not of common use in public debt contracts (Cormier *et al.*, 2000), banks make recourse to restrictive covenants in their loan agreements. The strength of Swiss banking industry, as a capital provider, leaves managers seeking external financing with limited bargaining power. Moreover, the collapse of real estate prices in the 1990s triggered a process of concentration among Swiss banks (i.e., private creditors). Those that survived started paying closer attention to their client accounts (Hertig, 1997). The result is the negotiation and re-negotiation of bank loan agreements for private debt may have become just as costly as for public loans.<sup>6</sup> Thus, these arguments leave open the result on the impact of the importance of [bank and private loan over total financial debts]:<sup>7</sup> as an empirical question.

*H2:* The recourse to bank and private loans is associated with accounting methods that accelerate the reporting of income and/or decrease leverage-ratios.

Finally, the term of the debt may have an impact on the choice of accounting policy. Firms approaching the credit market will benefit if they exhibit good performance and sufficient borrowing capacity. This may be relevant if the firm's external financing comprises mostly short-term loans (i.e., over total financial debts), because in such cases the loans are renewed more often. Firms approaching the credit market or frequently renewing their credit are more likely to manage their accounting choices.

*H3:* The higher the ratio of short-term debt over total financial debt, the more likely managers will tend to adopt accounting methods that accelerate the reporting of income and/or decrease leverage-ratios.

### *The Nature of Assets*

*Investment opportunities.* According to Myers (1977), a firm is composed of assets-in-place whose value is easily identifiable, and growth (or investment) opportunities whose value depends on future discretionary investments. Managers of firms composed mainly of growth opportunities are in a better position to assess the firm's value than are external investors, given information asymmetry (i.e., the value of such assets being difficult to observe). This asymmetry makes it harder to control the activities of these managers than would be the case in corporations composed mainly of assets-in-place. The presence of investment opportunities generates two types of risks for creditors. The first is the potential risk of under-investment. By definition, managers will decide at the appropriate time whether or not to proceed with a particular investment (i.e., to take up the investment opportunity). They will not make an investment if the current value – even if positive – is less than the amount the firm must repay to its creditors, thus generating a problem of under-investment. The second risk arises from the possibility that manager-shareholders may undertake projects where risk is greater than the one for which the creditors granted the loan (Galai and Masulis, 1976). The additional gain resulting from the increased risk will benefit only the shareholders and not the creditors who receive a fixed remuneration. The capacity to substitute assets is greater if the firm is composed mostly of growth opportunities. As a result, creditors consider growth opportunities to be riskier than assets-in-place, and will demand greater rates and/or

expectations in terms of financial health for such firms. The investment opportunity may be measured by Tobin's Q (Skinner, 1993), i.e. the ratio of the firm's market value over the replacement value of its assets. Tobin's Q is calculated by applying the Lindenberg and Ross (1981) approach.

*H4:* The higher the firm's Tobin's Q, the more likely managers will tend to adopt accounting methods that accelerate the reporting of income and/or decrease leverage ratios.

*Assets specificity.* Asset specificity is defined as the idiosyncratic nature of the asset, meaning the extent to which an asset can be redeployed for alternative uses or by alternative users without sacrificing productive value (Williamson, 1985). The value of a specific asset to the firm is, therefore, much higher than for any other users or for uses that are removed from its original purpose (Williamson, 1985, 1988). This may affect the relation between creditors and shareholders. The debtor is financially responsible for the liability. If the terms of the contract are violated, the debt holders can exercise their guarantee by seizing the asset. However, the debt recovery value will depend on the extent to which the asset can be redeployed, i.e. its degree of specificity. Potential creditors will price the debt according to the risk that, if the firm declares bankruptcy, it will be difficult for them to recover the amount of the loan by selling the firm's assets. Assets specificity alters the costs of debt financing by increasing the creditor's perceived risk. Firms engaged in intensive R&D activities potentially create intangibles and specific know-how, i.e. they acquire and/or produce assets that are unique and specifics (Balakrishnan and Fox, 1993; Dumontier and Bah, 1996, 2001). Such assets are less redeployable than other general use assets.

*H5:* The higher the R&D expenditures of the firm, the more likely managers will tend to adopt accounting methods that accelerate the reporting of income and/or decrease leverage ratios.

