2009

Survey of IFRS accounting practices of pharmaceutical companies that used U.S. GAAP prior to IRFS

Meiqin Lu
Eastern Michigan University

Survey of IFRS accounting practices of pharmaceutical companies that used U.S. GAAP prior to IRFS

Abstract

More than 100 countries around the world currently require or permit International Financial Reporting Standards (IFRS) reporting in 2009. When U.S. companies convert from U.S.Generally Accepted Accounting Principles (U.S. GAAP) to IFRS, they are faced with great challenges as well as opportunities to make choices on financial reporting policies. A survey of leading European pharmaceutical companies that used U.S. GAAP prior to the IFRS adoption was conducted to evaluate their first-time adoption of IFRS practices. The survey results are structured into three aspects and discussed in this thesis. First, IFRS 1 optional exemptions at transition date. Second, key accounting differences from IFRS to U.S. GAAP reconciliation, and the third, choices of alternative accounting methods allowed by IFRS. U.S. pharmaceutical companies can learn from these results to choose IFRS 1 optional exemptions to their best interest, to prepare reconciliation between U.S. GAAP and IFRS and to make accounting choices under IFRS for their first time adoption of IFRS. These results not only provide benchmark information, but also provide U.S. companies a cost-effective pathway in making their reporting choices in the near future when U.S. companies convert from U.S. GAAP to IFRS.

Degree Type

Open Access Senior Honors Thesis

Department

Accounting and Finance

Survey of IFRS Accounting Practices of Pharmaceutical Companies That Used U.S.GAAP prior to IFRS

by

Meiqin Lu

Supervising Professor: Dr. Angela Hwang

Honors Thesis presented in partial fulfillment of Departmental Honors in

Accounting & Finance
College of Business
Eastern Michigan University

October 30, 2009

Table of Contents

Acknowledgement

I would like to express my gratitude to all those who have helped me to complete this thesis. First, I want to thank my supervising Professor, Dr. Angela Hwang, from Accounting & Finance Department whose patience, guidance, encouragement and dedication helped me through all the time spent on the research and writing of this thesis and she has always been a constant source of encouragement and inspiration. This work would have been impossible without her support. Second, I would like to thank the Accounting & Finance faculty of Eastern Michigan University for inspiring my intellectual curiosity and guide me along academically. Third, I would like to thank the Honors College for granting me an Honors Undergraduate Fellowship, which provides financial support. I am also very grateful for comments and feedback from the participants at the Undergraduate Research Symposium. Then, I would like to thank the Academic Projects Center for providing feedback on this thesis and my fellow graduate assistant, Andrew Romanowski for editing this thesis. Lastly, I would like to give thanks to my husband, Lin Jiang, and my friends for their support during the whole process.

Abstract

More than 100 countries around the world currently require or permit International Financial Reporting Standards (IFRS) reporting in 2009. When U.S. companies convert from U.S.Generally Accepted Accounting Principles (U.S. GAAP) to IFRS, they are faced with great challenges as well as opportunities to make choices on financial reporting policies. A survey of leading European pharmaceutical companies that used U.S. GAAP prior to the IFRS adoption was conducted to evaluate their first-time adoption of IFRS practices. The survey results are structured into three aspects and discussed in this thesis. First, IFRS 1 optional exemptions at transition date. Second, key accounting differences from IFRS to U.S. GAAP reconciliation, and the third, choices of alternative accounting methods allowed by IFRS. U.S. pharmaceutical companies can learn from these results to choose IFRS 1 optional exemptions to their best interest, to prepare reconciliation between U.S. GAAP and IFRS and to make accounting choices under IFRS for their first time adoption of IFRS. These results not only provide benchmark information, but also provide U.S. companies a cost-effective pathway in making their reporting choices in the near future when U.S. companies convert from U.S. GAAP to IFRS.

Introduction

For the past several years, there has been strong momentum building toward using a set of high quality global accounting standards that could be applied by companies and understood by investors around the world. Currently, more than 100 countries around the world have adopted International Financial Reporting Standards (IFRS) reporting (Tsakumis, Campbell, & Doupnik, 2009). Approximately 85 of those countries require IFRS reporting for all domestic and listed companies, including Germany, France, Italy, and England. More and more global players will sooner or later convert to IFRS, including Japan and Canada (Mirza, Orrell & Holt, 2008). The IFRS conversion is more than just a technical accounting practice. It could have a significant impact on accounting policies, internal controls, financial reporting and disclosure and related parties (Thomas, 2003).

United States Securities and Exchange Commission (SEC) has made groundbreaking movement regarding IFRS. It made an announcement on November 15, 2007 to allow foreign private issuers to enter the US capital market using IFRS financial statements. This was considered a historical move. For the existing foreign registrants, they do not need to provide a reconciliation to be based on U.S. Generally Accepted Accounting Principles (U.S. GAAP) if accepted international accounting standard such as IFRS is used (SEC. 2007). The SEC released a long-awaited road map indicating the course of action for U.S. public companies converting to IFRS. The SEC proposed Roadmap is set forth as such: proposed voluntary application of IFRS will be permitted for some U.S. registrants at fiscal years ending after December 15, 2009. During 2011, the SEC will reconvene to decide whether a mandatory conversion date should be set. Proposed roadmap requires all U.S. public companies to report financial statements using IFRS in 2014 (SEC, 2008). Considering this financial crisis now, the SEC acknowledges that the pace for roadmap is slowing down (Forgeas, 2009). However, “SEC chief accountant James Kroeker said the roadmap would be an important priority this fall”, and we can expect to hear more about IFRS from Commission (AICPA, 2009).

Many publicly traded European Union (EU) companies used U.S. GAAP to prepare their consolidated financial statements for various strategic reasons prior to the IFRS mandate . Majority of European pharmaceutical companies such as AstraZeneca, Glaxosmithkline, Merck, Novarits, Novo Nordisks, Roche, Sanofi-Aventis and Schering have already adopted IFRS since 2005 or even earlier (Ernst &Young, 2006). When U.S. companies convert from U.S. GAAP to IFRS, they will be faced with great challenges as well as chances in making choices on financial reporting policies. U.S. pharmaceutical companies can benefit from these European companies by learning how they applied the guidance provided in IFRS 1 and selected new IFRS accounting policies as they begin to prepare for their first IFRS financial statements. By using IFRS, companies can reduce reporting costs, have greater access to world capital markets, and increase their ability to move accounting personnel around countries (AICPA, 2009). However, the disadvantage of converting to IFRS faced by all U.S. companies is the conversion cost. In November 2008, SEC provided an estimate of $32 million for the conversion cost for companies that would qualify for the early transition in 2009 (Forgeas, 2009). The pharmaceutical industry, compared to other industries, faces many challenges in converting to IFRS and needs more attention because its uniqueness in each of the following areas: revenue recognition, development costs, and intangible assets (Ernst & Young, 2006).

This study surveys the transition reporting practices and accounting choices adopted by eight leading European Union pharmaceutical companies, which are cross-listed in the U.S. and have successfully switched to IFRS from U.S. GAAP. Their experience with conversion to IFRS from U.S. GAAP is valuable for U.S. issuers because they are equivalent to U.S. issuers to the extent that they had used U.S. GAAP for their consolidated financial statements until 2007. The research tools include SEC EDGAR Company Search, Business Database: Financial Markets and Services and Net Advantage.

The survey results of these pharmaceutical companies are structured into three sections:

(1) IFRS 1 optional exemptions

(2) Key differences between IFRS and U.S. GAAP reconciliation

(3) Choices of alternative accounting methods allowed by IFRS.

(4) Important accounting policies

In addition to the four sections above, this thesis also includes a discussion of determinants of accounting choices and an appendix.

Table 1 is a list of surveyed pharmaceutical companies which adopted IFRS in preparing their annual report and had used U.S. GAAP before converting to IFRS. These companies can thus provide direct comparison between IFRS and U.S. GAAP.

［Insert Table 1 here］

1. IFRS 1 Optional Exemptions

The International Accounting Standards Board (IASB) published IFRS 1, First-time Adoption of International Financial Reporting Standards. IFRS 1 established the transition requirements for the first-time adopter to prepare the financial statements under IFRS. It requires a first-time adopter to apply IFRS at the reporting date retrospectively. Thus, these companies are presented as if they had always used IFRS for financial reporting. IFRS 1 contains mandatory exemptions to retrospective application in certain areas. IFRS 1 also provides optional exemptions to the general restatement in certain areas in which retrospective application is difficult or costs would exceed the benefits to the users of financial statements, areas such as business combination and cumulative translation difference. The purpose of these optional exemptions is to ease the burden of first-time adoption of IFRS (Deloitte, 2004). Table 2 below summarizes optional exemptions provided by IFRS 1.

［Insert Table 2 here］

Summary of Elected Optional Exemptions

Consistent with Hwang and Lin (2009), I focus on the four most commonly used optional exemptions, which are presented in Table 3. In the following discussion, I first list the rule of exemption option provided under IFRS 1 in applying a particular standard (The option II refers to the full retrospective restatement of an IFRS standard). I then report survey results and relevant excerpts as to how companies apply an exemption so US companies can learn to prepare such discussions.

GPC Biotech converted to IFRS from U.S. GAAP in the year of 2005 but did not provide IFRS financial statements until 2007, in which it did not provide first time adoption practices. Thus it is excluded from the discussion of optional exemptions but kept for other parts of this thesis. Table 3 below summarizes the most commonly used optional exemptions by the seven pharmaceutical companies.

［Insert Table 3 here］

1.1 Item 1: IFRS 3R Business combinations

For transactions qualifying as business combinations under IFRS 3, an entity can choose to:

I. Not restate business combinations before the date of transition, (i.e. full exemption applied)

II. Restate all business combinations before the date of transition, (i.e., retrospective application)

III. Restate all business combinations starting from a date it select prior to the date of transition. (i.e., partial exemption applied)

In all cases, the entity must apply IAS 36 impairment guidance to any remaining goodwill in the opening IFRS balance sheet, after reclassifying, as appropriate, previous GAAP intangibles to goodwill.

Survey Results for Item 1

Elan, Shire, MediGene, World of Medicine and Schwarz applied option I by not restating business combinations before the date of transition. Evotec and Sygnis did not take and discuss this option in their annual reports. In conclusion, Five out of seven pharmaceutical companies applied option I by not restating business combinations before the date of transition. This approach must have saved these companies money and effort. Basically, it can be concluded that it is in the company's best interest not to restate any business combination that occurred before the transition date.

