

GAAP Arbitrage: Valuation Opportunities in International Accounting Standards

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Accounting standards differ greatly across countries. But the differences can present opportunities for those able and willing to make the effort to understand and adjust for them.

In a recent project, the accounting statements of over 100 companies in 12 developed and emerging countries were restated to approximate common accounting standards. Companies in Sweden and Germany showed the biggest gains from restatement. On average, these companies' net incomes increased by 60% and 44%, respectively, while shareholders' equity increased by 44% and 41%.

"A good plan, violently executed right now is far better than a perfect plan executed next week."

General George Patton

Shareholders, corporations and governments depend more heavily now than ever before on accurate and comparable global financial data. Shareholders, the traditional clients of financial reports, have become much more numerous and widespread.

The global equity markets now total over \$12 trillion, compared with \$2.7 trillion in 1980. And the

flow of cross-border equity investing, now over \$1.2 trillion, is expected to grow to \$2.5 billion by the mid-1990s and \$13 trillion in 20 years. In the U.S. alone, institutional investors are 6% invested abroad and will shortly be moving to 10% and more.

Figure A illustrates the current world of equity markets, represented by size. The map will change as equity capital markets grow in the newly capitalist countries of Eastern Europe and Asia.

Corporations have historically cared more about internal than external reporting. But as product markets are becoming more global, merger activity has increased, with companies combining across country borders and across accounting borders. Cross-border mergers and acquisitions

have accounted for over \$200 billion annually, stimulated by changes in the European Community and the raising of the Iron Curtain.

Governments have responded to the economic imperative of capitalism and are scrapping the central planning of communist and socialist regimes. They all want to fulfill the dreams of their people and to become the next Japan, Korea or Taiwan. This cannot happen if capital is allocated simply where financial reports are clearest, rather than where costs are lowest or profit opportunities highest.

The objective of an efficient global capital market faces a major obstacle in the labyrinth of complex and obscure accounting practices prevalent around the

Figure A 1990 Market Capitalizations of Developed and Emerging Markets (millions of U.S. dollars)

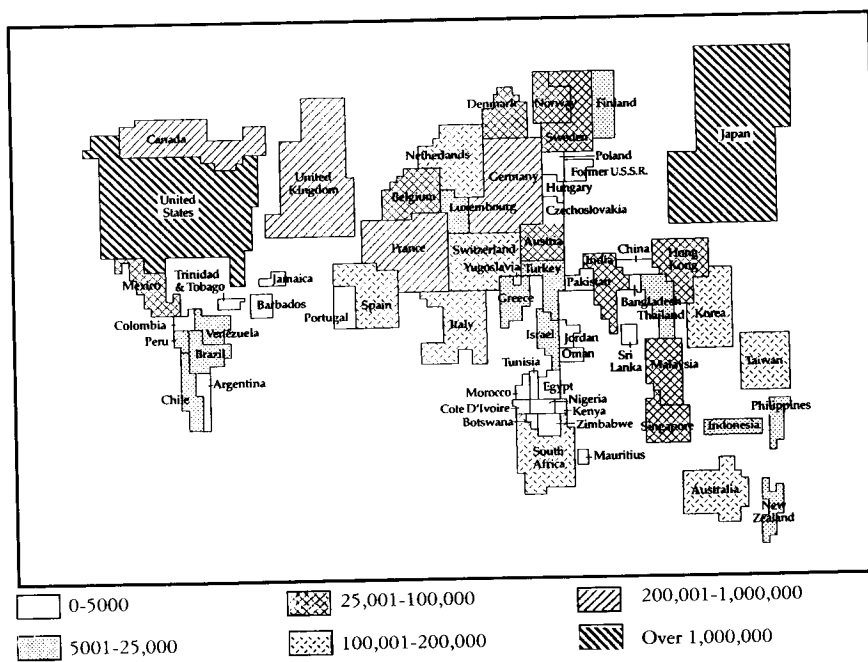
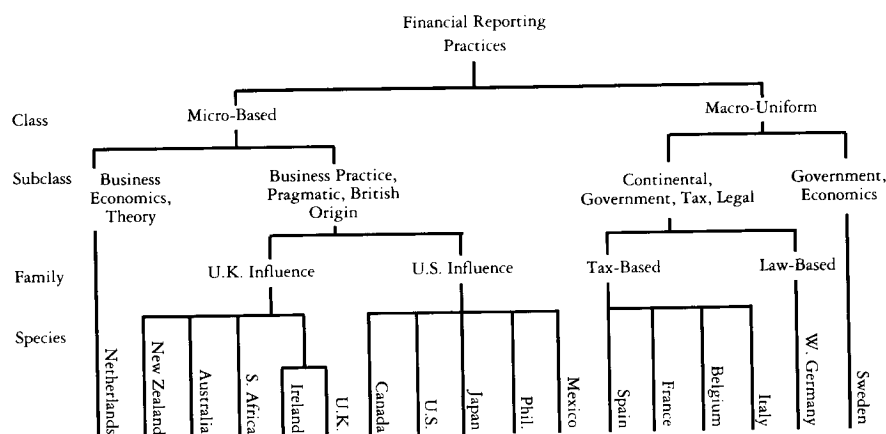