### *Political Costs*

*Firm size.* In Switzerland, the governance of most business relationships is characterized by a willingness to avoid any counterproductive and/or useless conflicts. The need to reach a "consensus" is strongly entrenched in social and commercial activities (Bergmann, 1994). In preparing the last revision of the CO, the Government explicitly made reference to the notion of the "social and labour peace" which has founded the economic relations over the last 50 years, in proposing rather flexible accounting

rules. Even politicians avoid conflicting situations that could lead to actions against themselves in the next elections (Stettler, 1986). For example, the revised CO explicitly accepted that managers delay the reporting of income as long as it is necessary for the “prosperity” of the firms<sup>8</sup> (CO, 663). For firms, political intensity is often related to firm size (Watts and Zimmerman, 1986: 234). Political costs may take the forms of State interventions (legislation, regulations) but also of retaliations from unions, customers that may result in opportunity costs (i.e. abandoning profitable investments). The visibility of large firms, especially in terms of available wealth, tends more easily to attract the attention of numerous stakeholders, including elected representatives (and the electorate), employees, customers and competitors. As a result, managers of large firms may be inclined to select accounting methods that delay the reporting of income to reduce the political costs borne by the firm. Most of the empirical studies use total assets or total sales as a measure of firm size (Bujadi and Richardson, 1997). Total sales offer the advantage of being unaffected by the accounting choices tested in this study.<sup>9</sup>

*H6:* The larger the firm, the more likely managers will tend to adopt accounting methods that delay the reporting of income.

*Labour force.* Another source of potential political costs for managers stems from conflicts that may occur with employees and/or union (i.e. its labour force). Indeed, as mentioned by a former representative of a leading Swiss union: “Switzerland is not a country without conflicts, it’s a country that manages its conflicts” (Dreyfuss, 1989); although the Swiss population tries to limit conflicts (Bergmann, 1994: 130). The goal of maximizing employee wealth generally takes the form of wage demands associated with the firm’s economic rents (Ashenfelter and Johnson, 1969). Given that economic rent is generally correlated with the firm’s profits (Liberty and Zimmerman, 1986; Elias, 1990), employees are likely to focus on reported earnings. Wage increases can generate a substantial reduction in shareholders wealth. This provides managers an incentive to limit the intensity of wage demand (and thus the intensity of conflicts) by selecting accounting methods which delay the reporting of income. The relevance of this accounting policy will increase as the bargaining power of employees increases – such as with union presence and/or in a labour intensive industry. The few studies examining the effect of labour pressures on the process of making accounting decisions consider the level of unionization to be a good indication of the employees’ power of negotiation (Liberty and Zimmerman, 1986; Culli-



nan and Knoblett, 1994). Since this information is not available for Swiss corporations, we use, as in Depoers (2000), the ratio of salaries plus social charges to sales as a proxy of labour force power.

*H7:* The higher the labour force, the more likely managers will tend to adopt accounting methods that delay the reporting of income.

### *Ownership Dilution*

In Switzerland, most corporations are owned and controlled by a small number of shareholders, and the general public owns only a small fraction of firms' stocks (Schmid and Burkhard, 1997). One reason may be the relatively high absolute price of an individual common share. Cormier *et al.* (2000) observed an average stock price of CHF1,200 (about US\$900). In the view of Williamson (1964, 1967), the cost of managerial control is lower for companies with a closely held ownership base than for other firms. Managers of Swiss firms, with their closely held ownership, may have less discretionary power in running the company. Alternatively, managers from a firm with a high ownership dilution (i.e., where the percentage of the voting rights held by the principal shareholders is low) may experience more discretionary power (Salamon and Smith, 1979; Hall, 1993), especially in publishing information on its performance (Williamson, 1967: 13). It is therefore highly probable that in firms where the ownership dilution is high, managers will choose accounting methods that accelerate the reporting of income to increase their own compensation. In doing so they may convince shareholders that the firm's performance is satisfactory, especially where Swiss bonus agreements may leave some discretion to the owners in determining the amount to be paid to the executives (Pratt and Behr, 1989: 20). Lastly, they also increase the value of their human capital by developing a reputation for professional competency (Williamson, 1964: 30), as well as by reporting a flattering image of the firm.

*H8:* The higher the ownership dilution of the firm, the more likely managers will tend to adopt accounting methods that accelerate the reporting of income.

## **3. Research Design**

### *Selection of sample*

The corporations selected are listed on the SWX (Swiss Stock Exchange) and published consolidated accounts in 1994–95.<sup>10</sup> One of the main

features of Swiss accounting practices is their compliance with “*massgeblichkeitsprinzip*”, which implies a close link between financial accounting and tax accounting (Achleitner, 1998). This link does not exist for consolidated accounts. Thus, by choosing consolidated financial statements, we were able to disregard any tax considerations in the tests. The choice of period also made a larger set of accounting methods available for testing. Since October 1996, Swiss listed companies have had to comply with the Swiss GAAP FER as well as with the CO. Previously the use of stricter standards was at the discretion of the firms themselves. They would, therefore, generally select the standards that best suited their own interests. Initially, the annual reports of all the non-financial companies (170 in all) were requested by mail for the study.<sup>11</sup> Of these, 64 firms were excluded because the firms did not publish consolidated accounts, display their accounting policies or provide enough information for the computation of independent variables. The final sample of 106 industrial companies represented 63% of the SWX's total market capitalization and 95% of all non-financial companies.