Excerpts from option I adopters:

Elan–from 2005 Annual Report page156

"Business combinations undertaken prior to the transition date of 1 January 2004 have not been subject to restatement and accordingly, goodwill at the transition date is carried forward at its net book value and is subject to annual impairment testing in accordance with IAS 36, "Impairment of Assets.""

Shire–from 2005 Annual Report page102

"The Group has applied the business combination exemption in IFRS 1. It has not restated business combinations that took place prior to the January 1, 2004 transition date in accordance with IFRS 3, "Business Combinations"".

MediGene–from 2005 Annual Report page55

The previous accounting principles for corporate mergers carried out before the transition date (January 1, 2004) would not be adapted to the new principles.

World of Medicine–from 2005 Annual Report page37

"Business combinations accounted for prior to the period of transition to IFRS, prior to January 1, 2004, were not retroactively adjusted to IFRS 3".

Schwarz–from 2005 Annual Report page39

The following exemptions from retrospective adjustment were elected pursuant to IFRS 1:

"Business combinations (IFRS 1.15): Goodwill from historic acquisitions of companies measured and carried forward under US GAAP is carried forward in the opening balance sheet. The balance sheet values as per 1 January 2004 were tested for impairment pursuant to IAS 36".

1.2 Item 3: IAS 19 Employee benefits on actuarial gains and losses

An entity may elect to:

I. Recognize all cumulative actuarial gains and losses for all defined benefit plans as an adjustment to opening retained earnings, even if it elects to use the IAS 19 corridor approach for actuarial gains and losses that arise after first-time adoption of IFRS. That is, an entity may reset any corridor recognized under previous GAAP to zero.

II. Restate all defined benefit plans under IAS 19 since the inception of those plans and defer the restated cumulative actuarial gains and losses.

Survey Results for Item 3

Schwarz, Elan and MediGene applied option I by recognizing cumulative actuarial gains and losses as an adjustment to opening retained earnings. Evotec,

Sygnis and Shire did not apply this option since they have used defined contribution plan. World of Medicine did not take this option and did not discuss this item. In conclusion, for item 3, no obvious pattern has been observed here since three companies have used defined contribution plan. However, three out of the rest four companies selected option I. Even though MediGene's discussion is not very clear, it doesn't affect the conclusion that selecting option I serve these companies best.

Excerpts from option I adopters:

Schwarz–from 2005 Annual Report page39

"Employee benefits (IFRS 1.20): All actuarial gains and losses exceeding the 10% corridor of the higher value of the present value of the pension liabilities and the plan assets as per 1 January 2004 were fully set off against employee benefits, leaving no actuarial gains and losses unrecognized in shareholders' equity. P118: As mentioned above, the SCHWARZ PHARMA Group has opted to use the exemption provisions under IFRS 1 as regards pensions and has set off all unrealized actuarial gains and losses against pension provisions (Employee benefits)".

Elan –from 2005 Annual Report page156

"Employee benefits: The corridor method has been applied retrospectively and the cumulative actuarial gains and losses from the date of inception of our defined benefit pension plans have been split into a recognized portion and an unrecognized portion and the recognized portion has been adjusted against retained loss in the opening balance sheet".

MediGene–from 2005 Annual Report page63

"As at December 31, 2004, no actuarial gains or losses were reported due to the use made of the relief option in accordance with IFRS 1. Actuarial gains and losses arising from experience adjustment and changes in actuarial assumption are posted to income over the employees expected average remaining working lives".

1.3 Item 4: IAS 21 Cumulative (foreign) translation differences

An entity may elect to:

I. Recognize all translation adjustments arising on the translation of the financial statements of foreign entities in accumulated profits or losses at the opening IFRS balance sheet date. Similar to the effect of Item 3 discussed previously, an entity may elect to reset the translation reserve included in equity under previous GAAP to zero. If the entity elects this exemption, the gain or loss on subsequent disposal of the foreign entity will be adjusted only by those accumulated translation adjustments arising after the opening IFRS balance sheet date.

II. Restate the translation reserve for all foreign entities since they were acquired or created.

Survey Results for Item 4

Shire, MediGene, and Sygnis chose this exemption: the cumulative translation reserve reset to zero. The other four companies did not take this option. There is no obvious pattern observed for this item. Given the fact observed from Table 4, these non-option I adopters have been experiencing big losses on this item for several years in a row, I boldly surmise that since 2004, the first year in which companies started to convert to IFRS, companies, without relative experience to rely on, inevitably acted conservatively.

Excerpts from option I adopters:

Shire–from 2005 Annual Report page102

"The Group has elected to set the previously accumulated cumulative translation differences arising on the translation and consolidation of results of foreign operations and balance sheets denominated in foreign currencies to zero at January 1, 2004. This exemption has been applied to all subsidiaries in accordance with IFRS 1".

MediGene–from 2005 Annual Report page55

"IFRS 1 allows companies to apply the standard IAS 21 (the effects of changes in Foreign Exchange rates) prospectively. This means that it is assumed that all of the accumulated currency exchange gains and losses reported according to US-GAAP before the transition date are valued at zero as at the date of transition to IFRS. And

that currency exchange differences which arise after the transition date must be reported separately in the balance sheet for each foreign subsidiary. The differences that emerge are set at zero at the date of transition".

Sygnis–from 2005 Annual Report page32

"The company used the option of IFRS 1.22, which allows the accumulated foreign currency exchange differences from foreign operations to be set at zero in the opening balance sheet".

Discussions for non-option I adopters:

Elan

Elan did not take option I for this item because U.S. dollars is the functional currency for the parent company and the majority of the group companies. Below is an excerpt regarding this item taken from Elan 2005 IFRS annual report page80:

"Financial Statements are presented in U.S. dollars rounded to the nearest million, being the functional currency of the parent company and the majority of the group companies".

Even though in 2005 Elan IFRS Annual Report (page74), in stockholders' equity, this item is a big loss (-$15.6 million). However, there is a decreasing pattern in this item from 2005 to 2008; they are -$15.6 million, -$11.7 million, -$11.0 million, and -$11.0 million respectively.

Evotec

Through reading financial reports from 2004 to 2008, I found the cumulative foreign currency translation item for 2005 to be € –35,856,000, which is carried over and this loss is getting bigger.

Schwarz

Schwarz also did not take option I. However, it is interesting to see that during 2005, this item is decreased dramatically from €-61,829,000 to €-861,000. The exhibit below is taken from Schwarz 2005 Annual Report to show this dramatic change.

［Insert Exhibit 1 here］

World of Medicine

No pattern is observed for this item through financial statements from 2004 to 2008. Table 4 summarizes the cumulative translation differences from non-option I adopters.

［Insert Table 4 here］

1.4 Item 8: IFRS 2 Share-based payment transactions

An entity may choose:

I-1. Not to apply IFRS 2 to any equity instruments those were granted before **November 7, 2002**.

I-2. Not to apply IFRS 2 to any equity instruments that were granted after **November 7, 2002** and **vested before the date of transition**, but only if the company has previously disclosed publicly the fair value of the instruments, determined at the measurement date.

II. To apply IFRS 2 to a liability relating to a cash-settled share-based payment that was settled prior to the date of transition to IFRS.

Survey Results for Item 8

Sygnis and World of Medicine did not provide such discussions. All other companies have chosen the option I, which is not to apply IFRS 2 to any equity instruments that were granted before November 7, 2002, or that were granted after that date and vested before the date of transition. In conclusion, except that two companies did not provide such discussions, the rest of five companies selected option 1. Thus it is safe to say that option I serves these companies the best.

Excerpts from option I adopters:

Evotec–from 2005 Annual Report page69

"IFRS 2, only stock options, which were granted after 7 November and not vested on 31 December 2005, are included in the fair value calculation".

Elan–from 2005 annual report page156

"Share-based payments: IFRS 2 has been applied retrospectively to those options that

were issued after 7 November 2002 and had not vested by 1 January 2005".

Schwarz–from 2005 Annual Report page39

"Stock option programs prior to 7 November 2002 and those granted after 7 November 2002 that were already fully exercisable at the time of the opening balance sheet, were not taken into consideration in preparing the opening balance sheet".

MediGene–from 2005 Annual Report page55

"The reporting of share-based instruments that were issued before November 7, 2002 is waived".

Shire–from 2005 Annual Report page102

"The Group has elected to apply the share-based payment exemption. It applied IFRS 2 from January 1, 2004 to those options that were issued after November 7, 2002 but that have not vested by January 1, 2005".

2. Reconciliation of Key Accounting Differences

IFRS 1 also requires that the first IFRS financial statements include a reconciliation of:

(1) Equity from U.S. GAAP to IFRS at the transition date and at the end of the latest period presented in the company's most recent annual financial statements under U.S. GAAP;

(2) Net profit from U.S. GAAP to IFRS for the last period in the company's most recent annual financial statements under U.S. GAAP.

The reconciliation information required by IFRS 1 and included in a reconciliation table usually indicates how equity and net profit from U.S. GAAP get reconciled to IFRS. The reconciliation disclosures from the eight companies are summarized in Tables 5 to 8. Specific items in reconciliation disclosures are listed in an attempt to find what the key items are. A summary of major items in reconciliation disclosures from the eight companies and the effects of IFRS transition on financial ratios are also included in Table 9 and Table 10 in this section.

I found that IFRS adoption results in lower net income and higher shareholders' equity than U.S. GAAP for our sampled companies. The mean (median) differences between U.S. GAAP and IFRS net income and shareholders' equity are -59.34% and 15.07% respectively (-0.63% and 3.65% respectively). Elaine, Lin, and Yang (2008) used 75 European companies cross-listed in the U.S., but found that IFRS provided higher (lower) net income (shareholders' equity) than U.S. GAAP. They find that the mean (median) accounting differences between U.S. GAAP and IFRS net income and shareholders' equity are 2.11% and -11.64%, respectively (1.40% and -1.18%). I used the same calculation method, but my results were quite different from theirs. It probably could be attributed to following facts: 1. Small sample size. 2. Different transition date (2004) 3. Seven out of eight companies are experiencing big losses, which could have something to do with the lower net income under IFRS. In these IFRS financial statements, I did not observe any obvious national identities, as Ernst &Young (2006) mentioned that IFRS financial statements retain their national identity.

This is probably because the majority of the companies are from Germany and because all these sampled companies unanimously used U.S. GAAP before converting to IFRS. Table 5 below presents net incomes of eight companies under both U.S.GAAP and IFRS

［Insert Table 5 here］

Table 6 summarizes specific items and their proportions to the IFRS Net Income in reconciliation table. No obvious pattern was observed from the following tables and these specific items and their proportion vary significantly from company to company even though they belong to the same industry.

