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Letter from the Editor

Greetings! I am pleased to present the Spring 2006 issue of the *Journal of Finance Case Research*, the official journal of *The Institute of Finance Case Research* (IFCR). Volume 8, Number 1 is the first of three anticipated issues for 2006. I would like to thank all of the reviewers and authors for their patience and participation – it has been a tough year thus far.

The IFCR provides an avenue for the writing of cases and their submission for peer review. Cases accepted for publication in the *Journal* have met the requirements of a double-blind review process, and are available for use through *Journal* subscriptions or by contacting the *Institute* for multiple copies (for a small fee per copy of the case). Teaching notes are available to instructors desiring to use each case by contacting the *Institute*. Our acceptance rate is 25%. The *Journal* is listed in *Cabell's Directory of Publishing Opportunities in Economics and Finance* and other standard references.

In addition to the *Journal*, the *Institute* continues to promote the interaction of case writers in a conference setting. Cases submitted for conference presentation are eligible for the review process for the *Journal*. Our overall objective is to create an outlet for case writers, and a source of high quality cases for case users.

I would like to personally invite case writers and case teachers to participate in the activities of the *Institute*. Our case sessions have been held at a variety of finance conferences, and they provide an excellent opportunity for interaction with others with similar interests. The journal has sponsored or participated in case or teaching sessions at annual meetings of the Southwestern Case Research Association, the Financial Management Association, the Southwest Finance Association, the Midwest Finance Association, the Academy of Economics and Finance and the Financial Education Association. Historically, cases presented at conferences have had more success in getting published, perhaps because of the scrutiny and comments they receive from other educators.

The *Journal* accepts cases of all types, as is evident from the content of this issue. Primarily, though, we want the *Journal* to be an outlet for interesting and representative cases. We have focused on decision cases in the past, both "textbook"-style directed cases and also more involved, open cases. In every instance, we are seeking cases that will be relevant and engaging for students and professors alike. Looking ahead to the remainder of the year, I can promise tutorial articles and detailed industry-background research in addition to our traditional case lineup.

The *Institute* is currently planning to create an outlet for shorter "one-pager" problems and classroom exercises which will debut later this year. Some of our colleagues have been using short exercises in class for years and years, and I hope folks will send those in and have them editorially reviewed and published the *Journal's* sister publication.

Finally, I would like to encourage all of our readers to consider volunteering to review manuscripts as schedules permit. Finding reviewers is a key part of the managing editor's job, and it is becoming more and more difficult as the volume of manuscripts increases.

This issue of the *Journal of Finance Case Research* contains seven outstanding cases and an excellent applied tutorial on credit. I hope you will put them to good use in your classes and seminars.

For additional information about the *Journal* and the *Institute*, please go to jfcr.org on the Web.

Timothy B. Michael, Managing Editor
Journal of Finance Case Research

PRE-PAID LEGAL SERVICES, INC. VERSUS THE S.E.C.

Marcus Allan Ingram, CFA, The University of Tampa
Michael G. McMillan, CFA, Johns Hopkins University

In his Letter to Shareholders in the 2000 annual report for Pre-Paid Legal Services, Inc., Chairman, Chief Executive Officer, and company founder Harland C. Stonecipher declared, "We are delighted to report that 2000 was another outstanding year" and that "the best is yet to come!" Stonecipher certainly had good reason for his satisfaction. Since 1996 Pre-Paid Legal Services' revenues and earnings had grown at an average annual rate of 30.9% and 43.3%, respectively, and in 2000 the company earned a record $43.5 million on nearly $250 million in revenues. Pre-Paid Legal Services, Inc. common stock traded on the New York Stock Exchange (ticker symbol: PPD). ***Forbes Magazine****, in its October 30, 2000 issue, ranked Pre-Paid Legal Services as the 12th best small company in America, the fifth consecutive time that the company had appeared on its annual list. Stonecipher attributed the growth of Pre-Paid Legal Services and its financial success to the revolutionary way the company delivered legal services to average consumers at a low cost.*

At the same time that Stonecipher was touting Pre-Paid Legal Services' financial results, a number of investors, securities analysts and journalists were raising concerns about the company's marketing practices and accounting procedures. During 1999 and 2000, numerous class action lawsuits were filed against the company claiming that Pre-Paid Legal Services, Inc. (NYSE: PPD) had, among other things, breached contracts, violated the Consumer Protection Act, and violated federal securities laws by using improper accounting procedures to inflate its stock price. The Securities and Exchange Commission (SEC) launched its own investigation into PPD's accounting practices. When PPD filed its 2000 Form 10-K Annual Report with the SEC on April 27, 2001, it mentioned these lawsuits, as well as the SEC investigation, as sources of ongoing risk to the firm (Management's Discussion and Analysis of Financial Condition and Results of Operations, "Risk Factors", pp. 30-31).

As a result, there were two conflicting views of Pre-Paid Legal Services, Inc. in early 2001. On the one hand Pre-Paid Legal was a fast-growing, successful, innovative legal services marketing firm with substantial institutional investors; at the same time PPD was also a firm under the dark cloud of ongoing concerns about their accounting and under investigation by the SEC. All of this was taking place during a time when several other noteworthy firms (Sunbeam, Waste Management, Enron, and Global Crossing, for example) had been rocked by accounting scandals. This was the situation in May 2001 as Kim Stephens began work on her research report on Pre-Paid for her employer, Robert Mackenzie Securities.

KIM STEPHENS, MACKENZIE SECURITIES

Robert Mackenzie Securities was a full-service regional investment bank and securities brokerage firm headquartered in Dallas, Texas, with offices throughout the southwestern U.S. A major international banking concern owned a minority interest in Mackenzie, but it was majority owned by its managing partners. Mackenzie had a 40-year history in Dallas and had an excellent reputation for client service, wealth management and research. Mackenzie had not been especially successful on its investment banking side recently despite the extremely hot new-issue market of the late 1990's.

Kim Stephens was an equity research analyst for Mackenzie, and her primary area of responsibility was the insurance industry. Prior to joining Mackenzie Ms. Stephens had worked as a leasing agent for a luxury apartment complex and completed her M.B.A. at North Texas University. She was hired in 1998 to assist the firm's long time insurance and financial services analyst, R. Charles Carlyle, who retired in December 2000. Kim Stephens was promoted to the role of lead analyst in insurance at that time, and in May 2001 was reviewing reports last written by Mr. Carlyle that needed to be updated and issued under her own name. The head of research had recently indicated to Ms. Stephens that Pre-Paid Legal Services needed a careful revision.

In 1993, Mr. Carlyle initiated coverage of Pre-Paid Legal Services with a "buy" rating because he was impressed by the company's profitability, growth and marketing strategy. From 1993 until 1999, Carlyle continued to follow PPD and maintained his buy recommendation. Many of the firm's clients and internal portfolio management team had purchased PPD, with positive investment results until recently. In December 2000, just prior to his retirement, Mr. Carlyle changed his recommendation to a "hold" after the Securities and Exchange Commission launched an investigation into the company's accounting practices.

COMPANY BACKGROUND

Pre-Paid Legal Services, Inc. is an Oklahoma-based company that designs, underwrites, and markets memberships in legal expense plans to individuals and employee groups. A legal expense (service) plan is an arrangement whereby the participant (member) pays a fixed amount each month (or year) and in exchange receives legal services (e.g., telephone advice and consultation, will preparation, etc.) on an as-needed basis. In many respects a legal expense plan is similar to a health benefit program, in which the participant is entitled to receive payment for medical services if and when the need arises. According to Pre-Paid's filings with the SEC, legal service plans have been used in Europe for more than a century (they generated more than $4 billion in revenues in 2000), but were not offered in the United States until the late 1960s (2000 Pre-Paid Legal Services, Inc. Form 10-K, p. 2)

In 1972 Harlan Stonecipher founded the company that is now known as Pre-Paid Legal Services to provide motor vehicle related legal expense reimbursement plans through membership in what was called a "motor service club." In 1976 the company began to offer memberships in a legal fee payment program that paid for a broad variety of legal consultation and advice expenses. In 1979 PPD began to offer a legal expense benefit product that provided for partial payment of legal fees incurred in the defense of certain civil and criminal actions (ibid, p. 1).

In 2001 PPD's signature product was The Family Legal Plan, which provided members with benefits for preventive legal services, motor vehicle legal defense services, trial defense services, IRS audit services and a 25% discount off other legal services not specifically covered by the membership. The average monthly membership fee of approximately $19 ($229 per year) gave members access to legal services through a network of independent law firms (known as "provider firms") contracted by PPD. Provider law firms, in turn, were paid a fixed fee by PPD to render legal services to plan members on a "capitated" basis. This capitation arrangement provided significant advantages to PPD in managing its claims risk because the fees paid by the company to the provider firms did not vary based on the type and amount of benefits (legal services) a member utilized. As of December 31, 2000, PPD had over one million active members in all 50 states as well as in the Canadian provinces of Ontario and British Columbia. Approximately 95% of these members belonged to the Family Legal Plan (ibid, p.3).

MARKETING

Pre-Paid Legal used a multi-level marketing strategy to sell memberships in its legal expense plans. Sales associates were engaged as independent contractors to market the company's memberships on a part time basis. PPD encouraged sales associates to develop their own membership sales organizations by recruiting new associates. This enabled sales associates to earn commissions on the memberships they sold as well as to earn commissions on the memberships sold by associates in their sales organizations.

Pre-Paid Legal provided extensive training programs for sales associates and had a support staff at the home office that was specially trained to answer questions from associates. PPD charged new sales associates a one-time enrollment fee of $65 to cover the cost of recruitment, training, and training materials. In January 1997, PPD implemented "Fast Start to Success," a new combination classroom and field training program designed to increase the number of memberships sold by new sales associates. This program also provided financial incentives to existing sales associates who helped in the training and to "sponsoring associates" once the new recruits completed the program. New associates who successfully completed the program by writing three new memberships and recruiting three new sales associates or by personally selling five new memberships within 60 days of the associate’s start date advanced through the various commission levels at a faster rate and qualified for receiving commission advances. New associates paid an enrollment of $184 to participate in this program.

At December 31, 2000, PPD had 242,085 “active” sales associates compared to 204,137 and 159,268 “active” sales associates at December 31, 1999 and 1998, respectively. (A sales associate was considered to be “active” if he or she has sold at least three new memberships per quarter or if he or she retained a personal membership.) During 2000, PPD had 73,826 sales associates who sold at least one membership, of which 43,169 (58%) made first time sales, compared to 64,611 and 51,026 sales associates producing at least one membership sale in 1999 and 1998, respectively. Relatively few associates sold more than 10 memberships in any year; in 2000, 11,055 associates sold at least 10 memberships, compared with 8,284 and 5,590 in the prior two years. In contrast to the large number of sales associates it counted, PPD and its subsidiaries employed only 559 individuals on a full-time basis at year-end 2000 (ibid, p. 4).

PPD especially promoted and supported its sales associates' marketing efforts toward employee groups. Marketing to employee groups permitted associates to reach more potential members with each sales presentation and enabled PPD to capitalize on what it perceived as a growing trend among employers to provide legal service plans to their employees. As a result, PPD required all associates to complete a specific training program before marketing to these groups. As of December 31, 2000, 73% of the company's total memberships in force were sold on an individual or family basis while 27% were sold through employee groups. This was an increase from 1999 and 1998 when only 25% and 24%, respectively, of the company's total memberships in force were sold through employee groups (ibid, p. 8).

COMMISSION STRUCTURE

Sales associates earned commissions when a membership was sold. Commissions were also earned by other associates (on average, 12 others) in the line of associates who directly or indirectly recruited the selling associate. Pre-Paid Legal advanced the selling associate (as well as the recruiting associates) up to three years worth of commissions at the time the membership was sold. This commission advance immediately increased an associate's obligation to the company, and thus was treated as a receivable by the company. As membership premiums were paid, PPD reduced the commission advance receivable or paid the associate directly for the amount of the commission earned. Commission advance receivables on lapsed memberships were recovered through commission earnings on an associate's remaining active memberships or through a "charge-back" mechanism. When a membership lapsed before the advances were recovered the company generated an immediate charge-back to the sales associate to recapture up to 50% of any unearned advance. Even though a commission advance may be fully recovered on a particular membership, no additional commission earnings from any other memberships were paid to an associate until all previous advances on all memberships both active and lapsed were recovered. If a membership lapsed before the commission was earned, PPD recovered the unearned portion through deductions from an associate's subsequent commission payments. In the event that an associate owed unearned advances but did not earn subsequent commission payments, PPD had the right to recover the unearned portion through collections or legal action, but PPD had not pursued this option in the past. The average period for commission advances in 2000 was 2.31 years, down from 2.43 years in 1999 and 2.50 years in 1998 (ibid, p. 18).

Prior to 1995, the commission structure for a typical plan paid 70% of the membership fee to the associate in the first year and 16% in subsequent years; there were no commission advances. In 1995 PPD changed their commission structure to 25% of membership fees in every year and gave the associate the option to take up to a 3-year advance commission at the time of sale.

MEMBER RETENTION

Because there was a large cash outlay (in the form of advanced commissions) for each new member, there was a net negative cash flow for PPD associated with new members in the first year of a membership. However, members generated large positive cash flows for the firm in year 2 and beyond. For this reason, the proportion of total members that were first-year members, the retention of members after the first year and the average life of a membership were statistics of great interest to PPD and the analysts who followed it.

Pre-Paid Legal Services measured its *membership persistency rate* based on the number of memberships in force at the end of the year as a percentage of the total new memberships in force at the beginning of the year plus new memberships:

$$\frac{\textit{End of Year Memberships}}{\textit{Beginning of Year Memberships + New Memberships}}$$

According to the company, over the past 20 years, from 1981 through 2000, the membership persistency rate averaged 74.5%. The annual membership persistency rates were 71.1%, 73.4% and 73.8% for 2000, 1999 and 1998, respectively (ibid, pp. 23-25). The overall membership persistency rate depended on, among other factors, the relative age of total memberships in force. The rate could become lower when the memberships in force included a higher proportion of newer memberships. During the most recent three years PPD had experienced significant increases in new membership sales and, as a result, the percentage of newer memberships had increased.

ACCOUNTING ISSUES

PPD's accounting treatment of the commissions paid to sales associates and the costs associated with the acquisition of new members had been a source of controversy for the past 10 years. Prior to 1994, PPD used insurance company accounting rules to record these transactions, since it was regulated as an insurance company in 13 states. PPD capitalized commission costs, advertising expenses, and other overhead expenses associated with the acquisition of new members on its balance sheet in an account entitled "Deferred Acquisition Costs." It then expensed these costs over the expected life of the membership. In addition, it capitalized the payment of commission advances on its balance sheet in an account entitled "Associate Balances" and expensed these payments as memberships premiums were received.

The "matching principle" provides the accounting justification for PPD reporting expenses in the manner in which they did. This principle, a foundation of generally accepted accounting principles (GAAP), states that expenses should be matched with the revenues they helped to generate in order to determine net income for the accounting period. In the accrual method this means that revenues are recognized when earned and expenses that helped to generate those revenues are reported in the same period rather than when the cash outflows associated with those costs actually occurred. As a result, net income is determined by a process of allocating revenue and expense to appropriate accounting periods. Accordingly, deferring part of first-year commission expenses to subsequent years to better match expenses and revenues was a common practice for many insurers.

These and other practices came under the scrutiny of the SEC at least as early as 1994. The result of the SEC's actions since that time had been to require the company to report more of their cash costs as expenses in the period in which they were incurred instead of in later periods. In 1994 the SEC ruled that PPD was not an insurance company, and requested that PPD change the method it used to account for its new member acquisition costs. In response to the 1994 ruling, PPD eliminated "Deferred Acquisition Costs" from its balance sheet and began to expense all costs associated with the acquisition of new members in the period when these costs were incurred.

The use of the "Deferred Acquisition Cost" asset account on the company's balance sheet to accumulate current period costs for commissions, advertising expenses, and other overhead expenses associated with the acquisition of new members had the effect of boosting PPD's current income, since these costs were not expensed in the period they were incurred. Instead PPD amortized these costs over the expected life of new memberships (which was approximately 3.5 years). Expensing these costs as incurred would have been a more conservative approach. According to a recent pronouncement from the SEC's accounting staff, capitalization and amortization was only permitted when "persuasive historical evidence exists that allows the entity to reliably predict future net revenues that will be obtained as a result of these costs" (SEC Staff Accounting Bulletin No.101, 1999).

In 1995, after revising its commission structure, it renamed "Associate Balances" as "Membership Commission Advances" because the term "commission advance" more clearly defined the purpose and use for this asset account since the sales associate, contractually, had to earn the advance prior to receiving renewal commissions. As membership fees (premiums) were paid, membership commission advances were expensed.

In late 2000 the SEC again began to question the accounting methods PPD used to record the payment of advance commissions. The SEC alleged that PPD's financial statements were not conforming to generally accepted accounting principles in the way that it accounted for commission advances. Instead of capitalizing the commission advance, the SEC wanted PPD to expense the entire commission advance at the time it was paid. The SEC's interest in Pre-Paid's accounting led to some negative news stories and a precipitous drop in the price of PPD shares from an all-time high of $48.75 in the summer of 2000 to less than $15 per share in early 2001 (Figure 1). Investors were particularly concerned about the detrimental impact this accounting change would have on PPD's reported earnings, since the number of new memberships sold each year was much greater than the number of membership renewals. PPD's auditor, Deloitte & Touche, however, stood firmly behind the company in statements to the SEC, and strongly argued in support of the method that PPD was using to account for its commission advances. An excerpt from PPD's 2000 10-K (Exhibit 1) explained the process of accounting for the advances, including a discussion of the allowance for unrecoverable advance receivables. PPD's audited financial statements dated December 31, 1998, 1999 and 2000 are included as Exhibits 2 through 4. Five-year financial highlights from the annual report, including selected membership and expense data, are included in Exhibit 5.

The ongoing accounting controversy at Pre-Paid Legal Services, Inc. was a source of concern and confusion for analysts and investors following the company. Investors needed to know if the accounting choices made at Pre-Paid Legal were the only reason the company had enjoyed such high levels of sales and earnings growth. That is, they had to determine whether Pre-Paid Legal was truly profitable in economic reality, not just according to generally accepted accounting principles. Moreover, stock analysts following the company were expected to provide accurate estimates of the earnings PPD would report in the near future. If the company changed its accounting policies again, these analysts would be expected to provide revisions of their earnings estimates for the current and future years very quickly.

In late May 2001 PPD stock was trading for less than $20. Although this was not the first time that the company's stock price had declined due to negative publicity, Mackenzie's portfolio managers and clients were rightfully concerned about their holdings of PPD stock. Kim Stephens needed to make a decision on whether to issue a "buy", "sell" or "hold" in her initial research report on PPD, and she needed to do so very soon. She decided her first task was to generate some estimates of the magnitude of the problem. How much of PPD's profits were due to the disputed accounting methods?

Suggested questions for student analysis

1. What industry is Pre-Paid Legal Services in? Analyze the competitive situation and Pre-Paid's strategy. What are the advantages and disadvantages of legal service plans for members and for provider law firms?
2. How does Pre-Paid Legal Services market its legal service plans? What are the advantages and disadvantages in this approach?

3. How does Pre-Paid Legal Services pay commissions to its sales associates? What effect did the 1995 change in commission structure have on PPD's financial statements?
4. What are the sources of revenues for PPD? How profitable is each source? What can you conclude about the historical financial performance of PPD?
5. What was the accounting justification for PPD's use of Deferred Acquisition Costs prior to 1994? What effect did eliminating Deferred Acquisition Costs have on the company's financial statements?
6. PPD has come under criticism for the way it accounts for its commission advances. Do you agree or disagree with the criticism? What would be the effect on PPD's financial statements for the years 1998 - 2000 if it followed the SEC's recommendations and expensed all commissions when paid?
7. Based on all of your analysis, what recommendation should Kim Stephens make regarding PPD stock?

FIGURE 1. PPD Stock Price Chart

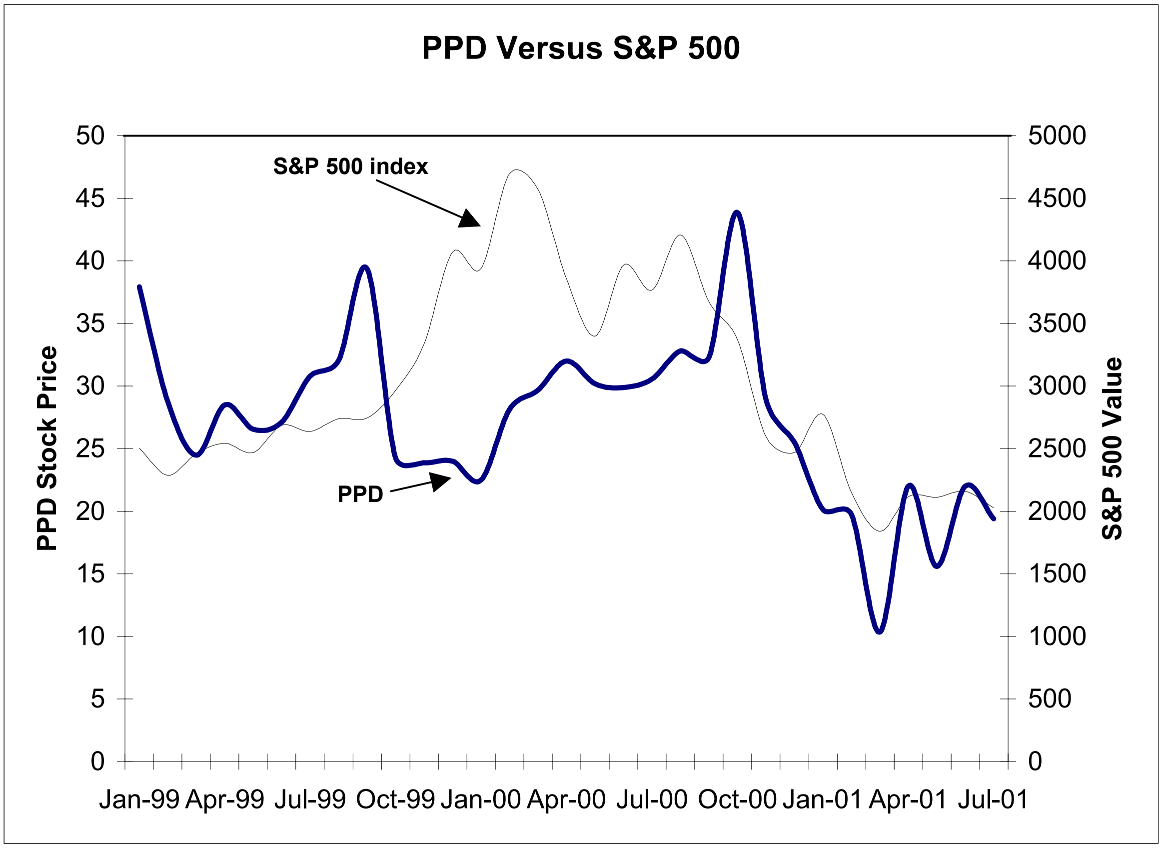

EXHIBIT 1. Excerpts from Pre-Paid Legal Services 2000 10-K
Management's Discussion and Analysis

Commission Expense

Beginning with new memberships written after March 1, 1995, Pre-Paid Legal Services, Inc. ("the Company") implemented a level commission schedule which results in the Company incurring commission expense related to the sale of its legal expense plans on a basis consistent with the recognition of the premiums generated by the sale of such Memberships. Prior to March 1, 1995, the Company's commission program resulted in recognizing commission expense of approximately 70% of Membership premiums during the first year of the Membership and approximately 16% in all subsequent years. The level commission structure results in the Company incurring commission expense at the rate of approximately 25% - 27% per year for all Membership years.

