

Gaining a Competitive Advantage: Critical Skills for CFOs and Controllers

GCA4/26/V1

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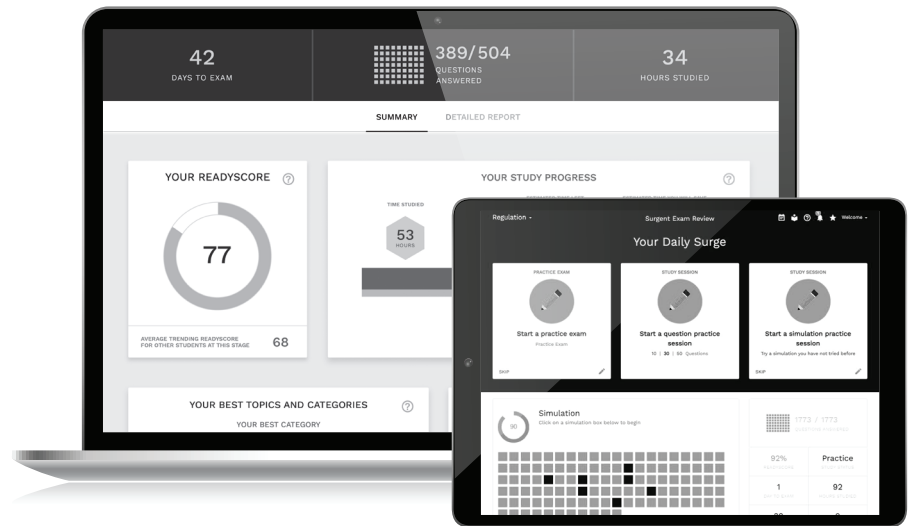
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Introduction

Let's take a few moments to talk about what to expect in this program and why it is being produced.

I. Goals of the program

A. Make you more valuable

Simply put, the objective is to make you, the finance professional, a more valuable asset to your organization. To accomplish this task, we will work on making the organization more successful and giving you the opportunity to suggest those changes. Naturally, to accomplish this we will need to agree on what success is, and that will lead off our discussion in the first chapter.

B. Be prepared for change

We recognize that the world is constantly changing, and consequently we need to change with it. For that reason, in each chapter and for each subject we will talk about the trends that are occurring in that particular discipline. This idea of change often develops a great amount of controversy since, generally, people do not like change. It is never terribly comfortable and usually means transforming thoughts and behaviors using methods with which we are not familiar. For this reason, we ask you to be open-minded. You might not like the changes suggested, and you might not agree. But please consider them since they are proven and have worked for many organizations over time.

Please look at the alternative. Ask yourself this key question:

Is your organization changing as rapidly as the world around it?

Obviously, that is a question of opinion, so there is no right or wrong answer. Stop and think about the consequences. If the organization does not change as fast as the world around it, you can make a very good case that the organization will eventually fail. That is, it will eventually go out of business or be merged into another organization that may be making faster changes. We will come back to this question several times during this program, since it comes up in virtually all subjects.

C. Be challenging

I can guarantee that you will not agree with everything discussed in this program. But I can also guarantee that it will make you think. Already, I stated that an organization that does not change as fast as the world around it will eventually fail. When I ask this question in class, I probably get 75 percent or more of the participants saying that their organization is not changing as fast as the world around it. If that is you, I can promise that you are not happy about either the question or the answer. But I can also promise that it will get you thinking about the concept of change and may even motivate you to talk with the other senior people in your organization about what should be done to increase your ability to make changes.

D. AI

In my opinion, the greatest change that has occurred affecting organizations in the past couple of years is the rise of *artificial intelligence*. Consequently, we have included an entirely new chapter in this latest revision, commenting on how AI will or already has changed specific subjects mentioned in the various

parts of the course. AI is developing so quickly that it is futile to try and teach you how to use it or even specify what tools are available. By the time you read the material, what is said will already be obsolete. I would suggest you do not read books about how to use AI in your business because by the time it goes through the writing, editing, and marketing process, the content will be well out of date.

Consequently, the chapter on AI will spend time talking about the opportunities and threats that AI presents to the financial professional, but it will not tell you how to use it. In my opinion, for that type of instruction, you will need to watch podcasts and interviews, read newsletters, and follow other methods of communication that can reach you much faster.

II. Organization of the course

A. Technical skills

Finance professionals need technical skills to be successful.

We will cover several very important technical aspects necessary for the success of the organization and the success of the finance professional. Again, we will concentrate on what is changing and how we can keep up with that change.

B. For all types of organizations

Since probably the majority of organizations represented in our seminars are for-profit, obviously, the concepts apply directly to them. But we also recognize that governments and non-profits also are important organizations in our economy and need to be addressed. The concepts presented here will apply to all three. Organizations need to be successful, regardless of who they are. Yes, sometimes the definition of success is unique to the type of organization, but the need to be successful is still there.

C. Designed for the decision maker

Almost all finance professionals are decision makers at their own level. If you are the CFO, obviously you are part of the leadership team. On the other hand, if you are the controller, you may also be the only finance individual in a small organization, or you may be a department head in a larger organization. In any case, you make decisions affecting people. For this reason, this course will not use the titles “controller” or “CFO,” but instead will use “finance professional” to include us all.

D. What do we need in order to succeed in this changing environment?

According to a recent article in *Business Insider*, finance professionals need the following traits to succeed in today’s environment. We must:

1. Become analytical wizards.
2. Manage increasing risks.
3. Adapt to new technology.
4. Be better at leading people.
5. Guide decisions in a politically charged atmosphere.
6. Manage big data.
7. Make effective decisions from data from outside the organization.
8. Understand business drivers from outside the organization.
9. Make better hiring decisions.

In this program, we will attempt to take a close look at some of these areas.

III. Never equate simple with easy

This program is meant to be easy to understand, in plain language, and actually present very logical and seemingly simple concepts; however, do not make the mistake of thinking that the suggested changes and ideas are easy to accomplish. On the contrary, in most cases they are very difficult. But they are well worth the effort!

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Metrics and Benchmarking

Learning objectives

Upon completing this chapter, the reader will be able to:

- Understand the importance of using metrics as a way to manage for autonomy;
- See how benchmarking and metrics go together for a management system;
- Understand how to use the balanced scorecard; and
- Know how to determine your key performance indicators.

I. Why metrics?

As our organizations mature, we find them relying more and more on numbers as a way to measure success. For this reason, most organizations will turn to their finance professionals to take on the job of proper measurement. Without question, this is one of the most important jobs of a finance professional in that it will have the most to do with the profitability of the organization. An important statement, which will seldom be disputed, is that proper measurement will greatly increase the chances that the organization will reach its goals and objectives. Well-known management consultant and author Peter Drucker once said that what is measured improves. If we want it to get better, we need to measure where it is, where we want it to go, and then track its progress.

The recent pandemic has forced many of our employees to work from home. Consequently, we have had to learn new ways to manage them, and metrics have become even more important. Without having the employees where they can be seen, we have to produce some way to measure their output. Metrics are the solution. The pandemic has caused metrics to be even more important. As we attempt to manage off-site employees, we have to understand their productivity, and metrics is the answer.

A. Problems with metrics

Unfortunately, there are several problems with measurement systems causing many organizations to forgo them and operate without good systems to track performance. These problems are from two different sources and need to be discussed separately.

1. Data overload

With modern technology, we have numerous numbers and statistics; however, we often have so much that we are unable to operate in a logical fashion because we have too much. The well-run organization develops systems to filter the data into logical buckets making it meaningful to decision makers. Developing a well-structured system of performance indicators and metrics will allow the organization to take the data and transform it into meaningful and actionable knowledge. That is a job for the finance professionals.

2. Politics

The other important, but less often discussed, problem of a metric system is the political problem. Some people, departments, and power groups do not want to be measured. Consequently, they may easily fight such a system.

Probably one of the best examples of the politics of metrics and measurement is within public education. For years, governments have wanted to measure education performance in an effort of improvement. The

problem is that there is little agreement about what should be measured or how that measurement should take place.