［Insert Table 6 here］

Table 7 presents stockholders' equities of eight companies under both U.S. GAAP and IFRS.

［Insert Table 7 here］

Table 8 summarizes specific items and their proportions to IFRS Stockholders' Equity (SE) in the Reconciliation Table. No obvious pattern was observed from the following tables and these specific items and their proportions vary significantly from company to company even though they belong to the same industry.

［Insert Table 8 here］

Here I have summarized the relatively major items in the reconciliation disclosures of these companies in Table 9 and have included excerpts on these items.

［Insert Table 9 here］

Elan

Excerpts from 2005 Elan IFRS Annual Report page153

Financial instrument*-We have adopted IAS 32 and IAS 39 effective 1 January 2005, which eliminates many of the investment related differences with our U.S. GAAP results. The principal remaining differences from 2005 onwards relate to the different carrying values for some of our investments under IFRS as compared to U.S GAAP.*

The definition of a derivative instrument under U.S. GAAP is similar to the IFRS definition with the result that the number of derivatives recorded at fair value through the income statement will be similar for both GAAPs. However, under U.S. GAAP, certain non-derivative investments, principally equity investments in private entities, are not marked-to-market through the balance sheet, whereas all non-derivative investments are marked-to-market through the balance sheet under IFRS with fair value changes taken through the fair value reserve.

Revenue recognition*-There are different rules under IFRS and U.S. GAAP in relation to the recognition of revenue arising under contracts which include multiple arrangements such as the sale of a product and related R&D or manufacturing arrangements, although the revenue recognized will be the same under both IFRS and U.S. GAAP over the life of the contract, the different requirements can result in differences in the timing of revenue recognition.*

Schwarz

Under U.S. GAAP, Schwarz used average and LIFO method for inventory valuation. Under IFRS, only average method was used since LIFO is prohibited by IFRS, which is the primary cause of the reconciliation differences in the inventory accounts.

Excerpt–from 2005 Schwarz Annual Report page40

Under U.S. GAAP, Inventories are stated at the lower of cost or market. Cost is generally determined in accordance with the average cost method. Certain foreign companies determine cost using the last-in, first-out method.

Employee benefits-As mentioned above, the SCHWARZ PHARMA Group has opted to use the exemption provisions under IFRS 1 as regards ***pensions*** *and has set off all unrealized actuarial gains and losses against pension provisions (Employee benefits).*

Evotec

Excerpts from Evotec 2005 IFRS Annual Report page60

Impairment (goodwill) *– under U.S. GAAP impairment is determined by comparing the value of the cash generating unit (reporting unit) to which goodwill is attributed*

using after tax cash flows discounted at an after tax discount rate, to the fair value of the assets of that reporting unit. Under IFRS no fair value adjustments are made and pre-tax cash flows and pre-tax discount rates are used.

***Impairment (property, plant and equipment)** – under U.S. GAAP, where there is an indication of an impairment of a fixed asset, the impairment is calculated by determining the value of the asset to the business using non-discounted cash flows and comparing this to the carrying value. Under IFRS a similar method to that of goodwill impairment is used. Asset impairments under IFRS may be reversed if conditions change.*

Sygnis

Sygnis sold its core business, bioinformatics unit in 2005. **Adjustment of severance** provision is the only item in the reconciliation table.

Excerpts from Sygnis 2005 Annual Report page31:

***Adjustment of severance**-Under US-GAAP, severance provision for employees are accounted for on a pro-rata basis if the term between the termination and the actual ending of the employment is longer than usual (normally more than three months), under IFRS such a liability is immediately accounted for at the total amount. This effect reduced equity in the opening balance as of April, 2004 by € 260 thousand, which was however counterbalanced by the counter effect in fiscal year 2005, however, the same issue resulted in a reduction of equity of € 55 thousand as of March 31, 2005.*

World of Medicine

Excerpts from World of Medicine 2005 Annual Report page57

***Deferred tax adjustment-**IFRS and USGP differ from each other regarding the accounting of deferred taxes in that, according to IFRS, deferred taxes are always shown as non-current balance sheet items.*

The changes to balance sheet items between IFRS and USGP in the opening balance that led to a €179 difference in shareholder equity primarily due to the adjustment of

budget horizon for the calculation of tax deferrals to losses carried forward.

The effects of IFRS transition on financial ratios

The key financial ratios under both U.S. GAAP and IFRS from four companies are compared and summarized in Table 10 in an attempt to have better understanding on the effects of IFRS transition on financial ratios. These financial ratios are representative of important aspects of financial status which include liquidity, profitability, activity, and financial leverage. Table 10 below summarizes the effects of IFRS transition on financial ratios

［Insert Table 10 here］

For liquidity ratios, the current ratio is theoretically increased after IFRS transition because deferred income tax is removed from current liabilities. This result was observed in the results, but I did not discuss deferred income tax here since this complex item is subject to regulations of the nations in which the companies operate.

For profitability ratio, the return on assets should theoretically vary with the changes on net incomes and assets. The results show that the ratios unanimously become higher. This could be due to small size or coincidence.

For activity ratio, asset turnover is theoretically lower because sales are usually the same and assets increase after IFRS transition. The results show that ratios of three companies become lower and only one ratio becomes higher

For leverage ratio, it should theoretically be lower (higher) as net income becomes higher (lower) after IFRS transition. The results here do not show this correlation, but show that the ratios unanimously become lower. Again, it could be due to small sample size.

3. Accounting Choices

The first-time adoption of IFRS also presents companies opportunity to change and reevaluate their accounting policies. IFRS allows companies to choose from a number of alternative accounting treatments—for example, the reclassification of interest income into operating activity or investing activity etc. Table 11 below summarizes the accounting choices provided by IFRS and the choices made by the surveyed pharmaceutical companies. A discussion follows Table 11.

［Insert Table 11 here］

Discussion for accounting choices

IAS 1, *Presentation of Financial Statements*, provides two options to classify expenses under Income Statement by **function** or by **nature**. All companies classify expenses by **function** as reported under U.S. GAAP.

IAS 7, *Cash Flow Statement,* permits either **indirect** or **direct** methods to prepare the statement. The **indirect** method has been uniformly applied by all of the companies. IAS 7 also allows optional choices on the activity classification for the interest expense, interest income, and dividend income in operating, investing, or financing activities.

IAS 2, *Valuation of Inventories*, allows two methods: **FIFO** or **average**. Because inventory is not material to GPC Biotech, there is no discussion about this item. There is also no discussion on this item for MediGene and Sygnis. Evotec and World of Medicine have followed their previous U.S. GAAP practices by using the **average** method. Schwarz was the only company that used LIFO and average under U.S. GAAP and selected only the **average** method for IFRS reporting.

IAS 16, *Property, Plant and Equipment*, allows for either revaluation or cost valuation methods. None of these companies chose the revaluation method based on the fair value model. Like U.S. GAAP, IFRS also allows choices for depreciation methods. All firms have uniformly chosen the **straight line** method.

IAS 19, *Employee Benefits* (on actuarial gains/losses), permits **immediate recognition** of actuarial gains/losses to equity or the **corridor method**, which is commonly used under U.S. GAAP. Elan and Schwarz have followed their previous U.S.

GAAP practices by using the corridor method. GPC Biotech, Evotec and Shire used the defined contribution plan. MediGene chose the immediate recognition approach. Sygnis and World of Medicine did not provide such discussions.

I also surveyed how firms apply the exchange rates per IAS 21, *The Effects of Changes in Foreign Exchange Rates*, to measure various financial statements. Except GPC Biotech, which used spot rate of transaction date for its income statement, all of the other surveyed companies reported **period-end** rates for their balance sheet and **average rates** for their income statement. None of the eight companies disclosed the use of exchange rates for their statements of cash flow.

Finally, I surveyed the option pricing model used for IFRS 2, Share-Based Payments/Stock Options. Except for MediGene which used the binomial model, all other companies used Black-Scholes option-pricing model. An excerpt for this item is presented below to explain why MediGene chose to use the binomial model.

Excerpt -- from MediGene 2005 Annual Report page62:

The fair values of the options that MediGene grants in return for employees work performance are reported as expenses. The instruments are valued with the help of the binomial model instead of the Black Scholes method that was used in the previous years. The latter can not be used under IFRS because it doesn't portray the fair value correctly. The binomial model takes account of, among other things, vesting periods, hurdle rate, volatility of the underlying value and interest rates.

4. Important Accounting Policies

Since the pharmaceutical industry differs from other industries in the areas of research and development (R&D) and revenue recognition, I have analyzed these two areas separately.

4.1 Revenue recognition

Under IFRS, rules for revenue recognition are more general compared with those under U.S. GAAP. According to IAS 11, in general, revenues are recognized when it is probable that the company will receive economic benefit and the amount of revenue can be reliably determined. In addition, the main risks and opportunities connected with the ownership of sold products must have been transferred to the buyer. Table 12 below presents revenue figures of seven companies from both U.S. GAAP and IFRS

［Insert Table 12 here］

Elan and GPC Biotech are the only two companies that have different revenue figures under U.S. GAAP and IFRS. Excerpts on revenue are taken from their annual reports to explain why their revenue figures are different under U.S. GAAP and IFRS.

Excerpts on revenue from Elan and GPC Biotech:

Elan –from 2005 IFRS Annual report page154

There are different rules under IFRS and USGP in relation to the recognition of revenue arising under contracts which include multiple arrangements such as the sale of a product and related R&D or manufacturing arrangements, although the revenue recognized will be the same under both IFRS and USGP over the life of the contract, the different requirements can result in differences in the timing of revenue recognition.

GPC Biotech: the only difference in revenue description between IFRS and U.S. GAAP is grant revenue.

Excerpt from 2007 IFRS Annual report Page48:

Grants from governmental agencies for the support of specific research and development projects are recorded as other income to the extent the related expenses have been incurred and billed in accordance with the terms of the grant.

4.2 Research and development (R&D) cost

Development costs are capitalized as an intangible asset if all of the following criteria are met [IAS 38R.57]:

a) The technical feasibility of completing the asset so that it will be available for use or sale;

b) The intention to complete the asset and use or sell it;

c) The ability to use or sell the asset;

d) The asset will generate probable future economic benefits and demonstrate the existence of a market or the usefulness of the asset if it is to be used internally;

e) The availability of adequate technical, financial and other resources to complete the development and to use or sell it; and

f) The ability to measure reliably the expenditure attributable to the intangible asset.