Effective April 2001, the Company modified its compensation plan to consolidate the lower four levels of its compensation structure into two levels. At the same time, the Company implemented a two-year advance at the lowest commission level for associates who participate in the training program. Associates who do not participate in the training program receive only earned commissions until they meet the advancement qualification requiring them to produce 50 new memberships in their organization in order to advance to the next compensation level and qualify for up to 3 years commission advance.

Commission Advances

Prior to January 1997 the Company advanced commissions at the time of sale of all new Memberships. In January 1997, the Company implemented a policy whereby the associate receives only earned commissions on the first three sales unless the associate has successfully completed the Fast Start training program that was implemented in 1997. For all sales beginning with the fourth Membership or all sales made by an associate successfully completing the Fast Start training program, the Company currently advances commissions at the time of sale of a new Membership. The amount of cash potentially advanced upon the sale of a new Membership, prior to the recoupment of any charge-backs (described below), represents an amount equal to up to three years commission earnings. The overall initial advance may be paid to many different individuals, each at a different level within the overall commission structure. This commission advance immediately increases an associate's obligation to the Company and represents a receivable from the associates.

Although the Company advances its sales associates up to three years commission when a membership is sold, the average commission advance paid to its sales associates as a group is actually less than 3 years because some associates choose to receive less than a 3-year advance and the Company pays less than a 3-year advance on some of its specialty products. Also, any residual commissions due an associate (defined as commission on an individual membership after the advance has been earned) is retained to reduce any remaining commission advance receivables prior to being paid to that sales associate. The average commission advance in 2000, 1999 and 1998 was 2.31, 2.43 and 2.50 years respectively.

Commission advance receivable activity for years ended December 31, 2000, 1999 and 1998 is as follows:

	(in thousands)		
	2000	1999	1998
Beginning commission advance receivables	$125,257	$87,263	$59,623
Commission advances	97,500	74,800	51,400
Recovery of advanced commissions	(48,255)	(36,806)	(23,760)
Write-offs	(7,309)	--	--
Ending commission advance receivables	167,193	125,257	87,263
Allowance for unrecoverable commission advance receivables	(11,055)	(4,544)	(3,994)
Ending commission advance receivables, net	$156,138	$120,713	$83,269

Commission advance receivables as of December 31, 2000, 1999 and 1998 are as follows:

	(in thousands)		
	12/31/00	12/31/99	12/31/98
Active sales associates	$146,649	$107,257	$75,757
"D status" sales associates	20,544	18,000	11,506
Allowance for unrecoverable commission advance receivables	(11,055)	(4,544)	(3,994)
Commission advance receivables, net	$156,138	$120,713	$83,269
Projected commission earnings - Active sales associates	$228,269	$171,935	$110,554
Projected commission earnings - "D status" sales associates	26,056	16,369	9,868
Total projected earned commissions	$254,325	$188,304	$120,422
Projected earned commissions/Commission advance receivables, net	163%	156%	145%

Commissions are earned by and payable to the associate as Membership premiums are earned, usually on a monthly basis. The Company reduces Commission advance receivables or remits payment to an associate, as appropriate, when commissions are earned. Commission advance receivables on lapsed Memberships are recovered through commission earnings on an associate's remaining active Memberships or through a charge-back mechanism. Should a Membership lapse before the advances have been recovered for each commission level, the Company generates an immediate "charge-back" to the applicable sales associate to recapture up to 50% of any unearned advance. This charge-back is deducted from any future advances that would otherwise be payable to the associate for additional new Memberships. Any remaining commission advance receivable is recovered by withholding future residual earned commissions due an associate on active Memberships. Additionally, even though a commission advance may have been fully recovered on a particular Membership, no additional commission earnings from any Membership are paid to an associate until all previous advances on all Memberships, both active and lapsed, have been recovered.

The Company charges associates a fee on commission advance receivables relating to lapsed Memberships ("Membership lapse fee"). The fee is determined by applying the prime interest rate to the commission advance receivable balance pertaining to lapsed Memberships. The Company realizes and recognizes income only when the amount of the calculated fee is collected by withholding from cash commissions payments due the associate, because the Company's ability to recover fees in excess of current payments is primarily dependent on the associate selling new Memberships which qualify for commission advances.

The Company has the contractual right to require associates to repay commission advance receivables from sources other than earned commissions. Historically, the Company has not demanded repayments of the receivables from associates, including terminated associates, because in the aggregate the Company's commission advance receivables have been substantially recovered from estimated future commission earnings, and collection efforts would likely increase costs and have the potential to disrupt the Company's relationships with its sales associates. However, the Company regularly reviews the commission advance receivable status of associates and will exercise its right to require associates to repay advances when management believes that such action is appropriate.

"D status" associates are those that are no longer "active" because they fail to meet the Company's established vesting requirements by selling at least three new Memberships per quarter or retaining a personal Membership. "D status" associates lose their right to any further commissions earned on Memberships previously sold at the time they are placed in "D status". As a result the Company has no continuing obligation to individually account to these associates as it does to active associates and is entitled to retain all commission earnings that would be otherwise payable to these terminated associates. The Company does continue to reduce the advance commission receivables for commissions earned on active Memberships previously sold by those associates. "

The Company assesses, at the end of each quarter, on an associate-by-associate basis, the recoverability of each associate's commission advance receivable by estimating the associate's future commissions to be earned on active Memberships. Each active Membership is assumed to lapse in accordance with the Company's estimated future lapse rate, which is based on the Company's actual historical Membership retention experience as applied to each active Membership's year of origin. The lapse rate is based on a 20-year history of Membership retention rates, which is updated quarterly to reflect actual experience. The Company also closely reviews current data for any trends that would affect the historical lapse rate. The sum of all expected future commissions to be earned for each associate is then compared to that associate's commission advance receivable balance. An allowance for unrecoverable commission advance receivables is recorded when expected future commissions to be earned on active Memberships (aggregated on an associate-by-associate basis) are less than the commission advance receivable balance. Adjustments to the reserve are immediately recorded in income. If an associate with an outstanding commission advance receivable has no active Memberships, the advance is written off.

Further, the Company's analysis of the recoverability of advance commission receivables is also based on the assumption that the associate does not write any new Memberships. The Company believes that this assessment methodology is highly conservative since its actual experience is that many associates do continue to sell new Memberships and the Company, through its chargeback rights, gains an additional source to recover advance commission receivables.

Source: Pre Paid Legal Services, Inc. 2000 Form 10-K, Management's Discussion and Analysis of Financial Condition and Results of Operations, pages 17-20.

EXHIBIT 2. Consolidated Balance Sheets

(Amounts in 000's, except par values)

ASSETS	December 31, 2000	December 31, 1999
Current assets:		
Cash and cash equivalents	$11,570	$10,191
Available-for-sale investments, at fair value	2,448	2,252
Membership income receivable	6,780	4,883
Inventories	1,542	1,442
Amount due from coinsurer	12,242	12,483
Membership commission advance receivables - current portion	45,594	32,885
Total current assets	80,176	64,136
Available-for-sale investments, at fair value	21,207	19,628
Investments pledged	6,105	5,288
Membership commission advance receivables, net	110,544	87,828
Property and equipment, net	11,200	8,361
Deferred member and associate service costs	8,494	--
Other assets	9,562	8,534
Total assets	$247,288	$193,775
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Membership benefits	$6,831	$5,252
Deferred revenue and fees	12,532	356
Accident and health reserves	12,242	12,483
Life insurance reserves	976	967
Deferred income taxes - current portion	13,951	10,664
Current portion of capital lease obligation	223	348
Accounts payable and accrued expenses	7,096	10,768
Total current liabilities	53,851	40,838
Deferred income taxes, net of current portion	39,065	30,535
Life insurance reserves	7,656	7,733
Capital lease obligation, net of current portion	--	205
Total liabilities	100,572	79,311
Stockholder's Equity:		
Preferred Stock	--	21
Common stock, $.01 par value;	247	245
Capital in excess of par value	64,958	59,822
Retained earnings	132,079	88,471
Accumulated other comprehensive income (loss)	(108)	(958)
Treasury stock, at cost; 2,480 and 1,960 shares held at December 31, 2000 and 1999, respectively	(50,460)	(33,137)
Total stockholders' equity	146,716	114,464
Total liabilities and stockholders' equity	$247,288	$193,775

EXHIBIT 3. Consolidated Income Statements

(Amounts in 000's, except per share amounts)

	Year Ended December 31,		
	2000	**1999**	**1998**
Revenues:			
Membership fees	$210,442	$157,217	$110,003
Associate services	30,372	22,816	17,255
Product sales	1,016	5,888	27,779
Other	5,822	6,939	2,901
	247,652	192,860	157,938
Costs and expenses:			
Membership benefits	70,513	51,833	36,103
Commissions	51,900	36,862	24,011
Provision for estimated uncollectible Membership commission advance receivables	4,734	550	250
Associate services and direct marketing	23,029	16,038	14,738
General and administrative	23,412	21,360	21,902
Product costs	675	4,174	17,967
Life Insurance benefits	940	959	--
Other, net	1,449	1,157	1,635
	176,652	132,933	116,606
Income before income taxes	71,000	59,927	41,332
Provision for income taxes	23,279	20,974	11,122
Income before cumulative effect of change in accounting principle	47,721	38,953	30,210
Cumulative effect on prior years of change in method of accounting for Membership commission advance receivables	(4,109)	--	--
Net income	43,612	38,953	30,210
Less dividends on preferred shares	4	10	10
Net income applicable to common stockholders	$43,608	$38,943	$30,200
Earnings per common share before cumulative effect of change in method of accounting for Membership commission advance receivables	$2.12	$1.69	$1.29
Cumulative effect on prior years of change in method of accounting for Membership commission advance receivables	(0.18)	--	--
Earnings per common share	$1.94	$1.69	$1.29

EXHIBIT 4. Statement of Cash Flows

(Amounts in 000's)

	Year Ended December 31,		
	2000	**1999**	**1998**
Cash flows from operating activities:			
Net income	$43,612	$38,953	$30,210
Adjustments to reconcile net income to net cash provided by operating activities:			
Cumulative effect on prior years of change in method of accounting for advance receivables	4,109	--	--
Provision for deferred income taxes	13,566	14,568	11,122
Provision for uncollectible Membership commission advance receivables	4,734	550	250
Depreciation and amortization	2,792	3,076	2,944
Tax benefit on exercise of stock options	1,044	1,149	912
Compensation expense relating to contribution of stock to ESOP	130	86	58
Increase in accrued Membership income	(1,897)	(1,288)	(1,196)
(Increase) decrease in inventories	(100)	1,146	(472)
Decrease in amount due from coinsurer	241	15	--
Increase in commission advance receivables	(46,481)	(37,994)	(27,640)
Increase in deferred member and associate service costs	(8,494)	--	--
Increase in other assets	(1,028)	(1,877)	(304)
Increase in accrued Membership benefits	1,579	1,444	1,159
Increase (decrease) in deferred revenues	12,176	(3,576)	(805)
Decrease in accident and health reserves	(241)	(15)	--
(Decrease) increase in life insurance reserves	(68)	19	--
(Decrease) increase in accounts payable and accrued expenses	(3,684)	1,382	(5,373)
Net cash provided by operating activities	21,990	17,638	10,865
Cash flows from investing activities:			
Acquisition of UFL, net of cash acquired	--	--	(18,995)
Additions to property and equipment	(5,631)	(2,659)	(4,926)
Purchases of investments – held to maturity	--	--	(36,116)
Proceeds from sales of investments – held to maturity	--	--	23,718
Maturities of investments – held-to-maturity	--	--	4,892
Purchases of investments – available for sale	(8,501)	(11,077)	--
Maturities and sales of investments – available for sale	7,235	24,372	--
Net cash (used in) provided by investing activities	(6,897)	10,636	(31,427)

EXHIBIT 4 (continued)

Cash flows from financing activities:			
Proceeds from sale of common stock	4,110	3,348	2,216
(Decrease) increase in capital lease obligations	(330)	(593)	766
Purchases of treasury stock	(17,323)	(29,432)	(1,528)
Redemption of preferred stock	(167)	--	--
Dividends paid on preferred stock	(4)	(10)	(10)
Net cash (used in) provided by financing activities	(13,714)	(26,687)	1,444
Net increase (decrease) in cash and cash equivalents	1,379	1,587	(19,118)
Cash and cash equivalents at beginning of year	10,191	8,604	27,722
Cash and cash equivalents at end of year	$11,570	$10,191	$8,604

EXHIBIT 5. Selected financial data

	Year Ended December 31,				
	2000	1999	1998	1997	1996
	(In thousands, except ratio, per share and Membership amounts)				
Income Statement Data:					
Revenues:					
Membership fees	$210,442	$157,217	$110,003	$76,688	$50,582
Associate services	30,372	22,816	17,255	12,143	5,646
Product sales	1,016	5,888	27,779	41,070	26,425
Other	5,822	6,939	2,901	1,867	1,803
Total revenues	247,652	192,860	157,938	131,768	84,456
Costs and expenses:					
Membership benefits	70,513	51,833	36,103	25,132	16,871
Commissions	51,900	36,862	24,011	16,417	10,701
Provision for estimated uncollectible Membership commission advance receivables	4,734	550	250	300	775
Associate services and direct marketing	23,029	16,038	14,738	11,431	4,544
General and administrative expenses	23,412	21,360	21,902	20,311	15,150
Product costs	675	4,174	17,967	27,017	20,568
Life insurance benefits	940	959	--	--	
Other, net	1,449	1,157	1,635	1,256	(273)
Total costs and expenses	176,652	132,933	116,606	101,864	68,336
Income before income taxes	71,000	59,927	41,332	29,904	16,120
Provision for income taxes	23,279	20,974	11,122	12,381	5,857
Income before cumulative effect of change in accounting principle	47,721	38,953	30,210	17,523	10,263
Cumulative effect of change in method of accounting for commission advances	(4,109)	--	--	--	--
Net income	43,612	38,953	30,210	17,523	10,263
Less dividends on preferred shares	4	10	10	13	15
Net income applicable to common Stockholders	$43,608	$38,943	$30,200	$17,510	$10,248
Earnings per common share	$1.94	$1.69	$1.29	$0.76	$0.46
Weighted average number of common shares outstanding – basic	22,504	23,099	23,456	23,127	22,332

EXHIBIT 5 (continued)

Membership Benefit Cost and Statistical Data:	**2000**	**1999**	**1998**	**1997**	**1996**
Membership benefits ratio (1)	33.5%	33.0%	32.8%	32.8%	33.4%
Commissions ratio (1)	24.7%	23.4%	21.8%	21.4%	21.2%
General & administrative expense ratio (1)	11.1%	13.6%	19.9%	26.5%	30.0%
Product cost ratio (1)	66.4%	70.9%	64.7%	65.8%	77.8%
New Memberships sold	670,118	525,352	391,827	283,723	194,483
Period end Memberships in force	1,064,805	827,979	603,017	425,381	294,151
Cash Flow Data:					
Net cash provided by (used in) operating activities	$21,990	$17,638	$10,865	$14,472	($911)
Net cash provided by (used in) investing activities	(6,897)	10,636	(31,427)	(6,254)	(2,855)
Net cash provided by (used in) financing activities	(13,714)	(26,687)	1,444	3,464	4,973
Balance Sheet Data:					
Membership commission advance receivables (net)	$156,138	$120,713	$83,269	$55,879	$30,852
Total assets	247,288	193,775	167,903	105,716	66,810
Total liabilities	100,572	79,311	66,599	36,246	21,654
Stockholders' equity	146,716	114,464	101,304	69,470	45,156

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(1) The Membership benefits ratio, the Commissions expense ratio and the general and administrative expense ratio represents those costs as a percentage of Membership fees. The product cost ratio represents product costs as a percentage of product sales. These ratios do not measure total profitability because they do not take into account all revenues and expenses.

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MAY DEPARTMENT STORES COMPANY: APPLYING AN EXPANDED DUPONT MODEL TO EXAMINE THE OUTCOMES OF CORPORATE STRATEGIC CHANGE

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Robert M. Hull, Washburn University

This case utilizes the DuPont Model, which is a system of financial ratio analysis that maps out the effect of margin management, asset management, and debt management on the return on equity (ROE). Textbook presentations typically do not go beyond the fact that the DuPont model consists of the multiplication of three financial ratios. The expanded DuPont framework given in this paper, with supporting flow charts, goes well beyond this elementary presentation. In the process of applying the expanded DuPont model, we provide students and instructors with an investigative tool useful for conceptualizing and analyzing, in a detailed fashion, the impact on ROE resulting from major corporate structural changes such as mergers, recapitalizations, and divestitures. The corporate case included here for student analysis is based on information concerning May Department Stores Company's divestiture of Payless ShoeSource, Inc. In investigating the impact of this divestiture on ROE, we apply the expanded DuPont Model both before and after this major corporate structural change. The end result of this application is a compact comparative view of financial variables including those that influence ROE.

THE CASE

Payless ShoeSource, Inc. [Payless] was acquired by May Department Stores Company [May Company] in 1979. At that time Payless was known as Volume Shoe Corp. May Company disposed of its interest in Payless in 1996 through a tax free divestiture transaction in the form of a spin-off. The divestiture announcement stated Payless no longer fit with May Company's business plans and market model. Following the divestiture, Payless shares were independently owned by May Company's current stockholders.

Historical Background - The May Department Stores Company

The original store of the company that developed into May Company opened in 1877 in Leadville, Colorado. Following a long series of acquisitions of department and dry goods stores, the firm incorporated in 1910 as The May Department Stores Company with its headquarters in St. Louis, Missouri. During that year May Company's earnings were $1 million. The following year, it began trading on the New York Stock Exchange. By 1923 earnings rose to $5 million and by 1939 annual sales reached $100 million. Acquisition of additional department stores continued over time. By 1974 May Company had begun international operations.

While all previous acquisitions had been of dry goods and department stores, in 1979 May Company entered a new arena through the acquisition of Payless, then known as Volume Shoe. Payless sold only shoes in free standing, self-service facilities. The Payless market model differed significantly from the moderate to upscale image of May Company's department stores. Following the acquisition of Payless, May Company continued to acquire established department stores throughout the U.S. In fiscal year 1996-1997, sales attained $12 billion. About that time, May Company's acquisitions became focused on the addition of specialized bridal wear entities. [May, 1999]

Historical Background - Payless ShoeSource, Inc.

Payless ShoeSource, Inc. was founded in Topeka, Kansas in 1956 as Payless National Stores. The new firm introduced a revolutionary concept of self-service marketing for retail shoe sales. Initial success led the firm to become a public company incorporated as Volume Distributors in 1962. The firm's name was changed to Volume Shoe Corporation in 1967. May Company acquired Volume Shoe in 1979 and in 1991 changed the name to Payless ShoeSource, Inc. May Company divested Payless, seventeen years after acquisition, in 1996. The newly independent firm kept its home office in Topeka while operating stores in all 50 U.S. states, the District of Columbia, Puerto Rico, and the U.S. territories of the Virgin Islands, Guam and Saipan [Payless, 1996]. Payless expanded into Canada in 1997, which was its first international venture into non-U.S. areas [Payless, 1997]. More recently, Payless has operated in Central and South America with plans for future expansion into Japan [Payless, 2003].

Divestiture Announcements

Two formal announcements appeared in the SEC report filed in 1996 by May Company. As seen below, the announcements contain little explanation for the planned strategic change.
First the disclosure from the SEC 8K filing, May Department Stores Company, January 17, 1996:

> On January 17, 1996, Registrant [May Department Stores Company] announced that it intends to divestiture Payless ShoeSource, Inc., its chain of self-service family shoe stores, as an independent company. The shares of Payless will be distributed to Registrant's shareowners in a tax-free transaction. The spin-off is expected to be completed in late Spring, 1996.

Second, the May Company press release, included within the 8K, with the headline "The May Department Stores Company Announces Planned Spin-Off of Payless ShoeSource, Inc.":

> St. Louis, MO, January 17, 1996 - The May Department Stores Company (NYSE: MA) announced today that it intends to spin-off Payless ShoeSource, Inc., its chain of self-service family shoe stores, as an independent, industry-leading company.

> David C. Farrell, chairman and chief executive officer of May Company, said, "Payless is a terrific business that we expect will perform well as an independent entity. The company, which currently sells one out of every five pairs of shoes in the United States, will be the leading competitor in its segment of the retail industry, have strong cash flow and be well-positioned for future growth with a strengthened management team and streamlined operating structure."

The divestiture of Payless was completed April of 1996 [Payless 10-K, 1997]. The year immediately following the divestiture, FY 1996-1997, was the first year that May Company did not include discontinued operations information related to Payless in its financial statements. May Company's financial statements for FY 1995-1996, FY 1996-1997 and FY 1997-1998 are provided in Exhibits 1 and 2. The financial statements for Payless for FY 1996-1997 and FY 1997-1998 are given in Exhibits 3 and 4. Exhibit 5 contains explanatory notes to the Payless financials for the first year of independent operations.

Exhibit 1. May Department Stores Company's Consolidated Statement of Earnings.

(Amounts in Millions Except Per Share)	FISCAL YEARS		
	1997-1998	**1996-1997**	**1995-1996**
Net retail sales	$ 12,685	$ 12,000	$ 10,952
Cost of Sales	8,732	8,226	7,461
Selling and general and administrative expenses	2,375	2,265	2,081
Interest expense (net)	299	277	250
Total cost of sales and expenses	11,406	10,768	9,792
Earnings from continuing operations before income taxes	1,279	1,232	1,160
Provision for income taxes	500	483	460
Net earnings from continuing operations	779	749	700
Net earnings from discontinued operations	0	11	55
Net earnings before extraordinary loss	779	760	755
Extraordinary loss related to early extinguishment of debt, net of income taxes	(4)	(5)	(3)
Net earnings	775	755	752
Earnings per share			
Continuing operations	3.27	2.94	2.73
Discontinued operations	—	0.05	0.22
Net earnings before extraordinary loss	3.27	2.99	2.95
Extraordinary loss	(0.01)	(0.02)	(0.01)
Basic earnings per share	3.26	2.97	2.94
Diluted earnings per share			
Continuing operations	3.11	2.82	2.61
Discontinued operations	—	0.04	0.21
Net earnings before extraordinary loss	3.11	2.86	2.82
Extraordinary loss	(0.01)	(0.02)	(0.01)
Diluted earnings per share	$ 3.10	$ 2.84	$ 2.81

Source: May Department Stores Company, 1997, 1999

Exhibit 2. May Department Stores Company's Consolidated Balance Sheet.