Most parents want to measure teachers and pay the best teachers the most money. However, there is little agreement about what constitutes the best teacher. Unions might want to measure experience and education level as a way of determining a good teacher; however, a parent might say that those two things do not necessarily determine a good teacher. So, they may suggest that pupil performance be a better measurement. The teachers, however, will quickly say that student performance has too many other factors, and thus a cause-and-effect relationship cannot be proven. We end up with a dysfunctional system with no agreement on the metrics.

To have a successful measurement and metric system, the organization must overcome these two problems. It must filter data to make it meaningful for decision makers and it must develop a system to obtain agreement about what is to be measured and how the measurement system will operate.

II. Start with the objective of the organization

As we have said throughout this program, the basic objective of all organizations is to serve their customers (clients, constituents, stakeholders, people they are serving) in the best way. Also, this must be done in the most efficient manner. If those two things are not the objectives – well then, find something that is, but most importantly, find an objective with which everyone can agree.

Once the objective is determined, then the organization needs to find a way to measure the objective or objectives. Establishing an objective without a way to determine if it is being reached is like playing a professional sporting event without keeping score. For example, if yours is a for-profit organization, profit is probably the best way to determine whether it is reaching its goal. But, more specifically, if the goal is to satisfy the customer and do it efficiently, then some kind of way to measure customer satisfaction might be researched, and certainly you would want to measure efficiency. Some people will refer to this combination as effectiveness and efficiency. For an organization to be successful, it needs to do both.

Not only should we measure the organization itself, but we should also examine each individual part. For example, the road and bridge department of a government entity might have the objective of increasing its traveling customers' satisfaction while accomplishing that task with the best possible efficiency. There are many ways that you could measure the effectiveness portion, such as by administering surveys or measuring the number of miles of roads in certain states of repair. Then, you could measure the amount of money that is required to meet that increased level of customer satisfaction and strike a ratio of satisfaction over cost. If the ratio goes up, then the department is gaining a greater level of satisfaction with less than the percentage increase in cost. Notice that the ratio covers both sides of the objective.

I use this example to illustrate the political nature of such a metric. Many will say that such a measurement isn't "fair." They may point out that there are many aspects of such a customer survey or many reasons why costs may fluctuate, on which the department has little influence. Thus, measuring the department this way is unfair. Okay, no one will disagree that there could be some unfairness in the system. But the organization needs to measure the department in some way if it is to improve. How else might we do that?

Discussion question:

If you were the road and bridge department manager, how would you go about developing a system to measure the effectiveness and efficiency of your department?

III. Next, determine the KPI

Metrics fall into two classifications, key performance indicators and tactical measurements. While both are measurements of factors of the organization, KPIs tend to be more general and strategic.

When we look at the organization, one of the first things we need to examine is what makes it different from the competition. What, in its business plan, gives it its competitive advantage? For the organization to be successful, it must have a way to accurately measure its achievement of this factor. In other words, the organization's key performance indicators are measurements of the ability to meet the vision, mission, and key values. It's great to have these three things, but we will never know if we are achieving them if we don't have a means of measurement. The KPIs put teeth on the vision, mission, and statements of core values.

A. Case study

Horizon Creditcorp had the vision of having the greatest market share in the marine financing industry. Determining its business as serving its boat dealer customers, it established the mission of providing the fastest decision time in the industry. Everyone in the company knew that decision time was a key performance indicator, so the company had to determine a way to measure to see if goals were being met. It established a sophisticated tracking system so that management could measure how long it took for each step of the process. Time of decision became a key performance indicator of the company.

B. Properties of KPIs

1. Longer term

KPIs tend to be longer term in nature. For example, a company may have market share as a key vision with its KPI as a way to measure and track its share of the particular market.

2. More strategic

KPIs are generally strategic rather than tactical in nature. They measure the strategy of the organization.

3. Audience is upper management

The people generally looking at the KPIs represent top management that monitors the entire organization. Tactical measurement, on the other hand, measures the tactics and therefore, is watched by people further down in the organization.

4. Harder to measure

KIPs are often more difficult to determine since strategy is often harder to measure than tactics.

C. Exercise

Regarding your organization, write down one or more key aspects to your vision that need to be measured to determine if you are reaching your goals.

Now, write down some ways that you will measure that achievement. These should be some of your key performance indicators.

IV. Tactical measurements

Tactical measurements are similar to KPIs in that both are metrics; however, they tend to be more specific, shorter term, and measure tactics rather than strategies. These metrics tend to be more succinct and more narrowly focused. They will usually measure only a single thing although that thing might lead toward the KPI.

A. Department level

While the KPI is usually more organization wide, the TM will often be measured at the department level. For example, the organization may say as part of its mission statement, that employees are its most important assets. It might measure achieving that vision with some kind of survey to make sure that the employees are happy. More locally, each department might measure a metric such as employee turnover, to see how that mission is being met at a local level.

B. Immediate feedback

Another interesting difference between the KPI and the TM is that the KPI tends to be a longer-term goal whereas the TM gives more immediate feedback to the department and the employee.

C. A key is balance

Managing by the numbers is a pretty simple and not-so-new idea. But, if done incorrectly, it can lead to many serious problems within the organization.

D. Case study – Home Depot

Bob Nardelli moved from GE to Home Depot with a handsome package, and what later turned out to be, an even better “golden parachute.” Having come from the military with a strong background in command-and-control management, he established a metrics system heavily oriented toward what was said to be his favorite, inventory turnover. He put many ex-military people in charge of the stores, and they were instructed to keep the inventory moving – which they did.

However, a problem developed. Maybe the inventory turned quickly, but when the do-it-yourselfer came into a store for 10 straight 2x4s, there were only six to be found. What did he do? Simple, he went to Lowe's.

The result was simple. The Lowe's stock went up; the Home Depot stock went down, and Nardelli got a chance to use his severance package.

The lesson from the case is also simple – don't make the mistake of measuring only one part of the business. Balance is the key.

V. Properties of good metrics

Items to be measured need to have certain qualities to make them most useful for the organization. These are described below.

A. Measure what is important

Good metrics are directly tied to the strategy and goals of the organization. For example, if having happy employees is a strategy for better customer service, the organization has to have a good way to measure that happiness. Just having the goal or strategy is worthless without a way to measure if it is being achieved.

B. Measure outputs more than inputs

Measuring inputs is very often easier, but measuring outputs is better. Taking the happy employee example further, we can say that probably salary level is part of having happy employees. Consequently, we can measure salary level against averages. But that is only an input. Wouldn't it be better to measure job satisfaction through a survey?

Often organizations don't want to measure outputs because it is more difficult, and it is more difficult to conclude a cause-and-effect relationship between a given input and a given output. Because there may be several factors affecting a given output, it is easier to measure the inputs.

A great example of this is the on-going debate about how to determine a "good teacher" in the public school system. Traditionally, schools have measured the inputs of experience and education level to determine "good teacher" and thus, salary level. Today, there is much debate about finding another way to determine good teachers based on measuring outputs such as student test scores. The problem with the metric is that there are many different things that determine test scores other than the skills and dedication of the teacher. When measuring outputs, cause and effect correlation is difficult; however, the result is a more meaningful measurement.

C. Measurable

A good metric must be able to be measured. Just saying that something is "good, fair, or excellent" is not enough. We must be able to compare the metric to some benchmark, and this is impossible if we are unable to measure it.

D. Controllable

In choosing metrics, we also need to make sure that they are things that we can control. While things that we can't control also need to be measured, they should not be used in performance evaluations. For example, if we are in the airline industry, we need to measure fuel costs; however, that metric should not be used to determine who is and who is not doing a good job.

E. Simple and easy to explain

One of the problems we often see with metrics is that they are too complicated, and employees can't relate to them. If we are going to use metrics to determine how we are doing, we need to have them simple enough so that people can understand what is being measured.

F. Cost-effective to collect

Some metrics cost more to collect than others. One of the keys to the organization is to be efficient, so obviously, we need to determine metrics that can be easily collected without a whole lot of expense.

G. Easy to maintain

Once we determine a metric, we need to maintain the data collection and archive the results. Consequently, we should be sure to automate its collection and storage to prevent changes and manipulation. One of the most important aspects of metric collection is consistency. If we are going to make the most use of the metric, it needs to be benchmarked over a period of time. Consequently, we need to be consistent with how it is being collected and stored. If we change the collection method frequently, the past data become useless.