For this R&D part, I have summarized accounting treatments for R&D expenditures from PWC and KPMG publications. I also have summarized the accounting difference in R&D and intangible assets from U.S. GAAP to IFRS for these pharmaceutical companies. Below is a summary of accounting treatments for R&D expenditures from PWC and KPMG publications.

	U.S.GAAP	IFRS
Similarity	Research costs are expensed as incurred under both accounting models.	
Difference	With very limited exceptions, US GAAP prohibits the capitalization of development costs. In the area of software development costs, US GAAP provides different guidance depending on whether the software is for internal use or for sale.	The recognition and measurement of intangible assets could differ significantly under IFRS. Development costs under IFRS are capitalized if certain criteria are met. In the area of software development costs, The principles surrounding capitalization under IFRS, by comparison, are the same whether the internally generated intangible is being developed for internal use or for sale.

Table 13 below presents accounting difference in R&D and intangible asset from U.S. GAAP to IFRS. After 1/1/2004, all companies have expensed development costs as

incurred, except Evotec which met the criteria and capitalized as intangible asset. Most companies have not capitalized development costs since IFRS took effect in 2005. After converting to IFRS, R&D tends to decrease the mean and median by -3% and -0.3% respectively while intangible assets tend to increase the mean and median by 25% and 6% respectively.

［Insert Table 13 here］

5. A Brief Discussion of Agency Theory in Explaining Accounting Choices

The choice made at the first time adoption of IFRS can have a significant impact on financial statements and strategy implications. Companies can benefit from a fresh start by choosing optional exemptions (Cormier, Demaria, Lapointe-Antunes & Teller, 2008). Cazavan-Jeny & Jeanjean (2007), in their paper, examine the determinants of management choices regarding IFRS transition. According to Cazavan-Jeny & Jeanjean (2007), the impact of a transition to IFRS on key items is relatively limited due to the companies' accounting policies. The difference between national GAAP and IFRS usually comes from mandatory adjustments and optional exemptions. The optional exemptions allowed by IFRS 1 enable firms to offset the impact of mandatory adjustments required by IFRS 1 (Cazavan-Jeny & Jeanjean, 2007). Their results are very interesting as they show that companies are making accounting policy choices that can be considered opportunistic while financial reporting is supposed to be more transparent. Managers pay attention to the published figures because those figures can affect their bonus and the firm's competitive position.

Their research hypotheses are formulated based on agency theories and signaling theories, which have significant impacts on accounting choices. The hypotheses are that optional exemptions are used to minimize the effect of mandatory adjustments on equity and that Firms choose the options that will enable them to reduce their apparent leverage (Cazavan-Jeny & Jeanjean, 2007).

6. Conclusion

It has been a growing trend to use a set of high quality global accounting standards that could be applied by companies and understood by investors around the world. Today, more than 100 countries around the world require or permit IFRS reporting. Proposed voluntary application of IFRS will be permitted for some U.S. registrants at fiscal years ending after December 15, 2009 according to SEC's proposed roadmap.

This study surveys leading European Union pharmaceutical companies using U.S. GAAP prior to using IFRS to identify first time IFRS adoption practices and choices for accounting policies under IFRS. The research tools include SEC EDGAR Company Search, Business Database: Financial Markets and Services, and Net Advantage.

Survey results are analyzed into three parts in this thesis. First, I looked at the four most commonly used IFRS 1 optional exemptions at transition date: IFRS 3R, business combinations, IAS 19, employee benefits, IAS 21, cumulative translation differences, and IFRS 2, share-based payments. Second, I analyzed the reconciliations of equity and net profit between U.S. GAAP and IFRS. I found that IFRS adoption results in lower net income and higher shareholders' equity than U.S. GAAP for my sampled companies. By comparing the several financial ratios under U.S. GAAP and IFRS, I found that under IFRS, current ratio and return on assets increases, asset turnover tends to decrease and debt to equity ratio decreases. However, these results should be interpreted with caution because of the small sample used and the sample's nationality (mostly Germany). Third, I analyzed accounting choices under IFRS. IFRS allows companies to choose from a number of alternative accounting treatments. All the surveyed companies made similar accounting choices. The common choices were to classify expenses by function**,** keep the cost method and straight-line depreciation method for property, plant, and equipment, and to continue using the indirect method to prepare cash flow statement as reported under U.S. GAAP. All these companies use either FIFO or average method for valuation of inventory since LIFO is forbade by IFRS. Six out of eight companies have the same revenue figures under U.S. GAAP and IFRS and all of these companies have different figures for R&D and intangible asset items even though seven out of eight kept expensing

R&D items. I also found it interesting that when converting to IFRS, R&D tends to decrease and intangible assets tend to increase even though development costs are not capitalized. Other accounting treatments vary and depend on the specific situation.

The survey results could be valuable for U.S. companies because it provides benchmark information. It could also provide U.S. companies a cost-effective pathway in making their reporting choices in the near future.

7. Reference

AICPA, 2009. IFRS Resources. *International Financial Reporting Standards* http://www.ifrs.com/updates/aicpa/ifrs_faq.html#q5

AICPA, 2009. IFRS Resources. *SEC Breaks Silence on IFRS*. http://www.blog.ifrs.com

Cavavan-Jeny, A. & Jeanjean, T., 2007. Accounting choices under IFRS 1: Analysis and determinants. *European Financial Reporting Research Group, Accounting in Europe, 3rd Annual Workshop, 12/13 September 2007*

Cormier, D., Demaria, S., Lapointe-Antunes, P., & Teller, R., 2008. First-Time Adoption of IFRS, Managerial Incentives and Value-Relevance: Some French Evidence.

Deloitte, 2004. *IFRS 1 First-Time Adoption of International Financial Reporting Standards*. http://www.iasplus.com/standard/ifrs01.htm#separate.

Drozdowski, M., KPMG, 2008. *Executive Training & Development How the IFRS Conversion Could Affect U.S. Biopharma.* Pharmaceutical Commerce.

Elain, H., Lin, S. & Yang, Y.W. 2007. Weak Signal: Evidence of IFRS and U.S. GAAP Convergence from Nokia's 20-F Reconciliations. *Issues in Accounting Education*, 22 (4): 709-720.

Ernst & Young, 2006. *IFRS Observations on the Implementation of IFRS* http://www.ey.com/Publication/vwLUAssets/Observation_on_the_Implementation_on_IFRS/$file/EY_IFRS_ImplementationOfIFRS_Master.pdf

Forgeas, R., 2009. *SEC's Leap Toward IFRS*. http://www.cpa2biz.com/Content/media/PRODUCER_CONTENT/Newsletters/Articles_2009/CPA/Feb/TowardIFRS.jsp

Hwang, Angela L.J. and Lin, S., 2009. A Survey of IFRS Accounting Choices: Learning from European firms that Transitioned from US-GAAP to IFRS, Working Paper, Eastern Michigan University and Florida International University.

Mirza, A., A., Orrell, M., & Holt, G. J., 2008. *Wiley IFRS: Practical Implementation Guide and Workbook*, 2nd Edition, ch33.

PricewaterhouseCoopers, 2008. *IFRS and US GAAP similarities and differences* http://www.pwc.com/extweb/pwcpublications.nsf/docid/598E9D7EDF5239A0852574AB00659431/$File/IFRS_USGAAPSep08.pdf

PricewaterhouseCoopers, 2008. *Preparing your first IFRS financial statements*. http://www.pwc.com/extweb/pwcpublications.nsf/docid/543374192ed81097852574b8006f0ad0

PricewaterhouseCoopers, 2008. *Issues and Solutions for the Pharmaceutical and Life Sciences Industries-VOL I & II UPDATES.*

Securities and Exchange Commission (SEC), 2008. Roadmap for The Potential Use of Financial Statements Prepared in Accordance with International Financial Reporting Standards By U.S. Issuers. http://www.sec.gov/rules/proposed/2008/33-8982.pdf

Thomas, A., 2003. IFRS: Turning Confusion to Competitive advantage. *Financial Executive* http://www.allbusiness.com/finance/671956-1.html

Tsakumis,.G. T., Campbell, D.R. & Doupnik, T.S., 2009. *IFRS: Beyond the Standards.* http://www.journalofaccountancy.com/Issues/2009/Feb/IFRSBeyondthe Standards

8. Tables

Table 1: Company List

Pharmaceutical company	Transition Date	Country
Elan	1/1/2004	Ireland
GPC Biotech	1/1/2004	Germany
Shire	1/1/2004	England
MediGene AG	1/1/2004	Germany
Evotec	1/1/2004	Germany
Schwarz Pharma AG	1/1/2004	Germany
Sygnis Pharma AG	4/1/2004	Germany
World of Medicine AG	1/1/2004	Germany

Table 2: List of IFRS 1 Optional Exemptions

Item	Standard No.	Title
1	IFRS 3R	Business combinations
2	IAS 16, 38, 40	Fair value or revaluation as deemed cost
3	IAS 19	Employee benefits (on actuarial gains and losses)
4	IAS 21	Cumulative (foreign) translation differences
5	IAS 32	Compound financial instruments
6	IAS 27, 28, 31	Assets and liabilities of subsidiaries, associates and joint ventures
7	IAS 39	Designation of previously recognized financial instruments
8	IFRS 2	Share-based payment transactions
9	IFRS 4	Insurance contracts
10	IFRIC 1	Changes in existing decommissioning, restoration, and similar liabilities included in the cost of property, plant and equipment
11	IFRIC 4	Leases
12	IAS 39	Fair value measurement of financial assets and financial liabilities
13	IFRIC 12	Service concession arrangements
14	IAS 23	Borrowing costs
15	IAS 27R	Investments in subsidiaries, jointly controlled entities and associates

Table 3: Summary of Elected Optional Exemption

Item	Standard	Title	Elan	Shire	MediGene	Evotec	Schwarz	Sygnis	World of Medicine
1	IFRS 3R	Business combinations	I	I	I	II	I	II	I
3	IAS 19	Employee benefits	I	N/A	I	N/A	I	N/A	II
4	IAS 21	Cumulative translation differences	II	I	I	II	II	I	II
8	IFRS 2	Share-based payment transactions	I	I	I	I	I	N/A	N/A

I: Not to retrospectively apply the standard before the date of transition
II: Retrospectively apply the standard before the date of transition
N/A: Not Applicable
Item 3 can not be applied on **Shire**, **Evotec** and **Sygnis** since these three companies have used defined contribution plan.
Item 8 can not be applied on **Sygnis** and **World of Medicine** since these two companies don't have share-based payment transactions.