(Amounts in Millions)	January 31, 1998	February 1, 1997	February 23, 1996
ASSETS			
Current assets			
Cash	$ 14	$ 12	$ 14
Cash equivalents	185	90	147
Accounts receivable, net	2,164	2,425	2,403
Merchandise inventory, net of LIFO reserves	2,433	2,380	2,134
Other current assets	82	128	169
Net current assets of discontinued operation	—	—	232
Total current assets	4,878	5,035	5,097
Property and equipment			
Land	304	287	238
Buildings and improvements	3,393	3,252	2,908
Furniture, fixtures, and equipment	3,028	2,765	2,416
Property under capital lease	62	68	75
Total property and equipment	6,787	6,372	5,637
less: Accumulated depreciation	(2,563)	(2,213)	(1,893)
Net property and equipment	4,224	4,159	3,744
Goodwill, net	752	776	671
Other assets	76	89	89
Net noncurrent assets of discontinued operation	—	—	521
Total Assets	**$ 9,930**	**$ 10,059**	**$ 10,122**
LIABILITIES & SHAREHOLDERS' EQUITY			
Current liabilities			
Current maturities of long-term debt	$ 233	$ 256	$ 132
Accounts payable	842	872	692
Accrued expenses	640	614	650
Income taxes payable	151	137	128
Total current liabilities	1,866	1,879	1,602
Long-term debt	3,512	3,849	3,333
Deferred income taxes	449	401	378
Other liabilities	277	267	204
ESOP preference shares	337	347	366
Unearned compensation	(320)	(334)	(346)
Shareowners' equity			
Common stock	115	118	124
Additional paid-in capital	—	—	—
Retained earnings	3,694	3,532	4,461
Total shareowners' equity	3,809	3,650	4,585
Total Liabilities and Shareowners' Equity	**$ 9,930**	**$ 10,059**	**$ 10,122**

Source: May Department Stores Company, 1997, 1999

Exhibit 3. Payless ShoeSource Inc.'s Consolidated Statement of Earnings.

(Amounts in Millions Except Per Share)	FISCAL YEARS 1997-1998	FISCAL YEARS 1996-1997
Net Sales	$ 2,566.9	$ 2,333.7
Cost of Sales	1,799.4	1,663.4
Selling and Administrative Expense	562.1	497.3
Interest Expense (Net)	(8.9)	(6.2)
Total Cost of Sales and Expenses	2,352.6	2,154.6
Earnings before Income Taxes	214.3	179.1
Provision for Income Taxes	85.4	71.4
Net Earnings	128.9	107.7
Earnings per Share	$ 3.35	$ 2.68

Source: Payless ShoeSource, Inc., 1999

Exhibit 4. Payless ShoeSource Inc.'s Consolidated Balance Sheet.

(Amounts in Millions)	January 30, 1998	February 1, 1997
ASSETS		
Current assets		
Cash and cash equivalents	$ 210.0	$ 193.6
Merchandise inventories	324.6	354.8
Current deferred income taxes	16.9	16.6
Other current assets	11.4	9.8
Total current Assets	562.9	574.8
Property and equipment		
Land	4.3	5.3
Buildings and leasehold improvements	559.3	545.1
Furniture, fixtures and equipment	279.7	275.7
Property under capital lease	7.5	8.0
Total property and equipment	850.8	834.1
less: Accumulated depreciation	(364.1)	(331.6)
Net property and equipment	486.7	502.5
Deferred taxes	19.9	11.3
Other assets	3.5	3.2
Total Assets	**$ 1,073.0**	**$ 1,091.8**
LIABILITIES & SHAREHOLDERS' EQUITY		
Current liabilities		
Current maturities of long-term debt	1.4	1.3
Accounts payable	63.8	82.9
Accrued expenses	112.9	98.4
Total current liabilities	178.1	182.6
Long-term liabilities		
Long-term debt	6.5	8.2
Deferred income taxes	—	—
Other liabilities	52.0	48.0
Total long-term liabilities	58.5	56.2
Total Liabilities	236.6	238.8
Shareowners' Equity:		
Common stock, $0.01 par value; 240,000,000 shares authorized; 36,924,127 and 41,000,000 issued in 1998 and 1997; 32,453,406 and 37,332,068 shares outstanding in 1998 and 1997	0.4	0.4
Additional paid in capital	21.0	12.0
Unearned restricted stock	(7.6)	(3.1)
May Company equity investment	—	—
Retained earnings	822.6	843.7
Total Shareowners' Equity	836.4	853.0
Total Liabilities and Shareowners' Equity	**$ 1,073.0**	**$ 1,091.8**

Source: Payless ShoeSource, Inc., 1999

Exhibit 5. Payless ShoeSource Inc.'s Special Explanations.

Extracted from 10-K405, 1999

(1) All years include 52 weeks, except 1995, which includes 53 weeks.

(2) Certain expenses related to occupancy costs and asset disposals have been reclassified from selling, general and administrative expenses to cost of sales.

(3) Special and nonrecurring items are included in selling, general, and administrative expenses in the accompanying Consolidated Statement of Earnings. During the fourth quarter of 1995, the Company committed to close or relocate underperforming stores and restructure its central office. The Company also incurred executive retention costs associated with the spin-off that established the Company as an independent public company.

(4) Calculations only shown since being an independent public company.

(5) Prior to 1996, total equity was the equity investment by The May Department Stores Company.

Source: Payless ShoeSource, Inc., 1999

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ARCHANGEL DIAMOND CORPORATION: REAL OPTION VALUATION UNDER HIGH POLITICAL RISK

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This case describes the conditions and events that confront the management of a publicly traded diamond mining company invested in and exclusively operating at a very early stage of the emerging market in post-Soviet Russia. The case illustrates management's perception that its current business opportunities are quickly being reduced or eliminated and that, in the face of high business and political risk and legal uncertainty, it must take decisive action to sustain its current diamond exploration or, if required, provide the means to exercise the real option to reposition itself in another viable business. By presenting the issues perceived by management and the decisions made by management, together with the motivation underlying them, the case ends with management in early 1996 taking steps that it believes will improve the Company's value for its stockholders. The Epilogue shows how the case has continued to develop to the present day.[1]

World Diamond Sales

For over 60 years, De Beers through its Central Selling Organization (CSO) has largely controlled the balance between the rough diamond producers and the market demand for polished stones. The CSO has consistently overcome the crises for oversupply, undercutting, recession and poor demand. It has accomplished this by employing the most successful acquisition, sales, marketing and business strategy of any cartel the world has ever seen. Over the last 30 years, De Beers has achieved for its members increases in the value of rough diamonds exceeding the average inflation rate by 2% per annum.

World and Russian Diamond Production

Rough diamonds are classified into three broad classes: gems, representing approximately 16%, near gems, representing about 34% and industrial stones, representing approximately 50%.

World production of rough diamonds at this time is about 100 million carats per year. Of this, 16 million carats or 16% are gem quality stones. Outside of Russia, the major production fields are located in South Africa, Botswana and Canada. Approximately 84% of rough diamond production comes from Africa and Australia with Russia supplying about 11%. Of the world's total gem diamonds, Russia produces about 19%, the total output coming from Yakutia in Eastern Siberia. These stones come from four gem-grade diamond bearing structures known as kimberlite pipes, all mined by open pit methods.

Supply and Demand for the Year 2000

Total diamond production is predicted to increase from 100 to 110 million carats per annum by the year 2000, which is only 1.9% growth compared to the 3.6% a year reached during the economically depressed late 1980s.

Rough gem production is estimated to grow by about 20% to 19 million carats a year, while growth of near gems is likely to remain constant. Between 1970 and 1990, the production of polished gems increased by 5.4% per annum, with a growth of 6.6% during the 1980s. By contrast, projected increases for the 1990s are estimated at less than 1% per year.

By judicious advertising and control of the ever-increasing marketplace over the last 20 years, De Beers and the CSO have achieved an average 5% increase in demand each year for polished diamonds.

One assumes they can continue to increase demand at least by 1% a year until the year 2000. In the short term, this modest increase should ensure a continued balance between supply and demand. For the near future, there is a strong likelihood that demand will outstrip supply.

Because of the well orchestrated marketing, the tightly controlled distribution, and the declining supply of diamonds, involvement in exploring for and producing diamonds in a previously forbidden region is expected to be a very attractive business.

Archangel Diamond Corporation: The Russian Joint Ventures

In late 1993, several Australian entrepreneurs responded to (1) the changes in political climate in Russia with the Communist Party's fall from power and the election of President Boris Yeltsin (2) the eagerness of the international securities markets to investment in Russia, given the openness of the new Russian political regime to free market business overtures (3) an invitation from the representatives of the Russian Archangel State Geological Enterprise, Arkhangelskgeologia (AGE) which was looking for a joint venture partner to tender a bid for several key licenses in the Archangel field in Northwest Russia. These properties had undergone approximately 15 years of exploration with AGE. Under the old Soviet system, AGE had sole responsibility for the region's entire geological program. The recent political and economic changes forced AGE to seek financial support from a foreign partner. Beginning with a Canadian public company, Canmet Resources Limited, management changed the Company name to Archangel Diamond Corporation, with the Vancouver Stock Exchange symbol AAD, thus promoting the Company's redirected efforts to pursue, directly and indirectly, diamond venture agreements and other arrangements for the exploration and development of diamond deposits in Russia. By November 1993, AAD had entered a joint venture agreement for mineral exploration at two sites in Northwest Russia: Windy Ridge and Verkhotina. The joint venture agreement with its Russian partner, AGE, gave AAD rights to 40% of the minerals from the Verkhotina property(See Exhibit 1, a map showing the location of Verkhotina). In a separate agreement with the Russian entity RIH, also signed in 1993, AAD also obtained a 40% stake in the mineral rights at the much larger Windy Ridge site. In its 1996 Annual Report and in other promotional materials, the Company declared its Mission Statement to be "to become the principal joint venture partner of choice in the development of the world's foremost emerging diamond field."

With the strong appetite in the financial markets for "hot" Russian deals, the company was able to raise by private placement $1.4 million Canadian in 1994; $8.8 million Canadian in

1995; and $3.7 million Canadian in 1996. The total raised from inception through February, 1996 was $14.5 million Canadian. The exotic nature of the Company's exploration in Russia for diamonds, which had been a secret sector reserved exclusively for the State, together with the potential financial returns generated an initial optimism in the market that propelled the stock to sell in the $2-3 (Canadian) range through most of 1994, as shown in Exhibit 2.

An Alignment of Interest: Financial Analysis

By the end of 1995, two years had gone by since the principals had raised the necessary investor funds to pursue AAD's Russian exploration program. The stock price declined from a 1994 high of over three dollars a share to less than a dollar a share in early 1996 (see Exhibit 2). Investors were disappointed that no significant find had been made after two years of exploration. Current management realized that to move the company forward to the next stage, more than their promotional and organizational skills were necessary. It required a new top management team steeped in operational experience and with an established credibility in the mining area to give the market hope that better results would be achieved by the Company.

The new management team would be expected to deal with several critical issues. First, an examination of AAD's financial statements for 1994, 1995, 1996 (see Exhibit 3) revealed that out of $14.5 million Canadian dollars raised, only approximately $1.2M Canadian remained on Janury 31, 1996. This signaled that to maintain continuing operations a cash financing deal would be needed immediately. Second, if a significant diamond deposit were found and the goal was to build an operating Company with eventual positive cash flows, management had to develop a long range plan to secure a multi-year financing capability for the Company. Third, with only one full time consultant engineer and a part-time administrator, AAD lacked the necessary technical-administrative infrastructure that would allow it to effectively deal with the uncertainties of its business environment as well as run its mining operations efficiently.

Franco Boulle

In February 1996, the directors of AAD asked Mr. Franco Boulle to assume leadership of Archangel as Chairman and CEO. Mr. Boulle had been in the diamond business for over twenty years and was a participant in the Boulle Partnership, whose assets became the base from which Jean Boulle, brother of Franco Boulle launched the wildly successful Diamond Fields Resources. While exploring for diamonds in Canada, Diamond Fields discovered the massive Voisey's Bay nickel deposit, which was sold to INCO for $4.3 billion Canadian in early 1996.

Mr. Alex Budzinsky, a University of Chicago MBA in finance, with extensive experience in international project financing and investment banking, was asked by Franco Boulle to evaluate the merits of accepting the leadership of Archangel as Chairman and CEO. Since Budzinsky's expertise was in the organizing, financing and managing of companies with a venture capital or project orientation, as was the AAD venture, his opinion provided a critical input for Boulle to evaluate the AAD proposal. Budzinsky discussed the Company's outlook with its staff and reviewed the available information about the Company, principally press releases and detailed securities filings, in order to evaluate the organizational structure, the management of AAD and of the joint exploration program, the financial status and financial controls of AAD, and the extensive legal issues involved in the Company's business (see Exhibit 4). It was clear that there were several critical issues which, if they were not resolved favorably, cast in doubt the viability of Archangel to survive financially and to operate as a legitimate enterprise.

The Deal: Boulle is Offered Stock and Options

The early 1996 offer made by the directors of AAD to Boulle contained the following elements and conditions: First, to stimulate his interest and ongoing commitment, Boulle would receive, at no cost, in a private party transaction organized by current management, a substantial number of shares of AAD stock out of the 16.5 million outstanding. This private party transaction would not require approval of shareholders or the Stock Exchange, since no shares would be issued by the Company. Additionally, Boulle was given an option by the Company to purchase a half-million additional shares. In keeping with accounting requirements at the time, the stock option award was not expensed on the income statement. Second, along with the announcement of Boulle's appointment as CEO, an additional 1.4 million shares would be sold in a private placement at $2.59 per share to raise $3.626 million Canadian, providing the cash required by AAD for the remainder of the year. Thirdly, the current senior management would resign to give Boulle a free hand to assemble his management team.

Boulle, in consultation with Budzinsky, concluded that AAD's diamond exploration at current face value could be expected to yield a negative NPV (given the low expectation of a significant diamond discovery, since nothing had been found in the past two years; and, if a discovery were made, major additional cash expenditures would be required for continued development and operation of a major mine). They also determined that the high level of political risk and legal uncertainties raised during their review of the situation were not likely to be reduced or eliminated as the exploration efforts went forward. However, in spite of the legal, political and exploration uncertainties, they believed that AAD's diamond exploration efforts created a strategic real option in mining that could be very valuable. As a result, Boulle accepted the position of CEO as of May, 1996.

It appears from the stock price and volume performance in March and April, 1996 that the market reacted very favorably to Boulle's expected appointment as the new CEO of the Company. The share price moved from below $1.00 Canadian to over $4.00 Canadian, beginning in March, as discussions were held with Boulle and peaked in April with the announcement of Boulle's accepting the position of CEO. (See Exhibit 2).

The original organizers and managers of the Company, who still owned a substantial number of the outstanding shares, believed that they achieved their objective of bringing in credible new management to continue building the Company and thus to improve shareholder value.

[1] I wish to thank Alex Budzinsky for his valuable assistance in researching this case. Also, I wish to thank Bocconi University-SDA Milan, Italy and Dean Maurizio Dallocchio for his administrative support in preparing the manuscript and providing a forum for the case's presentation.

REFERENCES

Archangel Diamond Corporation, Toronto, Ontario Annual Reports (1995-1998)

Archangel Diamond Corporation, Toronto, Ontario Press Releases (1995-1998)

Review Questions

1. Using the Statement of Changes in Financial Position shown in Exhibit 3, identify why management believed that the operational needs of the firm versus the firm's cash position in early 1996 was at a critical stage and required immediate attention
   a) Calculate how much cash has been consumed on a monthly basis for operations over the two years (24 months) 1994-1995?
   . Hint: Use the relationship,
   Beginning Cash + Added Cash Financing – Cash Consumed = Ending Cash
   BC(1994) + (Added C.Fin.1994 + Added C.Fin.1995)- Cash Consumed = EC(1996)
   b) From your results in (a), determine how many more months of operational cash the firm's approximate \$1.2 M on hand at January 1996 could sustain?
2. What is a real option? When is it strategic? What kind of strategic real option applies in this case?
3. Can the entry of a high profile new CEO provide the means to resolve the uncertainties that threaten the viability of the Company enterprise as detailed in the Company's securities filings and press releases?
4. If existing management acted because it saw in the proposed new CEO a means to sell shares at an elevated price, would this be a breach of responsible corporate governance on the part of existing management?
5. Did the investing market look beyond the Company's current diamond exploration business and see the value of additional strategic real options that the Company acquired with Franco Boulle as the new high profile CEO?
6. Was Franco Boulle's acceptance of the CEO position a win-win situation for all the stakeholders (investors, current management, new management)?

Exhibit 1: Map of Northern Russia Showing Location of Verkhotina Project
(found here)

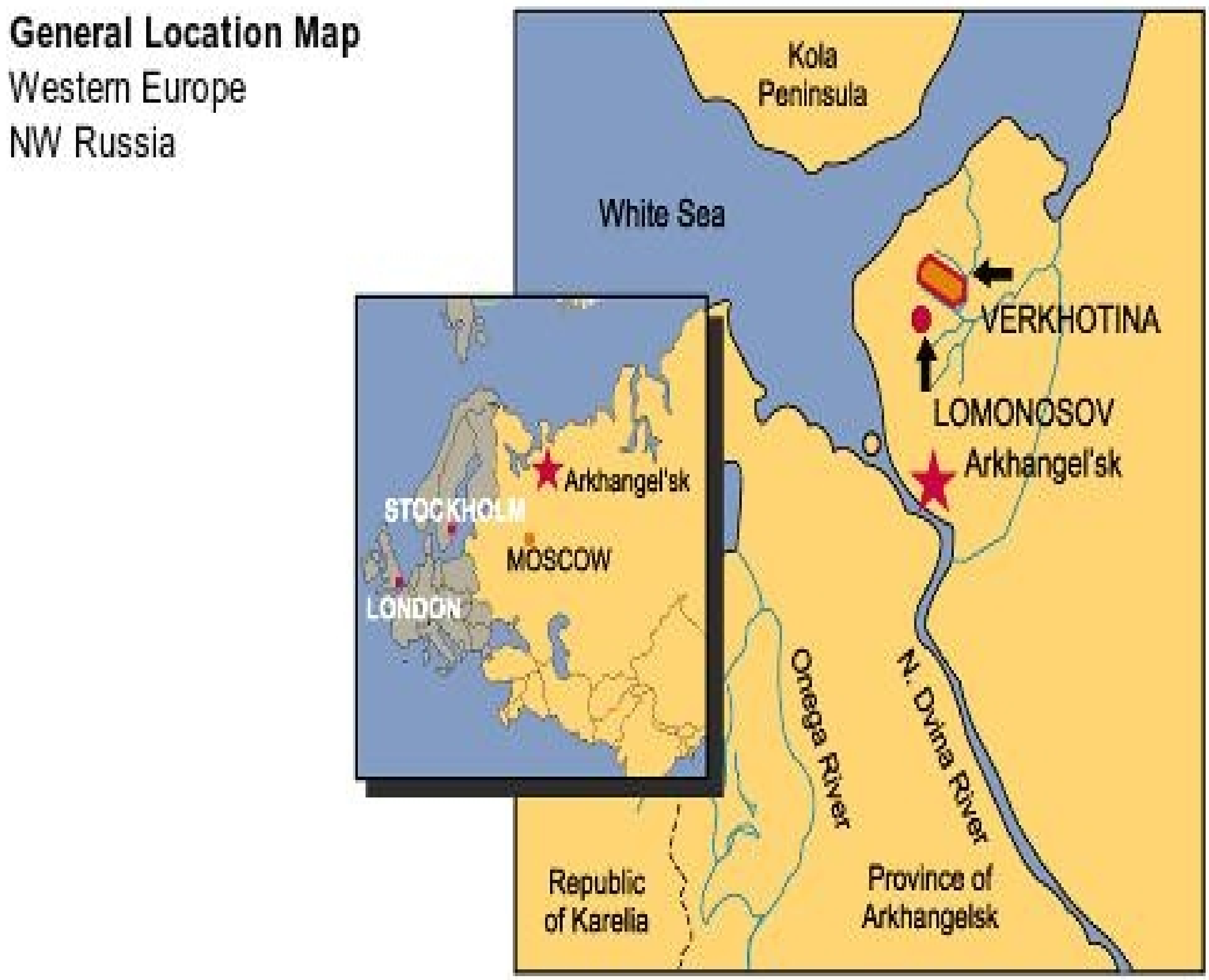
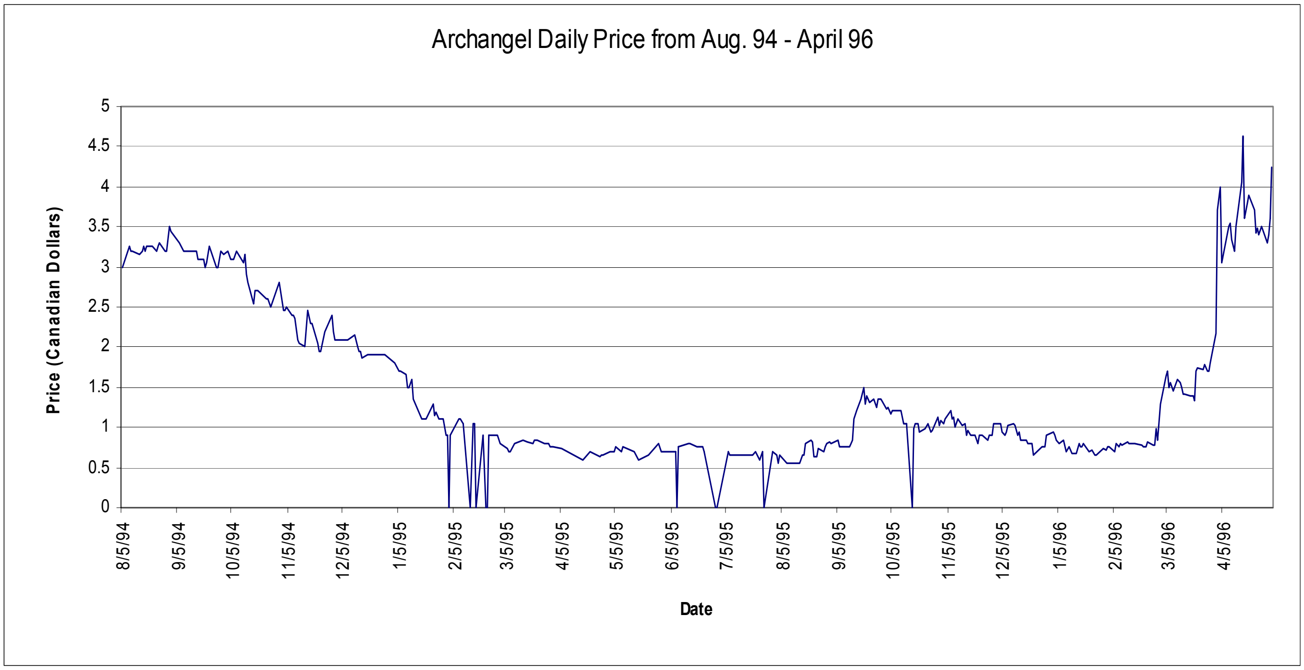