VI. *Balanced scorecard*

Simple in concept yet profound in application, the balanced scorecard was developed by Drs. Robert Kaplan and David Norton as a performance measurement framework to be used as part of a strategic planning and management system. The system is widely used in industry, government, and nonprofit organizations to align business activities to the vision and missions of the organizations.

The most important aspect of the balanced scorecard is that it is balanced. It prohibits any one person, department, or faction from placing an over-abundance of resources into one area. It forces everyone to measure what is important and does not allow only one aspect of the business to be measured.

A. Strategic alignment

For any organization, a key is to have everyone on the same page. In way too many companies we see people with different objectives building “silos” paying undue importance to their function or department. With a balanced scorecard, senior management sets the direction of the company, determines what is to be managed and measured, and then all measurements cascade from there.

B. Strategic performance

Once everyone is aligned to what is important and what is to be measured, the organization finds itself performing in the direction dictated by the strategy. We don't find individuals going off in their own direction but rather moving in line with the strategy that has been developed.

C. Communications

One of the scorecard's greatest attributes is its communication. With its use, we find that people at all levels of the organization use common terms and thus have better agreement. Poor communication causes poor alignment. When one group is talking one way with their own vernacular, we see them going toward their own goal. We need to recognize that organizations have many different vectors of energy, but if that energy is being spent in different directions, there can be chaos.

1. *How do we define success?*

While not always, most organizations ultimately define success in some kind of financial terms. For a for-profit organization, it might be return on equity, return on assets, or net profit. While the government or non-profit will usually not measure success in terms of profit, it will often define success in some other financial term.

Consequently, it's probably natural to start with the financial perspective when measuring the organization and even its parts. Level of sales, market share, margins, and these kinds of measurements are fine because they usually align with our final goals. However, there is one significant problem with financial measures. That problem is that true results usually show up in the financial measures later rather than earlier.

In the Home Depot example, the unintended consequences of the obsession with inventory turnover finally translated into profit and therefore stock price. But probably if the company had been adequately tracking customer satisfaction, it would have seen much earlier that customers were not happy and therefore, would probably not come back to the store. Problems with customer service tend to be leading indicators whereas profit or return on investment tend to be lagging indicators. By the time that the profit slips, it's probably too late.

D. Four perspectives

1. Financial

This perspective measures our goals and where we are headed. For the company it might be measured in many different ratios and amounts. This is often how the owner or owners might view the organization. Generally, owners want profits and high returns.

2. Customer

The owners will not reap a profit, however, if the customers are not happy. They have to want to purchase or use the product or service in sufficient quantities to pay the expenses and make the profit. If they are not satisfied, then the profit will not be there. Often when we measure how the customer views the organization and how happy they are, we gain new insight about what is demanded in the market.

3. Process

Regardless of the product or service we provide to the market, we need to do it as efficiently as possible. If another competitor is more efficient, we can expect that they will lower their prices and we will be at a severe competitive disadvantage. Consequently, we must constantly measure the efficiency and effectiveness of our internal processes.

4. Employee

While officially, balanced-scorecard terminology uses capacities and learning as the heading for this perspective, I would rather call it the employee perspective. The fact is that the efficiency and customer acceptance of our organization will be dependent upon the actions of our employees. Generally, if the employees are happy, they want to work hard, treat our customers well, and be more efficient. Thus, our success will eventually be dependent on our employees.



E. Strategy

At each level in the organization, we start with the central issue, which is the strategy. That is usually articulated by the vision and mission of the organization or the department. That can then be broken into the ways of measuring the achievement of the strategy and the four different perspectives that will cause the vision to come about.

1. Objective

This is what we want to accomplish in this particular perspective.

2. Measurement

This is how we will measure to see if we are achieving the objective.

3. Target

This is our goal for that particular measurement.

4. Initiatives

These are the various ways we will go about achieving the target.

F. Three tiers of the balanced scorecard

1. Tier one

One of the greatest advantages of the scorecard system is that it is practiced at every level of the organization. The senior management team has its own set of objectives, measurements, targets, and initiatives for achieving the strategy of the company.

2. Tier two

The tier-two level might be at the divisional or department level. For the larger organization this might be at the separate profit levels and for the smaller organization it might be the individual departments.

3. Tier three

Tier three is where the scorecard directly affects the individual or small team. For example, if you were the head of the accounting department, you would have a particular strategy for the department. You might describe that in the form of a vision and mission statement along with the core values of the department.

From these, you would have specific objectives, determine ways to measure the objectives, specific targets for the objectives, and finally the initiatives of how your department will achieve the objectives. Please note that you have these four things in each of the four different perspectives of financial, customer relations, operations, and human resources.

G. Exercise

For each of the four perspectives of the organization – Financial, Operations, Human Resources, Customer Service – pick an initiative that you would like to accomplish for your department. Then, pick a metric that could be used to monitor the accomplishment of that objective.

VII. Who determines the metrics?

As we answer this interesting question, we must again compare the modern organization to that of the old-style, command and control organization found in the early part of the Industrial Revolution. Let's remember that the old way was that we didn't trust our employees, and therefore, we needed to determine ways to measure their performance. A performance metric was used as part of the command-and-control structure.

Because of this, obviously, we wanted to make sure that the boss determined the metric, and especially the target for the metric. Slogans like, "You can't have the fox guarding the henhouse," come to mind.

Today, we are in a totally different environment. Our employees want to measure performance just as management does. In fact, good metrics allow for more self-management and more autonomy. Let's remember that we are all on the same team. Consequently, if we are going to determine metrics for a particular department, we should probably have those metrics determined by the team members in the department. After all, we want them to buy in to the measurement system and be properly motivated to work toward the achievement of the goals. If the boss is the only one to set the metrics and goals, then the rest of the team will not buy in and performance will generally be less.

A. ROWE and metrics

A ROWE is a Results Oriented Work Environment. While the idea is relatively simple and somewhat widely practiced, the term was coined and more widely discussed after the publishing of, *Why Work Sucks and How to Fix It: The Results-Only Revolution* by Cali Ressler and Jody Thompson.

In this book, the authors introduce and thoroughly explore the concept of paying people to do work rather than paying them to put in time. While obviously we want to pay people to work, most of our employment systems actually pay them for the hours rather than the work accomplished. The ROWE concept is to do the exact opposite – to pay people to accomplish the work rather than putting in the seat time.

Obviously, to accomplish that, we need a way to measure the work being accomplished. We have generally paid for the seat time since hours worked is an easy metric. Trying to measure the output of a particular job or department may be more problematic.

Experience has shown that in the long run, both the organization and the employee benefit when the proper metrics can be established; the organization benefits from the increased productivity and the employee benefits from having greater flexibility in determining how, from where, and when to do the work.

B. Exercise

Following is a partially completed scorecard for the wait staff department of a family restaurant. In each perspective, one objective has been filled out including the way of measurement, the target, and the initiative that may accomplish the goal.

In each of the four perspectives, fill in at least one or more other objective including the way of measurement and an initiative. Don't worry about the present level or the target for this exercise.

Objective	Measurement	Now	Target	Initiatives
Financial				
Increase sales	Average nightly sales	9,252	10,500	Adopt referral system
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
Customer				
Increase satisfaction	Customer survey	7.8	8.9	Develop ideas from wait staff
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Operations

Reduce waiting	Average wait time	7.5	5	Speed order turnover
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Learning/growth

Have happier employees	Employee survey	7.8	9	Develop bonus system
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

VIII. Metrics for financial statement analysis

Financial metrics often fall into the financial ratios commonly used to measure the risk and profitability of an organization.

A. Risk and return

While many companies will measure and compare many different ratios, actually most of the health of an organization can be determined by relatively few. The first group represents the risk and the return of the organization.

Risk is most often broken down between liquidity and leverage risk. Clearly without liquidity, especially in the form of cash, the organization can go out of business. But, in addition, the relationship between the debt and equity of the organization also determines risk.

1. Liquidity risk

This is the amount of working capital available to an organization and is most often measured by either the current or the quick ratio. The current ratio is reached by dividing current assets by current liabilities, and the quick ratio is reached by dividing cash and receivables by current ratio.