Exhibit 1: Schwarz: other comprehensive income (loss) from 2005 Annual Report page 89

	Currency Translation Differences	Other Comprehensive Income (Loss)
Status on 1/1/2005	(61,829)	(61,829)
Change	60,968	60,968
Status on 31/12/2005	(861)	(861)

Table 4 Summary of Currency Translation Difference

	cumulative currency translation differences					
	1/1/2004	12/31/2004	12/31/2005	12/31/2006	12/31/2007	12/31/2008
Elan (in million $)	-12.2	-12.9	-15.6	-11.7	-11	-11
Evotec (in thousands €)	-40,046	-39,005	-35,856	-33,956	-42,827	-38,835
Schwarz (in thousands €)	-31,348	-61,829	-861	-51,577	-4,428	N/A
World of Medicine (in thousands €)	67	-106	-87	-8	-521	-267

Table 5: Accounting Difference in Net Income (NI)

Company in year 2004	NI-IFRS (1)	NI-USGP (2)	Difference (1)-(2)	Percentages [(1)-(2)]/(1)
Elan (millions $)	-379.5	-394.7	15.2	4.00%
GPCB [1] (2007 T€[2])	-73,595	-69,245	-4,350	-5.90%
Shire (T$[3])	96,509	269,007	-172,498	**-179%**[4]
MediGene (T€)	-12,666	-12,306	-360	-2.84%
Evotec (T€)	-77,812	-84,203	6,391	8.20%
Schwarz (T€)	-835	1,844	-2,679	**-320%**[5]
Sygnis (T€)	-12,945	-13,150	205	1.58%
World of Medicine (T€)	-7,922	-6,396	-1,526	19.26%
Mean				**-59.34%**
Median				**-0.63%**

1. GPCB's financial figures under both USGP and IFRS is found in 2007's financial statements instead of 2004
2. T€: figures in thousands of euros except for percentages
3. T$: figures in thousands of dollars
4. **-179%∗**: the 2004 IFRS income statement of Shire presents much higher R&D (210,974) and selling general and administrative expenses (718,890) than those (196,265 and 516,645 respectively) of USGP, leading to lower net income under IFRS than USGP.
5. **-320%∗:** the 2004 IFRS income statement of Schwarz presents much lower other income from investment (101T€) than that (17,890 T€) of USGP, leading to lower net income under IFRS than USGP.

Table 6: Specific items and their proportions to the IFRS Net Income in reconciliation table [1]

Reconciliation item in Net income/companies	Elan	GPCB[3]	Shire[4]	MediGene	Evotec	Schwarz	Sygnis	World of Medicine
Intangible assets	6%[2]							
Financial instruments/non-consolidated	17%							
Revenue recognition	12%							
Acquired product rights and finance charges write off	3%							
Share-based payments	4%							
Other	6%							
General and administrative expenses				3%	0.10%			
Interest income and expenditures				0.10%	0.03%			
Costs of revenue					0.20%			
Research and development expense					0.40%			
Amortization of intangible asset					0.06%			
Impairment of goodwill					14%			
Impairment of tangible asset					6%			
Net loss from equity investments					0.30%			
Deferred tax benefit					7%	62%		
Executive stock options programs						372%		
Inventories						160%		
Property, plant and equipment						14%		
Other non-current provisions						71%		
Employee benefits						99%		
Adjustment of severance provision							1.60%	
Deferred tax adjustment due to adjusted budget horizon								7%

1. Reconciliation Table usually indicates how equity and net profit from U.S.GAAP get reconciled to IFRS
2. The percentage is calculated by dividing the specific reconciliation item by company's IFRS Net income.
3. The reconciliation item of **GPCB** is not available.
4. **Shire** only provides reconciliation between UK GAAP and IFRS instead of U.S GAAP and IFRS.

Table 7: Accounting Difference in Stockholders Equity (SE)

Company	SE-IFRS (1)	SE-USGP (2)	Difference (1) - (2)	Percentages [(1) - (2)]/(1)
Elan (million $)	538	205	333	62.00%
GPCB (2007 T€)	44,119	38,603	5,516	12.50%
Shire (T$)	4,244,932	2,250,653	1,994,279	45.80%
MediGene (T€)	29,249	29,220	29	0.10%
Evotec (T€)	110,508	102,498	8010	7.20%
Schwarz (T€)	528,211	528,797	-586	-0.10%
Sygnis (T€)	23,538	23,593	-55	-0.23%
World of Medicine (T€)	19,250	20,597	-1,347	-6.70%
Mean				**15.07%**
Median				**3.65%**

Table 8: Specific Items and their proportions to the IFRS SE in Reconciliation Table[1]

Reconciliation item in equity/companies	Elan	GPCB[3]	Shire[4]	MediGene	Evotec	Schwarz	Sygnis	World of Medicine
Intangible assets	45%[2]							
Financial instruments/non-consolidated	3%							
Revenue recognition	20%							
Other	0.20%							
Additional pain-in capital				0.40%	2%			
Accumulated deficit				4%	6%			
Net income recognized directly in equity				3%				
Reserve					0.50%			
Inventories						0.20%		
Property, plant and equipment						0.01%		
Restructuring provisions						0.10%		
Other non-current provisions						0.40%		
Employee benefits						0.80%		
Deferred tax						0.20%		
Currency translation differences						0.03%		
Minority interests						0.20%		
Adjustment of severance provision							0.20%	
Net income/loss carried forward								1%
Net income/net loss								8%

1. Reconciliation Table usually indicates how equity and net profit from U.S.GAAP get reconciled to IFRS
2. The percentage is calculated by dividing the specific reconciliation item by company's IFRS Net equity.
3. The reconciliation item of **GPCB** is not available.
4. **Shire** only provides reconciliation between UK GAAP and IFRS instead of U.S GAAP and IFRS.

Table 9: Summary of Major Items in Reconciliation Disclosures

Companies	Significant reconciliation items for NI and SE
Elan	Financial instruments, revenue recognition
GPC Biotech	No discussion
Shire	No discussion
MediGene	Accumulated deficit, net income recognized in equity (no explanation)
Evotec	Impairment of goodwill, impairment of tangible assets
Schwarz	Employee benefits, inventory
Sygnis	Adjustment of severance provision
World Of Medicine	Deferred tax adjustment

Table 10: The effects of IFRS transition on financial ratios

	IFRS	Shire (2005 T $)		Evotec (2004 T€)		GPCB (2007 T€)		Schwarz (2004 T€)	
		USGP	IFRS	USGP	IFRS	USGP	IFRS	USGP	IFRS
R&D Expenses	Lower R&D	**336,217**	**287,146**	**13,772**	**13,490**	**51,437**	**50,551**	**197,667**	**198,321**
NI or OI	Higher profit or lower loss	**-410,843**	**-177,378**	**-84,203**	**-77,812**	**-69,245**	**-73,595**	**19291 OI**	**15030 OI**
Liquidity: Current Ratio =CA/CL	Deferred Income Tax makes it lower	1,312,222/965,421 = **1.36**	1,245,217/968,940 = **1.29**	44,949/20,886 = **2.15**	44,869/21,512 = **2.09**	69,114/17,603 = **3.93**	69,114/17,726 = **3.90**	522,115/328,526 = **1.59**	484,198/261,398 = **1.85**
Profitability Ratio Return on Assets=Net Income/Assets	Depends Appear to be higher	-410,843/2,798,240 = **-0.15**	-177,378/5,227,905 = **-0.03**	-84,203/138,534 =**- 0.61**	-77,812/146,544 = **-0.53**	-69,245/73,386 = **-94.49%**	-73,595/78,658 = **-93.56%**	19,291/994,460 = **1.9%**	15,030/943,898 = **1.6%**
Activity Ratio Asset turnover=Sales/Assets	Lower	1,599,316/2,798,240 = **0.57**	1,599,316/5,227,905 = **0.31**	72,730/138,534 = **0.52**	72,730/146,544 = **0.50**	18,315/73,386 = **0.25**	22,252/112,523 = **0.20**	946,647/994,460 = **0.95**	946,647/943,898 = **1.002**
Leverage Ratio Debt/Equity	Lower	1,008,974/1,789,266 = **0.56**	1,144,772/4,083,133 = **0.28**	36,524/102,010 = **0.36**	36,036/110,508 = **0.33**	34,783/38,603 = **0.90**	34,539/44,119 = **0.78**	465,663/528,797 = **0.88**	415,687/528,211 = **0.79**

Note: USGP: U.S. GAAP
Given the availability of some important figures, some data are from different year than 2004.

Table 11: Accounting choices

		Elan	GPCB	Shire	MediGene	Evotec	Schwarz	Sygnis	WM
IAS 1	Presentation of Financial Statements								
	Expenses Classification 1-Functional 2-Nature	1	1	1	1	1	1	1	1
IAS 7	Cash Flow Statement								
	Method: 1-Indirect 2-Direct	1	1	1	1	1	1	1	1
	Interest Expense: 1-Operating Activity 2-Financing Activity	1	1	2	nd	1	nd	1	1
	Interest Income: 1-Operating Activity 2-Investing Activity	1	1	2	nd	nd	nd	1	nd
	Dividend Income: 1-Operating Activity 2-Investing Activity	nd	nd	nd	nd	nd	nd	nd	nd
IAS 2	Valuation of Inventories (Method)								
	US-GAAP method 1-FIFO 2-Average 3-LIFO	nd	nm	nd	nd	2	2,3	nd	2
	IFRS: 1-FIFO 2-Average	1	nm	1	nd	2	2	nd	2
IAS 16	Property, Plant And Equipment								
	Valuation Method: 1-Cost 2: Revaluation	1	1	1	1	1	1	1	1
	Depreciation Method: 1-Straight Line 2-Accelerated Declining 3-SYD	1	1	1	1	1	1	1	1
IAS 19	Employee Benefits								
	Actuarial gains/losses: 1-Immediate Recognition 2-Corridor	1	N/A	N/A	1	N/A	2	nd	nd
IAS 21	Foreign Exchange Rates 1-Period end closing rate 2 Average 3-Spot rate of transaction date								
	Balance Sheet:	1	1	1	1	1	1	1	1
	Income Statement	1	3	1	1	1	1	1	1
	Statement of Cash Flow	nd	nd	nd	nd	nd	nd	nd	nd
IFRS 2	Share-Based Payments/Stock Options								
	Black-Scholes option-pricing model	Y	Y	Y	N	nd	nd	nd	nd
	Other (be specific)				Binomial				

nd: no discussion provided N/A: not applicable
nm: The company specified the item is not material

