

Motives for Fixed Asset Revaluation: An Empirical Analysis with Swiss Data

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Abstract

This paper investigates the economic motives of fixed asset revaluations of Swiss listed companies. We extend the literature by testing the impact of international stakeholders on the choice of whether to revalue assets and provide international insights on revaluation motives, particularly in a stakeholders' regime. Results show positive associations between revaluation and both the proportion of foreign sales and leverage. Negative associations occur between revaluation and both cross-country listings and investment opportunities. These findings suggest that revaluation is used as a device to improve creditors' and foreign stakeholders' perceptions of the financial health of the firm and thereby improve the firm's borrowing capacity.

Keywords: Asset revaluation, information asymmetry, international stakeholders, leverage, Switzerland.

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1. Introduction

In several countries (e.g., Australia, Belgium, and the United Kingdom), accounting laws allow the value of fixed assets to be revalued upward—without a previous write-down—at managers' discretion.¹ Information asymmetry on the firm's assets value should be reduced by this departure from the historical cost principle (Brown et al., 1992, p. 41). Research on the value relevance of this accounting practice in Australia (Standish and Ung, 1982; Easton et al., 1993),

¹ Different countries have different regulations in this area. For example, upward revaluation is strictly forbidden in Canada and the United States but is authorized (under certain conditions) in Australia, Belgium, Spain, France, Hong Kong, Italy, Japan, New Zealand, the Netherlands, Switzerland, and the United Kingdom (Raffournier et al., 1998, p. 438).

in New Zealand (Emanuel, 1989; Courtney and Cahan, 2004), in the United Kingdom (Barth and Clinch, 1998; Aboody et al., 1999), and for Hong Kong firms (Jaggi and Tsui, 2001) provides mixed results.² Given that the choice of whether or not to implement revaluation lies with management, there is good reason to question the motivations underlying a practice that has no direct impact on the firm's cash flow besides implementation costs (e.g., additional audit fees). It is reasonable to think that these costs are compensated (Watts, 1977). It may therefore be interesting to understand the origins of the compensations, in order to comprehend the reasons why managers opt for upward revaluations.

The purpose of this paper is to empirically investigate the economic factors likely to affect fixed asset revaluation of Swiss listed companies by concentrating on contractual relationships (implicit and explicit). Investigation of the choice of upward asset revaluation—that is, without a previous write-down—in a Swiss context is of interest for three reasons. First, the accounting literature has extensive research on the associations between a firm's characteristics and its accounting method choices. Yet, unlike most accounting choices that accelerate or delay the recording of profits (e.g., via discretionary accruals management), effects of revaluation on the financial statements—all things being equal—do not reverse over time. Besides, upward revaluation may have a substantial effect on the financial statements' aggregates.³ Second, although some empirical works have focused on the economic logic underlying the decision to revalue; most previous studies have been concerned with firms in an Anglo-Saxon environment (i.e., Australia, New Zealand, and the United Kingdom). Only Jaggi and Tsui (2001) in Hong Kong and Gaeremynck and Veugelers (1999) for non-listed Belgium firms offered empirical

² To some extent, Nichols and Buerger (2002) found upward revaluation relevant in the debtors/creditors relationship in a German context.

³ Under IFRS, revaluation cannot apply to a given isolated asset only, but must encompass all assets in a given class, which increases the overall value involved.

results—on a manager’s motivation to revalue assets—in different institutional and cultural environments.⁴ The Swiss environmental setting has specific characteristics such as accounting regulations that prescribe few and rather flexible guidelines, leaving managers great discretion in terms of revaluation policy; a concentrated and relatively illiquid stock market that differs from those in "stockholders-oriented" countries (Hilary, 2003); and a small but open economy (Cauchie et al., 2004). This paper increases understanding of managers’ accounting choices, and particularly asset revaluation, in such a "stakeholders’ regime." Third, few articles have considered the impact of international stakeholders (i.e., customers, suppliers, and foreign investors) on a firm’s accounting policy choices (Cullinan, 1999). Financial statements of firms facing international competition are not exposed to the scrutiny of only local stakeholders. Numerous Swiss listed firms have expanded their activities abroad, providing the opportunity to test the impact of international stakeholders on reporting valuation choice (i.e., historical cost vs. upward revaluation of fixed assets).

In order to investigate the rationale underlying upward asset revaluation choice of the main Swiss listed companies, we derive hypotheses from the Swiss environment.⁵ We argue that revaluation is mainly a device to decrease both debt costs and political costs, as well as to meet foreign stakeholders’ information needs, and that it also reflects managers’ compensation considerations. It is further hypothesized that upward revaluation is positively associated with a firm’s leverage ratio, its level of export sales and its size; it is hypothesized to be negatively associated with the firm’s cross-country listing status and its ownership diffusion. The empirical

⁴ Results from prior research that has focused on managers’ motives to explain the decision to revalue a firm’s assets generally suggest that upward revaluation may be a signaling/contracting device to reduce debt costs (Brown et al., 1992; Whitted and Chan, 1992; Cotter and Zimmer, 1995; Black et al., 1998; Cotter, 1999, Lin and Peasnell, 2000a, 2000b).

⁵ Hypothesis developments from prior studies are also used when non-context specific.

analysis is based on univariate tests and Logit-type regressions on Swiss listed firms from the years 1994, 1997, and 2000. The three years were selected to capture the dramatic accounting changes Swiss firms have experienced over the last decade (see the next section). The univariate results suggest that leverage ratios and the ratio of foreign sales to total sales are positively associated with upward revaluation of certain fixed assets, whereas cross-country listing and investment opportunities are negatively associated. For the most, these observations are supported by multivariate regressions. Thus, although traditional explanations (based on leverage ratios)—which suggest that upward revaluation is a device to reduce debt costs—remains valid, it is also appropriate to consider that Swiss managers take into account international stakeholders in their reporting valuation decision.