Current ratio – Current assets/Current liabilities

Quick ratio – Cash plus receivables/Current liabilities

2. Leverage risk

The leverage risk of the organization is determined by the amount of funding provided by debt verses the amount provided by equity. The two most common ratios for this measurement are the debt/worth ratio and the debt/assets ratio:

Total liabilities/total net worth

Total liabilities/total assets

3. Profit measurement

The return that the company makes on its invested equity or invested assets will also help determine its risk. Obviously, a more profitable company is less risky than one that is not profitable. The most common ratios used to measure return are return on equity or return on assets:

Net profit/total net worth

Net profit/total assets

While the above ratios will tell us what happened to a company, they will not tell us why it happened. To find out, we will need to look behind these popular ratios by examining some somewhat more obscure, but more telling, ratios. We will call these the “causing ratios.”

In determining how to find out why something happened, we actually need to look no further than the statement of cash flows for the answer. Since 1971, either a flow of funds or cash flow statement has been a part of a set of financial statements and has been included to demonstrate to the reader what happened and why it happened to the company. When reviewing that statement, we can easily see that the most important changes happen due to changes in accounts receivable, inventory, and fixed assets offset by earnings.

Stating it differently, when an organization grows, usually the receivables, inventory, and fixed assets will grow. To keep the balance sheet in balance, this growth will have to be financed by either debt or equity, with usually a combination of the two being the result. Those changes in debt or equity will cause changes in the liquidity, leverage, and return ratios.

B. Causing ratios

1. Collection period

This ratio can be determined in several different ways – either as a turnover ratio or as a measure of the number of days’ sales outstanding.

AR turnover is calculated:

Sales/Accounts receivable

But we could also divide the year (365 days) by the turnover and get the number of days’ sales that are outstanding in accounts receivable.

Example:	Sales	\$45,678,435
	A/R	3,589,654
	A/R turnover ratio	$45,678,435 / 3,589,654 = 12.73$
	DSOs	$365 / 12.73 = 28.67$ days

Understanding why this is a causing ratio is simple. If the turnover falls, it is usually because the collection deteriorated, and the receivables went up. If that happened, then the liquidity (cash) would go down and/or the debt would usually go up. Consequently, the risk of the company would increase due to the slowdown in collection.

2. Inventory turnover

Similarly, we must evaluate the inventory. We generally do this with an inventory turnover ratio that is calculated by dividing cost of goods sold by average inventory:

Average inventory / Cost of goods sold

Example:	Average inventory	\$67,823,655
	Cost of goods sold	\$344,694,043

Inventory turnover ratio $344,694,043 / 67,823,655 = 5.08$

This ratio works similarly to the collection period. Whenever the inventory turnover slows down and there is more inventory, it hurts liquidity and it also harms liquidity since the inventory is usually financed by additional debt.

3. Fixed assets/net worth

This is a causing ratio because it involves the decision to purchase more fixed assets and finance them primarily with new debt. If the new fixed assets were financed with equity, the ratio would change very little.

Thus, with the increase in debt, the liquidity and leverage of the company is hurt. Consequently, it was the cause of the problem.

4. Sales/net worth

Often not seen as an important ratio, the sales to net worth ratio is actually one of the most important in the analysis. This is because when we increase sales as compared to net worth, we are usually also increasing inventory, sales, and fixed assets to accommodate the increase in sales. Consequently, an increase in this ratio will usually cause an increase in the other accounts that, in turn, have to be financed. If the increases in receivables, inventory, and fixed assets were financed by new equity, the ratio wouldn't change much. But if the ratio does change, it means that the increases were financed by debt which thus hurt liquidity and leverage. Thus, the decision to increase sales is what caused both liquidity and leverage to be hurt.

5. Gross profit/sales

The gross profit margin is an important causing ratio because it directly affects the net profit, which in turn affects the equity of the company. More or less equity thus directly affects both the liquidity and leverage. Since the gross profit margin generally reflects pricing policy, it is a key to the profitability of the organization.

6. Operating expenses/sales

This is the final causing ratio and directly affects net profit, which affects net worth. Net worth affects both liquidity and leverage. We keep a close watch on this ratio because it represents the efficiency of the organization. Since we should assume that there would be some fixed expenses, we would hope that this ratio would decrease as the company grew. If not, then the operation is becoming less efficient causing both liquidity and leverage to be hurt.

IX. Benchmarking

For a little trivia, the term “benchmarking” was first used by cobblers to measure people’s feet for shoes. They would place a person’s foot on the bench and mark it out to make a pattern for the shoes. That would become the mark on the bench, or the benchmark.

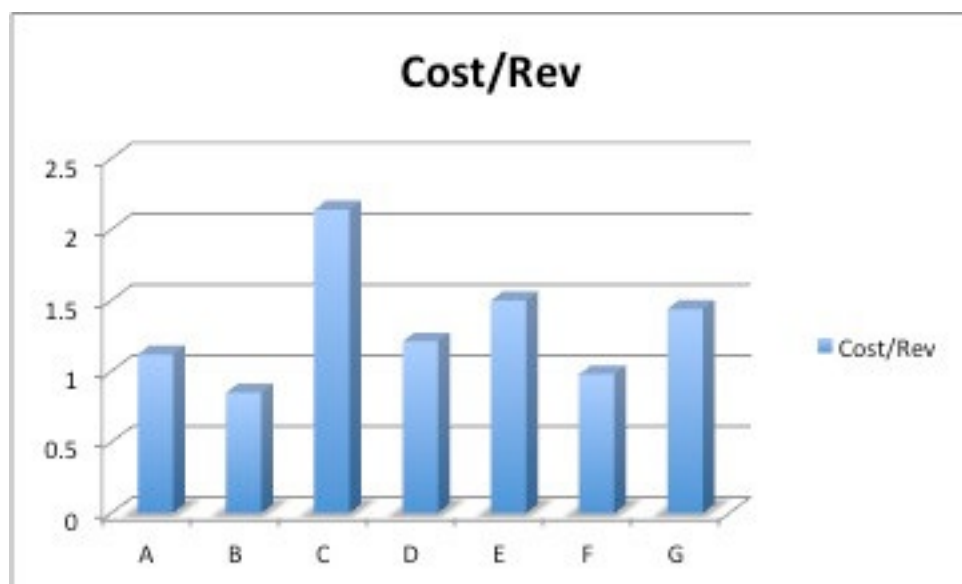
In modern days, it is the process of comparing one's business processes and performance metrics to some other standard. That standard may be comparing the metric to itself over time, to the best practices of other industries, or some other internal or external source.

Dimensions typically measured are quality, time, and cost. In the process of benchmarking, management may identify the best firms in an industry and compare the results and processes to determine what might be the best way to accomplish a process. This is from where the “best in class” term is derived.

A. Internal benchmarking

Internal benchmarking is a simple process that can take on several forms. The easiest, and probably most useful, is to compare a particular metric to itself over time. When put on a graph, the trend becomes easy to see, giving management a good reason for either staying the course or making some necessary changes.

Let’s look back and think again about the ratio that we fashioned for the road and bridge department earlier in this chapter. While the number being reached in the ratio is important, far more important is the trend over a period of time. If, year after year, we find that the efficiency and effectiveness of the department is declining, then we have to ask why and try to formulate a way to increase it. Another internal benchmark is where we compare the same process or number between different parts of our own organization. For example, we might have a multi-divisional organization where we have an accounting department in each division. As a metric, the organization has decided to watch the operating costs of the departments as a percentage of divisional revenue. Following is a bar chart of such a company comparing the various divisions. Note that the company would probably also want to compare the same ratio over time for each division. Clearly, this kind of benchmarking tells a lot, and is especially significant when put in graph form.



B. External benchmarking

1. RMA

This type of benchmarking involves comparing the organization and its metrics with those of another organization either in a peer group or others in the same industry. The peer group comparisons are probably the most important. The most readily available and popular ratio comparisons come from RMA. This organization was formerly known as Robert Morris Associates and now goes by the name of Risk Management Associates. This is a member organization that is dedicated to better understanding and helping manage risk in the financial services industries. By far the most well-known product of the organization is the annual statement studies that produce financial ratios in “common size” statement form for various different industries and broken down into both regions and size categories. The statement studies are available online.