Table 12: Summary of Accounting Difference in Revenue Recognition

Pharmaceutical companies	2004 revenue under IFRS (1)	2004 revenue under USGP(2)	[(1)-(2)]/(1)
Elan (millions $)	367	481.7	-31%
GPCB (2007 T€)	18,022	18,315	-1.60%
Shire (T$)	1,363,207	1,363,207	0
MediGene (T€)	13,138	13,138	0
Evotec (T€)	72,730	72,730	0
Schwarz (T€)	946,647	946,647	0
Sygnis (T€)	nd	nd	nd
World of Medicine (T€)	30,811	30,811	0

All these data are from 2004 financial statements except GPCB used data from 2007

Table 13: Accounting Difference in R & D and Intangible Asset (IA)

Company	R&D-IFRS	R&D-USGP	Difference	Percentages	IA-IFRS	IA-USGP	Difference	Percentages
	(1)	(2)	(1)-(2)	[(1)-(2)]/(1)	(1)	(2)	(1)-(2)	[(1)-(2)]/(1)
Elan (million $)	262.6	257.3	5.3	2%	1013	753.7	259.3	26%
GPCB (2007 T€)	50,551	51,437	-886	-2%	6105	164	5,941	97%
Shire (2005*T$)	287,146	336,217	-49,071	-17%	1,394,677	729,304	665,373	48%
MediGene (T €)	15,627	14,701	926	6%	7,020	7,020	0	0%
Evotec (T€)	13,490	13,772	-282	-2%	7,963	7,507	456	6%
Schwarz (T€)	197,667	198,321	-654	-0.3%	199,361	196,189	3,172	2%
Sygnis (T€)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
World of Medicine (T€)	3,955,455	3,955,455	0	0%	1,858,779	1,858,779	0	0%
Mean				-3%				25%
Median				-0.3%				6%

Note: All these data are from 2004 except for Shire and GPCB

*. relative figures from 2005 are used given the availability of the data under both U.S.GAAP and IFRS

9. Appendix:

This Appendix contains five parts as follows:

9.1－company background

9.2－excerpts on key items from both U.S. GAAP and IFRS

9.3－excerpts on exemptions from Shire, Elan and MediGene

9.4－excerpts on reconciliation from Elan

9.1 Company background

Evotec

Evotec AG is a biotechnology group dedicated to the discovery and development of novel small molecule drugs through both its own discovery programs and through contract research partnerships. It was founded on 8th December 1993. The geographical spread of revenues for the Group continues to be diverse. Europe continues to be the largest market with 51% of total revenues (2004: 46%), and the US market being second at 37% (2004: 42%). The Group's overall gross margin for 2005 was 36.3% (2004: 34.1%) with cost of revenues amounting to € 50.8 m (2004: € 47.9 m). This improvement comes as a result of a program of cost and efficiency improvements across all divisions together with changing market demands which have improved the revenue mix. While the US Dollar continues to be weak and therefore affects the Company's pricing and gross margin versus competitors with US based operations, the average US Dollar exchange rate was the same in 2005 as in 2004, and therefore currency effects have had less of an impact on the year on year comparisons. In total, currency contributed 0.6% points to the margin improvement. The Company's consolidated financial statements of 31 December 2005 are prepared in accordance with International Financial Reporting Standards (IFRS).

GPC Biotech

GPC Biotech is a publicly traded biopharmaceutical company focused on discovering and developing anticancer drugs and is incorporated in Germany. Its wholly owned U.S. subsidiary is located in Princeton, New Jersey. The consolidated financial statements of GPC Biotech AG and its subsidiary have been prepared in accordance with IFRS. **Year 2005** is the first year that GPC Biotech converted to IFRS from U.S.GAAP; however it did not provide IFRS financial statement until 2007, which does not provide first time

adoption practice. The year 2007 turned out to be the most difficult year in the history of GPC Biotech. In February, the company completed a New Drug Application Submission for Satraplatin. Unfortunately, in late October 2007, the company announced that Satraplatin did not demonstrate an improvement in overall survival in the total patient population enrolled in the SPARC trial.

Shire

Shire Group develops and market products for specialty physicians. The Group focuses on four therapeutic areas: central nervous system, gastro-intestinal, human genetic therapies and general products. This is the first year that the Company has presented its financial statement under IFRS.

Substantially all of the Company's revenues, expenditures, operating profits or losses and net assets are attributable to the Research and Development (R&D), manufacture, sale and distribution of pharmaceutical products within two operating segments: Pharmaceutical Products and Royalties. 83% (2004: 82%) of total revenues are derived from product sales, 15% of total revenues are derived from royalties (2004: 17%). All royalty income falls within the Royalties segment. For the year to December 31, 2005, the Company's total revenues increased by 17% to $1,599.3 million, compared to $1,363.2 million in 2004. Net loss for the year to December 31, 2005 was $177.4 million compared to net income of $96.5 million in 2004. The results for 2005 include a $527.0 million impairment of the goodwill that arose on the acquisition of BioChem Pharma Inc. (2004: an impairment of $132.6 million was recorded).

MediGene

MediGene Group was founded in 1994 in Germany. The purpose of the Group is research, development and commercialization of, in particular, technologies applied in molecular biology processes and products in the field of drugs, pharmaceutical substances. Year 2005 is the first year that the Company has presented its financial statement under IFRS. MediGene's revenue increased by 50% in 2005. The increase results particularly from its first drug on the market, Eligard, for the treatment of prostate cancer. In June 2005, MedeGene was honored with the ARC award- The World's Best Annual Report for its annual report in 2004.

Elan

Elan Corporation is a neuroscience-based biotechnology company headquartered in Dublin, Ireland. It was incorporated as a private limited company in Ireland in December 1969 and became a public limited company in January 1984. Its principal research and development, manufacturing and marketing facilities are located in Ireland, the United States (U.S.) and the United Kingdom (U.K.). Its business is organized into two business units: Biopharmaceuticals and EDT. Biopharmaceuticals engages in research, development and commercial activities and includes our activities in the areas of autoimmune diseases, neurodegenerative diseases and our specialty business group. EDT focuses on product development, scale-up and manufacturing to address drug optimization challenges of the pharmaceutical industry. Prior to the 2004 fiscal year, its Consolidated Financial Statements had adopted Irish GAAP. Beginning with 2004 fiscal year, it has adopted U.S. GAAP as the basis for the preparation of Consolidated Financial Statements. Accordingly, it's Consolidated Financial Statements on this Form 20-F are prepared on the basis of U.S. GAAP for all periods presented. It also prepared separate Consolidated Financial Statements in accordance with IFRS since the year ended December 31, 2005. Financial Statements are presented in U.S. dollars rounded to the nearest million, being the functional currency of the parent company and the majority of the group companies. It has incurred significant losses during the last three fiscal years and anticipates continuing losses for the foreseeable future.

Schwarz Pharma

The SCHWARZ PHARMA Group is a multinational pharmaceutical enterprise supplying a broad and diversified range of pharmaceutical products and services, with activities in research, development, marketing approval, manufacturing, and marketing. Its research activities are chiefly concentrated in two of its group companies, one in Germany and one in the USA, while its production sites are located in the USA, Ireland, Germany, and Poland. It also operates a China-based joint-venture production company in Zhuhai. The group's distributors are spread out throughout the USA, Europe, and Asia. 2004 was particularly marked by advances in clinical development. One highlight certainly was submitting the applications for market approval with the U.S. and European regulatory authorities for Neupro® (rotigotine transdermal system). The consolidated financial statements have been prepared in accordance with IFRS since 2005 as required by European Union. In fiscal year 2005, the SCHWARZ PHARMA Group achieved sales of

€990.6 million, marking a 4.6% increase over the previous year. The acquisition of the entire rotigotine rights in July 2005 led to an operating result of €–17.0 million, after €15.8 million in the previous year, and a net result of €–54.1 million (€–0.8 million).

Sygnis Pharma

It was incorporated in Germany in March 1997. The company originally offered drug discovery and knowledge management IT solutions and developed information management software and data integration to improve R&D performance in the life science industry. On March 24, 2005, the enlargement of the company's business purpose was approved. It now also includes the acquisition, holding, administration and the sale of investments, especially in the life science and IT market. At the end of fiscal year 2005, it sold its core business, bioinformatics unit, to BioWisdom Ltd. As a result of the sale and drastic reduction of workforce, it has also implemented the downsizing of the management board. Its consolidated financial statements were prepared in accordance with U.S.GAAP up to and include 2005. As a gear to capital market, it changed its accounting in full to IFRS as of April 1 2005, applying IFRS 1 , "First time adoption"

World of Medicine

W.O.M.AG is a supplier of technical equipment for Minimally Invasive Surgery (MIS), and develops, manufactures and distributes primarily insufflators, pump systems, cameras, light sources and video documentation systems for MIS, as well as the accessories and disposable supplies necessary for devices application. It has been the global market leader in this area for more than 30 years. The aforementioned products from W.O.M Group are distributed worldwide. The subsidiary W.O.M USA Inc. is responsible for marketing and sales in North America. The Germen subsidiary exclusively supplies research and development services for the Group. The consolidated financial statements have been prepared in accordance with IFRS since 2005 as required by European Union. In 2005, it minimized dependency on exchange rates in the core business by shifting purchasing volume to U.S. dollar territory. Its consolidated revenue declined by about 6%. This decline is attributed to the delayed launch of the new generation of digital camera and the challenging market environment in Europe.

9.2 Excerpts on key items from both U.S. GAAP and IFRS:

Elan R&D (U.S. GAAP)–from 2005 U.S. GAAP Annual Report page15

R&D costs are expensed as incurred. Acquired in process research and development arising on business combinations is expensed on acquisition. Costs to acquire intellectual property, product rights and other similar intangible assets are capitalized and amortized on a straight-line basis over the estimated useful life of the asset. The method of amortization chosen best reflects the manner in which individual intangible assets are consumed.

Elan R&D (IFRS) –from 2005 IFRS Annual Report page85

Expenditure on research activities undertaken with the prospect of gaining new scientific or technical knowledge and understanding is expensed as incurred. Expenditure on development activities, whereby research findings are applied to a plan or design for the production of new or substantially improved products and processes, is expensed when incurred, unless the criteria for recognition of an internally generated intangible are met. Regulatory and other uncertainties generally mean that such criteria are not met. To date, we have not had any development expenditures that have met the criteria for recognition of an internally generated intangible asset.