Exhibit 2: AAD Price/Volume 1/94-12/95
(found here)



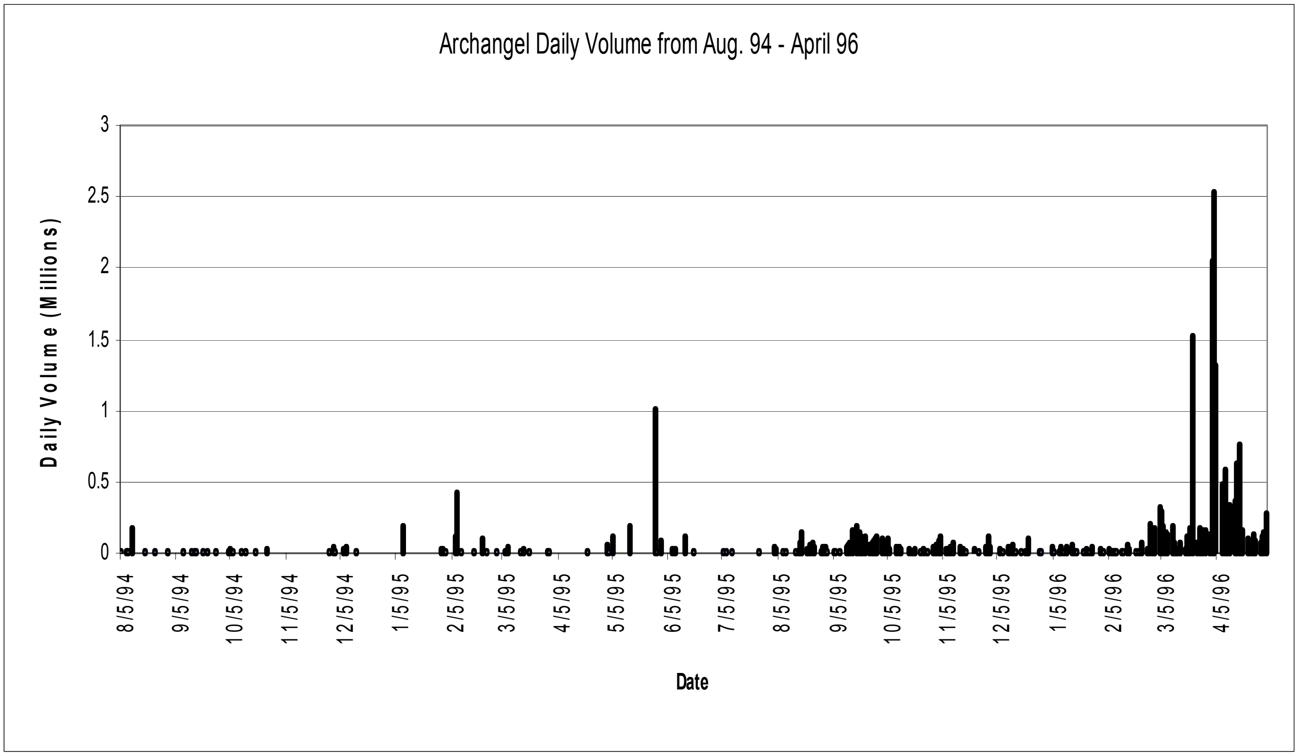


Exhibit 3: Archangel Diamond Corporation Summary Financial Statements

	July 3,1987 to January 31, 1996	1996	1995	1994
CASH PROVIDED BY (USED IN):				
OPERATIONS:				
Loss for the period	($2,607,260)	($1,303,260)	($863,869)	($65,231)
Items not involving cash:	9,561	7,991	1,570	-
Depreciation				
Exploration and mineral property costs				
Written off	451,564	264,706	-	-
Change in non-cash working capital:				
Accounts receivable	(8,450)	(192)	(6,118)	(1,803)
Loan receivable	(13,111)	(123,748)	(136,859)	-
Deposits and Advances	(24,757)	47,252	(72,009)	-
Accounts payable and accrued liabilities	372,271	140,165	211,925	13,753
	(1,819,692)	(719,590)	(865,360)	(53,281)
FINANCING				
Shares issued for cash	14,568,840	3,724,400	8,804,340	1,439,000
Shares issued for mineral property	654,364	606,864	15,000	-
	15,223,204	4,331,264	8,819,340	1,439,000
INVESTMENTS				
Mineral properties	(2,073,560)	(606,864)	(903,654)	(864,742)
Deferred exploration costs	(10,077,951)	(2,981,735)	(6,262,318)	(80,634)
Office and communication equipment	(64,370)	(56,515)	(7,855)	-
	(12,215,881)	(3,645,114)	(7,173,827)	(945,376)
INCREASE (DECREASE) IN CASH	1,187,631	33,440	780,153	440,343
CASH BEGINNING OF PERIOD	-	1,221,071	440,918	575
CASH END OF PERIOD	$1,187,631	$1,187,631	$1,221,071	$440,918

Exhibit 4: Summary of Review of Proposed Transaction

At the beginning of April 1996 Budzinsky prepared a review of the various issues that would have to be dealt with if Boulle took over as CEO of AAD. Budzinsky pointed out that the short time available to conduct the review and the incomplete or ambiguous information regarding the conduct of Archangel's business in Russia made it difficult to reach firm conclusions regarding some critical issues. A summary of this review appears below.

Background

ADD has entered into joint exploration programs with two Russian entities on two exploration prospects with high potential for diamonds near the city of Arkhangelsk in Northwest Russia. The Verkhotina prospect covers a 400km^2 area near the recently discovered Lomonosova field, which is considered to have major diamond-production potential. Verkhotina is being developed jointly with Arkhangelsk Geologia Enterprises ("AGE"), a State Enterprise wholly owned by the Russian Province of Arkhangelsk. The second prospect, the Windy Ridge prospect, covers 15,838km^2. Windy Ridge is being developed jointly with Resource Institute Horizon ("RIH"), a privatized Russian company headquartered in St. Petersburg.

ADD has raised in excess of $14,50000,000 (Canadian) to conduct the committed exploration programs on the Verkhotina and Windy Ridge prospects. The bulk of these funds has already been spent on exploration costs on the two prospects. Two prospective diamondiferous kimberlite pipes have been discovered on the Verkhotina prospect and preliminary evaluations of the diamond potential are currently under way. No significant discoveries have been made up to now on the Windy Ridge prospect.

Organizational Structure

ADD's small management team is spread out in London, Vancouver, Arkhangelsk, and Perth. The Company's administration, banking and public relations are managed principally in Vancouver. The Company's financing is arranged principally in London. The Company's exploration and mining activities are managed in London, with periodic visits by consultants to Arkhangelsk.

Every person working for ADD does so under a consulting or service contract. There is a lack of identification with the Company that usually comes with officer and/or employee status. The implication is that the positions are temporary and opportunistic, rather than longer term, career oriented ones.

The core business activities of the Company are presently performed by, and are ultimately under the control of, partners and contractors. The Company depends on and reviews the activity proposed by its partners on prospects originated by and owned or controlled by its partners. The partners in turn rely on the Company principally to provide funding. This requires trust and cooperation from the Company but makes it difficult or impossible for Company management to control expenses and to optimize results.

Finally, the Company is not in control of, and in fact appears to be totally uninvolved in, the political interaction at local and national levels that is required to assure that the project will be permitted to proceed and that the Company will be permitted to receive its agreed share of the ultimate benefits.

Management

There appears to be a lack of coordination of goals and activities in the management group and between ADD and its joint venture partners—particularly RIH. There is no visible leadership of the Company's activities. There is no senior managment guidance or supervision of line employees and of the joint venture partner/contractors to ascertain whether commitments had been met as agreed or to hold officers, employees, partners, contractors, etc. accountable for meeting their objectives and commitments.

AAD's exploration manager and the Director of RIH were unable to reach agreement on the fundamental exploration techniques appropriate for the Windy Ridge prospect—which formed a fundamental part of the Company's strategy in Russia. Senior management failed to manage the relationship and allowed the disagreements between its lead consultant and RIH's leader to—with the consequent break down of trust and good will between RIH and ADD. RIH then willfully ignored the program previously agreed upon by both ADD and RIH—and incurred substantial cost overruns. Recently, RIH declared that due to the delay in funding by AAD it would carry out additional exploration activities on a part of Windy Ridge exclusively for its own account. RIH may have a different agenda or an additional agenda to that of ADD.

During the Company's recent cash crisis, the roles and positions of several directors, consultants and contractors were re-evaluated and proposed to be re-structured or eliminated.

Financial Status

Since the beginning of its joint venture exploration programs in Russia in late 1993, ADD has obtained in excess of $14,500,000 (Canadian), almost all of which has been spent since that time in pursuit of these exploration programs. As of the end of April, the Company estimates that the bank balance would be approximately $500,000 (Canadian). In view of the declining bank balance, the Company has moved aggressively to delay, reduce, or eliminate exploration and staffing expenses. Although the Company appears to be generally current in its accounts, at the projected rate of expenditure, it will be unable to meet its financial requirements toward the end of June, 1996. The Company is presently attempting to raise approximately $3,400,000 (Canadian) in a private placement. With the proceeds from this financing, the Company estimates that it will be able to fund its exploration program and other obligations through the end of 1996.

Funding of obligations under the Russian joint venture exploration program for Verkhotina is transferred through a small private bank in Russia. Funding of the Windy Ridge program is transferred through the same small private bank in Russia and also through a Singaporean Bank. AAD consultants also bring substantial amounts of foreign currency into Russia to pay staff and expenses in cash—usually US Dollars.

Financial Controls

The financial controls of the Company are quite simple, reflecting the relatively uncomplicated financial nature of the business. There are only a few consultants and service providers to pay, with little leeway for variation from agreed amounts. Most payments are made through wire transfers. Checks require dual signatures. Transactions appear to be posted in a timely manner. Financial statements appear to be maintained on a timely basis.

On the other hand, there are no financial controls at all over the expenditures for on-site exploration programs. The Company is invoiced for these costs by AGE and by RIH, but has little opportunity to question the costs, to revise work practice or vendor terms, to confirm work done, or to confirm what is spent and by whom.

Legal Issues

Participation in the natural resource area in the CIS involves many uncertainties in the laws and regulations governing issues of ownership and/or control of resources. In Russia, with its relatively new and untried legal system, the existence of adequate contract law, the enforceability of existing laws, the protection of rights of non-citizen business participants, the protection of minority shareholder rights, the confidence with which one can rely on documentation provided by Government agencies, etc.—these are all topics that must be considered carefully because they will have a profound effect on the ability to realize the fruits of the exploration efforts funded by the Company. Regarding ADD's participation in the Verkhotina and Windy Ridge exploration prospects, three categories of legal issues should be addressed: resource ownership and mining rights under Russian law, rights of foreign partners in mining ventures under Russian contract law, and rights of foreign minority shareholders in publicly registered Russian mining companies.

Questions have been raised in many quarters regarding the validity and enforceability of the chain of title under which ADD can claim a right to any benefits arising from the Verkhotina or Windy Ridge Prospects. ADD has not conducted a legal review of the status of its claim on either of the two prospects. The law firm representing ADD was not requested to conduct any title work on the Verkhotina and Windy Ridge prospects and was unable to give any opinion on the matter. One of the Company's consultants questions whether the licenses for both prospects can be transferred to ADD under current Russian law. An additional question exists whether, even though the new law permits transfers of licenses, it is permitted to transfer such license to different or additional owners without a re-tender for the license area. AGE has submitted the Verkhotina license to the authorities for transfer to the joint venture company Almazny Bereg, but it remains unclear whether such transfer will be approved. In the case of Windy Ridge, similar questions remain, in addition to the concern whether the original license was in fact transferred to RIH, so as to be available for transfer into a public company vehicle when and if such vehicle is established to hold the Windy Ridge license on behalf of the joint venture partners.

Further questions have been raised about the additional conditions which may have to be met by the joint venture partners in order to convert the exploration right into a full exploitation right. It appears that additional governmental entities or agencies must grant their approvals of environmental, economic, and social acceptability of the proposed activity before exploitation can be conducted. The question has been raised whether such approvals can be readily expected. Cases have been mentioned in which such approvals were denied and the projects were unable to be completed. Concerns have apparently been voiced by authorities regarding the environmental dangers of open pit mining in the Arkhangelsk area. It will be critical for ADD to confirm that it in fact has created a right to participate in the ownership of the Verkhotina and Windy Ridge exploration and exploitation licenses and that upon establishing the commercial feasibility of the projects, exploitation is likely to be approved by all relevant authorities.

Finally, it is not at all certain that ADD's rights are clearly spelled out and protected in the agreements and contracts that have been entered into with AGE, RIH and Almazny Bereg. Nor is it clear that Russian law will enable foreign parties to enforce any such rights which may exist.

KAY MERRELL: 401(k) CHOICES AND DILEMMAS

William P. Dukes, Texas Tech University
Anne Macy, West Texas A&M University

Everyone faces the choices and challenges of 401(k) plans. Not all plans offer great mutual funds with low expenses. It is up to the employee to examine the funds options and choose the best that are available. What should employees consider? Students are placed in the role of financial advisor and must structure a portfolio mix for Kay Merrell with the constraints of the funds available and her retirement goal. Qualitative and quantitative information on each is presented so students learn how to decipher and use mutual fund information. The recent bear market and the subsequent negative returns of some funds augments the difficulty in choosing the right combination of funds. To further the asset allocation decision-making process, an actual 401(k) from Wal-Mart and a Roth IRA are presented to illustrate differences in plan design.

THE PHONE CALL

Jack Pettyjohn, an investment advisor for Lovell & Co., looked over his messages after lunch. One message caught his eye. It was from Kay Merrell, the great granddaughter of Andrew Hart Merrell and the daughter of the golfing great Andrew Merrell. Kay is certainly a client Jack wants to keep. Jack looked over her file to refresh his memory before he called her back.

Kay, 48 years of age, is a mid-manager at large domestic company in which only a few more rungs on the ladder remain above her. He remembered talking with her about her love of skiing and other outdoor activities in which she and her husband participate. Kay has an active lifestyle and would like to consider retiring at 65, when she can receive full Social Security benefits. Kay has set a goal of $1 million for the retirement plan. Her risk tolerance is more than adequate to use equities to meet her goal. Her annual income is $75,000 and should increase yearly with inflation. Jack prefers to use an annual rate of 2.5% for inflation.

Kay has participated in the company 401(k) for more than 10 years and has accumulated $250,000 in the plan. In addition, Kay has placed four securities in a newly opened Roth IRA; 103 shares in Vanguard Health Care, 226 shares in Pfizer, 308 shares in Sears, and 802 shares in Morgan Stanley. She received Sears and Morgan Stanley in an estate distribution. She chose the Vanguard Health Care fund and the Pfizer stock because she thinks that health care is a good industry in which to be especially because of the aging U.S. population.

Jack called Kay back and found her a bit anxious. The annual enrollment period for her 401(k) was next week. She was thinking about rebalancing her portfolio but after looking over the material that is available she was not sure how to make the decisions. Jack asked that Kay have her assistant drop off the material at the office before they met the next afternoon.

Jack hung up the phone and walked over to the coffee pot to get a fresh cup.

THE OFFERINGS

The firm for which Kay works offers their employees a 401(k) retirement plan. The retirement plan is overseen by an administrative committee, of which the plan administrator is the secretary. The plan administrator of the 401(k) has made arrangements with State Street Global Advisors (SSgA) to offer their funds. SSgA offers 21 public funds but the plan administrator has limited the choices to six funds, each with a different investment objective.

The six investment options made available to employees are the following:

1. The Money Market Fund is a diversified portfolio of short-term securities.
2. The Bond Fund is a diversified portfolio of debt securities that indexes securities in an attempt to match the Lehman Aggregate Bond Index.
3. The S&P 500 Fund is a diversified portfolio that replicates the index by purchasing all 500 component equities in the appropriate market value weighted proportions.
4. The Balanced Fund invests one-half of its assets in SSgA's S&P 500 Fund and one-half of its assets in SSgA's Bond Fund.
5. The International Equity Fund is a diversified portfolio of stocks outside of North and South America. SSgA manages the fund in a replication approach to track the Morgan Stanley Capital International, Europe, Australia, and Far East Index (MSCI-EAFE).
6. The Russell 2000 Fund is a diversified portfolio of small-capitalized U.S. stocks, managed in an attempt to match the Russell 2000 Index.

In addition, Kay's company requires that all employees hold its stock fund through which the company makes profit-sharing plan distributions. Northern Trust Company manages the company stock fund. A portion of the fund is invested in short-term securities to provide liquidity to process transactions in the fund.

Jack collected some descriptive information on the funds for his analysis into Exhibit 1.

Exhibit 1: 401(k) Plan Offerings

Fund	*3-year return*	*5-year return*	*10-year return*	*Expense Ratio*	*Morningstar Rating*	*Alpha*	*Sharpe's Ratio*
Money Market Fund	N/A	N/A	N/A				
Bond Fund	6.43%	6.97	N/A	.46	4	-57	1.83
Balanced Fund	-4.52%	.54	N/A	.28	3	1.50	.-76
S&P 500 Fund	-13.11%	-3.92	8.32%	.16	4	-0.14	-1.03
International Fund	-14.26%	-7.32	N/A	1.0	3	-6.06	-1.28
Russell 2000 Fund	4.23%	-6.08	7.1%	1.08	3	8.72	-.4
Company Stock Fund			11.7%				

Jack was surprised by the fund choices. He knows of other SSgA funds that have performed fairly well. For example, SSgA's Disciplined Equity Fund has a ten-year return of 7.83%. The plan administrator's recommended mix uses five of the seven funds (Exhibit 2).

Exhibit 2: Recommended 401(k) Mix

Fund	*Investment Mix*
Money Market Fund	20%
Bond Fund	10%
Balanced Fund	20%
S&P 500 Fund	30%
International Fund	20%

The money market fund has been returning 0.9%. Jack decided to use the five and ten year returns as proxies for future returns.

Jack reviewed the current prices and returns in the Roth IRA. The Vanguard Health Care Fund has a historical return of 19%. Its shares are currently selling for $100. The Pfizer stock is expected to return 17% based upon its current price of $30. Sears is selling for $26.50 and should return 5% while Morgan Stanley is selling for $42.75 and should return 2%.

THE CONTRIBUTIONS

Kay may deposit between 1% and 17% (in multiples of 1%) on a pre-tax basis into the 401(k). The company will match up to 5% of the contribution. The company offers two types of matching. A participation share contribution is equal to $0.50 for every dollar contributed. In addition, employees may also receive a performance share contribution of up to $1.00 for every dollar contributed. Thus, the total company contribution is up to $1.50 for every dollar of the first 5% the employee contributed.

Income taxes on deposits and fund gains and losses are deferred until a distribution is made. The tax laws have changed the maximum salary reduction to tax deferred retirement plans. The maximum is currently $15,000 for 2005 and an additional $1,000 next year. An additional catch-up contribution is allowed for those 50 or older.

Jack recalled reading on the popularity of 401(k) plans with employees and employers. These plans have hit a record high of over 90% of U.S. companies offering these plans to their employees. The popularity with the employees is because it allows them to defer taxes on part of their wages and work toward a retirement plan. For the employers, the plans are an important part of retirement planning for employees that will, in many cases, replace older style defined benefit plans and provides employers with deductions for tax purposes of the contribution allowed.

Another unique feature has been added for employees. Starting in 2006, additional contributions will be treated the same as contributions to Roth IRAs. In other words, if the additional funds are held for at least five years and not distributed before age 59 ½, the distributions will not be subject to federal income tax.

With the traditional IRA, the tax on the contribution is deferred and the tax is paid on the distribution, which will be the initial contribution plus all earnings on the contribution. For the Roth IRA, taxes will be paid on the amount of the contribution before it is placed into the Roth IRA, but there will be no tax on the contribution and the earnings when taken. The net benefit is no tax on the earnings while in the Roth IRA nor when the distribution is taken.

THE COMPARISON

For comparison purposes, Jack examined Wal-Mart's 401(k). Wal-Mart, through Merrill Lynch, offers a 401(k) to its employees. Wal-Mart offers funds from different fund families. The plan is designed with five core funds and five additional fund choices for those employees desiring a wider range of options. Exhibit 3 shows Wal-Mart's investment options.

Exhibit 3: Wal-Mart's 401(k) Plan Offerings

Funds	*3-year return*	*5-year return*	*10-year return*	*Expense Ratio*	*Morningstar Rating*	*Alpha*	*Sharpe's Ratio*
Core Funds							
Merrill Lynch Retirement Preservation	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PIMCO Total Return	7.58	6.77	N/A	0.90	4	-0.14	1.85
Ivy International	-7.00	-12.02	2.06	1.60	2	-5.57	-1.28
Putnam New Opportunities	-27.95	-9.41	6.77	.98	1	-5.79	-1.26
ML Equity Index	2.78	-3.92	8.32	0.95	4	-.14	--1.03
Additional Funds							
AIM International Equity	-11.00	-7.42	N/A	1.82	3	-1.56	-.97
Franklin SmMid cap Growth	-19.77	-3.82	9.99	.89	3	3.48	-.86
Massachusetts Investors Growth	-20.06	-3.09	8.53	.94	4	-5.81	-1.34
Davis New York Venture	-8.83	-1.97	9.3	.92	4	1.77	-.82
PIMCO Innovation	N/A	-7.19	N/A	1.30	3	25.38	0.16

Wal-Mart employees are also eligible to hold Wal-Mart stock. Wal-Mart equity has returned 25.97% over the last 6.5 years and 14% over ten years.

Wal-Mart plan administrator recommends three different models for conservative, moderate and aggressive goals from the eleven choices. Exhibit 4 shows the aggressive model, which would have a 10-year weighted average return of 10.71%.

Exhibit 4: Aggressive Mix for Wal-Mart 401(k) Plans

Fund	*Investment Mix*
ML Equity Index	10%
Franklin Small-Mid Cap Growth	25%
Massachusetts Investors Growth	10%
Davis New York Venture	25%
Wal-Mart Stock	30%

Jack looked back over his notes on Kay. He knew he had better get started analyzing Kay's choices if he wanted to be ready for tomorrow's meeting.

A PROBLEM OF NOT ENOUGH MONEY

Garland Simmons, Ph.D., Stephen F. Austin State University

Among the essential skills required of financial analysts are those of a detective. Facts are accumulated, and these facts are translated into a story describing what happened in a business and why. Theory is used as a tool to distinguish between facts that are important to an explanation and those which are irrelevant. As you read this case where the facts are located, remember some theory. First, value in any business is a function of cash flow. Whatever affects the size, the timing, and the risk of cash flow is important, for to understand why and how cash flow is generated and why and how it is used is to understand what has happened to a business. Second, when ownership of an enterprise is separated from its management there is often a tension, a conflict. With this in mind, consider in the narrative below what happens when a manager controls the cash flow that belongs to someone else.

