

## ***Cash Flow: Know Its Value Today When Buying, Selling, or Expanding***

- **Rate of Return Components**
- **Risk and Present Value Analysis**
- **You as Seller, You as Buyer**
- **Today's Value of \$500,000 Purchase Price**
- ***Case Study #1: Arcon Distributors, Inc.***
- ***Case Study #2: Jordan Components Corp.***

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This **Resource Report** was written by Thomas J. Martin, author of *The Business Library*. Mr. Martin is an investment banker, valuation expert, and the author of several finance and valuation books. Over the last 30 years, he has presented scores of workshops for business associations, accounting firms, banks, and other organizations on valuing, buying, and selling businesses.

**Any business decision where dollars are spent today for a return in the *future* involves adjusting the receipt of those future dollars to their value *today*.**

## ***Cash: Know Its Value Today and Tomorrow***

Dear Reader:

You're constantly making investment decisions in your business — whether to take on a new product line, buy another business, increase advertising expenditures, or add new salespeople. In each instance, you're spending cash *today* in hopes of a future return. Too often, such investment decisions are made on the basis of informal projections or your instinctive assessments of the future. These factors certainly should be considered, but your first step should be to assess whether the investment makes economic sense. The Cash Flow Method explained in this *Resource Report* is one way to make that economic assessment. It is useful in such situations as the following:

**#1** — When expending money *today* in exchange for a future stream of *cash inflow*.

**#2** — When selling a business in exchange for cash received in future years.

**#3** — When a business activity is undertaken *solely* to fulfill a specific project or contract, e.g., a large contract from the government or another customer.

**#4** — When you are evaluating a new investment. *Example:* A new marketing area is being developed or a new product is being launched and the start-up costs will be incurred over a specified time period (e.g., over the next three years). In each instance, the questions are: What is your desired return on those costs and what should your net cash inflow be to obtain that annual return?

To use the Cash Flow Method, take the following steps:

- Project the annual cash inflow and outflow (the net cash flow) for each of the years being analyzed, say, five years.
- Decide on the present value (or discount) rate that is to be applied to the cash flows over the five-year period. (The present value rate specifies the minimum annual return you expect an investment to earn each year, taking into account competing investment alternatives and risk.)
- Apply the present value rate to the projected cash flow to determine the values today.

This is what present value analysis is all about! It compares the value of dollars paid out *today* for dollars received in *future* years. Preparing data for cash flow and present value analysis will involve some uncertainties. But at the least, you will have the numbers (and values *today*) to make a more informed decision and, hopefully, the right one. In total, this Report accomplishes two objectives:

- Shows you how to compute the value of cash paid out or received over time.
- Illustrates the concept by applying it to the sale of a business which involves a *combination* of cash today and installment payments to be received over five years.

The analysis in the two case studies will also help you better understand your own business (when selling) or another business (when buying).

And, if you aren't in the position to apply the concepts now, work through the numbers anyway. You will be able to apply it the next time you are considering an expenditure today for any investment that will bring in cash tomorrow.

For the components of an interest rate and present value rate, please see the next page. Case Study #1 starts on page 6. We hope you benefit from and enjoy reading this Report.

Tricia Walsh, Publishing Director  
*The Business Library*

## Rate of Return Components

When deciding which annual return or present value rate to use on projected income and cash inflow, e.g., a 10%, 15%, or even a 30% rate, you must consider the following factors. All four have an impact on the rate of return you select to use when evaluating investment alternatives and projected cash flow.

- Basic *returns* available in today's marketplace — i.e., alternative investment opportunities, such as the yields on triple-A bonds and certificates of deposit.
- The *risks* involved in obtaining the cash inflows — the greater the risk, the higher the return needed and thus the higher the present value rate used.
- *Inflation* — the dollars you receive or pay years from now are *not* worth the same dollars received or paid today.
- *Liquidity* — the ability to promptly convert an asset into cash without any significant loss of principal. *Example:* A publicly held stock or bond can be sold the same day it is purchased. In contrast, an ownership position in a closely held business is very illiquid; it can't be readily sold and converted to cash. The same is true for an installment note.

*Axiom:* Use a higher return rate, say 20%, if the risk or uncertainty is greater, and a lower rate of return, say 12% or 15%, when the income or cash flow stream is fairly certain. However, the minimum annual return should be the *return on investment* you require when making major capital investment decisions. If that minimum return is 25% a year, then use that percentage as your present value rate on projected income.