Figure B Nobes' Classification of Accounting Systems



Source: C.W. Nobes "International Classification of Accounting Systems" (April 1980), Table C.

Community have not produced agreement on common accounting standards.

But the opportunities may outweigh the inadequacies of imperfect accounting data. Generally Accepted Accounting Principles (GAAP) may someday be the same around the world; meanwhile, arbitrage opportunities across accounting regimes can lead to profitable investments. Our adjustment and reconciliation techniques may not be perfect, but they are timely; and as General Patton would agree, in investing as in war, timeliness is more important than perfection.

world. While revolutionaries are quick to change political, legal and economic structures, they rarely tackle the task of legislating uniform accounting. Even at the international level, the Interna-

tional Accounting Standards Committee, the International Federation of Accountants, the Organization for Economic Cooperation and Development, the United Nations and the European

Table I Cost Basis of Financial Statements, 1990

Historical Cost Basis

- Canada
- United States
- Austria
- Germany
- Switzerland
- South Africa
- Japan
- Pakistan
- Thailand

Historical Cost with Price Level

- Adjusted**
- Colombia
- Chile
- France
- Netherlands
- Norway
- Portugal
- Spain
- Sweden
- United Kingdom
- Malaysia
- Singapore
- New Zealand

Historical Cost with Current Cost Data

- Mexico
- Brazil

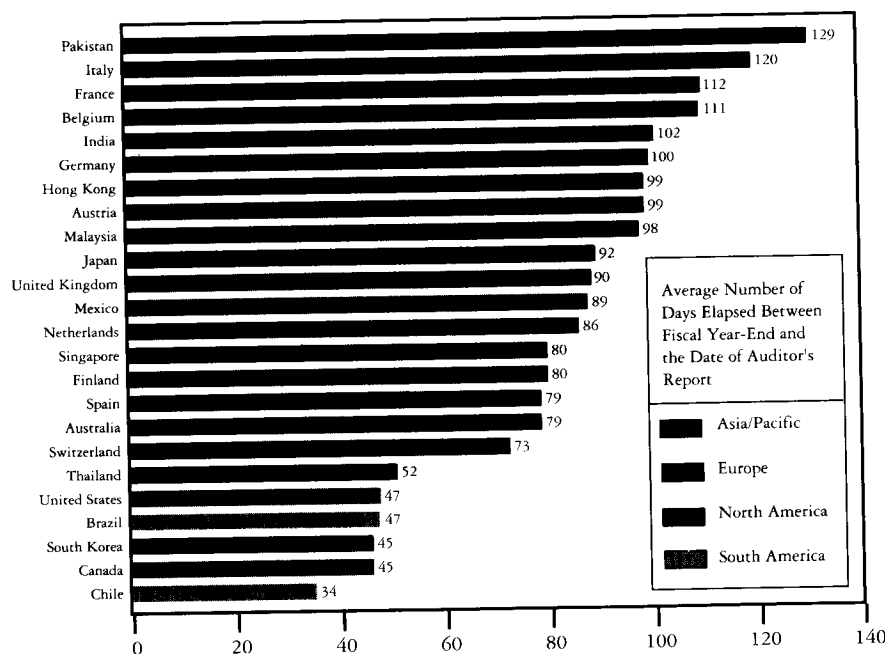
Current Cost Data

- Argentina

Historical Cost with Revaluation

- Belgium
- Denmark
- Finland
- Italy
- Hong Kong
- India
- Korea
- Australia

Figure C Timeliness of Publication of Annual Reports, Fiscal Year 1990



Source: *International Accounting and Auditing Trends*, 2nd edition.

Source: Cfarbase.



History of GAAP

Through the years, local practitioners have developed accounting standards primarily to fill the needs of local commerce. Governments have stepped in to control accounting for tax purposes. The result is a patchwork of systems with differing theoretical and conceptual foundations. Figure B diagrams these as a family tree with two principal branches—micro-based, company-level accounting, from which the U.S. and U.K. systems are derived, and macro-based, government-imposed systems, often heavily influenced by tax policies, which prevail throughout most of Europe.