I am a professor in the business school of *David Crockett College*. As such most of my work days are taken up with teaching, writing, and grading papers, but occasionally there is some consulting work to be done. My most recent experience in this regard took me to the small town of Shady Grove, a county-seat in East Texas, not far from Shreveport, Louisiana. I met there with an attorney, Ms. Debra Jones, a friend of mine going all the way back to college days. She hoped that I could help her with one of her cases.

This wasn't my first trip to the sleepy village of Shady Grove. I had worked there before, mostly expert witness stuff: valuing small businesses, estimating present values of lost earnings capacity, that sort of thing.

After pleasantries were exchanged the interview began. "As you know John, my law practice is that of a small town. Sometimes I get a chance to help people. I can afford that duty better than some of my colleagues of the bar whom I often spank handily in the courtroom." She laughed at this happy thought as well she might, for she was more than a capable opponent in the courtroom. She continued, "Let me start from the beginning."

"A distraught women, a person whom I had not met nor heard about came to this law office yesterday, right off the street. As it turns out Judge Smithers from over in Mast County had sent her to see me. Sometimes we get people from out of town who are too embarrassed or too afraid for whatever reason to seek the help they need in the town where they live. Anyway, although she had no appointment, my secretary Jamie had the good sense to usher into my study. She was crying when she walked in. I invited her to sit, and then, after she had calmed down some, we began talking about her case.

"Here is an abstract of this conversation which has been taken from my secretary's *verbatim* account." At this point in our discussion, Ms. Jones handed me an abstract of an interview. What follows below is material taken from this abstract.

TRANSCRIPT OF A CONVERSATION

Ms. Jones: Please describe for me your current situation.

Ms. Havard: I have a money problem. There is no money left for me to live on, except social security, and that doesn't go far enough. My son manages the store my husband left us, so we still have a store but there is no more money.

Ms. Jones: Don't worry about my fee. I will only charge you if I can help, and even then, you wouldn't have to pay until after you were to receive money. (At this point in the discussion Ms. Havard gives Ms. Jones an envelope.)

Ms. Jones: What do you have for me?

Ms. Havard: These are my financial statements for the last several years. These statements say that my retained earnings have grown and I want these earnings. My son must give it to me. My social security is not enough.

Ms. Jones: Thank you for giving me this information. I will work on understanding the contents of this package after you have gone. First, can you tell me in your own words what has happened?

Ms. Havard: Almost three years ago my husband died. We had been married for forty-six years. He was a small businessman. He started a small, country grocery store near Apple Lake many years ago and had worked in it almost until the day he died. Even when he was still alive, I would go to the store and help him out. In fact some time ago, when our children were still in school, I ran the store almost by myself for about a year. Jim had been shot in a holdup, nearly killed him, but he eventually was able to go back to work. After he recovered, he worked for seven more years, right up until the day that he died.

Ms. Jones: I'm sorry about the loss of your husband.

Ms. Havard: Thank you. He loved us, his family, and he loved working in the store too. He was a very good provider.

Ms. Jones: But now there are problems, money problems.

Ms. Havard: Yes. When Jim was alive we did not have to hire much help. We did most of the work ourselves, and much of what we couldn't do, our children did for us. Of course we paid our son and our daughter for working as much as we would have paid anyone else. I don't want you to get the impression that we took advantage of our children in order to make the business work.

Ms. Jones: Of course not. Did the store make money while Mr. Havard was alive?

Ms. Havard: Yes. We made a good living, and we were able to send both of our children through college too.

Ms. Jones: Is the store still in business at Apple Lake?

Ms. Havard: Yes, my son runs the store along with his wife. I still go in to do the books, but I don't work as much as they do.

Ms. Jones: Do you think that the money problem is connected to your son's management?

Ms. Havard: He wants to quit or his wife wants him to quit. They make a salary and all of their groceries and gas are taken out of the store.

Ms. Jones: Do you take a salary?

Ms. Havard: I have taken very little money out of the store since Jim died. When I get gas or groceries, I pay for it as if I were a customer. I check up at the end of every day.

Ms. Jones: What do you mean by checking up?

Ms. Havard: Once a day I reconcile the cash register with cash on hand and I reconcile the credit card machine with credit card sales. And once a month I balance the store's checkbook with the bank statement. Everything checks out, so far as I can tell.

Ms. Jones: Are you ever short large amounts of cash?

Ms. Havard: No. We have never had any problems with missing cash or anything like that. That is not what I meant when I said that there is no money left. The checkbook balances too. I really don't think that anyone is stealing from me. The business is not paying me anything, and I have completely used up my savings. In fact, my son has asked me to put more money in the business this year. Last year I loaned the store $3,000 but I can't afford to do that again.

Ms. Jones: What do you mean? You are the owner of the business. You own the store's cash in the bank and in the till. Why not take what you need?

Ms. Havard: The store has just enough cash to pay its bills. There is not any left over for me.

Ms. Jones: You said that your son and his wife take items from the store, gas and so forth. What about that?

Ms. Havard: That is accounted for as salary & wage expense. They write a ticket and put it in the cash register when they take something so that our computer won't be out of balance with our physical counts. They settle up for whatever is taken on payday. A check is written by my son or my daughter-in-law for what is owed.

Ms. Jones: So your cash register tracks inventory for you?

Ms. Havard: Yes. And in most cases our physical counts are very close to our computer records. Our shrinkage is less than one-half of one percent.

Ms. Jones: What about accounts receivables?

Ms. Havard: Nothing except for my son's family. Since credit cards have become so popular we had done away with the practice of doing business on account years ago. Now, our customers pay with cash or credit card. We also take checks from people we know.

Ms. Jones: Are bad checks a problem?

Ms. Havard: Very seldom. Some months there are one or two checks that come back. But we almost always collect on them. Transcript ends at this point. Financial statements that Ms. Havard gave to her attorney are found below.

Exhibit 1

Havard Store, Inc.
Income Statements
For the calendar years: 2000 - 2003

	2003	2002	2001	2000
Sales	$1,197,000	$981,000	$925,000	$930,000
Cost of goods sold	891,000	727,000	683,000	687,000
Supplies expense	4,000	3,000	3,000	3,000
Salary & wage expense	126,000	101,000	96,000	96,000
Utilities expense	18,000	14,000	13,000	13,000
Depreciation expense	3,000		6,000	6,000
Insurance and property tax expense	20,000	17,000	16,000	16,000
Income tax and state tax expense	37,000	29,000	26,000	26,000
Net income	$98,000	$90,000	$82,000	$83,000

Exhibit 2

Havard Store, Inc.
Balance Sheets
As of December 31, 2003 and December 31, 2002

	12/31/03	12/31/02
Cash	$ 9,000	$ 7,000
Accounts receivable		
Inventory	309,000	247,000
Prepaid insurance	4,000	3,000
Fixed assets	220,000	200,000
Less: Accumulated depreciation	(163,000)	(180,000)
Total assets	$ 379,000	$ 277,000
Accounts payable	$ 16,000	$ 14,000
Wages & salaries payable	3,000	2,000
Taxes payable	10,000	11,000
Utilities payable		1,000
Notes payable	3,000	
Total liabilities	$ 32,000	$ 28,000
Retained earnings	$ 227,000	$ 129,000
Common stock	120,000	120,000
Total shareholders' equity	$ 347,000	$ 249,000

Exhibit 3

Havard Store, Inc.
Balance Sheets
As of December 31, 2001 and December 31, 2000

	12/31/01	12/31/00 0
Cash	$ 9,000	$ 8,000
Accounts receivable		1,000
Inventory	193,000	168,000
Prepaid insurance	3,000	3,000
Fixed assets	200,000	200,000
Less: accumulated depreciation	(180,000)	(174,000)
Total assets	$ 225,000	$ 206,000
Accounts payable	$ 8,000	$ 10,000
Wages & salaries payable		
Taxes payable	17,000	20,000
Utilities payable		
Notes payable		
Total liabilities	$ 25,000	$ 30,000
Retained earnings	$ 80,000	$ 56,000
Common stock	120,000	120,000
Total owner's equity	$ 200,000	$ 176,000

After reading the transcript and glancing at these financial statements, I asked Ms. Jones if she knew anything more about the business.

"No, not anything except telephone numbers for her and for her CPA. Both are expecting you to contact them." Ms. Jones paused and then said, "I don't think legal action is anticipated in this case by Ms. Havard. She is very fond of all of her children, this son who manages the family business included. In any event I would not advise such a move given what I know now. At this point I am not sure that the son is incompetent, and I am certainly not persuaded that he is negligent in a legal sense, nor do I believe that he is guilty of stealing from his mother."

GATHERING MORE INFORMATION

After leaving the law office, I dropped by the Central Appraisal District located in nearby Mast County for the purpose of obtaining estimates of fair market value of the real estate property owned by *Havard Store, Inc*. (Central Appraisal Districts were created by the Texas Legislature some years ago to provide taxing authorities and taxpayers accurate and up-to-date appraised values for the taxation of real estate. Appraised values generated by these districts are a matter of public record.) I talked to the chief appraiser who told me that the real property owned by Havard Store consisited of approximately twelve acres, a 5,900 square foot building which was constructed of brick and cinderblock in 1983, a 1,600 square foot metal building constructed in 1985, six 4,000 gallon capacity underground storage tanks, six automated gasoline pumps, an awning covering these pumps, and an asphalt parking lot/ driveway of 8,700 square feet. The property had last been appraised in 2002 for $575,000. Currently, the annual property taxes levied on this property are $11,000. I also found out that there are no back taxes due on this property.

Armed with this information I next paid a visit to *Havard Store, Inc*. Located on both sides of this store is a fishing resort, each with a large number of cabins. The store itself is a market filled with groceries, a bakery section, frozen foods, produce, and a large cooler section containing meats, dairy products and beverages. In addition customers could also purchase there gasoline, fishing tackle and fishing supplies, including live bait. The fishing tackle inventories were particularly extensive. The store was busy. I could see two employees working while I was there. It was an impressive operation, a clean, beautifully maintained store. Moreover, the landscaping surrounding the buildings and the parking lot was spectacular.

Marine equipment was for sale in a separate building behind the market. For sale were boats, motors, and accessories for fishing boats, including sonar and gps equipment. In the show room I saw two jet-skis and three fully out fitted fiberglass fishing boats mounted on trailers, each boat and trailer combination with a retail price in excess of $25,000. The courteous sales person, a well-dressed middle aged man, offered to help me. I declined and left after several minutes of looking at boats, motors, jet-skis, and electronic gear. I would guess that the value of marine equipment inventory in this metal building to be significantly more than that of the busy market.

I went back to the market. I purchased a soft drink, filled my SUV with gasoline and left without introducing myself or revealing the reason that I had stopped to anyone.

The next day after returning home I called Ms. Havard's CPA. He told me that he had worked for the Havard family for many years and that were fine people who enjoyed a good reputation in and around the small farming community where they lived. In response to my questions he gave me the following information. The business had been incorporated in 1984 – but not as sub-chapter S. All of the stock in the business is owned by Ms. Havard. (Of course given the small size of this enterprise there is no market for this stock.) In 2003 card-reading gasoline pumps were purchased for a cost of $40,000 and these pumps replaced obsolete pumps that had been fully depreciated. The cost of the new pumps included disposal costs for the old.

Her CPA also indicated that no dividends were paid from the business to Ms. Havard in the calendar year 2003. (Prior to this year dividends had been paid every year the corporation had existed.)

I asked how the marine inventory was financed. The accountant indicated that the balance sheets were correct in this regard, there was no use of borrowed money to finance marine inventory. As of the end of 2003, the marine inventory was valued at cost, approximately $100,000. Revenue generated from the marine business separate from that of the rest of the enterprise is unknown; such records never have been kept.

The also verified from the CPA was that the notes payable found on the 2003 Balance Sheet was the result of a loan made by Ms. Havard to the business. I also found out that insurance cost is divided into two categories: fire insurance costs were $ 3,500 per year, liability coverage costs were $5,500 per year.

I next called Ms. Havard. I wanted to know several things about the nature of her business. From her I learned that it is a country grocery store located in a rural setting, twelve miles from the nearest town of any size but very close to a large lake that is very popular with fisherman and that is surrounded by vacation homes and permanent residences. Also, not far away is a large national forest. Before Mr. Havard's death this store was open six days a week from seven AM until five PM. Sometime in the last two years hours were extended in the summer until eight PM.

I thanked Ms. Havard for her time, and then after several days of working on this problem I called my lawyer-friend back. "I think …

IGI, INCORPORATED: OPPORTUNITY COST RATE CONSIDERATIONS[1]

Bennie H. Nunnally, Jr., UNC-Charlotte
Danny Ervin, Salisbury State University
Amit Shah, BOE Securities

The corporate level financial management at IGI, Inc. is considering the manner in which the opportunity cost rate is handled in the firm's internal investments. Specifically, the finance staff recognizes that the opportunity cost rate, or hurdle rate, must reflect the variation in expected cash flows. This is so whether it is business unit cash flows or cash flows related to a single capital budgeting project. One particularly important reason for the recent attention to the hurdle rate is the firm's level of international business activity. The managers believe cash flows provided by overseas revenue might contain an element of risk over and above that incurred in domestic revenues. As a result, the managers wish to specify a clear and operational definition, description and measurement of risk as it is reflected in the opportunity cost rate.

INTRODUCTION

Iredell Global, Inc (IGI) began operations in 1987 in Metrolina, North Carolina. The company has three distinct business units (divisions) with all its facilities primarily located in the southeastern region of the United States. The company started with one division and has expanded by acquiring and operating three divisions as of year-end 2003. The finance staff is now attempting to ensure that the firm's internal financial practices maintain pace with the increasing sophistication of its operations.

The company consists of three divisions; divisions A, B and C. Division A makes tires for commercial aircraft and over-the-road trucks; industry observers consider it a specialty tire maker. This division is the oldest, started in 1987 when the company began operations. The division has been financially sound over the years, experiencing a steady growth rate in cash flow. However, recent data show the division is reaching a stage of maturity and the increase in sales and growth might become stagnant or decrease.

Division B was acquired in 1991 from a major U.S. chemical company. This division makes a wide range of 'commodity' and specialty chemicals for industrial use. The division's overseas sales are an increasing percent of total revenue, and its research and development efforts have increased over the years. It has been relatively successful in bringing new products to market. However, the division faces industry related risks as it takes a considerable period of time before an idea materializes and eventually becomes a marketable product. Overall, about one in twenty ideas make it to the marketable product stage. Thus, in addition to the normal risk of doing business, the division faces relatively high research and development (R & D) expense as a percent of revenue.

Division C, also acquired in 1991, is a maker of specialty metal turning lathes and related products. A significant portion of sales in this division is to overseas customers. The company

[1] The authors would like to thank Professor Marianne Plunkert for invaluable comments in the construction of this case. All errors remain the responsibility of the authors.

enjoys a significant advantage in this line of business due to its patent on a sophisticated computer assisted metal lathe. The division forecasts show a lack of meaningful competition for at least three more years.

Each division has a portion of its revenue coming from sales in Europe and South America. Ten percent of Division A's sales are in overseas markets, Division B has 25% of its sales in international markets and Division C has 35% of its revenue coming from overseas sales. Exhibit 1 includes industry data relative to the firm's product lines.

Based upon the firm's relative complexity, the corporate finance staff at IGI was concerned with the company's internal investment approval process. In the past, IGI has used the traditional and latest finance methods for its internal financial management decisions. These include calculating the cost of equity of the firm by using the Capital Asset Pricing Model (CAPM). The firm's debt cost is based upon the yield to maturity for each outstanding bond issue. The company's beta is calculated by simple regression analysis. In that process the firm's quarterly return on market value equity is regressed against the corresponding quarterly return of a broad market index of common stocks. Finally, the weighted average cost of capital (WACC) is calculated using market value data.

The finance staff was concerned with this approach to defining and calculating the opportunity cost rate for its internal investments as it likely fails to adequately incorporate the risk of the individual divisions, not to mention that of the differing expenditure proposals within each division. Accordingly, IGI wanted a clearer view of the manner in which capital investment funds were allocated; and whether such allocation was reflective of the risk and return characteristics of each division. Thus the finance staff wondered whether it was possible to establish a divisional hurdle rate given an overall cost of capital for the firm that considered the differing risks each division faces.

IGI had grown at a steady pace until recently. For example, the tire division, which once was the breadwinner for IGI, has slowed to modest growth and has shown signs of stagnancy. This change in performance is primarily attributable to the fact that the aircraft industry in the past few years had shown very little growth and the price wars and the competition within the airline industry had forced it to work with very thin margins. This has directly affected IGI as airlines have reduced the demand for tires and thus caused reduced revenue growth for IGI and its competitors. The demand for over-the-road trucks (tractors and trailers) had not increased significantly during the past 2-3 years, although the demand in this line of business is higher than that of the aircraft industry. However, the over-the-road truck market alone cannot sustain the division's growth rate.

IGI believes that product diversification is an essential means of reducing the variation of its overall expected cash flows. That was the primary motivation for the acquisition of the chemical division in 1991. As mentioned, that division is highly dependant on R&D and product innovation to provide new products. The division's cash flow is highly variable but growth in cash flow has been significant in recent years. Within this overall environment efficient capital allocation is essential if competitive advantage is to be maintained. However, given the division's competitive position, once a product makes it to market it usually provides a sustainable source of revenue for IGI. To assure continued competitiveness, significant earnings from the division are retained for R&D to fuel further innovations.

Division C produces specialty metal turning lathes and related products. IGI enjoys a healthy overseas share of revenue from this division. Most of the overseas sales are in Europe and South America. However, an increasing amount is in India and China. Hence, this division faces a high amount of exchange rate exposure, for example. In addition, the international exposure affects capital allocation practices within the firm, as the risk associated with exposure in the international markets is often more difficult to forecast compared to domestic risk elements. Moreover, political and social risks associated with the division's overseas sales may also potentially influence the division's prospects. The monetary and fiscal decisions and the overall strength of the U.S. economy also play a role and thus IGI must balance several important factors in order to maintain a relatively stable level of sales and cash flow.

IGI is an example of a typical company in the conglomerate sector, which operates in various geographical and competitive areas through different business units. Each of the three divisions is totally independent of the other and this serves as something of a hedge for IGI. Each division has different long and short-term potential, and different economic, political, legal and technological factors that affect the growth, level and stability of its revenue.

THE INDUSTRY

The primary industry in which IGI operates has undergone many consolidations, revisions and shifts over the past few decades. The industry began in the middle of the 1940's as a small group of companies that made various materials for the war effort. In the ensuing years, as technology evolved, as merger and acquisition activity ebbed and flowed in the economy, most of the original metalworking and tire making companies in the U.S. had changed form and ownership many times. IGI management considered the company a descendent of this industrial history and tradition.

Many of the firms which competed with IGI appeared similar to IGI in substantive ways. For example, most were multi-business unit firms that saw an increasing amount of their sales growth occur in international markets. This inevitably led the companies' managers to continually update not only their technology but also their strategic planning and internal management practices. This was the case although the firms in the industry were not all alike in terms of their product offering. It was an industry defined primarily by its dedication to what has become known as 'heavy industry.' Not an accurate rubric but one that implied a relatively 'low-tech' means of production and products, with attention to product quality and customer service as major competitive factors.

Trade publications and other data, which researched IGI's industry group, were useful sources of information concerning industry trends and related data. For example, one reputable publication in a mid-year 2003 report stated that industry sales at 2002-year end were \$8 billion dollars, versus \$5 billion in 1997. Correspondingly, it reported an industry net profit margin of between 9 and 12 percent for each year in the series.

In addition to the foregoing, those companies that supplied products related to metal working and the like sold the bulk of those products in the overseas market. The primary areas of competition in that market was a stable, diversified sales force made up of persons with technical as well as administrative educational and employment backgrounds. The emerging economies of India, China, and Southeast Asian nations, for example, provided the most ready new market for the companies' overseas sales. Exhibit 1 provides data and information concerning certain operating characteristics of the industry. Again, the firms in the industry are not closely homogenous, but their products and manufacturing skill and philosophy (a keen dedication to quality and craftsmanship) cast them as a particular industry group.

Most industry observers and experts see no significant changes in the industry in the near future. Those changes that would occur will likely revolve around modest advances in production methods (the wide-spread use of computer assisted design and computer assisted manufacturing-CAD/CAM in the early 1980's, is an example). And, while it was reasonably clear that the industry, in many ways, was considered mature, most industry experts believed that overseas sales would continue to provide relatively strong growth, and in the future some companies might establish manufacturing facilities in some overseas locations.

Exhibit 1
Selected Industry Data

	1997	**2002**
Sales	$5 billion	$8 billion
Profit margin	12%	10%
Number of Business Units	5	4
Overseas sales, % of total	20%	35%

INTERNAL INVESTING AND CAPITAL COSTS: FINANCE STAFF CONCERNS

The finance staff at IGI was very aware of the trend in the industry concerning the growing importance of overseas sales. This awareness was heightened by the company's concern over its handling of internal investments (capital budgeting). Management believed that internal investments were an integral part of its strategic planning (long-range product and market planning) and must be updated and revised with as much care as its manufacturing processes.

In order to make the best decisions possible concerning how capital budgeting was conducted at IGI, the company vice-president of finance, Hari Sehgal, made a practice of consulting the latest and best academic research in finance and strategic planning. In that regard, Mr. Sehgal had come upon a paper presented at a very recent national/international finance conference, entitled "Risk Assessment and Capital Budgeting Practices: An Industry Survey." In that paper the authors illustrated current practices: what was right and what was wrong in companies' understanding of the interrelationship between cost of capital calculation and its application to internal investment analysis.

The results and conclusions of the "Risk Assessment . . ." paper were of great interest to Mr. Sehgal. He was interested in not only learning how IGI could better handle its internal investment analysis, but also how the company's practices in that area compared with other firms, regardless of industry. (The research paper methodology used a survey of a wide selection of firms in various industries.) Exhibit 2 provides selected responses taken from one of the paper's tables, based upon responses from 110 firms. The 110 responses represented a 14 percent response rate to the authors' survey.

Exhibit 2
Risk Adjustment Practices of U.S. Firms

1.	Different rates of return for different business units	48.2%
2.	Different 'hurdle rates' for different business units	51.0%
3.	Methods used to adjust for risk (more than one response possible)	
	Adjustment of discount rate	28.4%
	Adjustment of cash flows	27.4%
	Adjustment of cash flows *and* discount rate	30.5%
	Some other method	19.0%

The results in the table illustrate that generally about one-half of the firms experience differing returns among their various business units. Approximately fifty percent of the responding firms apply differing opportunity cost rates ('hurdle rates') to the various divisions. Presumably, the varying opportunity cost rates are a reaction to the differing rates of return experienced by the differing divisions. In other words, managers are apparently attempting to correlate risk and return. Risk and return are the two primary items for analysis (define, describe and quantify) in financial decision-making.