### *Accounting Methods*

Accounting policies were selected on the basis that they were disclosed in the firm's annual report. The methods selected also had to be relevant for the testing of the hypotheses – i.e. in the sense that accounting method choices were not uniform among the sample. The methods selected were: accounting for financial leasing, assets revaluation, goodwill, R&D expenses, pension liabilities, marketable securities and inventory valuation, interest costs, and deferred taxes.

The impact of each discretionary accounting choice on the financial statements are consistent with those identified in prior studies.<sup>12</sup> They are examined in the following and similar manner, which also complies with the IAS, Swiss GAAP FER and European Directives used by the sample firms at the time of the study.<sup>13</sup> (a) Financial leased assets may be capitalized in the company's balance sheet or disclosed exclusively in the notes. The option to capitalize will increase the leverage-ratios.<sup>14</sup> The impact on earnings is not obvious as it depends on the lease contract parameters, including the rate of depreciation of the new asset, the interest the lessee should pay and the repayment of the debt-equivalent. Companies rarely disclose this information, so the impact on the income statements will be ignored. (b) An upward assets revaluation increases shareholders' equity and the value of the related assets recorded in the

balance sheet. This practice decreases the leverage ratios and delays earnings as depreciation increases (i.e. when depreciation is relevant, so excluding lands). (c) Acquired goodwill may be capitalized or charged directly to shareholders' equity. The former choice leads to a decrease in leverage ratios and a delay in future earnings (due to the additional amortization expenses). (d) Development expenses (R&D) may be recorded entirely in the income statement as they arise, or may be partially capitalized. This latter treatment will decrease the rate of development expenses recorded in the financial statements, accelerate the reporting of income and decrease leverage ratios (both via the effect on equity and total assets). (e) The estimation adjustment required to cover pension liabilities can be disclosed in the notes or recorded in the balance sheet as a provision. This latter option entails an increase in liability expenses (i.e. it delays income), as well as an increase in leverage ratios (i.e., via a decrease in equity). (f) Marketable securities may be valued at the lower of cost or market value, or at market value exclusively. When the market value of the securities decreases, both valuation methods reduce accounting earnings similarly (i.e., the same amount of depreciation is recorded). However, when the market value is higher than the historical cost, only the latter method leads to an increase in the value of the assets. It is therefore more likely to decrease leverage ratios and accelerate earnings (i.e., when the potential gain is recorded in revenues). (g) The choice of the first-in-first-out (FIFO) inventory cost flow assumption is characterized as income-accelerating, unlike other valuation method choices (last-in-first-out and average cost). Hence, FIFO will also decrease leverage ratios (i.e., increase common equity and total assets when prices are rising). (h) Interest costs related to expenditures on new assets (i.e., assets not yet in service) may be capitalized and then amortized, or recorded directly as expenses. The former choice will spread the related expenses and thus accelerate the reporting of income, and decrease leverage ratios (i.e., by increasing total assets and shareholders' equity). (i) When managers decide to take into account their loss carry-forward when estimating deferred taxes, the amount of the provision and the corresponding expense is reduced. There is a direct positive effect on earnings and shareholders' equity and a decrease of leverage ratios. (j) When undistributed subsidies incomes are taken into account in estimating deferred taxes, the related expenses increase. This leads to a delay in earnings and an increase in leverage ratios. The measures of the explanatory variables and the impact of accounting methods on the financial statements are summarized in Tables 1 and 2 respectively.

### Accounting Method Strategies

These last two decades have seen an impressive amount of empirical research on the economic determinants of the choice of accounting methods. The vast majority of this research focuses on a single, isolated accounting practice, assuming that the accounting choices of managers were independent of each other. However, if we suppose that executives are bent on decreasing or increasing leverage ratios, and accelerating or delaying the reporting of income, it would be more reasonable to expect them to do so by taking into account the accumulated effect of their accounting procedures. The logic is easily understood from the viewpoint of accounting method strategies. This paper considers the firm's set of accounting choices as a single comprehensive decision (i.e., accounting choices are not independent). Yet, despite the coherence of this approach, it has been adopted by only a few researchers in empirical studies<sup>15</sup> (Zmijewski and Hagerman, 1981; Press and Weintrop, 1990; Skinner, 1993; Bowen *et al.*, 1995; Inoue and Thomas, 1996). In addition, the strategies previously examined included a maximum of four accounting methods and were viewed only in terms of their effect on income.<sup>16</sup> In this paper, the strategies combine up to ten accounting methods and are viewed separately in terms of their effects on income as well as on leverage ratios.<sup>17</sup>