Table II Consolidation Practices, 1990

No Consolidation

India

All Subsidiaries Consolidated

Canada
Mexico
United States
Argentina
Brazil
Chile
Venezuela
Austria
Belgium
Denmark
Finland
France
Germany
Italy
Netherlands
Norway
Spain
Sweden
Switzerland
United Kingdom
South Africa
Hong Kong
Malaysia
Singapore
Thailand
Australia
New Zealand

Domestic Consolidation, Others at Cost

Japan
Korea

Domestic Consolidation, Others at Equity

Taiwan

Table III Long-Term Investments (20%—50% owned), 1990

Equity Method

Canada
United States
Brazil
France
Netherlands
United Kingdom
South Africa
Taiwan
New Zealand

Cost Method

Austria
Belgium
Germany
India
Pakistan
Thailand

Cost and/or Equity Method

Mexico
Chile
Venezuela
Denmark
Finland
Italy
Norway
Portugal
Spain
Sweden
Switzerland
Hong Kong
Japan
Korea
Malaysia
Singapore

Equity Method but Partially Consolidated

Australia

Source: Cfarbase.

Both the U.S. and the U.K. systems have spawned siblings in related countries. U.S. GAAP has a heavy influence in Canada, Japan, the Philippines and Mexico, while the U.K. system has prevailed in many of the Commonwealth countries. Within these broad groups, however, there remain many differences resulting from strong national professional groups.

Despite our desire for comparability in global accounting, there would be no net gain if comparability required undermining the vitality of these national accounting organizations. Furthermore, total comparability does not seem likely in the near future, given the vigorous debate at recent ses-

sions of the international bodies. It is thus important for users of global financial statements to turn from complaints to analysis, and to view global accounting differences as an opportunity to profit from careful reconciliation.

Philosophical Differences

Differences in philosophy across accounting regimes are often intractable, because often there is simply no right answer. Alternatives exist because different points of view can be equally valid. Global commerce may one day produce a consensus, but for now that outcome is as unlikely as having automobiles drive on the right side of every nation's highways. Users must be made aware of these differences and must

Table IV Inventory Valuation Method, 1990

Mixed

Canada
United States
Chile
Austria
Belgium
France
Germany
Italy
Switzerland
Japan
Korea

Average Cost Method

Mexico
Brazil
Spain
Hong Kong
Malaysia
Pakistan
Singapore
Taiwan

First-In-First-Out Method (FIFO)

Denmark
Finland
Netherlands
Norway
Sweden
United Kingdom
South Africa
India
Thailand
Australia
New Zealand

Last-In-First-Out Method (LIFO)

Venezuela

Source: Cfarbase.

Table V Depreciation Method, Figure D Classification of Companies by Year-End Dates, Fiscal Year 1990

Straight-Line Method

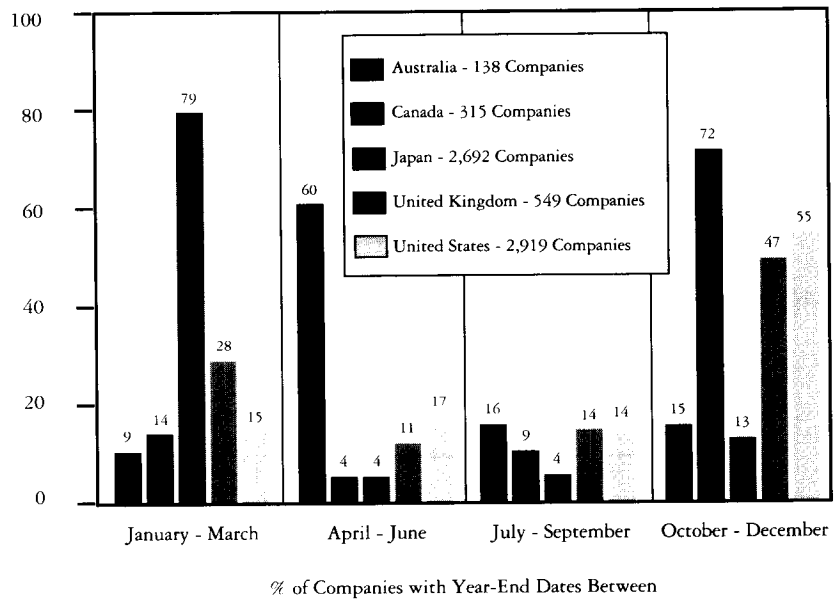
- Canada
- Mexico
- United States
- Argentina
- Brazil
- Chile
- Venezuela
- Belgium
- Denmark
- France
- Italy
- Netherlands
- Portugal
- Spain
- Switzerland
- United Kingdom
- South Africa
- Hong Kong
- India
- Malaysia
- Pakistan
- Singapore
- Taiwan
- Thailand
- Australia
- New Zealand

Accelerated Method

- Sweden
- Japan
- Korea

Straight-Line and/or Accelerated Method

- Finland
- Germany
- Norway



Source: Cfarbase.

make their best effort to adjust for them. Major philosophical differences include the following.