The paper is organized into the following sections. The next section describes the accounting context in Switzerland and examines the issues associated with revaluation, the third develops the hypotheses, the fourth presents the research design, the fifth discusses the main statistical results and the sixth offers a conclusion.

2. Accounting for Asset Revaluation in Switzerland

Switzerland follows the continental European model of legal approach to accounting standard settings, as its accounting regulation is mostly of legislative origin. Firms' accounting choices must be consistent with the legal rules set out in the Swiss Company Law (Code des Obligations, hereafter CO),⁶ which used to give firms considerable flexibility with regard to publication of information—the CO contains very few accounting principles or rules. As a result, Switzerland, although it was one of the world's most highly industrialized countries, was considered to be underdeveloped from the accounting standpoint (Zünd, 1993, p. 257). The situation has changed

⁶ The generally accepted accounting rules and principles in Switzerland are set out in sections 662 to 673 of the CO.

significantly in recent years. In 1984 the Swiss Institute of Certified Accountants created the Foundation for Recommendations concerning the Presentation of Accounts, known in Switzerland by its German acronym FER, for *Fachkommission für Empfehlungen zur Rechnungslegung*. The FER is a Swiss accounting standardization board modeled on the American FASB (Financial Accounting Standards Board). Its mission is to draw up recommendations (i.e., the Swiss GAAP FER) that intend to improve the quality and comparability of financial statements and help bring accounting practices into line with international standards (FER's standards apply mostly to consolidated accounts). The CO, which dates from 1881, was revised in depth in 1992, with emphasis on standardization of annual accounts, in respect of which it now contains a number of rules (art. 663 and 663a). Since October 1996, firms listed on the Swiss Stock Exchange (Swiss Exchange: SWX) must also comply with the Swiss GAAP FER (Accounting Rules Recommendation), the IFRS (International Financial Reporting Standards), or the U.S. GAAP, as well as with the CO. These new SWX rules merely confirmed a *de facto* situation, in that Switzerland's listed companies already voluntarily published their group accounts in accordance with recognized standards or standards consistent with generally accepted practices (Dumontier and Raffournier, 1998), such as the IFRS, Swiss GAAP FER, U.S. GAAP or European Directives.⁷

Besides U.S. GAAP, all available accounting standards—for Swiss listed companies—allow some form of upward revaluation. At the legislative level, except for the specific case of losses of half the capital stock and reserves (art. 670 CO), the CO prohibits revaluations in individual accounts but authorizes them in consolidated accounts. The CO does not, however, provide any guidelines relative to the accounting for upward revaluation. Instead, it invites managers to

⁷ Because Switzerland is not a member of the European Union, all references to the European Directives in Swiss firms' annual accounts were, and still are, entirely voluntary.

follow recognized GAAP for the reporting of consolidated accounts (art. 663 CO). Managers of Swiss listed firms may then prepare consolidated financial statements with upward revaluation of fixed assets under the other accounting references required by the SWX (i.e., Swiss GAAP FER and IFRS). Indeed, Switzerland's own standard, Swiss GAAP FER No. 5 "Valuation Principles for Group Accounts," authorizes both the historical cost method and the fair value method in consolidated accounts, and it does not state a preference. The accounting treatment of upward revaluation is stipulated in Swiss GAAP FER No. 18, "Tangible Fixed Assets." Firms may measure their tangible fixed assets at the "actual values" (FER 18, §8). This standard is similar to the one of IAS 16, "Property, Plant and Equipment" (*International Accounting Standards*) in terms of revaluation.⁸ Thus, under IFRS and Swiss GAAP, a company may choose the revaluation model as its accounting policy for PPE (Property, Plant & Equipment) after the initial recognition. As stipulated, PPE may be revalued at fair value (at the date of the revaluation), normally appraised by professionally qualified valuers (IAS 16, §32). The revaluation of assets should then be made with sufficient frequency (IAS 16, §34; FER 18, §10), and it should concern the entire class of PPE to which the assets belong (IAS 16, §37). Upward revaluation is recorded first by measuring the difference between the fair value of the assets and their book value. The revaluation difference is then added to the net book value of the assets and to the firm's equity capital as a revaluation surplus. If the revalued assets are depreciable, depreciation is recorded in the income statement. Where the difference between the fair value of an asset and its net book

⁸ Swiss GAAP FER No. 9 provides the accounting rules for intangible assets, which do not allow upward revaluation. Swiss GAAP FER No. 18, "Tangible Fixed Assets," and IAS 40, "Investment Property" (i.e., lands or buildings held to earn rentals or for capital appreciation), were not considered for the period in consideration in this paper, as both standards were effective for financial statements covering periods beginning on or after 1 January 2001. In addition, the effect of IAS 40 on financial statements differs from a revaluation model approach (i.e., the one investigated in this paper). IAS 40 allows the choice between two valuation methods: a cost model and a fair value model. With this latter approach, "investment should be measured at fair value and changes in fair value should be recognised in the income statement" (IAS 40, §5a). It is thus stipulated that "The fair value model differs from the revaluation model that the Board already permits for certain non-financial assets. Under the revaluation model, increases in carrying amount above a cost-based measure are recognised as revaluation surplus. However, under the fair value model, all changes in fair value are recognised in the income statement" (IAS 40, §6).

value is negative, the asset is depreciated by the same amount. When revalued assets are derecognized, the revaluation surplus may be transferred to the retained earnings (IAS 16, §41; FER 18, §13), or instead it could be “dissolved to profit” (FER 18, §13).⁹

3. Background and Explanatory Factors

Asset revaluation allows firms to take into account changes in the fair value of some assets when determining their carrying amounts in financial statements. The need to revalue certain non-current assets has its roots in the debate over the effects of changing prices. Some firms revalue their assets within the scope of inflation accounting standards (Griffiths, 1990). A firm may also consider upward revaluations to reveal its true economic and financial situation to investors. Where it is clear that an asset’s book value is far different from its fair value, management should make the relevant adjustment in order to reduce information asymmetry (Brown et al., 1992), even if this means increasing the book value of the asset in question.