Table 1. *Proxies and predicted sign for explanatory variables*

<i>Hypotheses</i>	<i>Predicted signs on</i>		<i>Proxies</i>
	<i>income effect</i>	<i>leverage effect</i>	
Leverage	+	+	Financial debt on total assets ratio
Bank and private loans	±	±	Bank and private loans/total financial debt
Short-term loans	+	+	Short-term debt on total financial debt ratio
Growth opportunities	+	+	Tobin's Q
Assets specificity	+	+	R&D expenditures on total sales ratio
Size	–	na	Natural logarithm of turnover
Labour force	–	na	Labour charges/turnover
Ownership structure	+	na	100% of voting rights of main known shareholders

A positive predicted sign corresponds to a positive association with explanatory variables and an accounting strategy that either accelerates the reporting of income or decreases leverage-ratios. na: denotes the non applicability of the related variable.

Table 2. *Classification of accounting method choices*

<i>Accounting policy</i>	<i>Leverage-ratios increasing</i>	<i>Leverage-ratios decreasing</i>	<i>Income delaying</i>	<i>Income accelerating</i>
Financial leasing	Off balance sheet (74%) <sup>a</sup>	Capitalized (26%)	?	?
Assets revaluation	Historical cost (77%)	Upward revaluation (23%)	Upward revaluation	Historical cost
Goodwill	Deducted from equity (43%)	Capitalised (57%)	Capitalised	Deducted from equity
R&D expenses	Taken into income statement (79%)	Capitalised (21%)	Taken into income statement	Capitalised
Pension obligation	Provisioned (55%)	Off balance sheet (45%)	Provisioned	Off balance sheet
Marketable securities valuation	Other valuation (66%)	Market value (34%)	Other valuation	Market value
Inventories valuation	Other method (33%)	FIFO (67%)	Other method	FIFO
Interest costs	Taken into income statement (91%)	Capitalised (9%)	Taken into income statement	Capitalised
Deferred taxes & Loss carry-over	Not taken into account (24%)	Taken into account (76%)	Not taken into account	Taken into account
Deferred taxes & undistributed subsidies income	Taken into account (22%)	Not taken into account (78%)	Taken into account	Not taken into account

<sup>a</sup>Percentage of the firms that selected this accounting method choice.

For each firm, the different accounting methods are combined and summed in the following way. First, given that the extent of the effects of the methods tested on the financial statements is rarely observable, as in Zmijewski and Hagerman (1981) and Inoue and Thomas (1996), it is assumed that the impact of the choice of method on the financial statements will be similar in magnitude regardless of the policy considered. It also appears that regressions on strategies determined in this way produce better statistical results.<sup>18</sup> Second, a firm is considered following an income-accelerating accounting strategy (income delaying) or leverage-ratios decreasing accounting strategy (leverage-ratios increasing) when more than 50% of its accounting method choices accelerate the reporting of income or decrease leverage ratios, i.e. among its available set of methods. This classification allows us to distinguish corporations whose accounting policy choices are clear. For example, firms with six accounting method choices that accelerate the reporting of income and four other choices that do not, will be considered to have an income-accelerating accounting strategy (i.e. as it is assumed each choice has the same impact on financial statements). Table 3 displays the classification of firms' strategies for both income statement and balance sheet effects, and Table 4 the descriptive statistics.

#### 4. Empirical Results

The empirical analysis favours a multivariate approach to test the hypotheses related to Swiss' firms accounting method strategies. As Table 5 shows, there are correlations between some of the explanatory variables. The highest association is a 0.5 Pearson correlation between bank and private loans and short-term loans (statistically significant at the 1% level). This correlation suggests that bank and private loans are primarily short-term within the sample. Other explanatory variables do not appear either significantly or highly correlated, so that regression estimates should not be substantially biased.

Table 3. *Classification pattern of firms' accounting methods strategy*

Firms with an accounting strategy that decreases (resp. increases) leverage-ratios	38%	(62%)
Firms with an accounting strategy that accelerates (resp. delays) the reporting of income	37%	(63%)
	<i>n</i> = 106	<i>n</i> = 106

Table 4. *Descriptive statistics*

<i>Variables</i>	<i>Mean</i>	<i>Median</i>	<i>Maximum</i>	<i>Minimum</i>	<i>First quartile</i>	<i>Third quartile</i>
Leverage (%)	30.1	30.8	88.9	0.00	18.7	39.1
Bank and private loans (%)	73.2	81.6	100	0.00	53.1	100
Short-term loans (%)	35.4	33.1	100	0.00	14.9	48.8
Growth opportunities (%)	119	105	323	64.0	89	131
Assets specificity (%)	2.25	0	21.7	0.00	0	3.4
Size (Th of CHF)	2,855,134	741,118	56,894,000	29,211	307,231	1,991,721
Labour force (%)	26	28	54.5	5.33	19	34
Ownership dilution (%)	47.6	47	100	0.00	26.4	67.2

Leverage = [financial debts/total assets], bank and private loans = [bank and private loans/total financial debt], short-term loans = [short-term financial debts/total financial debts], growth opportunities = Tobin's Q, assets specificity = [R&D expenditures/total sales], size (Th of CHF) = natural logarithm of turnover, labour force = [labour charges/turnover], ownership dilution = [100% of voting rights of main known shareholders].