The immediate concern to Mr. Sehgal was the manner in which IGI addressed the varying risk and return characteristics among its three business units, and the resulting effect upon capital cost (discount rate) and allocation. He reflected on how internal historical data illustrated the differences in cash flow variability for the three business units. The three business units manufactured and sold products in differing markets, both geographically and in terms of sales growth and stability. Conversations within the firm concerning the three divisions usually characterized Division A as being of 'average' risk, Division B as 'moderately' risky and, Division C as being the 'most' risky of the three divisions. Sehgal wondered if these characterizations were accurate and, perhaps more important, what influence did they have upon financing and investment decisions for each of the divisions, and how or whether they could be reasonably and usefully quantified.

COMPANY AND DIVISIONAL COST OF CAPITAL

IGI has used the firm's overall cost of capital in the past to evaluate the projects in each of its divisions, sometimes with disastrous results. The finance staff believes it is time to determine the cost of capital for individual divisions and perhaps individual projects within each division. This belief is based on the difference in risk each division faces. Such risk, again, is defined as the variability in expected cash flows. If the firm continues to use one cost of capital it will likely over-invest in risky projects and under invest in less risky projects. (See Exhibit 3 for selected data on the divisions' cash flow.) The longer-term result will be a less than optimal stock price. The company's most recent stock price was $20 per share. In addition, net income after tax was $16 million and the payout ratio was forty percent. The firm's marginal tax rate was thirty-five percent.

As the finance staff evaluated the risk of each division, it became obvious that each faced different levels of risk. In addition, at least for Division B, the individual projects can have very different risk levels. The commodity projects have a different set of risk characteristics when compared to the specialty chemical projects. The staff must decide how to determine the cost of debt and then the cost of equity for each division and for at least some of the projects in Division B. The cost of debt is a relatively straightforward calculation. The finance staff believes that the debt cost will be different for each division, if it issued its own debt, for example. This differential would be due to the differing risk among the divisions. As a result, the staff attempted to identify 'company characteristics' for firms that operate in the line of business of each of IGI's divisions. From this a better estimate of the debt cost component of divisional capital cost may be obtained.

Equity cost estimates for each division is also dependent upon the division's risk level. The staff believes that market risk is the only risk that should be evaluated when determining the cost of equity for a division or a project. As a result, two approaches could provide estimates of beta, which is a measure of market risk. The first method, the pure-play approach, requires the identification of firms that are publicly traded companies in the same line of business as the division in question, as in the case of debt cost estimation. Also, it is clear that calculating beta based on a portfolio of firms will usually provide a better estimate of the beta. At this point the beta will need to be modified to adjust for differences in capital structure. Exhibit 3, which follows, illustrates an attempt by the staff to organize and summarize its thinking on the cost of capital estimation issues.

Exhibit 3
Opportunity Cost Rate Information

Panel A:

	R.O.E.*	P/E	Long-Term Growth**
Division A: Specialty Tire Makers	14% (11)	16x (19)	12% (11)
Division B: Chemical Manufacturers	7% (10)	46x (16)	10% (10)
Division C: Machine Tool Makers	7% (9)	30x (22)	12% (10)

*Industry data. (Corresponding company data in parenthesis.) All data as of year-end 2003. ** Analysts' consensus.

Panel B:
Selected Bond Yield Data
(Year-end 2003)

Corporate (average, high-grade) Bond Yield	6%
Specialty Tire Manufacturers	6.5%
Chemical Manufacturers	6.5%
Machine Tool Manufacturers	7.5%

Panel C:
Selected Division Data*

Division	Expected Annual Cash flows	Standard Deviation
A	$28 million	$30 million
B	$20 million	$26 million
C	$17 million	$36 million

*In a "standalone" sense, the staff estimated the divisions' market risk as follows: Division cash flow for A, B, &C would be 10%; 15% and; 25% more variable, respectively, than the stock market average.

The finance staff next considers the country risk that each division encounters. Divisions B and C are greatly concerned with risks resulting from the international operations. Political and sovereign risk, host country regulations, taxes and legal system differences, cultural and language barriers, currency and transactions costs are the most pressing concerns in that regard. Each factor must be considered. Is this a factor that affects incremental cash flows or the cost of capital? How will the analysts measure each factor? These are the types of questions making their way around the finance offices at IGI.

Political and sovereign risk can take many forms. Perhaps the most common political risk is that a new government will come into power and decide to "nationalize" an industry or company and expropriate IGI's property. In addition to expropriation, IGI must consider changes in taxes and regulation. A new government may change the regulations concerning flow of capital. IGI currently has little trouble moving money across international borders. The tax rules in the countries in which IGI operates have been stable for sometime. The finance staff has given this risk much consideration in the past and decided to control for this risk by adjusting the incremental cash flows. The firm subscribes to an economic data service that produces the information required for this analysis.

The financial staff must also consider exchange rate risk. Current practice is to ignore this risk and this practice has caused high volatility in the free-cash-flows from Division C. The staff has investigated hedging this risk using the derivatives market and believes the firm should proceed with a hedging program. The staff understands hedging activities do not alter the business risk for Division C but that derivatives can only hedge the currency risk. Again, the staff wonders whether this risk may be captured in the weighted average cost of capital.

Currently IGI borrows domestically for all capital projects. The staff is contemplating revising this practice to facilitate borrowing in the country where the project will be located. There are several factors to consider. The first is the state of the capital markets. IGI will continue to borrow domestically for projects that are located in countries that do not have well functioning capital markets. The staff must then consider the feasibility of internationalizing the CAPM. Although financial theory would require IGI to use an international market in the CAPM, recent research suggests that the marginal cost of the analysis exceeds the marginal benefit. The staff must make a decision regarding these issues. The data and information in Exhibit 4 were recently collected by the finance staff as a means of better understanding the relationship between corporate capital costs and the external capital markets.

What follows is an illustration of the finance department's overall view of the cost of capital issue as it applied to both the company and the individual business units. In addition, the corporate controller believes the academic journal references, which follow the Appendix, applied directly to the situation at hand.

Exhibit 4
Selected Financial Data for IGI, Inc.

	(in Millions)		
	2001	**2002**	**2003**
Sales			
Div A (Tires)	55	58.30	61.80
Div B (Commodity)	40	41.80	43.68
Div C (Metal Lathes)	25	27.75	30.80
Group Sales	**120**	**127.85**	**136.28**

Company Capital Structure, 2003

Long Term Debt (AA Rated: 8%coupon rate, 8 years to maturity	72
Common Stock ($5 Par)	40
Retained Earnings	68
Total	**180**

*

Selected Capital Market Data, 2003

Yield on AA corporate debt	5.72%
5 year historical nominal yield on the S & P 500	11.0%
5 year average yield on 10-year Treasury bonds	5.20%

The 5-year yield on a broad average of industrial firms has experienced 80% of market variability.

* Averages are arithmetic, not geometric.

Appendix:
A Cost of Capital Primer for IGI, Inc.

Panel A:
Debt Cost

In determining the firm's cost of debt; the market yield of debt is the relevant rate. The firm's debt, as assessed by the capital markets, will have a known yield-to-maturity (YTM.) This YTM is the before-tax cost of the firm's debt component in the weighted average cost of capital (WACC) for the firm's internal investments of average risk.

Panel B:
Equity Cost

The Security Market Line (SML) is the preferred method for determining the cost of equity. This formulation: Rf + (Rm-Rf) B, represents the marginal cost of equity based upon several necessary assumptions (the references below are useful in understanding the assumptions and why they are necessary.) In the SML formula, where: Rf is the average yield on a low risk fixed payment security (the 10 year T-Bond rate, for example) and Rm is the historical yield on a broad market average of common stocks, and "B" or beta is the individual risk component which is a measure of the movement in an individual stock's returns relative to that of the broad market average. Also, "Rm", the market yield, has been expressed as

"First, the average difference between the actual returns realized in the past of the stock market (i.e. the S&P 500) and the actual past returns on the fixed income security are calculated. Second, this historical spread is added to the currently prevailing expected return (i.e. yield-to-maturity) on the fixed income security. The second step automatically adjusts for inflation because the prevailing rate on the fixed income security includes a premium reflection the market's forecast of future inflation. The approach yields an estimate of the expected return on the market, Rm. The rationale is that stocks are expected to yield a higher return than the return on lower-risk, fixed income securities, and the additional return on stocks, the spread, is expected to be the same as in the past." (See Butters & Fruhan, 1987)

Panel C:
Beta Calculation, An Illustration

Years	IGI (Y)	S & P 500 (X)	$y = (Y - \overline{Y})$
1	0.20	0.32	0.09
2	-0.11	-0.24	-0.23
3	0.04	-0.17	-0.07
4	-0.24	-0.02	-0.35
5	0.18	0.09	0.07
6	-0.08	0.31	-0.19
7	0.07	0.25	-0.05
8	0.51	0.24	0.39
9	0.54	0.35	0.43
10	0.01	-0.02	-0.10
	$\overline{Y} = 0.112$	$\overline{Y} = 0.109$	0.00

B= The change in the Y variable for each unit change in the independent (X) variable

B = ∑(xy)/ ∑(x$^{2)}$
B = 0.69

A = the value of Y when X is 0

$$A = \overline{Y} - b\overline{X}$$
A = 0.04

$Y_{e\,=}$ .04 + .69(X)
where Y_e = A + Bx

Panel D:
Compound Annual Growth of Cash Flow

The basis for financial cost calculation, refinancing considerations and analysis, and internal investment analysis is the forecast of positive incremental cash flow. That is, a firm's growth potential drives its need for capital, and the industry to which the firm belongs is a major influence upon its capital structure (in addition to the more quantifiable "risk and return" concerns illustrated in this case.) Therefore, in terms of a "benchmark" to the industry, and to specific industry sub-groups, or to the overall economy, clarity on the growth *rate* of cash flow is essential. Either **net cash flow** (net income after-tax plus depreciation) or the more sophisticated measure, **free cash flow** (which is EBIT (1-t) + depreciation and amortization +/- changes in new working capital-capital expenditures) may be examined. The compound growth rate can be calculated by dividing future value by present value and solving for the rate or "yield" over the relevant time period. Further, the past variability of cash flow, which may be measured by the standard deviation, may serve as a proxy for expected risk of future cash flow.

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FINANCIAL REPORTING: IBM (1999)

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Sam Houston State University

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Sam Houston State University

During the late 1990's, IBM posted significant cost reductions and profit increases in an environment where other firms within the industry were experiencing declining performances. The firm's chairman, Louis Gerstner, and other company publicists, were singing praises concerning IBM's superior expense management practices. While revenues were increasing, the selling, general and administrative (SGA) expense category was actually falling.

Robert Slattery, a financial analyst, has been asked by a large investor group to prepare an analysis of the actions IBM took to accomplish the exceptional performance, in hopes of identifying other firms within the industry that might see a similar performance gain if they employed similar strategies.

Robert Slattery relished the assignment he had just received from the Guardian Investments Group. Slattery, a consulting financial analyst, was often employed to dissect and analyze the financial statements of firms under consideration for investment by private investors and investment groups. He was particularly excited by the challenge that this latest assignment offered due to the complexity of the firm, IBM, and its recent reputation for the questionable quality of its reported earnings.

A June, 2000, issue of *Fortune* magazine that Slattery had read recently reported that it was widely believed in the analysts' community that IBM's earnings were attributable as much or more to sophisticated accounting practices than to revenue growth of their core businesses. The article noted in particular that under the seven-year leadership of Louis Gerstner, the Chairman of IBM, earnings had grown at an average rate of 27% a year (since 1994) and market value had skyrocketed from less than $30 billion to nearly $200 billion, while revenues had risen barely 5% annually since 1995 and gross profits had grown only 1.3% annually over the same period.[1] For a high-tech company in the middle of the (.com) era, with a record of producing the most patents annually of any American company, this could only be considered anemic revenue performance over this period. How had IBM, and Gerstner, been able to keep its shareholders and the Wall Street analysts happy with such little growth in its core businesses, and what contribution to this earnings performance was made by solid expense management?

Over the next several hours Slattery gathered the information he would need to conduct his analysis, including IBM's *1999 Annual Report*, quarterly 10Q reports, their 10K report, and other reference documents. Appropriate excerpts from these reports are presented as the Exhibits to this case.

Slattery began his analysis by examining the income statement and its accompanying notes (Exhibit 1, 1a-e) contained in the *1999 Annual Report* and the 1999 consolidated statement of financial condition (Exhibit 2). He noted particularly the management discussion regarding the selling, general and administrative (SG&A) line of the report (Exhibit 3). While SG&A had changed little from 1997 to 1998, it declined by 11.6% in 1999, from $16,662 to $14,729, a drop from 20.4% to 16.8% of revenue. The narrative of the annual report attributed the decline "to manage aggressively its infrastructure expense and its overall portfolio for investment in growth areas of the business."[2] How was this done? Was the decline in SG&A due to "aggressive expense management?"

Since no other information was contained in the management discussion of the annual report, Slattery turned his attention to the other footnotes contained in the financials. He noted with specific interest Note D Acquisitions/Divestitures (Exhibit 4) that indicated that during 1999, IBM sold its Global Network business to AT&T for $4,991 million, thereby removing 5300 employees from IBM's payroll and creating a "pre-tax gain of $4,057 million ($2,495 million after tax…) The net gain reflects dispositions of Plant, rental machines and other property of $410 million, other assets of $182 million and contractual obligations of $342 million."[3] What impact did this sale have on SG&A expenses? Could the sale of this asset be the reason why SG&A expense had fallen, more so than aggressive expense management?

To explore this in greater depth, Slattery traced the transaction back to the Second Quarter 1999 10Q Report (Exhibit 5) and the Third Quarter 1999 10Q Report (Exhibit 6). What did Slattery find? In his report, what should he say to investors?

[1]*Fortune,* June 26, 2000, 142(1), 165.
[2]*IBM 1999 Annual Report, 65.*
[3]*IBM 1999 Annual Report, 73.*

Exhibit 1

Consolidated statement of earnings
International Business Machines Corporation
and Subsidiary Companies

(dollars in millions except per share amounts)

For the year ended December 31:	Notes:	1999	1998	1997
Revenue:				
Hardware		$37,041	$35,419	$36,630
Global Services		32,172	28,916	25,166
Software		12,662	11,863	11,164
Financing		3,137	2,877	2,806
Enterprise Investments/Other		2,536	2,592	2,742
Total revenue		87,548	81,667	78,508
Cost:				
Hardware		27,071	24,214	23,473
Global Services		23,304	21,125	18,464
Software		2,240	2,260	2,785
Global Financing		1,446	1,494	1,448
Enterprise Investments/Other		1,558	1,702	1,729
Total Cost		55,619	50,795	47,899
Gross Profit		31,929	30,872	30,609
Operating Expenses:				
Selling, general and administrative	Q	14,729	16,662	16,634
Research, development and engineering	S	5,273	5,046	4,877
Total operating expenses		20,002	21,708	21,511
Operating income		11,927	9,164	9,098
Other income, principally interest		557	589	657
Interest expense	K	727	713	728
Income before Income taxes		11,757	9,040	9,027
Provision for Income taxes	P	4,045	2,712	2,934
Net income		7,712	6,328	6,093

Preferred stock dividends		20	20	20
Net income applicable to common stockholders		$7,692	$6,308	$6,073
Earnings per share of common stock:				
Assuming dilution	T	$4.12	$3.29*	$3.00*
Basic	T	$4.25	$3.38*	$3.09*

Average number of common shares outstanding:
Assuming dilution: 1999-1,871,073,912; 1998-1,920,130,470; 1997-2,021,869,884*
Basic: 1999-1,808,538,346; 1998-1,869,005,570* 1997-1,966,572,722*

*Adjusted to reflect a two-for-one stock split effective may 10, 1999.
The accompanying notes on pages 69 through 93 are an integral part of the financial statements.

Source: IBM 1999 *Annual Report,* 64.

Exhibit 1a
Note K
K Interest on Debt

Interest paid and accrued on borrowings of the company and its subsidiaries was $1,475 million in 1999, $1,585 million in 1998 and $1,596 million in 1997. Of these amounts, the company capitalized $23 million in 1999, $28 million in 1998 and $32 million in 1997. Of the remainder, the company charged to the cost of financing $725 million in 1999, $844 million in 1998 and $836 million in 1997, and to interest expense $727 million in 1999, $713 million in 1998 and $728 million in 1997. The decrease in total interest in 1999 versus 1998 was due primarily to lower average interest rates, partially offset by an increase in average debt outstanding during 1999. The decrease in 1998 versus 1997 was due primarily to lower average interest rates, partially offset by higher outstanding average debt. The average effective interest rate for total debt was 5.1 percent, 5.7 percent and 6.4 percent in 1999, 1998 and 1997, respectively. These rates include the results of currency and interest rate swaps applied to the debt described in note J, “Debt,” on page 74.

Source: IBM 1999 *Annual Report,* 75.

Exhibit 1b

Notes to consolidate financial statements
International Business Machines Corporation
and Subsidiary Companies

P Taxes

For the year ended inDecember 31:	1999	1998	1997
Income before income taxes:			
U.S. operations	$5,892	$2,960	$3,193
Non-U.S. operations	5,865	6,080	5,834
	$11,757	$9,040	$9,027
The provision for income taxes by geographic operations is as follows:			
U.S. operations	$2,005	$991	$974
Non-U.S. operations	2,040	1,721	1,960
Total provision for income taxes	$4,045	$2,712	$2,934

The components of the provision for income taxes by taxing jurisdiction are as follows:
(Dollars in millions)

For the year ended December 31:	1999	1998	1997
U.S. federal:			
Current	$1,759	$1,117	$163
Deferred	-(427)	-(475)	349
	1,332	642	512
U.S. state and local:			
Current	272	139	83
Deferred	7	260	-(87)
	279	-(121)	-(4)
Non-U.S.:			

Current	2,727	2,062	2,330
Deferred	-(293)	129	96
	2,434	2,191	2,426
Total provision for income taxes	4,045	2,712	2,934
Provision for social security, real estate, personal property and other taxes	2,831	2,859	2,774
Total provision for taxes	$6,876	$5,571	$5,708

The effect of tax law changes on deferred tax assets and liabilities did not have a significant effect on the company's effective tax rate.

Source: IBM 1999 *Annual Report, 79.*

Exhibit 1c
Note Q
Selling and Advertising

Selling and advertising expense is charged against income as incurred. Advertising expense, which includes media, agency and promotional expenses, was $1,758 million, $1,681 million and $1,708 million in 1999, 1998 and 1997, respectively.

Source: IBM 1999 *Annual Report,* 80.

Exhibit 1d
Note S
Research, Development and Engineering

Research, development and engineering expense was $5,273 million in 1999, $5,046 million in 1998 and $4,877 million in 1997. Expenses for product-related engineering included in these amounts were $698 million, $580 million and $570 million in 1999, 1998 and 1997, respectively.

The company had expenses of $4,575 million in 1999, $4,466 million in 1998 and $4,037 million in 1997 for basic scientific research and the application of scientific advances to the development of new and improved products and their uses. Of these amounts, software-related expenses were $2,036 million, $2,086 million and $2,016 million in 1999, 1998 and 1997, respectively. Included in the expense each year are charges for acquired in-process research and development. See note D, "Acquisitions/Divestitures" on pages 72 and 73 for further information about that expense.

Source: IBM 1999 *Annual Report,* 82.

Exhibit 1e
Notes to consolidated financial statements
International Business Machines Corporation
and Subsidiary Companies

T Earnings Per Share of common Stock
The following table sets forth the computation of basic and diluted earnings per share of common stock.

For the year ended December 31:	1999	1998	1997
Number of shares on which basic earnings per share is calculated:			
Weighted-average shares outstanding during year	1,808,539,346	1,869,005,570	1,966,572,722
Add - Incremental shares under stock compensation plans	59,344,849	51,124,900	55,297,162
Add - incremental shares associated with contingently issuable shares	3,190,717		
Number of shares on which diluted earnings per share is calculated	1,871,073,912	1,920,130,470	2,021,869,884
Net income applicable to common stockholders (millions)	$7,692	$6,308	$6,073
Add - net income applicable to contingently issuable shares (millions)	11		
Net income on which diluted earnings per share is calculated (millions)	$7,703	$6,308	$6,073
Earnings per share of common stock:			
Assuming dilution	$4.12	$3.29	$3.00
Basic	$4.25	$3.38	$3.09

Stock options to purchase 27,355,056 common shares in 1999, 4,124,730 shares in 1998 and 331,666 shares in 1997 were outstanding, but were not included in the computation of diluted earnings per share because the exercise price of the options was greater than the average market price of the common shares and, therefore, the effect would have been antidilutive in addition, 5,131,038 restricted stock units in 1998 relating to the company's Long Term Performance Plan were not included in the computation of diluted earnings per share as their effect would have been antidilutive. Net income applicable to common stockholders excludes preferred stock dividends of $20 million for 1999, 1998, 1997.

Source: IBM 1999 *Annual Report, 83*

Exhibit 2
Consolidated statement of financial position
International Business Machines Corporation
and Subsidiary Companies

(Dollars in millions except per share amounts)

At December 31	Notes:	1999	1998
Assets			
Current assets:			
Cash and cash equivalents		$5,043	$5,375
Marketable securities	L	788	393
Notes and accounts receivable - trade, net of allowances		20,039	18,958
Sales-type leases receivable		6,220	6,510
Other accounts receivable		1,359	1,313
Inventories	E	4,868	5,200
Prepaid expenses and other current assets		4,737	4,611
Total current assets		43,155	42,360
Plant, rental machines and other property	F	39,616	44,870
Less: Accumulated depreciated		22,026	25,239
Plant, rental machines and other property - net		17,590	19,631
Software		663	599
Investments and sundry assets	G	26,087	23,510
Total assets		$87,495	$86,100
Liabilities and Stockholders' Equity			
Current liabilities:			
Taxes	P	$4,792	$3,125
Short-term debt	J&L	14,230	13,905
Accounts Payable		6,400	6,252
Compensation and benefits		3,840	3,530
Deferred income		4,529	4,115
Other accrued expenses and liabilities		5,787	5,900
Total current liabilities		39,578	36,827

Long-term debt	J&L	14,124	15,508
Other liabilities	M	11,928	12,818
Deferred income taxes	P	1,354	1,514
Total liabilities		66,984	66,667
Contingencies	O		
Stockholders' equity:	N		
Preferred stock, par value $.01 per share		247	247
Shares authorized: 150,000,000			
Shares issued and outstanding (1999 and 1998 - 2,546,011)			
Common Stock, par value $.20* per share	C	11,762	10,121
Shares authorized: 4,687,500,000*			
Shares issued (1999 - 1,876,665,245; 1998 - 1,853,738,104*)			
Retained earnings		16,878	10,141
Treasury Stock, at cost (shares: 1999 - 72,449,015; 1998 - 1,924,293*)		-(7375)	-(133)
Employee benefits trust (shares: 1999 - 20,000,000; 1998 - 20,000,000*)		-(2162)	-(1854)
Accumulated gains and losses not affecting retained earnings		1,161	911
Total stockholders' equity		20,511	19,433
Total liabilities and stockholders' equity		$87,495	$86,100

Adjusted to reflect a two-for-one stock split effective May 10, 1999.