The debate relative to such departure from the historical cost principle is ongoing (Aboody et al., 1999; Lin and Peasnell, 2000a, 2000b). The principle of conservatism dictates that firms should consider only those events likely to reduce asset values, eliminating any upward valuations. Moreover, upward revaluations generate more in terms of direct costs (as discussed below) than they contribute in terms of business image; following this logic and according to Henderson and Goodwin (1992), accounting standards should prohibit them.

⁹ Under both IAS 16 and FER 18, the amount in the revaluation surplus may change upon three cases. (a) As a result of a revaluation, an increase of the carrying amount of an asset shall be credited directly to the revaluation surplus (or in profit or loss to the extent it reverses a revaluation decrease of the same asset previously recognized in profit and loss) (IAS 16, §39; FER 18, §13). (b) As a result of a revaluation, a decrease of the carrying amount of an asset shall be recognized directly to the revaluation surplus to the extent of any credit balance existing in the revaluation surplus of the assets (or directly in profit or loss in the absence of any credit balance of a revaluation surplus of the same assets) (IAS 16, §40; FER 18, §13). (c) When the revalued asset is derecognized, the revaluation surplus shall be transferred directly to retained earnings (and not through profit and loss) (IAS 16, §41; FER 18, §13).

Upward fixed asset revaluation generates a certain number of direct costs. One is the cost of obtaining an estimate of the fair value of the assets in question. In some cases, higher audit fees could be expected, for example where auditors have to verify the assumptions the company made when estimating internally the fair value of assets. Certain difficult-to-measure costs also result from the time spent in discussions and negotiations between auditors and management on the new asset value to be recorded (Brown et al., 1992, p. 37). Some indirect effects can arise from the lasting impact of revaluation on all the firm's financial statements.¹⁰ The published amounts may affect the decisions of some stakeholders in their relationship with the firm.

The empirical literature offers a number of factors to explain the revaluation decision in different contexts and environments. First, in Australia, the United Kingdom, and to some extent Hong Kong, upward revaluations help avoid violations of debt covenants, restricting debt levels (Brown et al., 1992; Whittred and Chan, 1992; Cotter, 1999) while improving the firm's ability to obtain new loans because the firm can report a lower debt ratio as a result of its higher asset value (Brown et al., 1992; Cotter and Zimmer, 1995; Black et al., 1998; Cotter, 1999; Lin and Peasnell, 2000b; Jaggi and Tsui, 2001). In such a context, and given that outside financing is more costly for firms composed mainly of investment opportunities than for those composed mainly of assets-in-place, it appears that the managers of the former have more reasons to implement upward asset revaluation (Brown et al., 1992; Whittred and Chan, 1992). Second, revaluations also serve to dissuade hostile takeover bids. If revaluation allows a firm to bring its book value into line with its fair value, this move lowers the probability of a successful under-value bid (Brown et al., 1992; Easton et al., 1993). Third, by reducing the return on equity and the return on assets, upward revaluation reduces the political costs borne by firms (Brown et al., 1992). Fourth, in the

¹⁰ These effects increase in proportion to the variation between the fair value and the book value of the assets, and they are larger as revaluation frequency declines.

UK and prior to 1993, when gain on sale of fixed assets could be calculated based on historical cost and flow through the income statement, revaluation could be part of an overall earnings management policy (Black et al., 1998). Fifth and last, managers may implement upward revaluation simply to report the fair value of the firm's assets. For example, Aboody et al. (1999), in the United Kingdom, and Jaggi and Tsui (2001), in Hong Kong, have both shown a positive link between upward asset revaluation and the firm's future performance, suggesting that the managers' choice was actually motivated by asset value modification considerations.¹¹ Within a Swiss context, several factors are also likely to influence managers' accounting decisions.

3.1 Leverage

The Swiss credit market is well developed, although since the collapse of real estate prices in the early 1990s, its banking sector has experienced an important consolidation process (Hertig, 1997; Rime and Stroh, 2003). The handful of banks that dominate the credit market (i.e., Credit Suisse, UBS, and Kantonal Banks) may find themselves in a dominant or even occasionally a monopoly position vis-à-vis corporations seeking external financing, which could lessen the firms' bargaining power. Creditors use accounting information to analyze a firm's financial standing and assess the risk they would be taking when granting credit or agreeing to a loan. Managers seeking to reduce financing costs may influence the accounting decisions to reduce the perceived risk of creditors, and thus reduce debt costs. Swiss bank loans may be priced and may contain restrictive debt covenants according to the debtor's financial standing (Missonier-Piera,

¹¹ Gaeremynck and Veugelers (1999) concluded that in Belgium, revaluation was a negative signal. They developed an analytical model suggesting that poorly performing firms benefit more than others from upward asset revaluation. Their empirical tests on unlisted Belgian firms appear to confirm their analyses, but only for a somewhat volatile industry.

2004).¹² Indeed, one of the main concerns of creditors is the risk of reducing or diluting the guarantees offered by the firm's assets in case of bankruptcy, which is positively correlated to the firm's leverage. Managers (acting on behalf of shareholders) will try to reassure creditors by opting for an upward revaluation policy for their fixed assets. This choice will not only reduce information asymmetry about the assets' fair value but also will reduce leverage ratios and the related perceived bankruptcy risk. Results from Nichols and Buerger (2002) indicate that bankers (in Germany) would grant significantly larger loans to firms reporting their financial statements with fixed assets at fair values instead of historical cost. This suggests that creditors may prefer such a revaluation practice, or at least that it is appropriate for debtors to present fixed assets at revalued amounts in their financial statements. This accounting choice becomes more relevant as the firm's debt level increases and as the firm moves closer to its contractual limits (Begley, 1990).