The interesting and important understanding about the RMA statement studies is how the information is generated. Whereas most other statement comparisons are restricted primarily to publicly available information, the RMA statement studies come from financial statements that have been submitted to banks as part of loan requests. Often, when these statements go to banks on a confidential basis, the names and other identifying information about the company is removed, and the statements are submitted to RMA to be included in the averages. Consequently, when the analyst compares a financial statement with the RMA averages, it can be seen how the company is benchmarked against others in the same region and in the same size group.

2. Trade groups

In many cases, an organization belongs to a trade group that shares financial information in the form of common size statements or financial ratios. In this case, the organization submits statements to the trade group that combines all members' statements and then gives average ratios back to the members. Again, this is an excellent source of benchmarking ratios since the averages include information from privately held companies.

This source of benchmarking information also may include ratios that might not be available from RMA. For example, retail trade groups would probably include a ratio for sales per square foot, whereas that information is probably not available from RMA.

C. External comparison case study

Tom Purvis was a member of the finance committee in a small town in the Southwest. One of the services performed by the town's public works department was trash pickup. The town's public works director, Skip Smith, recently came to the finance committee and requested an increase in trash rates to cover the increases in costs to his department. He explained that the town's rates were relatively low compared to other towns of a similar size. He also showed how the costs of the department had been increasing, and they had not had a rate increase in several years.

Being one who believes that external benchmarking is important, he asked Skip if he had compared the trash rates with towns that outsource the service to private contractors such as Waste Management. He said that he had not since those towns were not comparable.

As a member of the committee, Tom contacted Waste Management and had a discussion with one of its local executives. Through that discussion, Tom discovered that most of the people in towns served by

Waste Management were charged a lower monthly rate. While Tom could not speak for the town, he was able to determine that his town outsourced the service to Waste Management; the contract rate would probably be less than the cost presently being incurred by the internal department. In comparing the rates of the two sources of collection, Tom assumed that there were probably several reasons for the greater efficiency by Waste Management. These might be lower pension costs, and possibly lower wages.

After his benchmarking analysis, Tom discussed his findings with the finance committee as well as with Skip. Tom's recommendation was that rates should not be increased without further investigation of the possibility of outsourcing the service. Needless to say, Skip was not happy with this recommendation.

At this point, the town manager stepped in and asked that the decision about rates be tabled until he was able to investigate further and discuss the situation with Skip. Within six months, the manager came back to the finance committee and reported that the public works department had sharply improved its efficiency and was no longer seeking a rate increase.

D. Politics of benchmarking

A final aspect of metrics and benchmarking must be discussed due to its effect on the operation of the organization. In many cases, people are not happy about being compared and don't like the results. Like the case study above, Skip did not want to be compared with an organization from the private sector as he explained that the comparison wasn't fair. In fact, often comparisons aren't exact. There are often many things different from one to another organization. Consequently, it is important that benchmarking and comparisons be done with the agreement of all parties. Just as was the case with Skip in the case study, the person or department that may be shown in a negative light should have ample time to react and make corrections that were discovered from the benchmarking.

X. AI and metrics

A. From static reports to living metrics

Traditional financial metrics are backward-looking, slow, and can be siloed. When we shift to using AI in our metrics gathering and use, we shift from measurement to continuous insight using the available new tools.

B. Smarter data collection: Beyond the general ledger

- a. AI automates the collection of data (ERP, CRM, contracts, emails, market feeds).
- b. Reduction of manual reconciliation and data cleaning.
- c. Real-time or near-real-time financial data pipelines.
- d. The **result** is that finance teams spend less time gathering numbers and more time interpreting them.

C. New metrics emerge: From lagging to leading indicators

AI provides a shift from historical KPIs (monthly revenue, quarterly margins) to predictive signals:

- a. Forecasted cash-flow risk instead of current cash balance.
- b. Customer lifetime value adjusted dynamically by behavior.
- c. Margin sensitivity to supply chain or pricing changes.
- d. Scenario-based and probabilistic metrics, not single-point estimates.

D. Continuous forecasting and dynamic budgeting

- a. AI can replace annual budgets with rolling forecasts.
- b. Automated variance detection and explanation (not just “what changed,” but “why”).
- c. Budgets become adaptive guardrails rather than fixed commitments.
- d. Faster decision cycles for pricing, hiring, and capital allocation.

E. Decision support at the manager level

- a. Financial metrics embedded directly into operational tools (dashboards, alerts, copilots).
- b. Managers can receive recommendations, not just reports.
- c. Democratization of financial insight beyond the finance department.
- d. Reduced reliance on specialist interpretation for everyday decisions.

F. AI turns financial metrics into a real-time feedback loop

Finance evolves from scorekeeper to strategic partner, with the competitive advantage increasingly tied to how well companies learn from their own data.

Improving Efficiency

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Improving Efficiency

Learning objectives

Upon completing this chapter, the reader will be able to:

- Develop new ways to have a more efficient organization;
- See better ways to delegate; and
- Use ratios for better efficiency.

I. Introduction

As we have said throughout these materials, there are really only two things that any organization needs to do to be successful:

- a. **Serve the customer well;** and
- b. **Do it efficiently**

In this section, we will be looking at the second part of the equation – how to make sure that the organization is operating at its maximum efficiency.

II. Choices for increasing or assuring efficiency

Again, we need to look at the difference between the old and new styles of organizations. In the old style, it was the manager's responsibility to ensure that the organization or department operated in an efficient manner. Somewhat like the assembly line of a factory, it was the manager's job to make sure that the systems were both designed and operating at the maximum efficiency to insure the greatest productivity. As in Taylorism that was born at the beginning of the industrial revolution, managers sought to improve productivity by trying out different scientific ways to get more and more efficiency out of every step in the process.

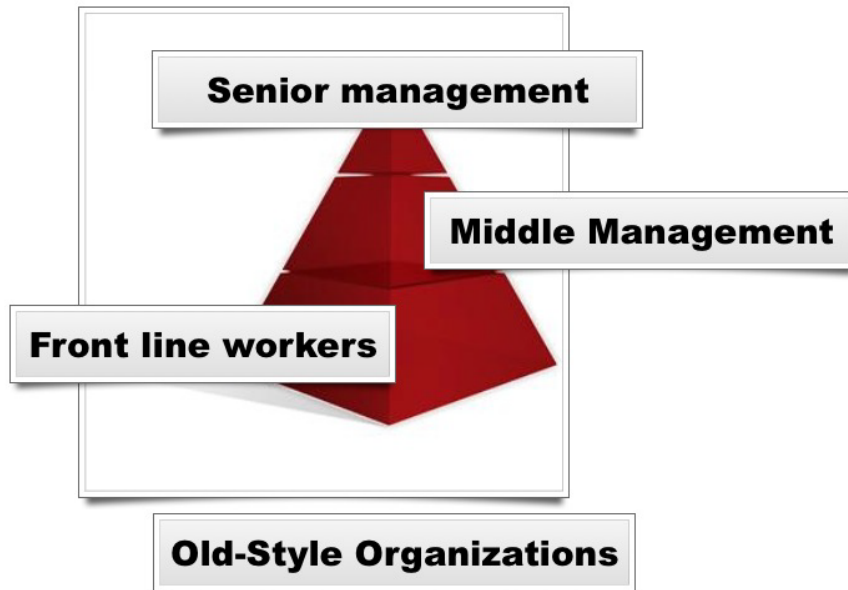
Naturally, the workers were removed from the process of discovering how to improve efficiency. With greater efficiency, they had to work harder and probably received no reward for the extra work. For example, if there was a production line to fit caps on bottles, and management was able to increase the speed of the line, then each worker would be more productive and working harder. The workers didn't like this pressure, which is why they formed unions and went out on strike. The bottom line of this method was for management to try and force the workers to be more productive.

Today, successful organizations are discovering that there is a better, and less expensive, way to increase productivity. The concept is simple. It is less expensive and better to have workers who want to be more productive than to force them to be more productive.

As we will demonstrate in this section, it is generally much better to have workers who want to be more productive than workers who feel that they are being forced to be more productive. This is for many reasons.

A. Cost of the bureaucracy

As we compare management systems and the goal for greater efficiency, we must take a close-up of the more traditional top-down bureaucratic system. That system is the traditional pyramid model that we have seen for years.