## ***Case Study #1: Sale of Arcon Distributors, Inc.***

Two of your top executives offer you \$500,000 for your business. You feel it's a good price. It represents:

- 1.7 times your company's net book value of \$300,000 and
- 12 times its net income of \$42,000.

**But there's a catch.** The two executives can pay you only \$100,000 cash right now but will give you a five-year, 5% note for the remaining \$400,000. *The terms are:* You will be paid \$80,000 a year over a five-year period: 20% of your stock goes to the buyers upon payment of the initial \$100,000 at closing and 16% each year as the \$80,000 payment is made.

You have mixed feelings. After all, you are getting only 5% interest on the outstanding balance of \$400,000 when high-quality, corporate bonds are yielding about 8%. However, you are being paid \$500,000, a multiple of 1.7 times your company's net book value (with assets already adjusted to fair market value) of \$300,000. *You want to sell!* But the question that nags you:

### **Is the \$500,000 price fair?**

The fact is you will never know until you calculate the real value to you over the full five years (the payout period), and that you haven't done. What you need to know is today's (present) value of the payments to you, including the 5% interest. Here is how to value the entire transaction — *in today's dollars*.

### **Risk and Present Value Analysis**

*Your questions are:*

- How much is the money paid to me over the five-year period worth in *today's dollars*?
- What risks do I face in waiting to receive the money?
- How much will inflation erode the value of the future payments?

For the purpose of demonstrating the impact of the five-year payments, we're going to ignore the tax implications and focus on *today's* value of the payments. We're also assuming a current yield for corporate bonds is 8% — a marketplace interest rate which represents the current cost of money to the best companies; it takes into consideration inflation, risk, liquidity, etc.

*Assumption:* The present value rate used to value the projected cash inflow will be 12%. We will show you how we arrived at that number and why the 5% interest rate is not a sufficient annual return to compensate you for the risks associated with the \$400,000 payout over five years.

### ***The Risks: Why a 12% Present Value?***

As indicated, the current rate for long-term bonds of 8% is the best rate obtained by well-heeled companies, three points higher than your 5%. And you have other problems that should be considered in setting the interest rate:

1. Two individuals (not a company) owe you the money; and they control the payments to you.

2. Yes, your unpaid-for stock will be held in escrow; but after two payments of \$80,000, they will still owe you \$240,000 and have 52% of your stock. That's a controlling interest.

3. As owners instead of employees, they get a closer look at your company while running it. They may hassle you by questioning your books, records and, just as important, the representations you made in the closing documents when you sold the business to them.

4. The high-grade bonds yielding 8% are *liquid*; you can buy and sell the bonds in the same day. The promissory note you took in return for your business is illiquid; you can't sell it. And, if you borrow against the installment note, all of the profit on the note may be immediately taxable income.

5. For all practical purposes, the \$400,000 due you will be paid out of your company's future profits. If the business doesn't do well and the new owners walk away from it, personal guarantees will help; but they better be iron-clad guarantees supported by collateral other than the stock in your own business.

6. Lenders charge higher interest rates on certain loans for a reason: there's added risk. Even some collateralized financings can be four to six points over the

prime rate. So, don't be shy; use an interest rate and present value rate that truly reflect the risks of receiving the \$400,000 note due you.

Finally, there is always the uncertainty of receiving the payments on time and *without* any disputes. That's why we used a present value rate of 12%, but you can use a 15% or even a higher rate. It depends on your analysis of the risks and the credit-worthiness of the buyer. *Axiom:* The higher the risk, the higher the interest rate and present value rate used when evaluating any investment or installment note.

### **How to Calculate Today's Value**

To determine today's value of the \$500,000 transaction, we're going to use present value factors. As stated, present value is the value of a dollar which is promised you now, but not paid until some future time. Thus, it's discounted. At a 12% present value rate, for example, a dollar received a year from now is worth only 89.3 cents today, a discount of 10.7%.

Now, let's construct a simple table that will show you how and when the payments are made to you, and then we can calculate the values. Your total cash inflow (principal repayments and interest) is over five years. Simply lay out the cash inflow by year and apply a 12% present value (P.V.) factor to each amount. *Note:* Since you receive \$100,000 cash *today*, it's worth \$100,000. Thus, the present value factor is 1.0. For other Present Value Rates and Factors, please see page 13.