Table 5. *Pearson correlation matrix between explanatory variables*

<i>Variables</i>	<i>Leverage</i>	<i>Bank loans</i>	<i>Short-term loans</i>	<i>Growth opportunities</i>	<i>Assets specificity</i>	<i>Size</i>	<i>Labour pressure</i>	<i>Ownership dilution</i>
Leverage	1.00							
Bank loans	− 0.02	1.00						
Short-term loans	− 0.11	0.50***	1.00					
Growth opportunities	− 0.08	− 0.05	0.18**	1.00				
Assets specificity	− 0.02	− 0.07	0.24	0.27***	1.00			
Size	− 0.23***	− 0.16*	0.08	0.01	0.11	1.00		
Labour force	− 0.09	0.02	− 0.09	− 0.09	0.28***	− 0.05	1.00	
Ownership dilution	− 0.14	0.03	0.16*	0.03	0.06	0.15*	0.24***	1.00

\*, \*\*, \*\*\* Statistically significant at the 10%, 5% and 1% level respectively. Leverage = [financial debts/total assets], bank and private loans = [bank and private loans/total financial debt], short-term loans = [short-term financial debts/total financial debts], growth opportunities = Tobin's Q, assets specificity = [R&D expenditures/total sales], size (Th of CHF) = natural logarithm of turnover, labour force = [labour charges/turnover], ownership dilution = [100% of voting rights of main known shareholders].



The general form of the empirical model is as follows:

$$Y = \alpha_0 + \alpha_1 \text{Leverage} \pm \alpha_2 \text{Bank loans} + \alpha_3 \text{Short-term loans} \\ + \alpha_4 \text{Investment opportunities} + \alpha_5 \text{Assets specificity} - \alpha_6 \text{Size} \\ - \alpha_7 \text{Labour force} + \alpha_8 \text{Ownership dilution}.$$

The dependent variable  $Y$  represents the firm's accounting strategy choice in terms of leverage ratios effects or in terms of income effects.  $Y=0$  when the accounting strategy increases leverage ratios (delays income), and  $Y=1$  when the accounting strategy decreases leverage ratios (accelerates income). The regressions are performed using Logit models given the dichotomous dependent variable. A regression is first performed on the accounting method strategies expressed in terms of income effect solely (Tables 6). Then, a second regression is performed but on the accounting method strategies expressed in terms of leverage-ratios effect solely (Table 7).<sup>19</sup>

Table 6. *Logit regression results of income accounting method strategies (N = 106)*

*Model:  $Y = \alpha_0 + \alpha_1 \text{leverage} \pm \alpha_2 \text{bank loans} + \alpha_3 \text{short-term loans} + \alpha_4 \text{investment opportunities} + \alpha_5 \text{assets specificity} - \alpha_6 \text{size} - \alpha_7 \text{labour pressure} + \alpha_8 \text{ownership dilution}$ .*

<i>Explanatory variables</i>	<i>Predicted sign</i>	<i>Coefficient</i>	<i>Wald-statistic</i>
Intercept		0.53	0.02
Leverage	+	1.88	1.30
Bank and private loans	±	3.69	7.77***
Short-term loans	+	− 1.87	2.31
Growth opportunities	+	− 0.75	1.62
Assets specificity	+	25.99	9.18***
Size	−	− 0.63	1.94
Labour force	−	− 5.28	3.32*
Ownership structure	+	2.52	5.33**
Pseudo- $R^2$ : 29.7%		Correctly classified: 78.3%	
$\chi^2$ of the model: 24.77***		Naïve classification: 61.0%	

\*, \*\*, \*\*\*, Statistically significant at the 10%, 5% and 1%. The dependent variable  $Y = 0, 1$  with  $Y = 0$  represents income-delaying choice, and  $Y = 1$  income-accelerating choice. Leverage = [financial debts/total assets], bank and private loans = [bank and private loans/total financial debt], short-term loans = [short-term financial debts/total financial debts], growth opportunities = Tobin's Q, assets specificity = [R&D expenditures/total sales], size (Th of CHF) = natural logarithm of turnover, labour force = [labour charges/turnover], ownership dilution = [100% of voting rights of main known shareholders].