In the system, we have the senior management group at the top, the workers at the bottom, and the middle management group in the middle. When we equate this model with rules, we see that the senior management group makes most of the rules; the workers on the bottom obey the rules; and the middle management group is in charge of enforcing the rules. It is also in charge of moving information from the workers to the senior management group.



In the new-style organization, we have a different type of worker. This person is more creative, smarter, and when managed correctly, needs far less supervision. The operation runs more like a team.

A fair question at this point is, is this really possible? The answer is yes. Recently, I was talking with an employee from one of the more modern and progressively led companies. She asked that the company name not be mentioned, so I'll respect those wishes. The point is that she was a financial analyst in the

organization, was part of a 50-person team with no designated team leader and was not told what to do. As the organization needed things done by this team, the assignments were presented to the team, and members accepted them if they had the time. She explained that no one told her what to do but she volunteered for assignments. She also said that the entry-level employees were treated the same way. This company has no “supervisors,” and it is a manufacturing company!

B. Advantages of a team-style organization

1. Who is the smartest in the room?

As we begin to discuss how the accounting department might be organized for maximum productivity, we need to look more philosophically at how the organization is organized and on what concepts. In the organizations of the past, the organization was designed with the senior management on the top, with middle management in the center, and the workers on the bottom. That concept worked well when we concluded that workers were relatively uneducated, didn’t care too much about the goals of the organization, and were generally there to put the proverbial square peg in the square hole. We really didn’t want those workers to be creative; we only wanted them to be obedient.

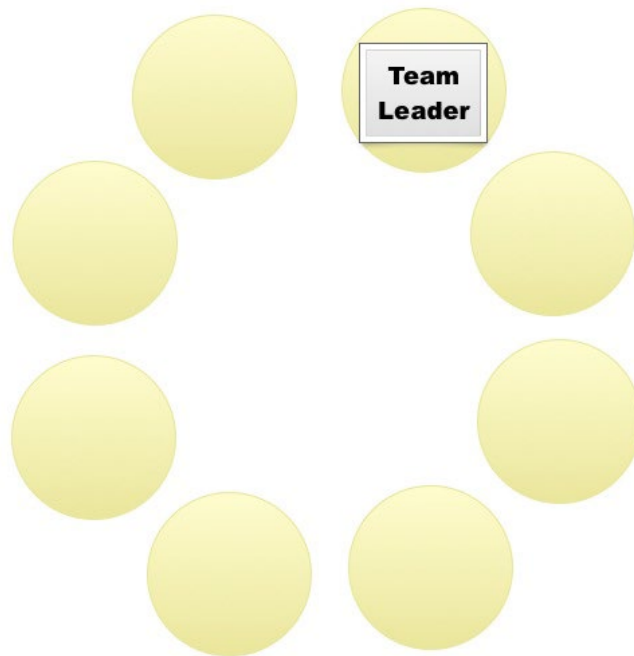
Today things are very different. Today, our workers are generally a lot smarter, more ingenious, and we want them to be more creative in how to best serve our customers and do it more efficiently. Thus, if we treat them as we might have treated the workers of old, we will not get the creative talents put to work in solving the problems of the company.

That’s the conceptual difference between the bureaucratic system of management and that of the team structure. In the bureaucracy, we consider that the boss is the smart one who will make all of the decisions, and the workers will be obedient and follow the instructions. In the team structure, the leader of the team knows that they will need the creativity and cooperation of the rest of the team to solve the team’s problems.

As an example, let’s take the accounting department that is headed by the controller and includes 7 other individuals, each responsible for the various functions of the department. If we were to ask who the smartest and most informed person in the department was, we would probably conclude that it would be the controller. That’s fine, but then we have to ask another question. Is the controller actually more informed than the rest of the individuals put together?

Here the answer would depend on the issue being considered. If it were some esoteric tax question, probably the controller might be better able to handle it than the rest of the group combined. But, if it were a more general question like how to best perform a particular function or who best to hire as an additional person in the department, then the team as a whole might be in a better position to decide than just the controller.

In the bureaucratic organization, the controller would make all of the decisions. In the team-centered organization, the controller would make the final decision, but they would engage the rest of the team in helping make a better decision. It would be assumed that the best decision would be made by reaching team consensus rather than by the controller alone.



2. *Workers feel trusted*

Management has a choice. It can either try to force workers to be more efficient or it can establish systems that cause them to want to be more efficient. One problem with the first way is that the workers do not feel trusted. There is a well-known management cliché that says, if you treat people like children, they will act like children. If you treat them like adults, they will act like adults. Which way do you want your workers to act?

Often when workers do not feel trusted, they will push back from the rules and regulations and purposely try and fight against efforts to be more productive. Management may develop a rule to increase productivity and the workers will think about ways to get around the rule.

The obvious way to solve the trust problem is to treat the workers as adults and empower them to make good decisions that add to the productivity of the department or company. Trust them to make good decisions and then talk with them when the decisions may not be as you would have made them.

3. *Workers feel empowered*

Today, we generally want to have workers who are empowered to make good decisions. We want to hire people who can think for themselves, are creative to find solutions to problems, and feel empowered to work on their own without continuously coming into our office for advice and counsel. For us to have these employees, we must find ways to allow them to work independently without our constantly looking over their shoulder.

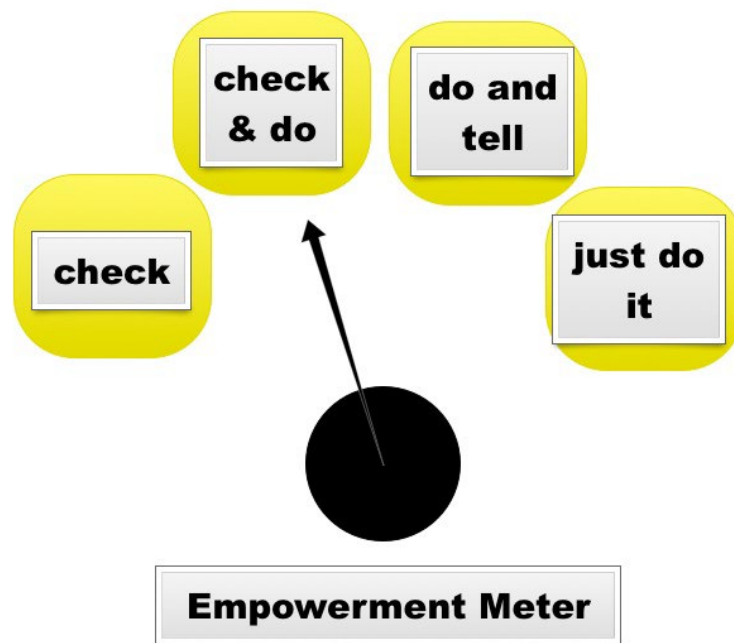
Micromanagement is the exact opposite of empowerment. If we micromanage, we are not allowing the other party to have a chance to make mistakes. To ensure that they don't make mistakes, we watch and approve everything they do to the point that we are insuring perfection.

That method might create a better environment, but it has two serious problems. First, the employee isn't challenged or empowered and therefore will probably leave for a job where their talents for creativity can be used. The second problem is the inefficiency. You as the manager cannot constantly be watching the work done by the entire department. If you do, you will be forever bogged down in the details and never have the time to work on the more important parts of your job.

At one of my previous jobs, I designed what I called the "empowerment meter." I used it as a way to communicate with my staff. The idea was that there were four different levels of empowerment:

- a. Check with me please before doing that.
- b. Check with me but have a plan and plan to do it.
- c. Do it and tell me afterward what you did.
- d. Just do it and don't tell me. That's your job.

When a worker had a decision to make, I wanted them to look at the meter and determine where the decision fell. Should they check with me? Should the person check with me but have an idea what the decision should be? Should they do it and then tell me later? Or should the employee just do it without bothering to tell me?



While the system might appear a little simplistic and corny, it worked quite well. If I had an employee who was constantly coming to me with questions, and I wanted to move them to a position where they would make recommendations, I would simply state that the decision should be moved into the check and do category. If I wanted the person to take more responsibility, I would ask them to move that kind of decision into the do and tell area. Generally, you will probably want most of the departmental decisions to be in either the check and do area or the do and tell area.