### ***Business Sale: Value of \$500,000 Purchase Price***

<u>Year</u>	<u>Principal</u>	<u>Interest*</u>	<u>Total</u>	<u>12% P.V. Factor</u>	<u>Value Today</u>
Today	\$100,000	\$ 0	\$100,000	1.000	\$100,000
1	80,000	20,000	100,000	.893	89,300
2	80,000	16,000	96,000	.797	76,512
3	80,000	12,000	92,000	.712	65,504
4	80,000	8,000	88,000	.636	55,968
5	<u>80,000</u>	<u>4,000</u>	<u>84,000</u>	.567	<u>47,628</u>
	\$500,000	\$60,000	\$560,000		<u><u>\$434,912</u></u>
			Discount off \$560,000		<u><u>\$125,088</u></u>

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\* Interest at 5% on outstanding balance of \$400,000 (end of year one),  
5% on \$320,000 year two, 5% on \$240,000 year three, etc.

As computed, the total purchase price in *today's dollars* is \$434,912. That represents \$125,088 or 22% less than the \$560,000 that you thought you were going to receive over the five-year period. In fact, even excluding the interest income of \$60,000, the present value amount of \$434,912 is still \$65,088 (13%) less than the \$500,000 purchase/sale price.

To show how dramatically present value rates affect the value of cash inflows received in the future, look at the value of the \$84,000 received in year five. It is worth only \$47,628 today, a difference of \$36,372 (43% less than the \$84,000 promised to you).

#### **How to Get the Full Value**

The only time a purchase price of \$500,000 will be equal to \$500,000 on an installment sale is when the interest rate received on the note is *equal* to the present value rate used. If the interest rate was 12% in the table above, it would equal the 12% present value rate used and the \$500,000 price would equal the present value of the total amount received over the five-year period. To prove this, we will insert receipt of 12% interest in the table above, and you will find that the total value of the cash inflow equals \$500,000. (For computation of today's value of the \$500,000 purchase price using a 12% interest rate, see page 14.)

***Axiom: The higher the risks, the higher the interest rate and present value rate used in evaluating the investment.***

*How to reduce risk:* Use a lender's approach. Secure the installment note by taking a lien on the company's accounts receivable, inventory, and equipment. Be sure to effect a UCC filing on those assets. Obtain the personal guarantee of the buyer and release the shares (ownership) as the note is repaid.

\* \* \*

In all transactions involving payments into the future, you must adjust for the time value of money and the risks (uncertainty) of receiving that money, in full and as promised. It's straightforward; the greater the risks, the higher the interest rate you should receive and thus the higher the present value rate used in determining the value of the transaction in *today's* dollars.

### ***Case Study #2: You're the Buyer of a Business***

If you are on the other side of the coin, i.e., purchasing another business which has a lot of debt and other risks, you might want to use a present value factor of 18% to 24% in analyzing that company's total income (net cash inflow) to you. This would lower the value of the business and thus its purchase price.

Let's look now at the sale of a business from a buyer's point of view and how you can use present value analysis to determine a fair price for the business.

You have an opportunity to buy a small division of a large company, *Jordan Components, Corp.*, a distributor of electronic components to the industrial and communications markets. Since you know the business intimately, you can accurately forecast the company's growth. Right now it's not profitable, but with your expertise and plans, you expect it can generate \$380,000 net cash flow over five years *and* have a net book value (net worth position) of \$400,000 at the end of year five. The \$380,000 net cash flow is *after* all cash outlays.

You decide that you want to earn an annual return of 24% on your investment (purchase price) to compensate you for the time and money needed to make the division profitable.

*Question:* How much should you pay for the division? The projected annual net cash flow of \$380,000 is as follows:

(In Thousands)	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
Net Cash Flow	\$ 0	\$40	\$80	\$110	\$150

*Answer:* Since you want an annual return of 24% on your money, simply compute the present value of the projected net cash flow stream. You also must include the value of the \$400,000 net worth position at the end of year five.

Referring to the present value table on page 13, under 24%, you can obtain the following present value factors:

<u>Year</u>	<u>Present Value Factor for 24% Rate of Return</u>
Today	1.000
1	0.806
2	0.650
3	0.524
4	0.423
5	0.341

All that is needed now is to prepare a table showing the net cash flows for the five-year period. You then multiply the present value factor (for a 24% annual return) by the net cash flow for each year.