GPCB R&D (U.S. GAAP)–from 2005 U.S. GAAP Annual Report page46

Research and development (R&D) expenses include salaries, benefits, and other headcount related costs; clinical trial and related clinical manufacturing costs; contract and other outside service fees; employee stock-based compensation expense; and facilities and overhead costs. R&D expenses consist of independent R&D costs and costs associated with collaborative R&D and in-licensing arrangements. In addition, we acquire R&D services from other companies and fund research institutions under agreements which we can generally terminate at will.

GPCB R&D (IFRS)–from GPCB 2005 IFRS Annual Report page40

In accordance with IAS38, research costs, which are defined as costs of original and planned research performed to gain new scientific or technical knowledge and understanding, are expensed as incurred. Development costs are defined as costs incurred to achieve technical and commercial feasibility. Since regulatory and other uncertainties inherent in the development of the company's new products are so high that the requirements set out in IAS38 are not met, these internal development costs are not capitalized, but expensed as incurred.

GPCB

Similar part of Revenue Recognition under U.S. GAAP and IFRS–from 2007 IFRS Annual Report p46 and 2007 U.S. GAAP Annual Report page46

Licensing Arrangements

The Company generally receives non-refundable upfront fees upon signing of a licensing agreement. These fees generally include licensing fees, technology access fees and initiation fees. All non-refundable upfront fees received or to be received under these arrangements are recognized when SAB 104 revenue recognition criteria are met, ratably over the term of the agreements, as this is the period over which the license is granted or the Company is substantially and continually involved.

Co-Development Arrangements

Revenue recognized from partners in co-development arrangements is generally based on a fixed-percentage of agreed upon research, development and commercialization costs incurred by the Company. Revenue from these co-development arrangements are recognized on a gross basis as collaboration revenue in the consolidated statement of operations as the related costs are incurred. If payments are received prior to the activity having been performed, these amounts are deferred and recognized in future periods when the co-development costs are incurred.

Milestone Payments

Milestone payments are recognized as revenue when the performance obligations, as defined in the contracts, are achieved. Performance obligations typically consist of significant milestones in the life cycle of the related technology or product candidate, such as initiation of clinical trials, filing for approval with regulatory agencies and approvals by regulatory agencies. These milestone payments are generally tied to a specific performance condition and are recognized in full when the performance obligation is met. The reaching of a milestone is evidenced by a milestone confirmation letter that is signed and dated by both parties. In the absence of such milestone confirmation, no milestone revenue is recognized, unless there is other persuasive evidence that the milestone event has been reached and the milestone fee has been earned.

Different part of Revenue Recognition:

GPCB Revenue (U.S. GAAP)–from 2007 U.S. GAAP Annual Report page46

Grant revenues from governmental agencies for the support of specific research and development projects are recorded as revenue to the extent the related expenses have been

incurred and billed in accordance with the terms of the grant.

GPCB Revenue (IFRS)–from 2007 IFRS Annual Report page48

Grants from governmental agencies for the support of specific research and development projects are recorded as other income to the extent the related expenses have been incurred and billed in accordance with the terms of the grant.

9.3 Excerpts on exemptions from Shire, Elan and MediGene:

Shire–from 2005 IFRS Annual Report page102

40 Explanation of transition to IFRS

This is the first year that the Company has presented its financial statement under IFRS. The following disclosures are required in the year of transition. The last financial statements under UK GAAP were for the year ended December 31, 2004 and the date of transition to IFRS was therefore January 1, 2004.

Exemptions from full retrospective application -elected by the Group

The Group has elected to apply the following optional exemptions from full retrospective application.

Business combinations exemption

The Group has applied the business combination exemption in IFRS 1. It has not restated business combinations that took place prior to the January 1, 2004 transition date in accordance with IFRS 3, Business Combinations.

Cumulative translation differences exemption

The Group has elected to set the previously accumulated cumulative translation differences arising on the translation and consolidation of results of foreign operations and balance sheets denominated in foreign currencies to zero at January 1, 2004. This exemption has been applied to all subsidiaries in accordance with IFRS 1.

Exemption from restatement of comparatives for IAS 32 and IAS 39

The Group has elected to apply this exemption. It applies UK GAAP rules to derivatives, financial assets and financial liabilities and to hedging relationships for the 2004 comparative information. The adjustments required for differences between UK GAAP and IAS 32 and IAS 39 are determined and recognized at January 1, 2005.

Designation of financial assets and financial liabilities exemption

The Group reclassified various equity investments as available-for-sale investments. The adjustments relating to IAS 32 and IAS 39 are required and determined at the opening balance sheet date of January 1, 2005 -the IAS 32 and IAS 39 transition date.

Share-based payment transaction exemption

The Group has elected to apply the share-based payment exemption. It applied IFRS 2 from January 1, 2004 to those options that were issued after November 7, 2002 but that have not vested by January 1, 2005.

Fair value measurement of financial assets or liabilities at initial recognition

The Group has applied the exemption offered by the revision of IAS 39 on the initial recognition of the financial instruments measured at fair value through the income statement where there is no active market.

Elan –from 2005 IFRS Annual Report page147

Exemptions under IFRS 1

In accordance with IFRS 1, which establishes the framework for transition to IFRS by a first-time adopter, we elected to avail ourselves of a number of specified exemptions from the general principle of retrospective restatement as follows:

(i) Business combinations:

Business combinations undertaken prior to the transition date of 1 January 2004 have not been subject to restatement and accordingly, goodwill at the transition date is carried forward at its net book value and is subject to annual impairment testing in accordance with IAS 36, "Impairment of Assets"

(ii) Employee benefits:

The corridor method has been applied retrospectively and the cumulative actuarial gains and losses from the date of inception of our defined benefit pension plans have been split into a recognized portion and an unrecognized portion and the recognized portion has been adjusted against retained loss in the opening balance sheet.

(iii) Share-based payments:

IFRS 2 has been applied retrospectively to those options that were issued after 7 November 2002 and had not vested by 1 January 2005.

(iv) Financial instruments:

We have adopted IAS 32 and IAS 39 from 1 January 2005, with no restatement of comparative information. Therefore, financial instruments in the comparative 2004 period continue to be recorded on an Irish GAAP basis. With effect from 1 January 2005, we reclassified various financial instruments as available-for-sale investments and as derivatives at fair value through the income statement.

MediGene – from 2005 Annual Report page55

(2) Relief options in IFRS 1 as per the transition date January 1, 2004 are being used as follows:

Business Combinations:

MediGene AG acquired a company in 2001. MediGene's management decided that it would make use of the relief option for corporate mergers provided for under IFRS 1 and that, consequently, the previous accounting principles for corporate mergers carried out before the transition date (January 1, 2004) would not be adapted to the new principles.

Foreign currency translation:

IFRS 1 allows companies to apply the standard IAS 21 (the effects of changes in Foreign Exchange rates) prospectively. This means that it is assumed that all of the accumulated currency exchange gains and losses reported according to US-GAAP before the transition date are valued at zero as at the date of transition to IFRS. And that currency exchange differences which arise after the transition date must be reported separately in the balance sheet for each foreign subsidiary. The differences that emerge are set at zero at the date of transition from US-GAAP to IFRS in the item "Net income/expenses recorded directly in equity" and the retained earnings are reduced accordingly. The retained earnings are reported in the balance sheet under the item "Accumulated Deficit".

Compound Financial Instruments:

A compound financial instrument is divided into an equity and borrowings component only if the borrowings component still exists as at the transition date (January 1, 2004). These compound financial instruments are portrayed in accordance with IAS32 or IAS 39. The equity component is produced by the difference between the issue proceeds and the fair value of the future payment obligations (borrowings component).

Share-based compensation:

Share-based instruments, such as options and convertible bonds issued to employees are reported in the balance sheet in accordance with IFRS 2. Under this regulation, the reporting of share-based instruments that were issued before November 7, 2002 is waived.

No further options in addition to the above are used for the transition from US-GAAP to the new accounting standard.

Mandatory exemptions

The application of the mandatory exemptions in IFRS 1 did not give rise to any adjustments.

Schwarz – from 2005 Annual Report page39

The following exemptions from retrospective adjustment were elected pursuant to IFRS 1:

Business combinations (IFRS 1.15): *Goodwill from historic acquisitions of companies measured and carried forward under US GAAP are carried forward in the opening balance sheet. The balance sheet values as per 1 January 2004 were tested for impairment pursuant to IAS 36.*

Employee benefits (IFRS 1.20): *All actuarial gains and losses exceeding the 10% corridor of the higher value of the present value of the pension liabilities and the plan assets as per 1 January 2004 were fully set off against employee benefits, leaving no actuarial gains and losses unrecognized in shareholders' equity.*

Share-based payment transactions (IFRS 1.25B and 1.25C): *Stock option programs granted prior to 7 November 2002, and those granted after 7 November 2002 that were already fully exercisable at the time of the opening balance sheet, were not taken into consideration in preparing the opening balance sheet. They will not affect the net result posted in the consolidated financial statements of the SCHWARZ PHARMA Group in future. Hence, specifically the first, second, and third trances of the Executive Stock Option Program 2000 are not taken into account in the group's*

IAS/IFRS consolidated financial statements. However, the effects of the Executive Stock Option Program 2003 (first and second trances) were and will in future be expensed in the consolidated financial statements.