Cost Basis of Financial Statements: While historical cost was hardly questioned 20 years ago, it

Source: Cfarbase.

Table VI Frequency of Interim Financial Statements, 1990

Two Per Year

- France
- Germany
- Spain
- Switzerland
- United Kingdom
- Japan
- South Korea

Three Per Year

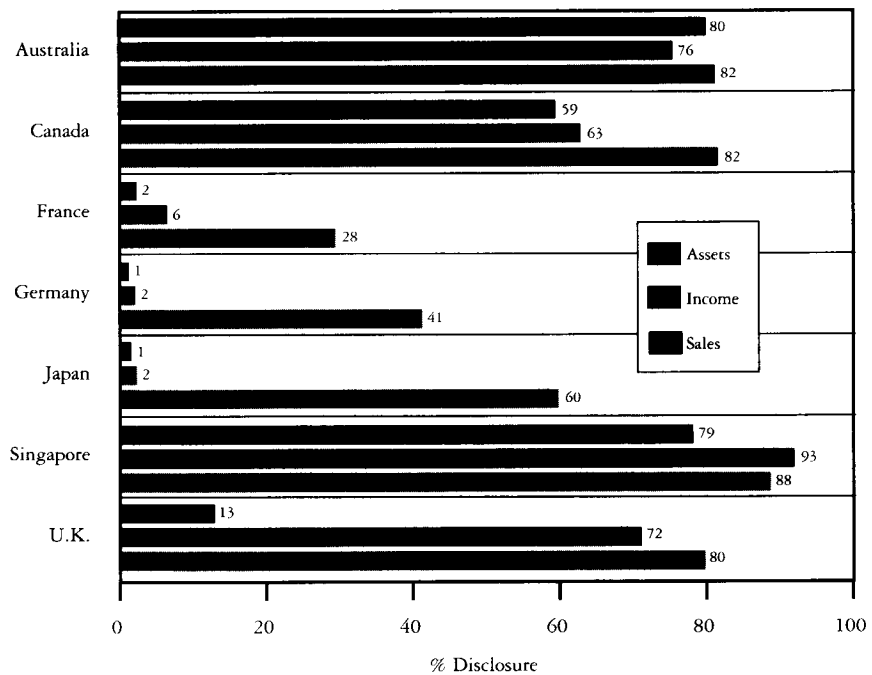
- Norway

Four Per Year

- Canada
- Mexico
- United States

Source: *International Accounting and Auditing Trends*, 2nd ed.

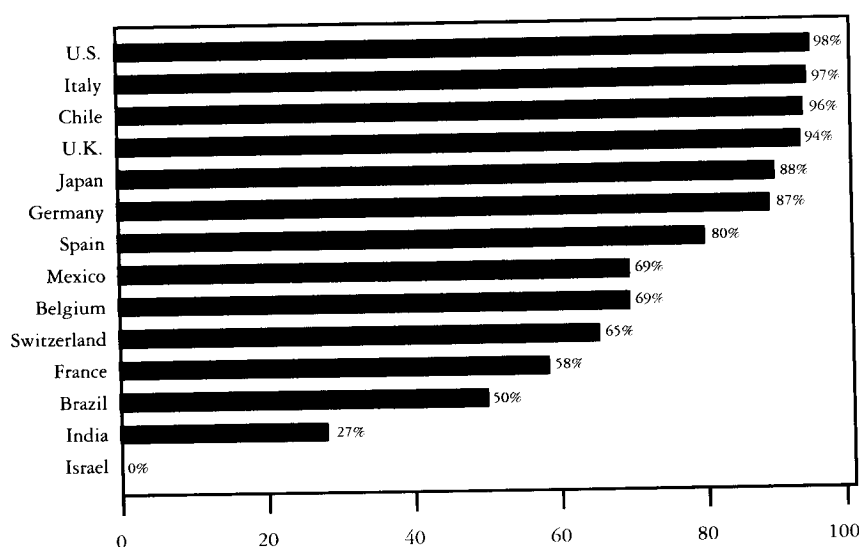
Figure E Business Segment Data



Source: Cfarbase.



Figure F Percentage of Companies Audited by Leading Accounting Firms



Source: *International Accounting and Auditing Trends*, 2nd edition.