***H1:** The higher the firm's leverage, the more likely it is that its managers will use upward fixed asset revaluation.*

3.2 Ownership Control Status

The Swiss stock market is concentrated and relatively illiquid (Cormier et al., 2000; Faccio and Lang, 2002; Hail, 2002). Most corporations, including some of the biggest, are owned and controlled by a small number of shareholders, and the general public owns only a small fraction of the firms' stocks (Schmid and Burkhard, 1997). Köke (2004) provided empirical evidence that changes in control—due to poor performance—may play a disciplinary role in a bank-based

¹² "Deal Scan" from Loan Pricing Corporation (a private worldwide database) provides such detailed information on some Swiss private debt agreements.

economy (i.e., like that of Switzerland), although the probability of control changes is reduced as ownership concentration increases. The ownership structure of the firm may then affect managers' accounting method choices. Indeed, senior managers have considerable discretionary power over the firm's management—in particular, regarding the publication of information on its performance (Williamson, 1967, p. 13)—in firms when the cost of controlling managerial activities is high. This particularly tends to be the case in firms with diffuse shareholdings (Salamon and Smith, 1979; Dhaliwal, 1988; Hall, 1993). A manager of such a firm could select accounting methods to convince shareholders that the firm's performance is satisfactory in order to increase managerial compensation, or at least give a flattering image of the firm.¹³ Hence, Elston and Goldberg (2003) found a positive association between the level of executive compensation and both firm profitability measures as well as ownership dispersion for firms in Germany (i.e., a country close to Switzerland in terms of corporate governance attributes). Upward revaluation decreases accounting profitability measures,¹⁴ leading us to expect:

***H2:** The more diffused the ownership of the firm, the less likely it is that its managers will use upward fixed asset revaluation.*

¹³ This should discourage hostile takeover bids by ensuring that existing shareholders do not wish to sell their shares. Such practices should be all the more relevant in a market with a low ratio of firms' owners (i.e., the main shareholders) to managers, as the competition between these latter is stronger (Williamson, 1975).

¹⁴ The increase of managers' compensation may result from the presence of a bonus (for example). Indeed, the literature in the area assumes that—in order to monitor managers' activities more effectively—the presence of a bonus plan within the firm is positively associated with more diffused ownership of firms (Salamon and Smith, 1979; Dhaliwal et al., 1982). Managers' compensation contracts are difficult to obtain for Swiss corporations, however. The few bonus plans identified (in Switzerland) seem to leave shareholders some latitude in fixing the amount of managers' bonus payments (Pratt and Bher, 1989, p. 20). The scarcity of compensation contracts available for study and the difficulty in obtaining them may result simply from the relatively highly concentrated ownership structure of the Swiss stock market, which—according to the literature—should be negatively associated with the presence of such contracts.

3.3 International Stakeholders

According to the Swiss Federal Office of Statistics, exports represented 28%, 32%, and 37% of GDP in 1994, 1997, and 2000, respectively. On the Swiss stock market, a large proportion of firms are exposed to foreign economic conditions (Cauchie et al., 2004). In addition, due to the relatively small size of the Swiss market, numerous listed firms have expanded their activities abroad and have sought external funds on foreign financial markets (i.e., on foreign exchanges) to finance their expansion. A firm engaged in international activities has to provide information not only to its domestic stakeholders such as investors, creditors and customers but also to those from abroad. Very few articles have considered the impact of international stakeholders on accounting methods choice (e.g., Cullinan, 1999). Financial statements of firms facing international competition, however, are exposed to the scrutiny of local and international stakeholders, both of whom may affect managers' accounting decisions. From abroad, Swiss companies may be perceived as more risky than local firms. Not only do users of financial information (e.g., foreign customers) have to convert the financial statements into their local currency, but also they do not share the same amount of information and do not have the same expertise and knowledge about the firm (e.g., its business history) as financial statement users from Switzerland. Swiss firms have therefore an incentive to enhance their perceived financial strength by reducing information asymmetry. Upward revaluation may be a device to achieve this goal, especially when this practice may be well perceived in some neighbor countries and significant economic partners, such as Germany (Nichols and Buerger, 2002). We may then expect that:

H3a: The higher the level of a firm's export sales, the more likely it is that its managers will use upward fixed asset revaluation.

Swiss firms listed on the Swiss stock market but also on a foreign stock exchange may have to comply with different accounting rules. To some extent, they may not be allowed to implement upward revaluation by the foreign regulation, as is the case, for example, with stock exchanges requiring U.S. GAAP exclusively. Thus, and first, those cross-listed firms may relevantly try to avoid the costs of preparing two sets of financial statements (or a statement of reconciliation), that is, one for the SWX with revaluation, for example, and another without upward revaluation of fixed assets. Second, they may be willing to prepare financial statements in a way that can be interpreted and compared easily by both domestic and foreign analysts (Dumontier and Raffournier, 1998). Therefore, Swiss firms that are cross-listed should be then more prone to prepare their accounts in accordance with both domestic and foreign stock exchange regulations. We may then expect that:

H3b: Managers of cross-listed firms are less likely to use upward fixed asset revaluation.