The accompanying notes on pages 69 through 93 are an integral part of the financial statements.

Source: IBM 1999 *Annual Report, 65*

Exhibit 3
Management Discussion
International Business Machines Corporation
And Subsidiary Companies

Selling, General & Administrative Expense

Operating Expenses

(Dollars in millions)	1999	1998	1997
Selling, general and administrative	$14,729	$16,662	$16,634
Percentage of revenue	16.8%	20.4%	21.2%
Research, development and engineering	$5,273	$5,046	$4,877
Percentage of Revenue	6.0%	6.2%	6.2%

Selling, general and administrative (SG&A) expense declined 11.6 percent in 1999 versus 1998 and was essentially flat in 1998 with 1997.

The company continues to manage aggressively in its infrastructure expense and its overall portfolio to allow for investment in growth areas of the business. Key ongoing investments include software marketing, major marketing campaigns, and new offerings for small and medium business opportunities, as well as the e-business campaign. These types of expenditures are consistent with the company's ongoing objective of growing revenue while improving the expense-to-revenue ratio over time.

Research, development and engineering expense increased 4.5 percent in 1999 from 1998, following an increase of 3.5 percent in 1998 from 1997. The increase in 1999 reflects additional expenses associated with the acquisition of Sequent Computer Systems, Inc., Mylex Corporation and DASCOM, Inc. Those acquisitions are intended to improve the company's long-term competitiveness in the server, storage and Web-security markets, respectively. (See note D, "Acquisitions/Divestitures," on pages 72 and 73 for further detail about the in-process research and development charge.) In addition, the increases in both 1999 and 1998 reflect the company's continued investments in high-growth opportunities like e-business. Tivoli systems management and Lotus products, as well as the effect of ongoing research, development and engineering expense associated with new acquisitions.

As a result of its ongoing research and development efforts, the company received 2,756 patents in 1999, placing it number one in patents granted in the U.S. for the seventh consecutive year. The application of these technological advances transforms the company's research and development into new products. Examples of these efforts range from new e-business solutions to innovative manufacturing techniques. A patent for performing computer-based online commerce using an intelligent agent will play a major role in future e-business. This patent enables customers to use intelligent software agents to negotiate for services from multiple providers. The intelligent agents take into account both the availability of the requested service, such as airline seats, and the providers' business policies, such as those on cancellations. The agents commit to services with the most flexible policies first, giving the user the greatest possible protection. With respect to manufacturing technologies, the silicon-on-insulator (SOI) chip technology can reduce power consumption and improve chip performance. A new patent in 1999 defines processing improvements that increase the efficiency and reduce the cost of manufacturing SOI chips. This technology will be crucial in the industry's development of a new class of "pervasive computing" devices, handheld and embedded products such as smart phones, and Internet appliances that business professionals and consumers will rely on for easy access to e-business data and services.

Source: IBM 1999 *Annual Report,* 56-57.

Exhibit 4
Note D
Acquisitions/Divestitures

Acquisitions
In 1999, the company completed 17 acquisitions at a cost of approximately $1.5 billion. Three of the major acquisitions for the year are detailed in the following discussion.

On September 24, 1999, the company acquired all of the outstanding capital stock of Sequent Computer Systems, Inc. (Sequent) for approximately $828 million. Sequent was an acknowledged leader in systems based on NUMA (non-uniform memory access) architecture.

On September 29, 1999, the company acquired all of the outstanding stock of Mylex Corporation (Mylex) for approximately $259 million. Mylex was a leading developer of technology for moving, storing, protecting and managing data in desktop and networked environments.

On September 27, 1999, the company acquired DASCOM, Inc. (DASCOM), an industry leader in Web-based and enterprise-secured technology, for approximately $115 million.

The company accounted for each acquisition as a purchase transaction. The effects of these acquisitions on the company's Consolidated Financial Statements were not material. Hence, the company has not provided pro forma financial statements as if the companies had combined at the beginning of the current period or the immediately preceding period.

The company engaged a nationally recognized independent appraisal firm to express an opinion on the fair value of the net assets that the company acquired to serve as a basis for the following allocation of the purchase price.

(Dollars in millions)	Sequent	Mylex	DASCOM
Purchase price	$848	$259	$115
Tangible net assets (liabilities)	328	67	(17)
Identifiable intangible assets	187	35	13
Current technology	87	26	19
Goodwill	183	145	92

In-process research and development	85	7	19
Deferred tax liabilities related to identifiable intangible assets	(96)	(21)	(11)

The tangible net assets comprise primarily cash, accounts receivable, land, buildings and leasehold improvements. The identifiable intangible assets comprise primarily patents, trademarks, customer lists, assembled workforce, employee agreements and leasehold interests. The identifiable intangible assets and goodwill will be amortized on a straight-line basis over a five-year period.

In connection with the acquisitions of Sequent, Mylex and DASCOM, the company recorded a pre-tax charge for research, development and engineering of $111 million ($111 million after tax, or $.06 per diluted common share) for acquired in-process research and development (IPR&D). At the date of each acquisition, the IPR&D projects had not yet reached technological feasibility and had no alternative future uses. The value of the IPR&D reflects the relative value and contribution of the acquired research and development to the company's existing research or product lines.

In January 1998, the company acquired Software Artistry, Inc., a leading provider of both consolidated service desk and customer relationship management solutions for distributed enterprise environments. In March 1998, the company acquired CommQuest Technologies, Inc., a company that designs and markets advanced semiconductors for wireless communications applications such as cellular phones and satellite communications. In connection with these acquisitions, the company recorded a pre-tax charge for IPR&D of $111 million ($111 million after tax, or $.06 per diluted common share.)

On April 16, 1997, the company purchased a majority interest in NetObjects, a leading provider of Web site development tools for designers and intranet developers. In 1999, as a result of NetObject's initial public offering, the company's interest declined to less than 50 percent. In September 1997, the company acquired the 30 percent equity interest held by Sears in Advantis, the U.S. network services arm of the company's Global Network. Advantis was then owned 100 percent by the company. Advantis became part of the company's Global Network, which the company sold to AT&T in 1999. In December 1997, the company acquired Eastman Kodak's share of Technology Service Solutions, which was formed in 1994 by the company and Eastman Kodak. In December 1997, the company acquired Unison Software, Inc., a leading developer of workload management software. In connection with these acquisitions the company recorded a pre-tax charge for IPR&D of $111 million ($111 million after tax, or $.05 per diluted common share).

Divestitures

In December 1998, the company announced that it would sell its Global Network business to AT&T. During 1999, the company completed the sale to AT&T for $4,991 million. More than 5,300 IBM employees joined AT&T as a result of these sales of operations in 71 countries.

The company recognized a pre-tax gain of $4,057 million $2,495 million after tax, or $1.33 per diluted common share). The net gain reflects dispositions of Plant, rental machines and other property of $410 million, other assets of $182 million and contractual obligations of $342 million.

Source: IBM 1999 *Annual Report,* 72.

Exhibit 5
IBM Second Quarter 1999 10Q Report
Notes to Consolidated Statements

6. The second quarter 1999 results include a pre-tax benefit of $1,610 million ($687 million after tax, or $.37 per diluted common share) related to the sale of IBM's Global Network, actions within the company's Technology Group, and a change in estimate related to the depreciable life of personal computers used within the company. That benefit is reflected on selling, general and administrative expense.

Sale of Global Network. In December 1998, the company announced that it would sell its Global Network business to AT&T for $5 billion. The IBM Global Network generated revenues of approximately $1.2 billion in 1998.

During the second quarter of 1999, the company completed the sales of its Global Network businesses in the United States, Japan, the United Kingdom, and Ireland, for approximately $4,192 million. More than 3,500 IBM employees joined AT&T as a result of the sales to date. The company expects the sales of the Global Network in the remaining countries to be substantially completed in the third quarter.

The company recognized a pre-tax gain of $3,430 million in the sales ($2,102 million after tax, or $1.12 per diluted common share). The net gain reflects dispositions of Plant, rental machines and other property of $310 million and other assets of $181 million, and contractual obligations of $283 million.

Technology Group Actions. During the second quarter, the company approved and implemented actions designed to better align the operations of IBM's Technology Group with that group's strategic direction in view of the competitive environment, overcapacity in the industry and resulting pricing pressures. The actions affect the Microelectronics Division (MD) and the Storage System Division (SSD) of the company's Technology Group. The company expects these actions to be substantially completed by the first half of 2000. The action and the resulting improvement in the cost structure are intended to enable the company to enhance its profitability within MD and SSD in the future.

During the second quarter, the company recorded a charge of $1,416 million ($1,174 million after tax, or $.62 per diluted common share) related to the Technology Group actions. The charge included $190 million related to employee termination benefits and $1,226 million of other costs as described below. (The table on page 9 identifies the portion of the total charge that related to investments and other asset write downs and the portion that relates to liabilities as of June 30, 1999.)

Summary. The following table identifies the significant components of the pre-tax charge related to Technology Group actions, the investments and other asset write-downs in the quarter, and the liability as of June 30, 1999:

(Dollars in millions)

	Total Pre-tax charges	Investment & Other Asset Write-Downs	Liability created in the second quarter	Liability as of June 30, 1999
MD Actions				
Essonnes Equipment	$662	$662		
Employee Terminations	$167		$167	$167
Dominion Investment	$171	$171		
MiCRUS Investment	$152		$152	$152
SSD Actions				
Equipment	$241	$241		
Employee Terminations	$23		$23	$23
Total Actions	**$1,216**	**$1,074**	**$342**	**$342**

Change in Estimate. The company developed a Client Standardization Strategy for IBM's internal desktop asset management designed to ensure that IBM deploys standard platforms to provide common interfaces among IBM organizations. To achieve optimal productivity, the acquisition and rollout of standard use software must be aligned with compatible hardware. New software typically is designed to be used with technology that is no more than three years old. Thus, personal computers (PCs) used within IBM will be replaced, on average, by the end of their third year in use instead of the current practice of five years.

As a result of the Strategy and the change in estimate of PC useful life, the company recognized a charge in the second quarter of $404 million ($241 million after tax, $.13 per diluted common share). The remaining book value of the assets will be depreciated over the remaining new useful life. In the second quarter, the company wrote off the net book value of PCs that were 3 years or older and, therefore, had no remaining useful life. The net effect on future operations is expected to be minimal as the increased depreciation due to the shorter life will be offset by the lower depreciable base attributable to the write off of PCs older than three years.

IBM Second Quarter 10Q Report, pgs. 7-9.

Exhibit 6

IBM 10Q Report
Third Quarter 1999

Notes to Consolidated Statements

6. The third quarter 1999 results include a pre-tax benefit of $201 million ($63 million after tax, or $.03 per diluted common share) related to the sale of IBM's Global Network, actions within the company's Technology Group, and charges for acquired in-process research and development related to three purchase acquisitions.

Sale of the Global Network. In December 1998, the company announced that it would sell its Global Network business to AT&T for $5 billion. The IBM Global Network generated revenues of approximately $1.2 billion in 1998.

During the third quarter of 1999, the company completed the sales of its Global Network business in 34 countries for approximately $727 million, bringing the year-to-date total to 38 countries and $4,919 million. More than 5,100 IBM employees joined AT&T as a result of these sales.

The company recognized a pre-tax gain of $586 million on the third-quarter sales ($366 million after tax, or $.19 per diluted common share). The net gain reflects dispositions of Plant, rental machines and other property of $62 million and contractual obligations of $79 million.

Technology group actions. On August 31, 1999, the company announced that the Networking Hardware Division (NHD) of the company's Technology Group entered into a global alliance with Cisco Systems, Inc. (Cisco) comprising an agreement by Cisco to purchase IBM technology over the next five years; a strategic relationship with IBM Global Services under which the two companies will offer a full spectrum of services and jointly developed solutions for customers' e-business and networking needs; and the sell to Cisco of intellectual property (IP) related to routing and switching technology. The completion of the sale of IP is subject to regulatory approvals.

The IP sales agreement permits the company to continue to (a) sell router and switch products to new customers for one year after the company receives the regulatory approvals and (b) fulfill existing contractual commitments beyond the one-year period. As a result of the announcement of the alliance, demand for the router and switch products from both existing and new customers has abruptly deteriorated. Thus, the company took a pre-tax charge totaling $178 million ($109 million after tax, or $.06 per diluted common share) related to a write-down to net realizable value of its inventory of router and switch products ($144 million) and related contract cancellation fees ($34 million).

During the second quarter, the company approved and implemented actions designed to better align the operations of IBM's Technology Group with that group's strategic direction in view of the competitive environment, overcapacity in the industry and resulting pricing pressures. As part of those action, the company announced (in the second quarter) aggressive steps to improve the competitive position of its Storage Systems Division (SSD) by merging server hard disk drive product lines and realigning operations. The company will integrate all server hard disk drives into a single low cost design platform that uses common development and manufacturing process. The company took a pre-tax charge of $264 million in the second quarter and expects these actions to be substantially completed by the first half of 2000.

The continuing actions within SSD resulted in additional third quarter pre-tax charges of $96 million ($83 million after tax, or $.04 per diluted common share). That amount includes write-downs to fair value of equipment (a) that is idle and will be scrapped ($42 million), (b) under contract for sale and delivery by March 31, 2000 ($7 million), and (c) subject to sale-leaseback agreements ($47 million write-down of the equipment to appraised fair value).

The liability as of September 30, 1999 for the second quarter charges within the Technology Group is $327 million. There is no liability at that date for the third quarter SSD asset write-downs.

Acquisitions. On September 24, 1999, the company acquired all of the outstanding capitol stock of Sequent Computer Systems, Inc. (Sequent) for approximately $828 million or $18 for each outstanding share of Sequent common stock. Sequent is an acknowledged leader on systems based on NUMA (non-uniformed memory access) architecture. NUMA is advanced hardware and software that allows large numbers of processors to operate as a single system while maintaining the ease of programming and manageability of a small system.

On September 29, 1999, the company completed the acquisition of Mylex Corporation (Mylex) for approximately $259 million or $12 for each outstanding share of Mylex common stock. Mylex is a leading developer of technology for moving, storing, protecting and managing data in desktop and networked environments.

On September 27, 1999, the company acquired DASCOM, Inc., (DASCOM) an industry leader in Web-based and enterprise-security technology, for approximately $115 million.

The company accounted for each acquisition as a purchase transaction. The effects of these acquisitions on the company's consolidated financial statements were not material. Hence, the company has not provided pro forma financial statements as if the companies had combined at the beginning of the current period or the immediately preceding period.

The company engaged a nationally recognized independent appraisal firm to express an opinion on the fair value of the net assets that company acquired to serve as a basis for the following allocation of the purchase price.

(Dollars in millions)	Sequent	Mylex	DASCOM
Purchase price	$828	$259	$115
Tangible net assets	383	67	(17)
Identifiable intangible assets	187	35	13
Current technology	87	26	19
Goodwill	183	145	92
In-process research and development	85	7	19
Deferred tax liabilities related to identifiable intangible assets	(96)	(21)	(11)

The tangible net assets comprise primarily cash, accounts receivable, land, buildings and leasehold improvements. The identifiable intangible assets comprise primarily, trademarks, customer lists, assembled work force, employee agreements and leasehold interests.

Current technology includes products currently in the marketplace as of the acquisition date and products still in the development stage and technologically feasible. The identifiable intangible assets and goodwill, and current technology will be amortized on a straight-line basis over a five- and two-year period, respectively.

Purchased-In-Process Research and Development. In connection with the acquisitions of Sequent, Mylex and DASCOM, the company recorded a pre-tax charge for research, development and engineering of $111 million ($111 million after tax, or $.06 per diluted common share) for acquired in-process research and development (IPR&D). At the date of each acquisition, the IPR&D projects had not yet reached technological feasibility and had no alternative future uses. The value of IPR&D is calculated using a discounted cash flow analysis of the anticipated income stream of the related product sales. The discount rate assumption range from 25 percent to 50 percent based on stage of completion of each of the projects, costs and complexity of the work completed to date and to be completed, and other risks associated with completing the development.

IBM Third Quarter 1999 10Q Report, pgs. 7-9

Results of operations

Expenses

(Dollars in millions)	Three Months Ended September 30			Nine Months Ended September 30	
	1999	1998		1999	1998
Selling, general and administrative	$3,501	$4,057		$10,284	$11,588
Percentage of revenue	16.60%	20.20%		16.20%	20.50%
Research, development & engineering	$1,383	$1,240		$3,857	$3,639
Percentage of revenue	6.50%	6.20%		6.10%	6.40%

Selling, general and administrative expenses for the third quarter and first nine months of 1999 decreased 13.7 percent and 11.2 percent, respectively, from the same periods in 1998. The decrease in the third quarter of 1999 was primarily driven by the net pre-tax benefit of $456 million associated with the sale of the Global Network, continuing actions within SSD for write-downs to fair value of equipment and the contract cancellation fees associated with the proposed sale of IP by NHD. (See Note No. 6 to the Consolidated Financial Statements on pages 7 through 9 for further information). The decrease in the first nine months of 1999 reflects the net pre-tax benefit of $2,066 million associated with the sale of the Global Network and the actions taken in the second and third quarter of 1999 to better align the operations of the company's Technology Group with that group's strategic direction.

The company continues to manage aggressively its infrastructure expense and its overall portfolio to allow for investment in growth segments of the business. Key ongoing investments include software marketing, major marketing campaigns and offerings for small and medium business opportunities, as well as the e-business campaign. These types of expenditures are consistent with the company's ongoing objective of growing revenue while improving the expenses-to-revenue ratio over time.

Research, development and engineering expense increased 111.5 percent and 6.0 percent, respectively, for the third quarter and first nine months of 1999, when compared with the same periods of 1998. The increases reflect a $111 million pre-tax charge taken in the third quarter of 1999 for in-process research and development associated with the acquisition of Sequent, Mylex and DASCOM. Those acquisitions are intended to improve the company's long-term competitiveness in the server, storage and Web-security markets, respectively. In addition, the increases also reflect the company's continued investments in high-growth opportunities like e-business, Tivoli systems management and Lotus products.

Interest on total borrowings of the company and its subsidiaries, which includes interest expense and interest expense and interest costs associated with rentals and financing, amounted to $366 million and $1,118 million for the third quarter and first nine months of 1999, respectively. Of these amounts, the company capitalized $8 million for the third quarter and $23 million for the first nine months of 1999.

The effective tax rate for the quarter ended September 30, 1999, was 33.0 percent versus 30.0 percent for the same period in 1998. The 3.0 point increase was principally due to the actions taken by the company in the third quarter.

The effective tax rate for the first nine months of 1999 was 35.9 percent versus 30.6percent for the same period in 1998. The 5.3 point increase from the 1998 rate was primarily a result of the actions taken by the company in the second and third quarters.

Financial condition

During the first nine months of 1999, the company continued to make significant investments to fund its future growth and increase shareholder value. These investments included expenditures of $4,284 million for research, development and engineering, $4,217 million in Plant, rental machines and other property and $5,140 million for the repurchase of the company's common shares. The company had $6,026 million in Cash and cash equivalents and Marketable securities at September 30, 1999.

Cash flow

(Dollars in millions)	Nine Months Ended September 30 1999	1998
Net cash provided from (used in):		
Operating activities	$6,760	$6,541
Investing activities	(559)	(4,486)
Financing activities	(6,831)	(3,703)
Effect of exchange rate changes on cash and cash equivalents	(163)	95
Net change in cash and cash equivalent	($793)	($1,553)

Working capital

(Dollars in millions)	At September 30, 1999	At December 31, 1998
Current assets	$42,877	$42,360
Current liabilities	37,778	36,827
Working capital	$5,099	$5,533
Current ratio	1.13:1	1.15:1

Current assets increased $517 million from year-end 1998 primarily due to increases of $258 million in Cash and cash equivalents and Marketable securities, and $299 million in Prepaid expenses and other current assets. The increase in Cash and cash equivalents and Marketable securities resulted primarily from cash generated from operations and the net proceeds from the sale of the IBM Global Network, offset by stock repurchases, capital expenditures and strategic acquisitions. The increase in prepaid expenses and other current assets is mostly due to increases in deferred tax assets from year-end 1998.

IBM Third Quarter 1999 10Q Report, pgs. 16 - 18.

TILL V SCS CREDIT CORP.: A TUTORIAL IN SUBPRIME INTEREST RATE DETERMINATION

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A recent ruling by the United States Supreme Court in Till v SCS Credit Corp. 124 S. Ct. 1951 (2004) provides the finance professor with a unique opportunity to present a practical application of theory. As a result of the Supreme Court's ruling, secured creditors must now develop and justify an approach for determining the appropriate interest rate on consumer loans to be charged default debtors under Chapter 13 of the Bankruptcy Code. Since economic and financial theory must be used to derive practical results, the finance professor can develop a valuable classroom example linking law with finance.

TILL v SCS CREDIT CORP., 124 S. CT. 1951 (2004)

On May 17, 2004, the U.S. Supreme Court issued its decision in *Till v. SCS Credit Corp.*, 124 S. Ct. 1951. In that case, consumer debtors, Lee and Amy Till, had purchased a used truck from a subprime lender, SCS Credit Corp., pursuant to a financing agreement by which they agreed to pay an annual contractual interest rate of 21 percent. Almost one year after entering into the contract, the debtors failed to make the required payments and filed for Chapter 13 bankruptcy. At that time, Till owed $4,000 on the truck. As part of their repayment plan, the debtors proposed to pay the secured creditor's claim at the rate of 9.5 percent per year. This rate represented the national prime rate (8 percent at the time) plus a premium of 1.5 percent for the risk of nonpayment. The secured lender, SCS, objected and argued that it was entitled to repayment at the contract rate of 21 percent.

The question presented in this case was which method a court should use to calculate the rate of interest to be paid a secured creditor when allowing a debtor to "cram down" a plan of reorganization.[1] Under the Bankruptcy Code, a Chapter 13 debtor must promise each creditor future payments "not less than the [claim's] allowed amount." When a repayment plan includes a series of payments or installments, as Till's did, the installments must equal the "total present value" of the amount owed.

The Supreme Court's description of the decisions by the lower courts demonstrates the divergence of opinions on the subject. The following rates were adopted by various courts:

- **Formula rate**: risk-free rate plus adjustment for risk.
- **Coerced loan rate**: rate the creditor would have obtained on loan of equivalent duration and risk.
- **Presumptive contract rate**: the pre-petition contract rate, 21 percent in this case, which could be challenged with evidence that a higher or lower rate should apply.

- **Cost of funds rate**: that rate reflecting what it would cost the creditor to obtain the cash equivalent of the collateral from another source.
- **Risk-free rate**: a rate that compensates the lender for inflation, but not for the risk of nonpayment.

THE DECISIONS OF THE COURTS

As the case made its way through the lower courts, each employed a different approach for calculating what it believed was the appropriate interest rate (see Exhibit 1 for more details).