9.4 Excerpts on reconciliation –from Elan 2005 IFRS Annual Report page152

Reconciliation from IFRS to U.S. GAAP

The following is reconciliation to net loss and shareholders equity calculated in accordance with U.S. GAAP:

Net income/ (loss) for the years ended:

	31 December 2005 $m	31 December 2004 $m
Net income/(loss) as stated under IFRS	612.3	(379.5)
Adjustments to conform to U.S. GAAP:		
(a) Intangible assets	64.3	21.8
(b) Financial instruments/non-consolidated subsidiaries	8.1	(63.2)
(c) Revenue recognition	50.8	46.2
(d) Convertible notes—fair value on conversion option	(1,136.1)	—
(d) Convertible notes—net charge on debt retirement	(31.6)	—

(d) Convertible notes—accretion of discount	12.4	—
(e) Acquired product rights and finance charges write off	—	(12.0)
(f) Share-based payments	36.6	15.1
Other	(0.4)	(23.1)
Net loss as stated under U.S. GAAP	(383.6)	(394.7)

Shareholders' equity

	31 December 2005 $m	31 December 2004 $m
Shareholders' equity as stated under IFRS	308.4	538.0
Adjustments to conform to U.S. GAAP:		
(a) Intangible assets	(177.3)	(241.6)
(b) Financial instruments/non-consolidated subsidiaries	(1.4)	14.7
(c) Revenue recognition	(56.4)	(107.2)
(d) Convertible notes	(46.4)	—
Other	(10.0)	1.1
Shareholders' equity as stated under U.S. GAAP	16.9	205.0

The principal differences between IFRS as adopted in the EU and U.S. GAAP, as they apply to our financial statements, are as follows:

a. Intangible assets

The carrying value of our intangible assets is higher under IFRS than under U.S. GAAP because of differences in our historical Irish GAAP accounting for business combinations which have carried into our IFRS financial statements as part of the transitional arrangements. This in turn gives rise to a higher amortization charge under IFRS than under U.S. GAAP. Additionally, higher carrying values under IFRS will result in higher intangible impairment charges if the fair value of the related intangibles declines post-acquisition.

The principal reason for a higher carrying value of intangibles under IFRS is that under U.S. GAAP, the fair value of acquired IPR&D is expensed upon acquisition, whereas under Irish GAAP as carried into IFRS these amounts are capitalized as acquired IPR&D. Additionally, under U.S. GAAP, our acquisition of Dura was accounted for under the pooling-of-interests method, whereas under Irish GAAP and now IFRS this transaction was accounted for using the purchase method. As a result, under U.S. GAAP, the assets and liabilities of Dura were recorded at their historical carrying amounts and no goodwill arose from the merger of Dura and Elan, whereas under IFRS the assets and liabilities of Dura were recorded based on their fair values at the date of acquisition, and the excess of the purchase price over the fair value of assets acquired was allocated to goodwill. Also, a

number of differences arise in the manner in which goodwill was previously written off when businesses were sold under Irish GAAP and U.S. GAAP. As we did not restate our historical business combinations in accordance with IFRS 3, "Business Combinations", as permitted by IFRS 1, these differences remain in effect between U.S. GAAP and IFRS.

b. Financial instruments/non-consolidated subsidiaries

Effective 1 January 2005

We have adopted IAS 32 and IAS 39 effective 1 January 2005, which eliminates many of the investment related differences with our U.S. GAAP results. The principal remaining differences from 2005 onwards relate to the different carrying values for some of our investments under IFRS as compared to U.S GAAP. The definition of a derivative instrument under U.S. GAAP is similar to the IFRS definition with the result that the number of derivatives recorded at fair value through the income statement will be similar for both GAAPs. However, under U.S. GAAP, certain non-derivative investments, principally equity investments in private entities, are not marked-to-market through the balance sheet, whereas all non-derivative investments are marked-to-market through the balance sheet under IFRS with fair value changes taken through the fair value reserve.

Prior to 1 January 2005

Prior to 1 January 2005, our investments and derivatives were accounted for on an Irish GAAP basis, which resulted in a significant number of differences from U.S. GAAP. These are detailed below. Derivative instruments were marked-to-market through the income statement under both Irish GAAP and U.S. GAAP. However,

The definition of a derivative instrument is significantly broader under U.S. GAAP than under Irish GAAP, with the result that more derivatives were marked-to-market through the income statement under U.S. GAAP than under Irish GAAP. Additionally, under U.S. GAAP, quoted common stock and certain debt instruments are marked-to-market on the balance sheet, but were not marked-to-market under Irish GAAP, and, consequently, shareholders' equity differences arose. These differences will remain in effect as the carrying basis of certain investments under IFRS is derived from the Irish GAAP basis. Under Irish GAAP, when a convertible instrument is exercised and converted into common shares of the issuer, the common shares acquired as a result are recorded at their fair value on the date of conversion, with any excess over the carrying value of the convertible instrument recorded as a gain. Under U.S. GAAP, no gain is recorded upon conversion. As a result, there is a different historic cost basis for converted investments. Under IFRS, EPIL and EPIL II have been consolidated as subsidiaries of Elan, with the

loan notes issued by each entity being recorded as a liability and the related interest charges expensed through the income statement. Under U.S. GAAP, both entities were no consolidated subsidiaries through the date of repayment of their loan notes (March 2001 and June 2004, respectively), as we had effected a true legal sale of a portfolio of investments to each entity and had not retained control over the transferred assets.

Accordingly, the transfer of investments to each entity was treated as a sale of the assets at fair value under U.S. GAAP, and the related loan notes were not included as a liability. As a consequence, we did not record an expense for the related interest charges under U.S. GAAP. In addition, the timing and amount of charges related to impairments of the investments transferred to these entities differed under IFRS and U.S. GAAP, since under IFRS each investment was assessed for impairment individually at each balance sheet date, whereas under U.S. GAAP we recorded provisions under our guarantee agreements with the note holders based upon the difference at each balance sheet date between the fair value of the total assets of each entity and its total liabilities.

c. Revenue recognition

There are different rules under IFRS and U.S. GAAP in relation to the recognition of revenue arising under contracts which include multiple arrangements such as the sale of a product and related R&D or manufacturing arrangements. Although the revenue recognized will be the same under both IFRS and U.S. GAAP over the life of the contract, the different requirements can result in differences in the timing of revenue recognition.

d .Convertible notes

Effective 1 January 2005

We have adopted IAS 32 and IAS 39 effective 1 January 2005, with no restatement of comparative information in prior periods. With the adoption of IAS 32 and IAS 39, the 6.5% Convertible Notes are analyzed into a debt component and a separate embedded conversion option component. Under IFRS, prior to 28 October 2005, the conversion option in the 6.5% Convertible Notes was classified as a derivative within liabilities and fair valued through the income statement at each reporting period. The finance cost for the 6.5% Convertible Notes also includes an amortization charge for the discount between the initial fair value of the debt component of the 6.5% Convertible Notes and the proceeds received on issue. This discount under IFRS is determined on the issue date using a market interest rate for an equivalent non-convertible note, and is amortized along with issuance costs up to the maturity of the notes using the effective interest rate method,

such that the discounted carrying value of the debt will accrete to the principal amount over the period to the maturity date. This initial discount, which reflects the initial fair value of the conversion option, amounted to $128.7 million for the issue as a whole, of which $71.7 million, approximately 55%, related to the remaining principal amount of $254.0 million outstanding at 31 December 2005. Of this $71.7 million, an amount of $46.4 million remains unamortized at 31 December 2005.

On 28 October 2005, we removed the cash settlement feature from the Convertible Notes and as a result, the value of the remaining conversion option is fixed as of 28 October 2005 at $91.8 million. It will not be subsequently remeasured after this date, and has been transferred from liabilities to shareholders equity, being the equity portion of a compound financial instrument. This $91.8 million increase in shareholders equity represents the initial fair value of $71.1 million of the conversion option (initial fair value discount on the debt) on the remaining $254.0 million of principal amount of the 6.5% Convertible Notes, plus the increasing of shareholders equity, upon the removal of the cash settlement feature, for the net cumulative mark-to-market loss of $20.7 million on the remaining principal amount (that had previously been expensed to shareholders equity). As described above, the $71.1 million is being amortized to interest expense over the period to the maturity date using the effective interest rate method. The effective interest rate of the 6.5% Convertible Notes is 15.9%. Of this $71.1 million, $46.4 million remains unamortized at 31 December 2005

Under U.S. GAAP, there is no separate recognition of the conversion option, as it is deemed to be clearly and closely related to the debt instrument. As a result, there is no fair value movement on the U.S. GAAP income statement, nor an additional finance charge for the discount arising on separation of the instrument. Timing differences may also arise on net gains/(charges) on debt retirements, since under U.S. GAAP such gains/(charges) are recorded only as such transactions occur, whereas the requirement under IFRS to fair value the conversion option during each reporting period means that such gains/(charges) may have been partially recorded in prior period(s). The difference in shareholders equity of $46.4 million between U.S. GAAP and IFRS at 31 December 2005 represents the remaining unamortized initial fair value discount.

This difference will decline over time to $Nil at maturity as this discount is amortized to interest expense under IFRS using the effective interest rate method.

Prior to January 2005

Prior to 1 January 2005 the convertible debt was accounted for under Irish GAAP on an amortized cost basis until extinguished on conversion or maturity. Therefore, there was no difference in the accounting treatment under Irish GAAP and U.S. GAAP.

e. Acquired product rights and finance charges

Under IFRS, contingent and potential product payments which are likely to be made in the future are recognized as a liability on a time discounted basis, with a corresponding finance charge being expensed annually. The contingent liabilities are released if the related assets are sold. Under U.S. GAAP, such contingent payments are not recognized in the financial statements until the related contingencies are resolved.

f. Share-based payments

IFRS requires that the fair value of share-based payments is expensed to the income statement over the period the related services are received, together with a corresponding increase in equity. There is no corresponding charge for share-based payments under U.S. GAAP for the periods presented. We will implement U.S. GAAPs Statement of Financial Accounting Standards (SFAS) No.123R, Share-Based Payment-An Amendment of FASB Statements No. 123 and 95, effective 1 January 2006. This standard will require us to expense the fair value of share-based payments, rather than using the intrinsic value method as previously allowed. Therefore, from 1 January 2006, we will record a similar share-based compensation expense under both IFRS and U.S. GAAP.

g. Discontinued operations

Under IFRS, a discontinued operation is a component of a company that either has been disposed of or is classified as held for sale and (i) represents a separate major line of business or geographical area of operations, (ii) is part of a single coordinated plan to dispose of a separate major line of business or geographical area of operations, or (iii) is a subsidiary acquired exclusively with a view to resale. Under U.S. GAAP, a discontinued operation is a component of an entity whose operations and cash flows have been or will be eliminated from the ongoing operations of the entity and the entity will not have any significant continuing involvement in the operations of the component after its disposal. As the criteria for the determination of discontinued operations are different under IFRS and U.S. GAAP, the products and businesses treated as discontinued operations differ under each. There are no reconciling differences to total net income/(loss) or shareholders equity between IFRS and U.S. GAAP related to discontinued operations. However, the split of net income/(loss) between continuing operations and discontinued operations differs under both GAAPs.

h. Held for sale assets

A presentation difference arises between IFRS and U.S. GAAP on assets classified as held for sale. Under IFRS, comparatives are not restated to reflect the classification as held for sale at a reporting date, whereas under U.S. GAAP comparatives are restated to reflect current held for sale classifications.