Table 7. *Logit regression results of leverage ratios accounting strategies (N = 106)*

Model:  $Y = \alpha_0 + \alpha_1 \text{leverage} \pm \alpha_2 \text{bank} + \alpha_3 \text{short-term loans} + \alpha_4 \text{investment opportunities} + \alpha_5 \text{assets specificity}$

<i>Explanatory variables</i>	<i>Predicted sign</i>	<i>Coefficient</i>	<i>Wald-statistic</i>
Intercept		-4.15	11.44***
Leverage	+	2.43	3.08*
Bank and private loans	±	3.55	8.94***
Short-term loans	+	0.26	0.06
Growth opportunities	+	-0.33	0.41
Assets specificity	+	12.88	3.66**
Pseudo- $R^2$ : 24.1%		Correctly classified: 67.9%	
$\chi^2$ of the model: 20.35***		Naïve classification: 54.5%	

\*, \*\*, \*\*\*, Statistically significant at the 10%, 5% and 1%. The dependent variable  $Y = 0.1$  with  $Y = 0$  represents leverage-increasing accounting strategy choice, and  $Y = 1$  leverage-decreasing accounting strategy choice. Leverage = [financial debts/total assets], bank and private loans = [bank and private loans/total financial debt], short-term loans = [short-term financial debts/total financial debts], growth opportunities = Tobin's Q, assets specificity = [R&D expenditures/total sales].

The results exhibited in Table 6 are related to a model – which includes all Table 1 explanatory variables – that tests income accounting method strategies only. The model is significant at the 1% level ( $\chi^2$  of 24.7). The pseudo- $R^2$  of 29.7%, although relatively low, is similar to those of prior studies on accounting strategy (Skinner, 1993; Bowen *et al.*, 1995) or even higher than  $R^2$  reported in other studies (Zmijewski and Hagerman, 1981; Cullinan and Knoblett, 1994). The quality of Logit models is measured by the percentage of accurate classification. The model accurately classifies 78.3% of the firms<sup>20</sup> (compared to a 61% naïve classification).

The results in Table 6 indicate that highly leveraged firms are not significantly associated with accounting method strategies that would impact income. Unlike the findings of prior studies in an Anglo-Saxon context, it suggests that leverage, as such, does not seem to affect Swiss managers' multiple accounting method decisions, at least when considering the effect on income. Not surprisingly, this result is similar to the one of Saada (1995) for French listed companies, i.e. in a relatively similar institutional environment. Yet, the more the firm's financing leans towards bank and private loans, the more its managers tend to select accounting methods that accelerate the reporting of income (coefficient statistically significant at the 1% level). This result differs from those of

prior studies (Daley and Vigeland, 1983; Malmquist, 1990; Mazay *et al.*, 1993), which assumed that the use of public debts should be associated with income-accelerating choices to lessen the debt covenants constraint. This result may reflect the presence of more restrictive private debt covenants compared to those in public debt contracts (Duke and Hunt, 1990; Sweeney, 1994). This result may also be due to the necessity for Swiss managers to satisfy private creditors' expectations over public creditors in terms of performance. As Berlin and Mester (1990) demonstrated, the value of the option to renegotiate loan agreements depends on the borrowing firm's creditworthiness. On average, the firms in the sample obtained 73% of their borrowing through bank and private loans (see Table 4). This amplifies the importance of such creditors in Swiss' managers' decision process. Additionally, the concentration process among Swiss banks of the 1990s may have entailed more scrutinized screening from their part. The result relative to hypothesis H3 indicates that the necessity to approach the credit market or the frequency of loans renewal (proxied with the proportion of short-term debts) does not appear as a significant enough incentive to affect the firm's accounting policy choice.

The influence of the nature of assets is mixed. The presence of investment opportunities (related to hypothesis H4) does not have a significant impact on managers' accounting decisions, whereas – as predicted by hypothesis H5 – asset specificity seems to lead managers to adopt income-accelerating accounting strategy (significant at the 1% level). Additionally, a high labour force of the firm gives an incentive to adopt an income-delaying accounting strategy (significant at the 10% level). In line with hypothesis H7, the greater the payroll pressure, the more managers tend to opt for income-delaying accounting strategies. Political costs consideration appear to be of interest for Swiss listed firms. However, the absence of significance of the size variable (related to H6) raises questions on the effective impact of political costs on accounting method strategies for Swiss listed companies. Lastly, in line with hypothesis H8, the more the firm's ownership structure is diluted, the more its managers will tend to adopt income-accelerating strategies. This result implies that Swiss managers may report on their quality and expertise through the firm's reported income.<sup>21</sup>

The results relative to the model that tests leverage-ratios effect only are exhibited in Table 7. The estimate of the model is statistically significant at the 1% level, with a pseudo- $R^2$  of about 24.1%. The estimate performed correctly classifies 67.9% of the sample compared

with a 54.5% naïve classification. Overall, the results suggest that the recourse to financial debt, to bank and private loans, and the importance of assets specificity all lead managers to select a set of accounting methods that decrease leverage-ratios (coefficient statistically significant at the 10%, 1% and 10% level respectively). As with the first regression, this result suggests that, for Swiss managers, the transaction costs of debts are higher with bank and private loans – than with other forms of loans – and for firms composed mainly of specific assets. Additionally, the results are consistent with managers considering both income effect and leverage-ratio effects in their attempt to reduce debt costs via their multiple accounting method choices.