3.4 Investment Opportunities

Myers (1977) claimed that 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). Investment opportunities may have two countervailing associations with asset revaluation policy. (a) On one hand, by definition, firms composed mainly of investment opportunities have fewer assets-in-place. From this perspective, these growth firms have fewer possibilities than firms composed mainly of assets-in-place to revalue their assets upward. Indeed, fixed asset revaluation may concern only existing-assets (i.e., assets-in-place). (b) On the other hand, managers of firms composed mainly of growth opportunities are better

acquainted with their value than are outside investors, due to information asymmetry (i.e., the asset value is difficult to appraise). It is therefore more difficult to control the activities of growth firms than it is to control the activities of firms composed mainly of assets-in-place. For creditors, the presence of investment opportunities generates a problem of underinvestment and of asset substitution¹⁵ (Galai and Masulis, 1976). Creditors will then perceive such growth firms as more risky, and they will have higher expectations in terms of financial health.¹⁶ This gives an incentive to opt for upward revaluation of fixed assets (Whittred and Chan, 1992), along with the need to reduce information asymmetry with potential investors (Brown et al., 1992). Because of these two opposite arguments, it is difficult to make a prediction *a priori* about the sign of the association between investment opportunities and upward revaluation of fixed assets.

H4: *The importance of the firm's investment opportunities is associated with the use of upward fixed asset revaluation.*

3.5 Firm Size

The Swiss population is strongly attached to the notion of “social and labour peace.” When and if Swiss politicians fear conflict situations that could lead to retaliations in the next elections, they strive to maintain this “social peace” (Stettler, 1986). For example, the revised CO

¹⁵ The first risk is the potential risk of underinvestment. By definition, managers will decide at the appropriate time whether or not to proceed with the investment (i.e., to take up the investment opportunity). They will not make the investment if its net present value—even if positive—is less than the amount the firm must repay to its creditors, generating a problem of underinvestment. The second risk arises from the possibility that manager-shareholders may undertake projects that are more risky than those for which creditors granted the loan (Galai and Masulis, 1976). This is because the additional gain resulting from the increase in risk will benefit the shareholders only, not the creditors, who receive a fixed amount. The capacity to substitute assets is greater if the firm is composed mostly of growth opportunities rather than assets-in-place. As a result, creditors consider growth opportunities to be more risky than assets-in-place.

¹⁶ In addition, given the conservatism of accounting valuations, accounting data are very poor indicators of the firm's performance where the firm is composed mainly of growth opportunities (Smith and Watts, 1991). It is reasonable to suppose that the use of loan covenants and manager compensation contracts based on accounting data is more likely in firms composed mainly of assets-in-place. Skinner (1993) concluded from this that the managers of such firms have more incentives than others to select accounting methods that speed up profit accounting in order to maximize their own compensation or comply with loan covenant provisions.

leaves certain accounting flexibility “as long as it is necessary for the prosperity of the firm” (CO 663). Political cost intensity is often related to firm size (Watts and Zimmerman, 1986). Political costs, or transfers of the firm’s wealth to the electorate, take the form of legislation, regulations, or other government interventions that also become opportunity costs (i.e., abandoning profitable projects). Large firms tend to be more visible, especially in terms of available wealth, and thus more easily attract the attention of elected representatives (and the electorate), who seem to concentrate more on the firms’ profits than on their relative value (Zimmerman, 1983). As a result, managers of large firms may be inclined to apply upward revaluations to reduce the return on equity and on assets as well as the potential capital gains obtained from sales of assets, and thereby reduce their political costs.

H5: The larger the firm, the more likely it is that its managers will use upward asset revaluation.

4. Research Design

4.1 Sample Selection

The sample is composed of industrial and commercial firms listed on the Swiss Stock Exchange (SWX) for the three distinct periods of 1994, 1997, and 2000; only firms that do not report their financial statements under US GAAP are included. Use of these three periods captures the accounting changes that have occurred over the last decade in Switzerland. Pooling of the observations across time is undesirable because it would bring about a problem of independence across observations (Bowen et al., 1995, p. 264). The time periods are not selected arbitrarily. The year 1994 takes into account the last 1992 review of the CO, which came into

force on 1 July 1993. Moreover, IAS 16, revised in 1993 and applicable to years beginning on or after 1 January 1995, became more restrictive, requiring for example that revaluations take place at regular intervals and that assets be valued by professionals.¹⁷ Since October 1996, firms listed on the SWX have had to comply with Swiss GAAP FER, U.S. GAAP, or IASB standards in addition to the CO. The year 1997 is chosen to test the effect of the new requirement of the SWX on managers' reporting of valuation choice. The year 2000 allows control for regularity over time relative to managers' accounting decisions, as well as the ability to disregard the introduction of IAS 40, on "Investment Property." The sample firms all published consolidated accounts because the CO prohibits revaluations in individual accounts. This constraint also allows the analysis to ignore the fiscal impact of accounting decisions, because a major characteristic of Swiss accounting practices is compliance with *Massgeblichkeitsprinzip*. This "Authoritative Principle" simply states that commercial accounts are directly linked with accounts for tax purposes (Achleitner, 1998).¹⁸

The data set was collected manually from all annual reports of industrial and commercial listed companies (excluding financial and government institutions) available at the Universities of Geneva and Lausanne (Switzerland). Among them, 96, 95, and 103 firms disclosed all necessary information (for the years 1994, 1997, and 2000, respectively), and 22, 21, and 16 respectively resorted to upward revaluation of certain fixed assets for the reporting of their consolidated financial statements. This sample selection represents 48%, 57%, and 55% of all listed companies in terms of market capitalization in Switzerland in 1994, 1997, and 2000, respectively, and 65%, 74%, and 82% of all industrial and commercial listed companies for the same years (excluding

¹⁷ In addition, annual reports from prior years were not available for many companies or did not provide sufficient information for the testing of the hypotheses.