4. Workers feel more engaged

Employee engagement is the emotional commitment the employee has to the organization and its goals. When workers are treated like adults and asked to be more efficient on their own without following detailed rules, they feel more engaged in the operations of the company. There have been several surveys done in recent years about employee engagement, and they have indicated that close to 30 percent of workers feel closely engaged in their jobs. Of those, almost 90 percent said that they feel that what they do in the organization makes a significant difference. In short, if your workers are engaged, they want to be more efficient. If they are engaged, they want to be more efficient and contribute more significantly to the organization's goals.

5. Workers feel more challenged

Asking workers to want to be more efficient rather than having them follow narrow rules forcing them to be more efficient allows them to be more challenged to think and be more creative. Rules generally take away from creativity and challenge. After all, if we can simply follow a rule, we don't have to think because the rule has set the parameters and caused us not to have to think.

6. Workers feel more valued

Rules forcing efficiency generally do not show value to the worker. In fact, the rule says to the worker that they don't have to think and make decisions but only have to follow the rule. This does not show value to the employee.

C. Understanding authority for greater efficiency

There are three words that are often bantered around management circles with little understanding of how they relate. These are: responsibility, authority, and accountability. In short, they need always to go together. When they are separated, the organization becomes dysfunctional and bad things happen. Let's take a close look at each one, see how they go together, and then look at what happens when they are separated.

1. Responsibility

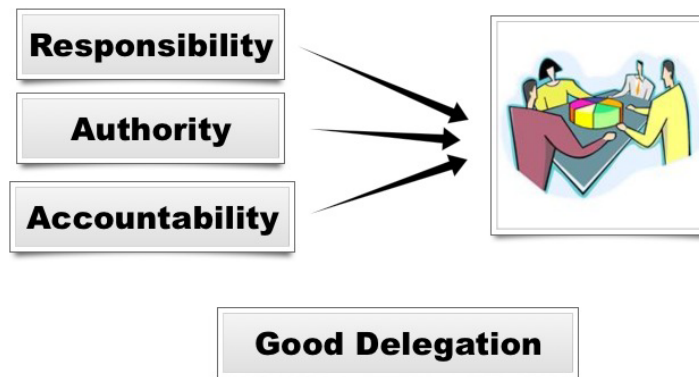
This might be best viewed as the job assignment. I am given the responsibility of running the accounting department. I'm given the responsibility of collecting the accounts receivable. When you are given the responsibility for a particular job, you can share that responsibility with others, but you also hold onto it. That becomes shared responsibility.

2. Authority

This is the power to carry out the responsibility. For the police officer, it is their weapon with which to carry out the job. For the department manager, it may be the ability to set the budget, approve expenses, reward employees, and terminate those who refuse to do the job.

3. Accountability

This term is often misused in today's society to mean the blame when things go wrong. It seems like everyone is calling for more accountability, but they are really saying that someone or something must be held accountable when a mistake happens. In management, the word accountability means that the fortunes of the person given the responsibility rise and fall with how well they perform the responsibility.



4. They must go together

When we delegate a task, we need to make sure to delegate all three of these things together. Otherwise, we will find that something doesn't work. When one is missing, the system collapses.

Example: Responsibility and accountability but no authority

Unfortunately, the best example of this problem is all too common. It is when a department head is given the responsibility to run the department and is held accountable for the results. But the person has little or no authority. Let's say they want to hire someone, fire someone, or give someone a raise.

Unfortunately, due to policy, the person can't make those decisions. Thus, the person doesn't have the authority and is totally frustrated. This circumstance happens most often in a bureaucratic organization where little authority is given down the line.

Example: Responsibility and authority but no accountability

This situation also will cause major dysfunction in the organization. A good example can happen when employees receive employment guarantees and it becomes almost impossible to terminate the ones who are not performing. In colleges and universities today, the professors often have the responsibility to teach a class and the authority to do everything needed to teach it. But, if the class isn't good, or if the professor does something wrong, often the tenure policy prohibits terminating the professor. This can be true in governments, and other union situations where the grievance system makes it almost impossible to hold an employee accountable.

III. Measurements of efficiency

Theoretically, productivity is the relationship between the amount of inputs and outputs for an organization. In manufacturing, it is the amount of raw materials, capital, and labor needed to produce a given amount of outputs. In the service organization, the measurement becomes more complicated as we try and measure all of the things that go into producing our service.

For each department in the organization, it's necessary to determine what it produces and then measure the amount of inputs to make that happen. For example, let's look at the marketing department. It has the responsibility for marketing the organization's products. Consequently, a good measure of its success is total sales. On the expense side would be all of the expenses of the department, and the ratio between the two would be an efficiency ratio.

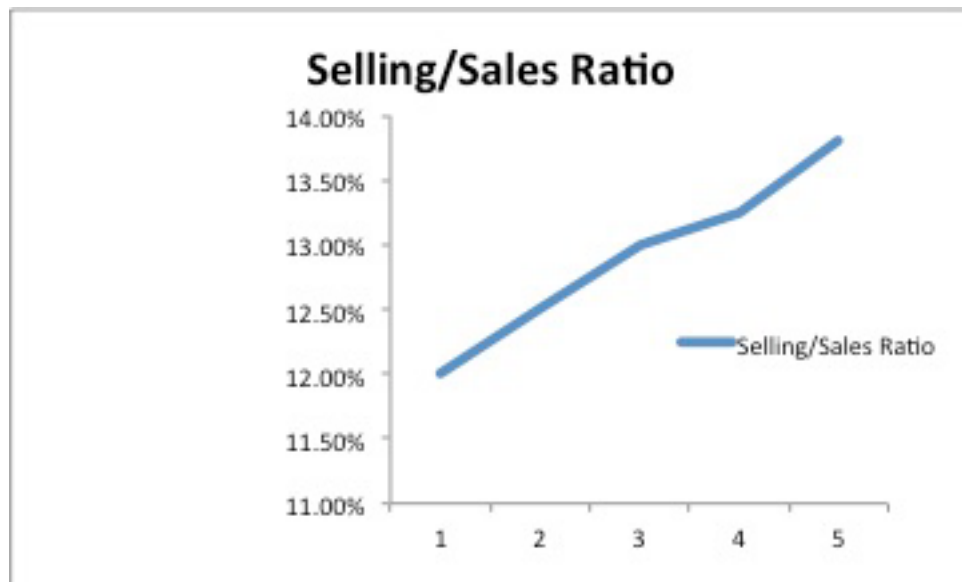
Obviously, we can break down the expenses of that department into categories, thus giving us more information about what makes up the total expenses. If we then divide any expense by some numerator, we gain more information about the expenses.

Regardless of striking ratios either for the whole organization or any one department, we gain the advantage of a ratio that we can measure and benchmark both against time and as a comparison to other divisions or departments.

A. Exercise

Sam Brown is the recently named controller for the XYZ Services Company. This is a relatively small operation, and Sam is also the chief financial officer although he doesn't carry the title. The company has a sales force of 14 people who travel the country selling their products. In addition, several others on the executive team do some traveling.

One of the first assignments given to Sam was to increase the efficiency in the company. While it has always been profitable, the net profit margin has been slipping. As part of his analysis, Sam discovered that selling expenses as a percentage of sales has been increasing over the past five years as shown in the following graph.



After a little more investigation, he discovered that travel and entertainment expenses accounted for almost a third of the selling expenses. Consequently, he determined that he should do something to try to increase the efficiency of the travel and entertainment expenses.

Review Sam's problem and make suggestions about what he might do.

B. Monitoring and benchmarking expense ratios

The key to a better way of controlling expenses is to monitor and benchmark ratios for each type of expense that you want to monitor. Some of the possible ratios are as follows:

- Occupancy costs – Occupancy costs/sales.
- Utilities – Utility expenses/head count.
- Transportation expenses – Transportation expense/sales.

- d. Auto expenses – Auto expense/sales or auto expense/head count.
- e. Consulting services – Consulting services/sales.
- f. Advertising – Advertising expenses/sales.
- g. Marketing – Marketing expenses/sales.
- h. Bad debts – Write offs/sales, write offs/receivables, or past due/either sales or receivables.
- i. Dues and publications – Dues and publications/head count.
- j. Office supplies – Office supplies/head count.
- k. Salaries and wages – Salaries and wages/sales or head count.
- l. Fringe benefits – Fringe benefits/salaries.
- m. Telephone – Telephone expenses/head count.