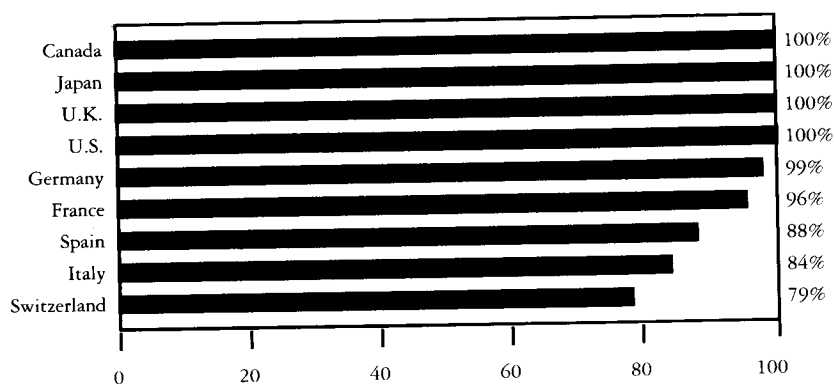
is the sole basis today mainly in the U.S., Japan, Germany, Canada, Switzerland, Austria and South Africa. As Table I shows, adjustments for inflation are now common elsewhere.

Consolidation Practices: Significant corporate activities are often missing from company reports because of a failure to provide consolidated statements. This is a significant problem for financial

statement users in Japan, Korea and Taiwan (see Table II).

Accounting for Long-Term Investments: The pattern of accounting for investments of 20% to 50% of equity is similar to that for consolidation of majority-owned subsidiaries, as Table III shows. Only in a few countries, including the U.S., the U.K., Canada, Singapore and Australia, can one expect all "control" interests to be fully re-

Figure G Percentage of Analysts in Agreement on Last Year's EPS



62 Source: I/B/E/S.

Table VII Availability of English-Language Financial Statements, 1990

All Companies Report in English

- Canada
- United States
- United Kingdom
- South Africa
- Hong Kong
- India
- Malaysia
- Pakistan
- Singapore
- Australia
- New Zealand

More than 40% Report in English

- Chile
- Venezuela
- Belgium
- Denmark
- Finland
- Netherlands
- Norway
- Portugal
- Spain
- Sweden
- Switzerland
- Japan
- Taiwan
- Thailand

Less than 40% Report in English

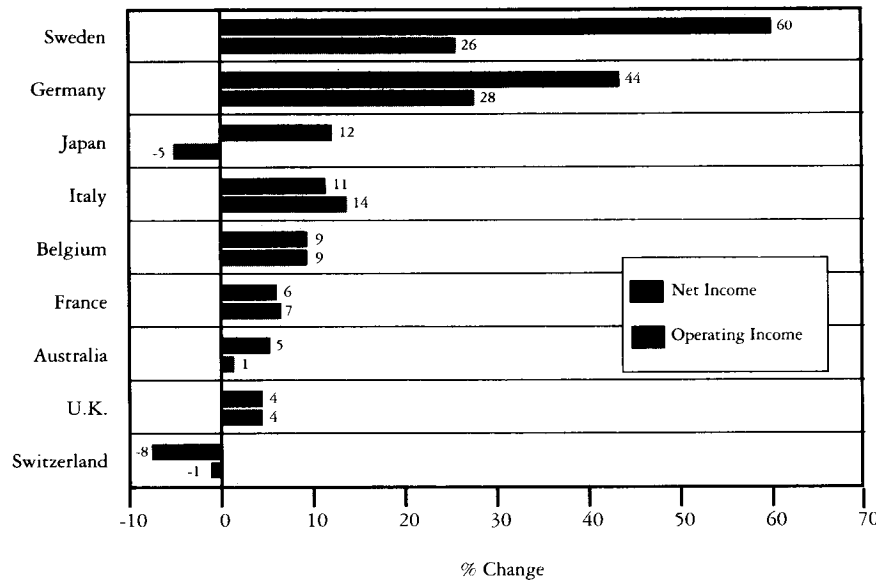
- Mexico
- Argentina
- Brazil
- Austria
- France
- Germany
- Italy
- Korea

Source: Cfarbase.

flected in the income stream. Elsewhere (most notably in Germany), these positions are accounted for on a cost basis, with only dividends recognized in income.

In Japan, where accounting for both majority and minority interests varies widely, comparative analysis of companies is extremely complex because of the popularity of cross-holdings. These are the foundation of the powerful cooperative company groups known as *keiretsu*. The organization chart of the Tokyo Group, for example, looks like the web of a drunken spider and includes 334 firms with interests in railroads, hotels, construction,

Figure H Adjusted versus Reported Income



airlines and retail. This complexity recently increased when the group established an antitakeover plan under which 35% of each listed company would be held by other group members.