¹⁸ The IFRS and the Swiss GAAP FER are used for group accounts and not for tax purposes. Tax accounting uses its own rules, generally based on the rules set out in the CO, that is, the Swiss Company Law (Oberson, 1998).

financial and government institutions). According to annual reports, land and properties were the types of assets most involved in revaluations. For firms that revalue upward their fixed assets, on average revaluation represents (respectively for 1994, 1997, and 2000) 26%, 16%, and 8% of their fixed asset values (without revaluation).

4.2 Variable Measurement

The accounts of the sample firms are recalculated to take into account the impact of revaluation on the measures of the independent variables. The reprocessing consists of establishing the values of the financial statements' aggregates that would exist in the absence of the upward revaluation. Several methods can be used to measure the leverage ratio. We use, as did Brown et al. (1992), the total of financial debt to total assets (LEV). Ownership diffusion (OD) is measured by one minus the percentage of voting rights held by the known major shareholders. This variable is thus continuous. The firm's ownership structure is likely to determine both managerial behavior and the nature of managers' compensation contracts. Hypothesis H2 suggests that managerial corporations¹⁹ select accounting methods that tend to enhance company performance results. The measure used for this research is similar to that used by Hall (1993) and Dumontier and Raffournier (1998). The pressure from international stakeholders is measured with the percentage of sales outside Switzerland (EXP) and with a dummy variable (STK) that takes the value 0 if the firm is listed on the SWX only and the value 1 if it is also listed on a foreign stock exchange. Investment opportunities (IOS) are measured by

¹⁹ According to the criteria of Monsen and Downes (1965), a firm is a managerial corporation if none of the shareholders has more than 5% of the voting rights. Otherwise, one shareholder is able to exercise effective control over managerial activity. Others (Dhaliwal et al., 1982; Dhaliwal, 1988) consider firms to be shareholder corporations if a shareholder owns more than 10% of the firm's capital stock, or if a group of shareholders owns more than 20%. In all other cases, firms are considered to be managerial corporations.

Tobin' Q (i.e., market value of the firm divided by the replacement value of its assets).²⁰ Tobin's Q is measured following the modified version of Lewellen and Badrinath (1997) proposed by Lee and Tompkins (1999), which provides a method to estimate the replacement cost of the fixed assets. Lastly, most empirical research uses either total assets or sales as a measure of firm size (Bujadi and Richardson, 1997). Total sales (SIZE) has the advantage of not being affected by the accounting choices tested in the study described here. To limit the amplification effects of a small number of extreme values, the decimal logarithm of total annual sales is used as a measure of size. Table 1 shows all the proposed measures, and Table 2 presents the descriptive statistics.²¹

- Insert Tables 1 and 2 about Here -

The general form of the empirical models is as follows:

$$Y_i = \alpha_0 + \alpha_1 LEV - \alpha_2 OD + \alpha_{3a} EXP - \alpha_{3b} STK \pm \alpha_4 IOS + \alpha_5 SIZE$$

$$i = 0,1$$

Y represents the effect of accounting choice: 0 if the firm chooses the historical cost valuation principle and 1 if the firm opts for upward revaluation of fixed assets. Univariate tests are carried out to identify the impact of the individual independent variables on the choice of whether to use asset revaluation. Some of the explanatory variables may be correlated with one another, a problem that can be addressed by using multivariate analysis, which also was undertaken, as discussed in section 5.2.

²⁰ We also used the market-to-book ratio as a proxy for IOS. The results are not affected by this other proxy. Tobin's Q has the advantage of not being affected by the accounting choice tested in this study.

²¹ For the year 2000, the standard deviation of the variable IOS may suggest the presence of outliers. Some companies in the high-tech industry exhibited a relatively high Tobin's Q. We do not consider this group of homogeneous company (in terms of Tobin's Q) as outliers. Univariate and multivariate tests performed without these companies provide the same conclusions as reached in the primary analysis; the results are similar in terms of signs of coefficients and levels of significance.

5. Empirical Results

5.1 Univariate Analyses

The purpose of the univariate analyses is to compare the independent variables in two groups, namely firms that revalued some of their fixed assets upward for the publication of their annual reports and firms that did not. The difference in the means of the two groups is tested using the Student parametric test (t test) and the Mann-Whitney nonparametric test (U test). The use of a nonparametric test is justified given that, *a priori*, there is no reason to consider a particular form for the independent variable distribution curve.

– *Insert Table 3 about Here* –

The univariate results reported in Table 3 confirm the validity of the hypotheses concerning the choice of valuation principles for leveraged firms, the investment opportunity sets, and to a lesser extent the international exposure. The results validate the importance of leverage (LEV), which is significantly associated with the choice of the firm's financial statements valuation principle. Firms preparing their financial statements with upwardly revalued assets exhibited a higher leverage ratio than firms using historical costs entirely. Firms with the highest ownership diffusion (OD) are associated with the historical cost principle, as is expected according to Hypothesis H2, although the association is not significant for any of the years. Table 3 also illustrates the association between international stakeholders and Swiss managers' accounting choices, but in a different manner, depending on the surrogates considered. As hypothesized (H3a and H3b, respectively), firms that adopt upward asset revaluation exhibit a

higher percentage of foreign sales (EXP) than those using historical costs entirely for the preparation of their financial statements, whereas managers of firms listed on a foreign stock exchange (STK) are more likely to adopt the historical cost valuation principle exclusively. Although statistically significant, these associations must be interpreted cautiously because the level of significance is low in 2000 for both variables (10% level for EXP and 5% for STK), and the relationship does not reach statistical significance in 1994 for either variable. Results relative to the variable IOS suggest that the higher the proportion of investment opportunities, the less likely it is that the firm adopts fixed asset revaluation. The associations are statically significant for the three periods tested. The statistical results relative to the firm size (SIZE) are contrary to those expected from Hypothesis H5 (except in 2000), larger firms appear to be those that select the historical cost principle for their reporting. The associations, however, are not significant in any year.