## **5. Conclusion**

The number of empirical studies investigating the economic determinants of the accounting choices made by European companies is relatively small. This paper contributes to the existing literature by examining the behaviour of Swiss listed companies and providing an accounting method strategy approach to the analysis. We argue that accounting method choices (decreasing leverage-ratios and accelerating income) in a Swiss context are primarily affected by debt costs, covenant constraints, political costs, and managers own compensation. The results of the empirical analysis seem to confirm the debt costs hypotheses when firms are composed of specific assets or when they rely on bank and private loans. The results also suggest that Swiss managers are more likely to adopt income-accelerating accounting strategies when the ownership dilution of their firm is high, or income-delaying strategies when facing a strong labour force.

The empirical analysis is consistent with creditors playing a significant role in the selection of corporate accounting procedures. Thus, pressure from private creditors (i.e., generally bankers) may affect managers' accounting decisions, at least in the Swiss context. It would be useful to enlarge the analysis of the governance role of creditors, and especially banks, in future Swiss accounting research. The influence of the nature of assets is less obvious. On the one hand, the investment opportunities coefficient does not appear significant in any of the regressions. Dumontier and Bah (2001), however, reported significant associations between European companies' financial policies and the nature of their assets, especially their investment opportunities. On the other hand, it would seem that asset specificity does affect the choice of accounting strategies,

regardless of impact on financial statements. The risk associated with such assets may be of interest for creditors, but also for others stakeholders (Godfrey, 1994). Thus, research on the impact the nature of assets may have on financial reporting policy should take into account managers' interest toward the concern of other stakeholders.

Some conventional economic variables traditionally used in accounting research do not seem to affect the accounting method choices in the case of Swiss listed companies. Neither the size of the firm nor leverage in itself, when considering income effect, presents significant coefficients. Nevertheless, it appears that creditors, the nature of assets (i.e., assets specificity), and to some extent political costs and managers' compensation do have an impact on accounting policy choices. Thus, as Cormier *et al.* (2000) concluded for earnings management studies, the positive accounting theory approach may have some relevance in the European context, particularly in Switzerland. However, as the effect on financial statements of several accounting methods may reverse over time, it is likely that the cross-sectional research design of this research does not perfectly capture the magnitude of the multiple accounting method choices on financial statements made by managers for a given year. Yet, notwithstanding this limitation, the results increase our understanding of the determinants of accounting policy choices within a Swiss context.

## Notes

1. To date, some researchers have analyzed the determinants guiding Swiss firms' voluntary disclosure of financial information (Raffournier, 1995), the reasons for voluntary compliance with IAS (Dumontier and Raffournier, 1998) or the motives governing earnings management (Cormier *et al.*, 2000).

2. Like France and Germany, Switzerland has a civil code. The general accounting rules and standards approved for stock companies in Switzerland are set out in articles 662 to 673 of the *Code des Obligations* (CO).

3. The Swiss GAAP FERs are the standards published by the Foundation for Recommendations Concerning the Presentation of Accounts (FER: Fachkommission für Empfehlungen zur Rechnungslegung) created in 1984. The FER is the Swiss accounting standards body and is modelled on the American FASB (Financial Accounting Standards Board). Its mandate is to make recommendations to improve the quality and comparability of financial statements and to harmonize Swiss accounting practices with international standards. FER standards are essentially concerned with consolidated accounts.

4. This study investigates Swiss listed accounting choices in the period 1994–95, that also provides a larger set of accounting methods available for testing. Indeed, since October 1996, Swiss listed companies have had to comply with the Swiss GAAP FER as well as with the CO, whereas until then the use of stricter standards was at managers' discretion.

5. According to Bowen *et al.* (1995: 261–2), managers may reasonably believe that at least some creditors are unlikely to completely adjust firm's reported accounting numbers for differences in accounting methods because (a) it can be difficult to determine the effects of accounting method choices after the year of adoption, (b) some of the creditors are likely to have limited ability to process accounting information and (c) they do not have a material sum invested in the debtor.

6. The Swiss credit market was then dominated by a handful of banks (i.e. CS, UBS, Kantonal Banks). These banks found themselves, *de facto*, in a dominant or even occasionally a monopoly position vis-à-vis corporations seeking external financing, which lessened the corporations' bargaining power and gave managers further incentives to decrease leverage ratios and accelerate earnings.

7. Researches have suggested that the importance *per se* of public debts (and/or private) in the firm financial structure should affect accounting choices (Holthausen, 1981; Gupta, 1995).