Inventory-Valuation Methods: As Table IV shows, these vary widely, with first-in, first-out used in the U.K. and Scandinavia, while average cost is used nearly everywhere else. Recently, controversy increased when the IASC indicated its disapproval of last-in, first-out accounting, a popular alternative in the U.S.

Depreciation: Depreciation methods cause some of the most dramatic comparability problems for global investors. While most U.S. investors expect to see straight-line depreciation, accelerated depreciation, which tends to understate earnings, is most popular in Japan and Korea. Meanwhile, excess (often arbitrary) depreciation charges are sometimes used to smooth earnings in continental Europe (see Table V).

Quality Differences

While the many philosophical differences can be subject to endless debate, quality differences can-

not. High-quality accounting is imperative, and anything less costs companies dearly in lower stock prices and higher capital costs. The world standard should be full, prompt and reliable disclosure, and in this respect, many nations fall short.

Timeliness: There is no justification for a delay of over six months

in availability of annual reports, when most U.S. and U.K. companies deliver them in three months. Surprisingly, Germany, France and Italy are among the worst offenders in this regard (see Figure C).

Interim Statements: While quarterly reports are the standard in the U.S., Canada and Mexico, most companies in other countries provide only semiannual data (Table VI). Comparisons quickly lose validity when based on old data. This problem becomes particularly important when fiscal-year dates differ; this is the case when comparing most Japanese companies, which use a March fiscal year, with those elsewhere (see Figure D).

Segment Disclosure: In the U.S., the Financial Accounting Standards Board mandated business-segment disclosure with Statement 16 in 1976. Elsewhere many companies have voluntarily made this disclosure. As Figure E shows, however, coverage is still spotty.

Leading Accounting Firms: While many small firms do excellent work, their independence is sometimes subject to question.

Figure I Adjusted versus Reported Book Value

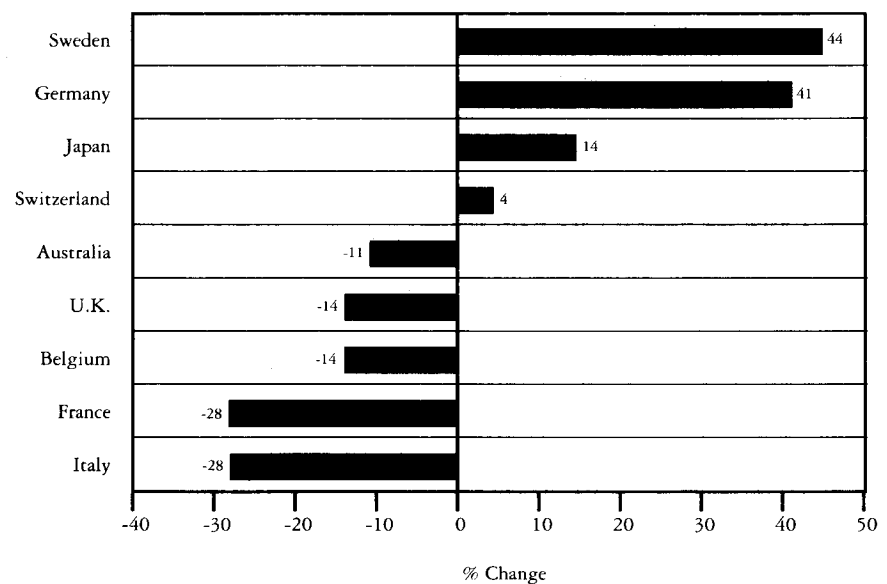
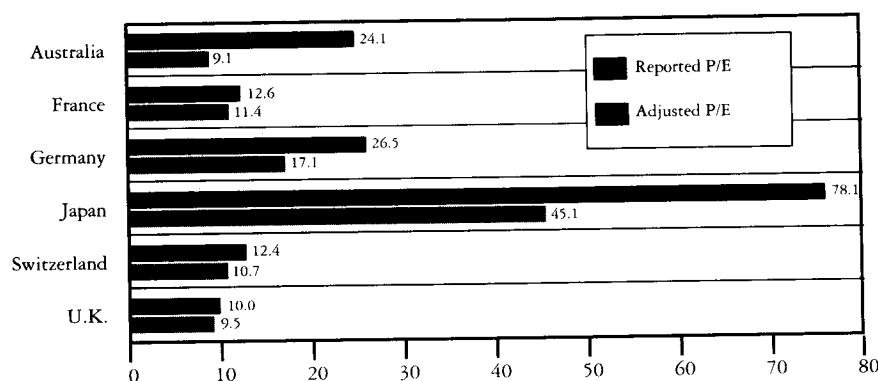


Figure J Adjusted versus Reported Price/Earnings Ratio



The leading accounting firms uphold a high standard, but smaller firms, particularly in emerging markets (such as India) may be heavily influenced by their clients. Figure F shows the percentage of various countries' firms audited by large accounting firms.