5.2 Multivariate Analyses

Interpretation of the univariate results must take into account a potential risk of multicollinearity between the explanatory variables (Table 4). If multicollinearity does in fact exist, a univariate analysis highlighting the statistical significance of several independent variables does not systematically contribute relevant information to explain a phenomenon. In the case in question here, several independent variables are significantly correlated (although not highly in most cases). The problem of multicollinearity can be resolved in part by multivariate analysis. Because the dependent variable is dichotomous, the analysis is based on a *Logit* model regression. The results are presented in Table 5.

– *Insert Tables 4 and 5 about Here* –

The specification of the multivariate models considers only the explanatory variables that are statistically significant in the univariate tests. This eliminates the potential problem of multicollinearity among variables. Besides the correlation between Leverage (LEV) and the investment opportunity sets (IOS), the other most correlated variables are not simultaneously significant at the univariate level. The regressions are run for each of the three years studied. All the models are statistically significant and offer classifications superior to those of a naïve model. The *LLR* and the *Pseudo R²* are quite high compared to those of most accounting choice studies. Overall, the multivariate results confirm those of the univariate tests. Leverage (LEV) coefficients are generally statistically significant and of the expected positive sign, supporting Hypothesis H1 (suggesting that highly leveraged firms have an incentive to select accounting method choices that decrease their perceived leverage ratios, thus signaling additional available borrowing capacity to creditors). This result is consistent with findings obtained in Australia, the United Kingdom, and New Zealand by most of the authors who have studied asset revaluation (Brown et al., 1992; Whittred and Chan, 1992; Cotter and Zimmer, 1995; Black et al., 1998; Cotter, 1999; Lin and Peasnell, 2000a, b).²²

Results relative to international stakeholders (i.e., firms engaged internationally) are as expected. The coefficient of the variable EXP (foreign sales) is significant and positive for the years 2000 and 1997. This result confirms the expectations from Hypothesis H3a, differing from prior Canadian results. Cullinan (1999) argued that international exposure (export sales) should lead to selecting an income-increasing accounting policy. The models also exhibit a negative coefficient for the variable STK (like the univariate analysis), which supports Hypothesis H3b,

²² Courtenay and Cahan (2004) found that revaluation is not value relevant for New Zealand firms that exhibit a high leverage ratio.

and indicates that firms listed on foreign exchanges are prone to preparing their financial statements in a way more internationally recognized (i.e., historical costs entirely) or do not want to prepare two sets of financial statements. The coefficient is significant, however, only in 1997 (at the 10% level) and not in 2000 (the variable was not included in the 1994 model). The result in the present study suggests that firms engaged internationally should have managers who select an accounting policy that enhances the perceived financial strength of the firm. Upward asset revaluation is preferred as a policy that enhances the firm's perceived financial situation by reducing leverage ratios. For Swiss firms, leverage ratios may be better surrogates of perceived financial health than earnings. Thus, the impact of international stakeholders may differ depending on the proxy variable considered or the foreign stakeholders in question. Indeed, the foreign listing variable (STK) refers mainly, and more specifically, to foreign investors, whereas the percentage of sales abroad (EXP) refers mainly to other foreign customers.

The coefficients for the IOS variable, measuring investment opportunities (relative to Hypothesis H4), are statistically significant at the 5% level for the years 1994 and 2000 (and not significant for 1997). This result—in conformity with the univariate analysis—is contrary to those obtained by Whittred and Chan (1992) and Brown et al. (1992) in Australia, although it corroborates the results of Lin and Peasnell (2000a,b) in the United Kingdom.²³ There are three possible explanations for such a result. First, notwithstanding that investment opportunities are slightly and negatively correlated with leverage, firms composed of assets-in-place are likely to revalue upward those assets that can be revalued. They cannot revalue assets they don't yet have (that is, as-yet-unrealized investment opportunities). Second, estimating the value of a firm composed mainly of investment opportunities is costly because the value of its assets is difficult

²³ It is interesting to note that Cotter and Zimmer (1995) and Cotter (1999) found an absence of statistical significance for this variable.

to appraise. As observed by Gaver and Gaver (1993) and Skinner (1993), there appears to be a negative link between the quantity of growth opportunities and the use of accounting data in the firm's covenants. Hence, there is less incentive to select a particular accounting method because it will have little impact on the firm contracts. Third, managers may prefer not to damage their profitability measures (with upward revaluation) given the level of risk of their firm (i.e., composed mainly of investment opportunities).

6. Conclusion

This paper investigates the economic factors likely to affect asset revaluation of the main Swiss listed companies. The Swiss environment provides interesting institutional characteristics because, as in contrast to countries such as the United Kingdom and Australia (Cotter, 1999), firms rely heavily on bank loans for their external financing. It also allows examining the impact of international stakeholders' information needs on accounting policy choices. Indeed, numerous Swiss companies rely on foreign sales or foreign investors to support their activities. This study contributes to the existing literature by shedding light on the motives to upwardly revalue a firm's assets. It provides an opportunity to seek some international regularity in the rationale underlying such an accounting practice.