<u>Year</u>	<u>Net Cash Flow</u>	<u>Present Value Factor — 24%</u>	<u>Today's Value</u>
2008	\$ 0	0.806	\$ 0
2009	40,000	0.650	26,000
2010	80,000	0.524	41,920
2011	110,000	0.423	46,530
2012	<u>550,000</u> *	0.341	<u>187,550</u>
Totals	<u>\$780,000</u>		<u>\$302,000</u>

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\* Includes \$150,000 net cash flow and \$400,000 net book value of the division at the end of year five.

As computed, the total value of the projected net cash flow stream is \$302,000 *today* — and this includes the projected \$400,000 net book value of the business at the end of year five.

In other words, if the division were purchased *today* for its net cash flow value of \$302,000 and if the projected cash flows for the five years were generated (including the projected net worth value of \$400,000), you would realize a 24% annual rate of return on your \$302,000 investment over the five-year period.

\* \* \*

That's the importance of cash flow and present value analysis! And, this analysis applies to many other business decisions, such as launching new products, expanding geographically, and adding more salespeople to increase sales and profits.

*Reminder:* Use a higher return rate than 24% if the risk or uncertainty is greater, and a lower rate of return, say 12% or 18%, when the projected income or cash flow stream is fairly certain. However, the *minimum* annual return should be the *return on investment* you require when making major capital investment decisions. If that minimum return is 30% a year, then use that percentage as your present value rate on projected income on cash flow. □

*References:*

*Exhibit 1:* Present Value Rates and Factors for \$1, next page

*Exhibit 2:* How to Get the Full Value, page 14

*Exhibit 3:* Test Yourself, page 15

## Present Value Rates and Factors for \$1

Year	8%	10%	12%	14%	15%	16%	18%	20%	22%	24%	26%	28%	30%
1	0.926	0.909	0.893	0.877	0.870	0.862	0.847	0.833	0.820	0.806	0.794	0.781	0.769
2	0.857	0.826	0.797	0.769	0.756	0.743	0.718	0.694	0.672	0.650	0.630	0.610	0.592
3	0.794	0.751	0.712	0.675	0.658	0.641	0.609	0.579	0.551	0.524	0.500	0.477	0.455
4	0.735	0.683	0.636	0.592	0.572	0.552	0.516	0.482	0.451	0.423	0.397	0.373	0.350
5	0.681	0.621	0.567	0.519	0.497	0.476	0.437	0.402	0.370	0.341	0.315	0.291	0.269
6	0.630	0.564	0.507	0.456	0.432	0.410	0.370	0.335	0.303	0.275	0.250	0.227	0.207
7	0.583	0.513	0.452	0.400	0.376	0.354	0.314	0.279	0.249	0.222	0.198	0.178	0.159
8	0.540	0.467	0.404	0.351	0.327	0.305	0.266	0.233	0.204	0.179	0.157	0.139	0.123
9	0.500	0.424	0.361	0.308	0.284	0.263	0.226	0.194	0.167	0.144	0.125	0.108	0.094
10	0.463	0.386	0.322	0.270	0.247	0.227	0.191	0.162	0.137	0.116	0.099	0.085	0.073

### Explanation of Present Value

*Present value is the value of a dollar promised to you now, but not paid until some future time. As shown in the table on page 9, a present value factor of .893 was used at the end of year one. Since that total income (principal and interest) of \$100,000 will be received one year later (not today), it is not worth \$100,000; it's worth only \$89,300.*

The .893 reflects an inherent annual return of 12%. Multiply .893 by \$1.12 (1 being \$1 of principal and .12 being a return on that \$1), and you get \$1. So basically, \$1 received one year from today is worth only 89.3 cents today (at a 12% present value rate).

Present Value Rates and Factors can be found in most financial handbooks and the calculations done on calculators and computers.

**How to Get the Full Value  
Reference Is to Page 9 (Bottom)**

***Business Sale: Interest Rate Is 12%***

<u>Year</u>	<u>Principal</u>	<u>Interest*</u>	<u>Total</u>	<u>12% P.V. Factor</u>	<u>Value Today</u>
Today	\$100,000	\$ 0	\$100,000	1.000	\$100,000
1	80,000	48,000	128,000	.893	114,304
2	80,000	38,400	118,400	.797	94,365
3	80,000	28,800	108,800	.712	77,466
4	80,000	19,200	99,200	.636	63,091
5	<u>80,000</u>	<u>9,600</u>	<u>89,600</u>	.567	<u>50,803</u>
	\$500,000	\$144,000	\$644,000		<u><u>\$500,029</u></u>

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\* Interest at 12% on outstanding balance of \$400,000 (end of year one),  
12% on \$320,000 year two, 12% on \$240,000 year three, etc.