Earnings Per Share: An example of improvement in comparability is shown in Figure G, which reflects the influence of I/B/E/S (the Institutional Brokers Estimate System) on financial analysts' behavior. I/B/E/S has been collecting Wall Street brokers' earnings estimates for U.S. companies since 1971, but it only began collecting abroad in 1986. At that time, analysts often could not agree on what companies had earned in the *prior* year, let alone their estimate for the future. Today, the situation is much improved, although it is still weak in southern Europe.

Language: While it may seem arrogant or lazy on the part of English-speaking people to expect financial statements in English, our language has become a standard for business around the world. Already, many companies publish English language annual reports (see Table VII). We hope to see the percentage increase, particularly in continental Europe. Users must be careful, however, because there is often more detail in the local language reports.

Accounting Adjustments

In the art world, it is sometimes said that a piece is never completed, the artist has simply stopped working on it for a while. So too in accounting. Financial statements are never complete or perfect, they are simply a "best guess" at a given point in time. History will judge them to have been close or otherwise, but it will rarely find them perfect. This simplifies the task of adjustment; to achieve significant gains in global comparability, we need not strive for absolute precision.

We analyzed over 100 companies from 12 countries and five broad industry groups (consumer goods, capital goods, basic industries, utilities and transportation). These companies were selected from the 900 largest global companies ranked by sales, assets and market capitalization.

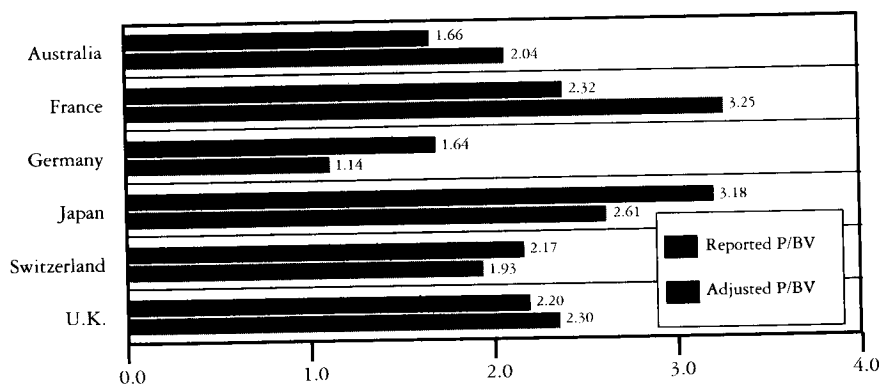
Using a spreadsheet template, adjustments were made to standardize accounting for depreciation, non-equity and discretionary reserves, goodwill, consolidation, valuation of investment, asset revaluation, inventory adjustments, intercompany transactions, foreign currency translation, extraordinary items and deferred taxes. The appendix describes the adjustments for one company, Bayer AG.

After making our adjustments, we calculated the net changes in the income statement, balance sheet and ratios such as P/E and price/book. Thirty-six companies with extreme changes were eliminated to produce summary data for 83 companies.

The changes of greatest significance for valuation may be those affecting the income statement. Figure H summarizes the direction and magnitude of changes in operating income and net income by country (using the equal-weighted average). When adjusted to a uniform global standard, Sweden and Germany show the greatest gains, with net income increases of 60% and 44%, respectively. Next come Japan, Italy and Belgium with gains of 12%, 11% and 4%. Only Switzerland showed a decline.

There were also significant changes on the balance sheet, shown in Figure I. Again, Sweden and Germany were big gainers, with increases of 44% and 41% in

Figure K Adjusted versus Reported Price/Book Value Ratio



shareholders' equity. At the other extreme, French and Italian companies had a 28% reduction in equity.

Figures J and K show the changes in P/E and price/book for these markets when going from reported to adjusted bases.

Conclusion

We adjusted standards toward the U.S./U.K. conventions. This resulted in large changes in German, Japanese, Swedish and Swiss reported figures. Regardless of the norm chosen, however, those countries appear to understate values by amounts that are sometimes very significant.