The univariate and multivariate empirical results clearly suggest that firms using upward asset revaluation are more leveraged and have fewer investment opportunities than firms using historical costs solely. It appears that upward revaluation is used as a method of signaling the firm's additional borrowing capacity and to increase its credit rating, as well as to reduce the likelihood of violating restrictive covenants. The empirical analysis also confirms those of prior studies relative to managers' concern about the international exposure (as such) in their

accounting procedure choices (Raffournier, 1995; Dumontier and Raffournier, 1998; Murphy, 1999; Cullinan, 1999). In a Swiss context, foreign sales have an impact on managers' choice to use upward asset revaluation. Such a policy tends to decrease reported profits and leverage ratios. Assuming that managers aim to enhance the financial situation of their firm as perceived by foreign stakeholders, it seems that the financial situation is signaled via creditworthiness variables rather than profitability variables. Foreign exchange listing induces managers to select valuation principles with conservatism (i.e., historical costs); however, it is difficult to discern whether this choice actually reflects their desire not to decrease their perceived profitability, or instead reflects a desire to prepare only one set of financial statements in a conventional and internationally recognized way (and to reduce reporting costs). Overall, it is reasonable to consider that, based on this study's results, the decision to implement revaluation seems to be guided mainly by the need to signal the firm's financial health, especially its additional borrowing capacity, and to a lesser degree sufficient profitability for its level of risk (i.e., the IOS). Lastly, the results also indicate managers' concerns regarding foreign stakeholders in their reporting principle choice.²⁴

²⁴ One caveat must be considered. Revaluation motives should also consider fiscal impact in jurisdictions where tax accounting relies partly on group accounts. That is, where the unrealized gains from revaluations are taxed.

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Table 1 Independent Variables

(Financial statements at historical cost exclusively -- ; or with upward assets revaluation +)

Leverage (*expected sign : +*)

LEV = [Total financial debt / Total assets]

Ownership diffusion (*expected sign: -*)

OD = [100 – voting rights of the main known shareholders]

International pressure (*expected sign: + and - respectively*)

EXP = [Total foreign sales/Total sales]

STK= [1 if listed outside Switzerland; 0 if listed only in Switzerland]

Investment opportunities set (*expected sign: ±*)

IOS = [firm market value/replacement cost of assets], i.e. Tobin's Q

Political costs (*expected sign : +*)

SIZE = Log [Total sales]

Total financial debt = (short-term debt and current portion of long-term debt) + long-term debt

Firm market value = (Market capitalization + book value of debt) at year end

Firm book value = Total assets

Table 2 Descriptive Statistics									
Variable	2000			1997			1994		
	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation
LEV	0.2247	0.2236	0.1365	0.2643	0.2714	0.1538	0.2928	0.2998	0.1647
OD	0.5258	0.4955	0.2580	0.4875	0.4650	0.2633	0.4793	0.4710	0.2600
EXP	0.5515	0.5750	0.2989	0.5570	0.6045	0.3184	0.5199	0.5300	0.3167
STK	0.2000	0.0000	0.4050	0.1700	0.0000	0.3750	0.1200	0.0000	0.3310
IOS	1.7919	0.9499	2.4361	1.1036	0.7014	1.1167	1.2131	1.0504	0.5705
SIZE	5.9042	5.9582	0.6612	5.8263	5.8260	0.6897	5.9418	5.8727	0.6456
	<i>N = 103</i>			<i>N = 95</i>			<i>N = 96</i>		

Note. LEV is the total financial debts-to-total assets ratio. SIZE and OD are respectively the logarithm of total sales and 1 minus the percentage of voting rights of the main known shareholders. IOS is the Tobin's Q. EXP is the ratio of foreign sales to total sales. STK takes the value 1 for foreign exchange listing and 0 otherwise.

tistically significant at the 10%, 5%, and 1% levels, respectively. The t values and Z values are those resulting from the test (i.e., respectively the Student t test and Mann-Whitney U test) of the hypothesis that there is no difference in the dependent variable between the two groups of firms using different valuation principles resulting from a change in the independent variable. Subscript 1 denotes firms using upward asset revaluation, and subscript 0 denotes firms using historical costs entirely for the reporting of their financial statements. DA is the ratio of total debts-to-total assets ratio. $SIZE$ and OD are respectively the logarithm of total sales and 1 minus the percentage of voting rights of the main known shareholders. IOS is the Tobin's Q . EXP is the ratio of foreign sales to total sales. EXL is 1 if the firm is listed on a foreign exchange listing and 0 otherwise. μ and R denote respectively the mean and the rank of each subsample.

Table 4 Pearson Correlation Coefficients (for year 2000)

	LEV	OD	EXP	STK	IOS	SIZE
LEV	1.000					
OD	— 0.001	1.000				
EXP	0.036	0.123	1.000			
STK	— 0.012	0.149	0.068	1.000		
IOS	— 0.276***	0.088	0.161**	0.073	1.000	
SIZE	0.053	0.062	0.353***	0.542***	— 0.117	1.000

*, **, ***, statistically significant at the 10%, 5%, and 1% levels, respectively. These correlations are related to the year 2000. Years 1997 and 1994 are available upon request.

Table 5 LOGIT Regression Results

<i>Variable</i> <i>(expected sign)</i>	<i>2000</i>	<i>1997</i>	<i>1994</i>
LEV (+)	7.50 (7.19)***	4.90 (5.20)**	4.38 (6.93)***
EXP (+)	1.94 (3.25)*	2.51 (6.87)***	
STK (-)	-1.26 (1.17)	-1.92 (3.08)*	
IOS (±)	-1.43 (4.44)**	-0.63 (2.48)	-2.93 (4.47)**
Constant	-3.26 (7.95)***	-5.19 (12.15)***	-0.01 (0.00)
χ^2	26.09 ***	22.89 ***	14.73 ***
of the model			
% correctly classified	88.3%	80.0%	79.8%
Naïve classification	73.7%	64.4%	64.6%
Pseudo R^2 <i>Nagelkerke</i>	38.7%	32.4%	21.9%

*, **, ***, statistically significant at the 10%, 5%, and 1% levels, respectively. Wald statistic in parentheses. The independent variable $Y = 0$ when financial statements are based on historical costs exclusively, and $Y = 1$ otherwise (i.e., with upward asset revaluation). LEV is the total financial debts-to-total assets ratio. IOS is the Tobin's Q. EXP is the ratio of foreign sales to total sales. STK takes the value 1 for foreign exchange listing and 0 otherwise.