Lower Courts

Over the finance company's objection that the interest rate did not accurately reflect the present value of its security interest in the truck, the bankruptcy court found that the appropriate rate was a “formula” rate combining the prime rate - which it deemed to be essentially risk-free - plus a 1.5 percent increment to compensate the lender for the risk of its “new” loan. On appeal, the district court reversed the bankruptcy court’s decision, ruling that the “coerced loan rate”, called such because proponents view cram downs as a new involuntary loan made by the creditor to a bankrupt debtor, should apply. It ruled in favor of the pre-petition (i.e. 21 percent) rate pointing out that the proper rate was that at which the lender might reinvest its funds were it permitted to foreclose on the collateral. On further appeal, a divided Seventh Circuit Court of Appeals modified the approach of the district court slightly, ruling that the pre-petition contract rate was presumptively the proper rate but that the parties could introduce evidence that a higher or lower rate should apply. A dissenting judge on the panel advocated a cost of funds approach requiring an analysis of the lender’s cost of obtaining the cash equivalent of the collateral from an alternative source.

Supreme Court

Like the lower courts, the Supreme Court also failed to reach a consensus with respect to the calculation of the appropriate rate of interest. Of the nine Supreme Court judges on the bench, four favored the formula approach, which begins by using the national prime rate as a “base rate”. The opinion of the four judges subsequently became the plurality opinion. They stated that the base rate could then be adjusted to reflect factors such as the circumstances of the estate, the nature of the security, and the duration and feasibility of the reorganization plan. The result is that the analysis begins with a low estimate of the interest rate and places the burden on the creditor to adjust that rate upward.

The plurality noted that the coerced loan rate and the presumptive contract rate were improper because they were based on the circumstances of the particular lender, including costs, overhead, and lending practices, and overcompensate creditors by covering factors such as profits and transactions costs, that should not be relevant in the cram down context. Similarly, the cost of funds rate focuses on the particular creditor’s cost of borrowing rather than the debtor’s circumstances.

The plurality added that the prime-plus formula approach was best because it was “straightforward, familiar, and objective.” Moreover, they stated that this approach depended only on the state of financial markets, the circumstances of the bankruptcy estate, and the characteristics of the loan, not on the creditor’s circumstances or prior dealings.

Four other judges filed a dissenting opinion. They favored a contract rate based on the assumptions that the subprime credit market is competitive and largely efficient, and that the risks associated with a Chapter 13 plan are at least as great as at the time of the initial loan. They emphasized the risks of default in Chapter 13 bankruptcies and reasoned that the pre-bankruptcy contract rate is the closest approximation to the appropriate market rate and should serve as a lower bound for the interest rate in a cram down. This opinion offers either party the opportunity to prove that a higher or lower rate should apply based on changes in financial market conditions.

The ninth judge, Justice Thomas, concurred in the plurality's judgment under the facts of the case. However, he favored the use of the prime rate only, arguing that the statute said nothing about compensating creditors for debtor-specific risks. He advocated that the risk of default not be included anywhere in the analysis.

The plurality's choice of interest rate was driven by the need for a uniform approach that was familiar to the finance community and minimized the need for expensive evidentiary proceedings. Additionally, they argued that the inquiry should be objective, with no need to consider each creditor's circumstances (*e.g.,* pre-bankruptcy dealings or alternative loans he could make if he foreclosed). The argument was that all similarly situated creditors could be treated similarly.

The positions held by the plurality and the dissent are noticeably different. First, the opinions diverge based on their assumptions about the rights of creditors in cram downs. Second, the plurality begins from a low base rate and requires the creditor to present evidence supporting a higher rate to compensate for the risk of nonpayment. The dissent begins from a high presumptive contract rate and then requires the debtor to present evidence supporting a lower rate (Rankin and Alliotts, 2004). Third, the differences reflect a different view as to the risk of nonpayment posed by a Chapter 13 debtor. Fourth, the two opinions differ on the nature of the "value" a secured creditor is entitled to receive under a cram down plan. For the plurality, this means compensating the secured creditor only for the time value of money and the relatively slight risk of default. The dissent, by contrast, aims for an interest rate that will make the secured creditor "indifferent" to receiving a lump sum payment now versus a stream of payments in the future. They, accordingly, state that the risk premium should reflect the probability of plan failure, the rate of collateral depreciation, the liquidity of the collateral market, and administrative expenses of enforcement, in addition to the creditor's profit and overhead (Rapisardi, 2004).

It is likely that the plurality's formula or prime-plus approach will be the method applied by bankruptcy courts (Yerbich, 2004). However, while the Supreme Court decision establishes a basis for interest rate determination, it offers no guidance with respect to the practical construction of the interest rate. In particular, the plurality states, "We do not decide the proper scale for the risk adjustment, as the issue is not before us."[2] It left this aspect of the interest rate computation to the bankruptcy courts.

FINANCIAL ANALYSIS

The financial analyst can shed considerable light on the issue of interest rate determination by recourse to financial and economic theory. We provide one such approach paying heed to the plurality's opinion that the prime-plus rate of interest should be objective and depend only on a) the state of financial markets, b) the circumstances of the bankruptcy estate, and c) the characteristics of the loan. The financial analyst can add value by developing a proper adjustment for risk so as to make the Supreme Court ruling operational.

At the outset, note that a mix of quantitative and qualitative factors determines the nominal interest rate on a loan. Conceptually, the following factors make up this rate:

- *The real risk-free rate of interest*: This is the interest rate that would exist on a risk-less security if no inflation were expected over the life of the loan.
- *Inflation premium*: A premium for the average inflation rate expected over the life of the loan.
- *Default risk premium*: A premium for the possibility that the borrower will not pay interest or principal at the stated time and in the stated amount.
- *Maturity or Term risk premium*: A premium charged for the possibility that credit market conditions might change with time in a way that could adversely affect the lender's profitability on an existing loan.
- *Liquidity premium*: A premium reflecting the possibility that the loan collateral might not be convertible into cash on short notice at a reasonable value.

Practical estimates of each factor determined using available financial market data are given below.

The real risk-free rate of interest

This is a rate that a lender would require merely for foregoing the use of funds, holding all elements of risk constant. This rate cannot be directly observed. However, in 1997 the U. S. Treasury began issuing Treasury Inflation Protected Securities (TIPS) that offer investors (lenders) principal protection from inflation over the life of the security. The appropriate-maturity yield on this security is commonly used as a proxy for the real interest rate in the economy.

On October 1, 2004, *The Wall Street Journal* reported that the yield on an approximate five-year (January 2009 expiring) inflation-indexed Treasury security was 0.92 percent. We use this as an approximation of the current real interest rate in the economy.

Inflation premium

Since inflation erodes the value of money, lenders seek compensation in the form of an inflation premium. The common approach to estimating an inflation premium is to compute the excess of the yield on a Treasury-issued security over the yield on similar-maturity TIPS.

On October 1, 2004, the yield on a five-year (August 2009 expiring) Treasury security was 3.42 percent, while the yield on a five-year inflation-indexed Treasury security was 0.92 percent. The difference of 2.50 percent reflects the market's estimate of inflation over the next five years.

Conceptually, the yield on a nominal Treasury (not inflation-protected) security, i.e. the combination of the real risk-free rate of interest and the inflation premium, serves as a starting point or base for the interest rate computation. This is commonly referred to as the risk-free interest rate. In this case, this would the 3.42 percent, as reported earlier.

However, this rate must be adjusted for the lender's normal overhead and regular business expenses. Thus, the "base rate" (as discussed in *Till v SCS*) used in the interest rate computation is typically the "Treasury yield plus". From a practical standpoint, the base rate used by most lenders is the prime rate, defined by *The Wall Street Journal* as the base rate on corporate loans posted by at least 75 percent of the nation's 30 largest banks. The prime rate published by the Wall Street Journal on October 1, 2004 was 4.75 percent, and is used in the analysis that follows as the base rate.

Default risk premium

The premium for nonpayment or default is estimated in different ways in different segments of the market for credit. There are several issues involved in the computation of this premium.

In evaluating the credit or default risk of consumers, most lenders rely on a credit score. The credit score is a number generated by a mathematical algorithm based on information in the borrower’s credit report, and compared to information on thousands of other individuals. Most consumer (especially mortgage and automobile) lenders rely on credit scores such as FICO, Beacon or EMPIRICA, which are used by the leading credit-reporting agencies, *i.e.* Experian, Equifax and Transunion.

Scoring is not a measure of a borrower's income, assets, or bank account - it is based solely on the data within the credit file. These scores include past credit problems, delinquencies and bankruptcies. Using the FICO system as an example, the scoring scales tend to range from 300 to 800, with higher scores indicating better credit quality.

In addition to the credit score, lenders require borrowers to submit a loan application. This application contains information about the individual’s financial data and obligations and is used to generate various ratios and measures of loan quality.

The ultimate lending decision is made after a careful evaluation of both quantitative and qualitative factors. In addition to information from credit scores and the loan application, the lender evaluates the relationship with the borrower, other business that the borrower has with the lender, the quality and liquidity of the collateral, and similar issues. Clearly, an element of subjectivity exists which is unavoidable. Using the quantitative and subjective factors, potential borrowers are placed in various risk classes.

The loan is then priced in accordance with current market conditions in the particular segment of the market for credit and the specific guidelines of the lender. Thus, a borrower in the highest quality class would qualify for loans at the best rate, while borrowers in lower quality (higher risk) classifications might either fail to qualify for loans from conventional lenders or qualify for loans at higher rates of interest.

From a practical standpoint, we estimate the default risk premium by examining the spread between the yields on high- and low-quality bonds of similar maturity on the assumption that the default risk premium for a subprime borrower, who is close to, or in, bankruptcy, would be viewed by a lender the same as a poor quality corporate borrower. Stated differently, the subprime borrower and the poor quality corporate borrower are both on the edge of bankruptcy, and would be viewed equally risky by lenders. On October 1, 2004, *BondsOnline* reported that the spread between the yields on Caa/CCC and triple-A industrial bonds was 1379 basis points.[3] Therefore, the appropriate default risk premium for a typical subprime borrower is 13.79 percent as reported in Exhibit 2.

In Exhibit 3, we vary the assumptions concerning the borrower’s default risk. Our interest rate estimates for moderate and low-risk debtors vary significantly from the estimate for a high-risk debtor reported in Exhibit 2. We return to the Exhibit 3 estimates later.

Maturity Risk Premium

This premium is charged for the possibility that credit market conditions might change with time in a way that could adversely affect the lender's profitability on an existing loan. This is also called interest rate risk.

A bond investor (lender) will see the value of his bond decline as market interest rates rise. Similarly, consider a lender who made a 5-year loan two years ago at a fixed interest rate of 5 percent. If market interest rates have risen, such that similar risk and maturity loans can now be made at 8 percent, the profitability of the lender's loan portfolio is adversely affected due to his inability to adjust the rates on previous loans for the new higher interest rates in the market. In essence, the lender bears an opportunity cost of 3 percent. Typically, the probability of market interest rates rising increases with the term of the loan. Consequently, lenders build in a compensation for this element of risk, with longer maturity loans bearing a larger maturity risk premium than shorter maturity loans.

From a practical standpoint, one can approximate the maturity risk premium by examining the spread between the yields on similar-risk securities with differing maturities. On October 1, 2004, *The Wall Street Journal* reported that the yield on a five-year Treasury note was 3.42 percent, while the yield on a 3-month Treasury bill was 1.68 percent. Therefore, the spread between the yields was 1.74 percent. Thus, the five-year maturity risk premium is approximated to be 1.74 percent.

Liquidity Premium

This is a premium reflecting the possibility that a security might not be easily convertible into cash at a reasonable price or value. Securities with short-term maturities and an active secondary market are considered to be more liquid compared to securities with longer maturities and/or less liquid secondary markets. In the context of consumer loans, this premium has implications for the lender's ability to sell the loan collateral (in the event of default) easily and at a reasonable price. Moreover, as dissenting Justice Scalia points out in *Till*, "the costs of foreclosure are substantially higher in bankruptcy because the automatic stay bars repossession [of collateral] without judicial permission." If default were anticipated, lenders might reasonably add a liquidity premium. Moreover, if the collateral (for instance, the car in a consumer automobile loan) is old/used/in poor condition, then the sale of such collateral is unlikely to recover for the lender the outstanding loan balance and attendant costs of recovery.

From a practical standpoint, it is very difficult to estimate a liquidity premium under these circumstances. In the case of consumer automobile loans, however, a reasonable proxy can be generated by comparing similar-maturity interest rates on loans for new and used cars, on the assumption that the primary determinant of the spread is the difference in re-sale values of the two types of cars. On October 1, 2004, *Bankrate.com* reported that average rates on 60-month used and new cars were 8.34 percent and 7.44 percent, respectively. This gives a spread of 0.90 percent, which is used as an estimate of the liquidity premium.

Results

In Exhibit 2, we list the various estimated components of the interest rate for a typical subprime debtor. Our final estimate of 21.18 percent is based solely on quantifiable factors and current market conditions. The rate for a subprime consumer borrower of 21.18 percent contains a risk premium over the prime rate of 16.43 percent, and is composed of a default risk premium of 13.79 percent, a maturity risk premium of 1.74 percent, and a liquidity risk premium of 0.90 percent.

In Exhibit 3, estimates of interest rates are presented under different risk assumptions. Compared to the 21.18 percent rate reported in Exhibit 2 for a high-risk debtor, the interest rate that might be charged a moderate risk debtor (A) drops to 9.43 percent, while the interest rate for a low risk debtor (B) could drop to 8.28 percent. In cases where the maturity risk premium and/or liquidity premium is varied (C and D), rates could further change. Our estimates indicate that the ultimate interest rate is driven significantly by assumptions made concerning risk premiums, especially the default risk premium.

In Figure 1 the estimated interest rate for a spectrum of default risk premiums is plotted, assuming both the maturity and liquidity premiums are relevant. It is clear that a wide range of interest rates is possible depending on the assumption made concerning the borrower's default risk. This is especially relevant because of the Supreme Court's opinion that the "risk of non-payment under a Chapter 13 plan is materially different (and presumably lower) than the risk of non-payment on a pre-petition loan." Depending on the circumstances of the bankruptcy estate and the characteristics of the loan, different assumptions concerning default risk are likely to be allowable in the courts. Our estimates suggest that various interest rate outcomes are possible depending on the facts of the case.

CONCLUSION

Those who teach in the financial institutions and markets area constantly search for real-world examples that help students understand theory. The application of theory helps students understand theory. The *Till v SCS Credit Corp.* (2004) Supreme Court ruling provides a very useful setting for the practical application of the determination of interest rates. The interest rate developed here helps students understand the real risk-free interest rate, and the risk premiums for inflation, default, maturity and illiquidity. The analysis also facilitates an understanding of the linkages between law and finance.

The traditional finance (TF) approach to interest rate determination differs from the court rulings in *Till v SCS* in at least a couple of ways. In their definition of a risk-free interest rate, the courts chose throughout to adopt the prime rate, also referred to in the court documents as the "base rate". The TF would instead use the nominal yield on a Treasury security as the risk-free rate on the assumption such securities are essentially default risk-free. The prime rate, which is typically higher than the yield on a Treasury security, might be considered a "Treasury yield plus" rate. The courts, therefore, have allowed not only for an inflation risk premium and "relatively slight default risk", but also for lender costs of doing business (e.g. overhead and other expenses). The plurality's opinion, however, states that the latter should not be considered in a Chapter 13 cram down.

Also, the plurality's attempt to preserve Chapter 13 plan feasibility by keeping risk premiums low shifts the risk of the reorganization process to dissenting creditors. The TF approach would recognize that the market for credit is governed by supply and demand conditions, i.e. by both debtor and creditor characteristics. The Court's explicit ruling that neither creditor circumstances, nor any prior dealings between debtor and creditor be considered is contrary to the traditional manner in which business is conducted in the market for credit (see the discussion of the default risk premium). The approach of the plurality forces the typical underwriting analysis on any secured loan to only reflect macroeconomic factors such as inflation and the money supply. This stands in contrast to the specific underwriting circumstances of the loan, the collateral and the debtor. Some of these issues are discussed in the maturity and liquidity risk premium sections. While the TF approach adopts the plurality's stance of starting with a low rate and adjusting it upward for various risks, the TF approach is more consistent with the dissent's approach when determining the risk premiums. Specifically, the TF approach would seek to make the secured creditor indifferent to receiving a lump sum payment now versus a stream of payments in the future. The TF approach would require an evaluation of the probability of plan failure, the rate of collateral depreciation, the liquidity of the collateral market, and administrative expenses of enforcement, in addition to the creditor's profit and overhead, as stated by the dissent.

What is likely to occur, as a consequence of the plurality opinion, is reflected in the dissent's view that if subprime lenders are systematically undercompensated in bankruptcy, they will charge higher rates, or, if they already charge the legal maximum under state law, lend to fewer of the riskiest borrowers. This in turn could affect the securitization market for portfolios of subprime loans (secured by assets other than the principal residences of the principal borrowers) as investors will require more of a cushion to address bankruptcy issues, with a consequent reduction in liquidity and yield in these markets.

Since the present value analysis of a stream of deferred payments is substantially the same in both Chapter 13 and Chapter 11 cram down reorganization cases, the *Till* decision may begin to be utilized by courts in Chapter 11 cram down cases as well.[4] However, the impact of *Till* is unclear. Himmelstein (2004) and Steiner and Gottesman (2004) point out that the plurality's approach seems inadequate to address the wide range of businesses, collateral classes, Chapter 11 plans, and other factors that can have a meaningful effect on the risk of nonpayment. In a recent Chapter 11 ruling, Judge Raslavich, in re *Prussia Associates* [Bankr. E.D. Pa. 2005], held that "*Till* is instructive, but is not controlling, insofar as mandating the use of the 'formula' approach in every Chapter 11 case."

Ultimately, the Till decision leaves significant uncertainty in the area of valuation of deferred payment streams. Moreover, it is not clear at this time if the Supreme Court ruling will actually reduce costly evidentiary hearings. Indeed, in one case, the U.S. District Court for the District of Kansas (In re *Smith*, 310 B.R. 631 [D. Kan. 2004]) has already reversed the confirmation of a Chapter 13 plan that had used a formula of the treasury bill rate plus a 3 percent risk adjustment – finding that the bankruptcy court was required to conduct a case-by-case evidentiary hearing to determine the proper risk adjustment (Connolly, 2004).

Finally, note that neither the courts nor the TF approach reasonably use consumer information to develop risk premiums for consumer debtors. Our approach, which reflects the TF approach, uses corporate debt security proxies to estimate default risk premiums. Data limitations make this a developing area of study in finance.

NOTES

1. A cram down occurs when the bankruptcy court confirms a plan of reorganization over the objection of a secured creditor that it is being deprived of its contractual right to possession of the collateral and is, instead, being provided with the promise of installment payments over time.
2. They caution, however, that the cram down provision obligates the court to select a rate high enough to compensate the creditor for its risk but not so high as to doom the plan. "If the court determines that the likelihood of default is so high as to necessitate an "eye-popping" interest rate, the plan probably should not be confirmed."
3. Note that Caa and CCC are Moody's and S&P's credit ratings, respectively, for poor quality bonds.
4. Chapter 11: A reorganization proceeding in which a troubled business may continue in business or in possession of its property as a fiduciary while a bankruptcy court supervises the reorganization of the company's contractual and debt obligations.
   Chapter 13: A repayment plan for individuals which provides for repayment of some or all of the debts out of future income over 3 to 5 years under court supervision.

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Data Sources
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Corporate bond spreads from BondsOnline.com:
Available at: http://www.bondsonline.com/Todays_Market/Corporate_Bond_Spreads.php

New and used car average rates from Bankrate.com:
Available at: http://www.bankrate.com/brm/rate/auto_home.asp

Exhibit 1
Interest Rates Adopted by Courts in *Till v. SCS Credit Corp*., 124 S. Ct. 1951

Lower Courts	Rate	Estimate	Supreme Court	Rate	Estimate
Bankruptcy Court	Formula rate: Prime + Risk Premium	8% + 1.5% = 9.5%	Plurality	Formula rate: Prime + Risk Premium	Not provided
District Court	Coerced loan rate	21%	Dissent	Presumptive contract rate	21%
Seventh Circuit Court majority	Presumptive contract rate	21%, subject to adjustment	Justice Thomas	Risk-free rate (Prime rate)	8%
Seventh Circuit Court dissent	Cost of funds rate	Not provided			

Note: The prime rate at the time of the court hearings was 8%.

Definitions:
- Formula rate: risk-free rate plus adjustment for risk [adopted by Bankruptcy Court and Supreme Court plurality].
- Coerced loan rate: rate the creditor would have obtained on loan of equivalent duration and risk [adopted by the District Court].
- Presumptive contract rate: the pre-petition contract rate, 21% in this case, which could be challenged with evidence that a higher or lower rate should apply [adopted by the Seventh Circuit Court majority and Supreme Court dissent].
- Cost of funds rate: What it would cost the creditor to obtain the cash equivalent of the collateral from another source [adopted by the Seventh Circuit Court dissent].
- Risk-free rate: the prime rate, which compensates the lender for inflation, but not for the risk of nonpayment

Exhibit 2
Interest Rate for a Typical Subprime Consumer Borrower

Base Rate: Prime rate [Source: *The Wall Street Journal*]	 4.75 percent
Default Risk Premium Yield on triple-C rated bonds in excess of yield on triple-A rated bonds [Source: BondsOnline.com]	 13.79 percent
Maturity Risk Premium Yield on 5-year Treasury security in excess of yield on 3-month Treasury security [Source: *The Wall Street Journal*]	 1.74 percent
Liquidity Premium 60-month loan rate on used cars in excess of 60-month loan rate on new cars [Source: Bankrate.com]	 0.90 percent
Interest Rate:	**21.18 percent**

Note: Market data is from October 1, 2004

Assumptions:
1. The 5-year loan is for a used automobile
2. No early payment of loan is permitted
3. A subprime consumer borrower is as risky as a "poor quality" corporate borrower
4. Rates on new and used cars differ solely based on the resale values of cars

Exhibit 3
Interest Rates with Alternative Risk Premium Adjustments

Components	**Risk Assumption**	**Measure**	**Interest Rate Estimates** A (%)	B (%)	C (%)	D (%)
Base Rate	Prime rate	Prime rate	4.75	4.75	4.75	4.75
Default Risk Premium	Moderate Risk Debtor	Yield on Ba1/BB+ rated bonds in excess of yield on triple-A rated bonds	2.04		2.04	2.04
	Low Risk Debtor	Yield on Baa1/BBB+ rated bonds in excess of yield on triple-A rated bonds		0.89		
Maturity Risk Premium	Yes	Yield on 5-year Treasury security in excess of yield on 3-month Treasury security	1.74	1.74		
	No	None			0.0	0.0
Liquidity Premium	Yes	60-month loan rate on used cars in excess of 60-month loan rate on new cars	0.90	0.90	0.90	
	No	None				0.0
Interest Rate			**9.43**	**8.28**	**7.69**	**6.79**

See Exhibit 2 note and assumptions 1, 2 and 4.

Figure 1. Interest Rate for Different Default Risk Premiums