Furthermore, there is evidence that capital markets are not making a complete reconciliation for these differences. Over time they will, as analysts make more complete adjustments and as accountants make progress toward global standards. As this occurs, capital markets will become more efficient, and financial rewards will accrue to those investors who anticipate the direction of changes in valuation. Meanwhile, it is the responsibility of investors and all other users of financial statements to press for improved global accounting, based on full disclosure, so philosophical differences can be reconciled, and on the standard of uniform high quality around the world.

Appendix

Bayer Restatement

Table AI shows the accounting restatement for Bayer. The single most significant factor in the restatement is depreciation expense. This is true for many other German companies.

The method allowed by regulation is the declining-balance method until the depreciation by the straight-line method is greater. The straight-line method is used from that point. Also, depreciation computed using the declining-balance method cannot

Table AI Accounting Restatement for German Multinational Chemical Company BAYER AG For Fiscal Year ending on December 31, 1990 (in millions of DM)

1. Operating Income					
As Reported	+	Add back excess depreciation	=	Adjusted	Change
3,551	+	1,341	=	4,892	+38%
2. Shareholders' Equity					
• Add back cumulative effect of excess depreciation after tax					
• Add back special non-equity reserves					
As Reported	+	Adjustments	=	Adjusted	Change
15,545	+	6,795	=	22,340	44%
3. Price/Earnings Ratio					
Will reduce from 7.2 to 5.6 (22% reduction)					
4. Price/Book Ratio					
Will reduce from 0.9 to 0.6 (32% reduction)					

exceed three times the amount computed using the straight-line method in any given year (i.e., depreciation charged during the year is limited to three times the straight-line depreciation, regardless of the method used).

Based on the rules above, an asset with a 30-year life will be fully depreciated in approximately nine years. Because the majority of assets are depreciated in such a short period, the measurement of the actual life of assets is difficult.

One can use the average depreciation expense to sales or cost of goods sold of a similar company for estimation. For example, Wella AG in Germany provides

depreciation expenses on the straight-line method (although its size is about 6% of Bayer's). Table AII compares Bayer and Wella. After the adjustments to Bayer, accumulated depreciation as a percentage of adjusted total assets is similar to Wella, at 28%, but depreciation expense as a percentage of sales is still higher, at 4%, compared with Wella's 2.6%.

Alternatively, one can assume Bayer's operating structure is similar to that of other multinational corporations in the same industry. The average depreciation expense for these major multinational corporations can then be used as an approximation for Bayer's. Table AIII illustrates the pro-

Table AII Adjustment for Depreciation, Method 1 (fiscal year 1990)

	Bayer	Wella
Sales	41,643.000	2,562.000
Total Operating Expenses	38,092.002	2,435.000
Total Assets	37,947.000	1,728.000
Gross Fixed Assets	43,800.000	762.000
Depreciation Unadjusted	3,034.000	67.000
(% of Sales)	7.29%	2.62%
Depreciation Exp. Adjusted	1693.000	67.000
(% of Sales)	4.00%	2.62%
Depreciation Method	Tax Rules	Straight line
Accumulated Dep. Unadj.	29,841.000	394.000
(% of Total Assets)	78.64%	22.80%
(% of Gross Fixed Asset)	68.13%	51.71%
Adjusted Total Assets	53,013.000	
Accum. Dep. Adj.	14,775.000	
(% of Adj. Total Assets)	27.87%	

Table AIII Adjustment for Depreciation, Method 2

	<i>Bayer</i>	<i>ICI</i>	<i>Sandoz</i>	<i>Ciba-Geigy</i>
Sales in U.S. Dollars	27,900.810	24,521.400	9,650.000	15,360.000
Pharmaceutical % Sales	19%	11%	46%	32%
Dep. Method	Tax Rules	SL Method	SL Method	Depr. Current Value
Unadj. Dep. Exp. % Sales	7.30%	4.10%	5.80%	5.50%
Adj. Dep. % Sales	4.00%			
Accum. Dep. % Assets Unadj.	78.60%	43.00%	20.40%	N/A
Accum. Dep. % Assets Adj.	27.87			

cedure. One drawback to this approach is that it raises cyclical issues in evaluating companies that are exposed to differing economic conditions in different countries.

Non-equity reserves are also a problem in restating Bayer accounting figures. Some types of reserves are clearly specified and can be easily restated. However, reserves are sometimes mixed together and not clearly specified. At Bayer, for example, reserves for future uncertain business risk are mixed with reserves for vacation and bonus.

Some estimates must be made to restate these reserves. One approach is to estimate certain parts of operating reserves. Reserves for vacation, for example, can be estimated from companies in neighboring countries with similar cultures. These estimated operating reserves can then be deducted from mixed provisions and the remainder can be added back to income.