8. For example, corporations are legally free to use latent reserves to "smooth out" accounting results: "Supplementary latent reserves are admissible to the extent that they are justified to sustain the prosperity of the corporation or the distribution of a dividend stable enough to satisfy the interests of shareholders." (CO, Art. 669, para. 3, free translation from the French).

9. To limit the effects caused by a few extreme values, the decimal logarithm of the annual sales figure will serve as the measure of firm size.

10. The choice of the 1994–1995 period also made a larger set of accounting methods available for testing. For many Swiss listed firms, the balance sheet date differs from the end of the fiscal year. The annual reports selected were those with balance sheet opening date in 1994.

11. 215 Swiss firms were listed on the SWX at the end of 1994 and 236 at the end of 1995 (Swiss Exchange, *Jahresbericht*, 1995). Among them, 49 were either banks or insurance companies.

12. Such studies are for example: Hagerman and Zmijewski (1979), Zmijewski and Hagerman (1981), Daley and Vigeland (1983), Morse and Richardson (1983), Lee and Hsieh (1985), Hunt (1985), Penno and Simon (1986), Cushing and Leclerc (1992), Kuo (1993), Skinner (1993), Archambault and Archambault (1994), Cullinan and Knoblett (1994), Bowen *et al.* (1995), Inoue and Thomas (1996), Craycraft *et al.* (1998).

13. The impact on earnings from different accounting policies can be temporary and may actually reverse over time (the impact is also not obvious, for example, when considering accounting for financial leased assets and inventory valuation). The choice of a particular accounting method can only accelerate or decelerate the recording of expenses and thus profits. Without additional information, it is not possible to avoid such simplification. However, it is also true that a choice of accelerating or decelerating the reporting of profits corresponds to a deliberate rationale. For example, an accounting policy that accelerates the reporting of profits may facilitate the renewal of a loan, or may avoid penalties from creditors. This policy proceeds from a financial rationale where the utility of a current gain (i.e. loan renewal or the absence of penalties) is higher than the utility of that gain in the next period, especially when it is uncertain (e.g. insolvency risks in the absence of the loan renewal). Lastly, given that this classification of accounting policies is consistent with most prior studies, the results described in this paper are comparable with those set out in the literature.

14. This would not be relevant in the extreme case where  $[\text{Debt}/\text{Assets}] > 1$ , but does not concern this study.

15. Cullinan and Knoblett (1994: 69) mention recourse to an income strategy approach as an additional procedure to their individual accounting method analysis. However, their statistical results are not provided.

16. Although the principal hypotheses of the accounting choices theory initiated by Watts and Zimmerman (1978) are expressed in terms of the effect on financial statements, most of the empirical studies almost exclusively consider the effect on income. Very few formulate their hypotheses in terms of the effect on leverage ratios (e.g., Whittred and Chan, 1992; Cotter, 1999) and even then for very specific accounting methods (i.e., assets revaluation).

17. Indeed, due to the specific nature of the accounting methods identified and selected, some accounting method choices may have counter-effects on income. For example, one choice may increase income and decrease leverage ratios (e.g. R&D capitalization, interest costs capitalization), while another may decrease both income and leverage ratios simultaneously (i.e. upward assets revaluation and goodwill capitalized). Thus, when determining the combined effect of managers' multiple accounting choices (i.e. accounting strategies), it is necessary to consider the two effects separately with two distinct accounting method choices' portfolios. A first one that includes accounting choices solely expressed in terms of income effects, and in terms of leverage ratios effect for a second portfolio.

18. Zmijewski and Hagerman (1981) determine portfolios in two ways. They consider a first portfolio in which all methods have the same impact on financial statements, and two other portfolios for which the accounting methods are classified according to the (supposed) size of their impact. The regressions on these different portfolios give very similar results, even better with the first portfolio in terms of accurate classification.

19. In these regressions, the explanatory variable [total financial debts/total assets] has been computed *ex ante*, i.e. without taking into account the effect of accounting method choices. The value exhibited in Table 4 (descriptive statistics) is an *ex post* value, i.e. as reported in annual reports.

20. This accurate classification is superior to those of prior studies. However, it should be noted that the percentage of accurate classification generally decreases with the number of possible values of the dependent variable. Thus, at best Zmijewski and Hagerman (1981) correctly classified 40% of their sample, Press and Weintrop (1990) 60%, Saada (1995) 39% and Inoue and Thomas (1996) 47.5%. Skinner (1993) and Bowen *et al.* (1995) did not provide this information.

21. Also, to control for the strong correlation identified in Table 5, diagnostic tests were performed by dropping the explanatory variable [short-term loans/total financial debts]. The results were not affected for the analysis of leverage-ratios effects. For the analysis of income effects, the variable [Labour force] was not significant with this specification.

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