As computed, the total purchase price in *today's dollars* is \$500,029, equivalent to the \$500,000 offer. That's because the 12% interest rate is equal to the 12% present value rate. The difference of \$29 is due to the rounding off of the present value factors. □

### **Test Yourself**

You're worried about the buyer's credit and you want to use an 18% present value rate rather than 12%. Answer these questions using the Present Value Rates and Factors on page 13.

*Question #1:* Using a present value rate of 18%, what is today's value of the \$500,000 purchase price, including 5% interest on the \$400,000 note? *Note:* Use the Table format on page 9.

*Question #2:* What is the percentage discount from the \$560,000 total cash inflow promised to you?

*Question #3:* Using a 12% present value rate, what is the value of the \$500,000 purchase price if *no* interest is paid on the \$400,000 note?

For the Answers, please see the next page.

## Answers to Questions on Prior Page

**Question #1.** Using a present value rate of 18%, what is today's value of the \$500,000 purchase price, including 5% interest on the \$400,000 note?

*Answer:* The value is \$391,772 computed as follows:

### ***Business Sale: Present Value Rate Is 18%***

<u>Year</u>	<u>Principal</u>	<u>Interest*</u>	<u>Total</u>	<u>18% P.V. Factor</u>	<u>Value Today</u>
Today	\$100,000	\$ 0	\$100,000	1.000	\$100,000
1	80,000	20,000	100,000	.847	84,700
2	80,000	16,000	96,000	.718	68,928
3	80,000	12,000	92,000	.609	56,028
4	80,000	8,000	88,000	.516	45,408
5	<u>80,000</u>	<u>4,000</u>	<u>84,000</u>	.437	<u>36,708</u>
	\$500,000	\$60,000	\$560,000		<u><u>\$391,772</u></u>

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\* Interest at 5% on outstanding balance of \$400,000 (end of year one),  
5% on \$320,000 year two, 5% on \$240,000 year three, etc.

**Question #2.** What is the percentage discount from the \$560,000 total cash inflow promised to you?

*Answer:* The percentage discount is 30%, computed as follows: \$560,000 total purchase price *less* \$391,772 (value above) *equals* \$168,228; this figure divided by \$560,000 equals 30% discount.

**Question #3.** Using a 12% present value rate, what is the value of the \$500,000 purchase price if *no* interest is paid on the \$400,000 note?

*Answer:* To answer this question, we use the table on page 9 and eliminate the Interest Column. It's calculated as follows:

***Business Sale: No Interest***

<u>Year</u>	<u>Principal</u>	<u>Total</u>	<u>12% P.V. Factor</u>	<u>Value Today</u>
Today	\$100,000	\$100,000	1.000	\$100,000
1	80,000	80,000	.893	71,440
2	80,000	80,000	.797	63,760
3	80,000	80,000	.712	56,960
4	80,000	80,000	.636	50,880
5	<u>80,000</u>	<u>80,000</u>	.567	<u>45,360</u>
	\$500,000	\$500,000		<u><u>\$388,400</u></u>

As computed, the total purchase price in *today's dollars* is \$388,400. That represents \$111,600 or 22% less than the \$500,000 price and \$171,600 (31%) less than the \$560,000 price, including interest. □

## About *The Business Library*

This **Report** is part of *The Business Library* (TBL), a collection of 90 Reports and Manuals on subjects of critical importance to business owners, executives, their families, and the professionals who advise them. TBL is produced by an editorial and research staff with an *average experience* of **30** years in helping businesses and individuals manage their finances better.

The company was formed in 1974 by Thomas J. Martin. Martin has written more than 900 articles and advisories and presented *hundreds* of workshops and seminars to *thousands* of business owners and executives on many of the subjects covered in *The Business Library*. He is an Investment Banker and an expert witness in Valuation and Succession Court Cases. He has helped *hundreds* of business owners and executives raise capital, refinance debt, prepare for succession, and value and sell their businesses.

The information in *The Business Library* has helped more than 300,000 business owners, executives, entrepreneurs, investors, and individuals manage their companies and finances better, using several million copies of our reports, manuals, advisories, books, seminar workbooks, and newsletters to guide them in their business and family planning.

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