1. Importance of benchmarking

As in the above example with T&E expenses, it is crucial to measure the expense ratios by benchmarking both over time and department or division against other divisions or the average. In both cases, such a comparison is the fastest way to determine if there is something wrong.

Let's remember that we are doing this type of analysis for two reasons. First, we want to lower the expenses and become more productive, but we also want to discover if there is fraud going on in the operation.

2. Fraud case study

Ace Management Company is a property management company specializing in operating small garden apartment projects within a major city. The company has 31 projects under management. Most of the projects are approximately 50 units in size.

The company employs a project manager at each site who has the responsibility of both renting the units and also taking care of the grounds and other light maintenance. The company had no central purchasing operation, and each manager was on his own buying such things as fertilizer and grass seed.

At one project, the manager had made an arrangement with a local farm supply store where he was given a kickback in the form of free equipment and free chemicals for his personal use. Because he lived in the complex he managed, he didn't use these benefits but gave them to his son.

The fraud was discovered at an audit of the company's records but had been going on for several years and probably cost the company over \$300,000. Could this problem have been stopped or discovered earlier?

The answer is interesting. There are a lot of bureaucratic controls that could be put in, but most of them are expensive. Moreover, a skillful manager might be able to get around the controls. Probably the fraud could not have been easily prevented but would have been caught much more rapidly if the company had in place a system of benchmarking expense ratios. The best ratio might have been maintenance expense/unit, and that ratio would have been compared both over time and against other projects. By comparing that ratio against the average and also against other units, the company would have quickly seen that the maintenance expenses at this particular project were higher than the average and also higher than most or all of the others. Upon discovering that, the company will go to that project and further investigate.

Using ratios as the method of controls will not always discover a fraud. There are a lot of reasons why expenses fluctuate and are different from one part of the organization to another. But, when a ratio is out of line, it gives management the signal that it should investigate.

Take a look at the following chart. Here we listed the various projects of the management company along with the maintenance expense. Then, we determined the maintenance costs per unit and took an average of those ratios. Finally, we took the difference between each unit's ratio and the average. From the table, can you quickly see what units might be checked because their ratios are too high? Maybe we would also want to talk with the managers who have ratios that are below the average. Please note that this is not the most sophisticated analysis we can do. With more statistical practice, we can plot out curves, standard deviations, and use other tools. But the simple approach is inexpensive and is a good one for this kind of analysis.

Unit #	Units	Maintenance Expenses	Maint/exp. per unit	Diff from Average
1	50	60,000	1,200	(102)
2	52	57,200	1,100	(202)
3	48	65,088	1,356	54
4	39	48,984	1,256	(46)
5	48	79,296	1,652	350
6	46	57,776	1,256	(46)
7	54	70,200	1,300	(2)
8	52	69,940	1,345	43
9	58	78,068	1,346	44
10	46	57,270	1,245	(57)
11	39	51,090	1,310	8
12	41	58,220	1,420	118
13	46	58,190	1,265	(37)
14	45	60,525	1,345	43
15	51	57,375	1,125	(177)
16	50	65,600	1,312	10
17	39	55,575	1,425	123
18	45	59,670	1,326	24
19	51	73,950	1,450	148
20	56	70,840	1,265	(37)
21	48	69,840	1,455	153
22	46	60,996	1,326	24
23	43	53,019	1,233	(69)
24	41	50,635	1,235	(67)
25	51	67,422	1,322	20
26	52	64,116	1,233	(69)
27	45	53,955	1,199	(103)
28	45	55,530	1,234	(68)
29	39	51,636	1,324	22
30	51	63,495	1,245	(57)
31	45	56,925	1,265	(37)
Average			1,302	

IV. Organizing the accounting department for maximum productivity

A. Exercise

Jim is controller of Last Manufacturing Company. Recently his boss has told him that the company has a new bank relationship that requires a faster and more recent closure with more details being provided to the bank. Jim knows that this will require more work for the accounting department and must decide how the additional work will be allocated.

In this situation, how would you go about determining who should get the additional work?

A similar kind of question often comes up when determining who to hire either to replace a person in the department or add to the staff level. In the bureaucratic organization, that decision would be made solely by the department head. In the team-centered organization, the decision would be made by the department head, but only after a lot of discussion with the team.

B. Controlling the expenses

The old top-down bureaucratic ways of trying to control the expenses might include more audits, more approvals, and more rules pertaining to what kind of expenses would be allowed. We might specify a particular chain of hotels that has to be used, a single airline regardless of the number of stops or convenience, maybe an internal travel department that makes all the reservations. We might also limit the amount of expenses that would be allowed for meals.

There are two specific things that are wrong with that approach. The first is that such policies may be disobeyed and can even cause serious discontent. After all, while they might seem good, we usually allow the higher ranked executives much more latitude to circumvent the rules, or they don't apply to them. The other employees to whom they do apply become resentful and find creative ways to make up for what they feel is unfair. Rule-based expense policies often say, "I don't trust you" to the employee, and that message does not produce happy employees.

The second reason this approach doesn't work is that it is expensive and usually costs more in the long run. After all, audits, approvals, travel departments, and the rule enforcement cost money.

C. Per diems

Another way to handle some of the T&E expense problem is with the use of per-diem allotments. Here we are not suggesting a limit but simply reimbursing all meals on a per-diem basis. The IRS has established such limits for both higher- and lower-priced areas. There are two significant advantages to the system. First, it is a lot less expensive for the organization. It takes far less time for the person traveling not to have to produce receipts and saves time for both the person approving and the accounts payable department.

The other significant advantage is that it gives a message to the employee that they are trusted and do not need to worry about receipts. It increases autonomy by allowing the person to eat well one day and skimp the next to make up for the difference.

D. Offset against commission

Another method often used is to include travel and entertainment as a deduction from commissions. For example, if the company were paying a sales commission of 10 percent, it might calculate that it should pay a commission of 11 percent but then deduct the travel and entertainment expenses from the sales before calculating the commission. The advantage of this system is that the salesperson is the one making the decision about where to eat, where to stay, and on what airline to fly; but they are also absorbing some of the results of that decision.

V. *AI and efficiency*

AI tools can be strategically used throughout the organization to increase productivity in every department. This is more of a practical improvement rather than a technical one. As we automate tasks, improve decision-making, and optimize operations, we work toward the goal of improving the customer's experience while simultaneously increasing efficiency. Following are some of the ways in which that can be accomplished.

A. Automating repetitive tasks

Examples include data entry, scheduling, invoice processing, and customer inquiries, all of which save time, reduce human error, and allow employees to focus on higher-value and more challenging work.

B. Improving decision-making with data

AI can analyze large volumes of data faster than humans in areas such as sales forecasting, inventory management, and market trend analysis. This reduces guesswork and results in faster and more informed decisions.

C. Enhancing customer support

AI chatbots and virtual assistants have the advantages of 24/7 availability and faster response times; however, we must make sure that they are accurate and there is a way to get to a human quickly since many customers do **NOT** want to interact with AI.

D. Optimizing operations and resources

AI can identify inefficiencies in workflows and processes such as supply chain optimization, predictive maintenance, and workforce scheduling. This gives us reduced downtime and better resource allocation.

E. Scaling without proportional cost increases

AI systems can enable growth without linear increases in staff, helping small and midsize businesses compete with larger firms and resulting in rapid expansion with controlled costs.

Artificial Intelligence

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Artificial Intelligence

Learning objectives

Upon completing this chapter, the reader will be able to:

- Review the benefits of AI in finance and where AI is already used;
- Identify risks related to internal control, data integrity, and cybersecurity; and
- Understand the regulatory landscape relating to AI.

I. Introduction

Artificial intelligence is moving rapidly from experimentation to normal thinking within corporate finance, but it is moving at a pace that terrifies many of us. We knew that AI was used when we “Google” something but often do not go beyond that. AI now touches transaction processing, financial close, forecasting, controls, and executive reporting. For CFOs and controllers, AI presents a defining leadership challenge: how to harness its speed and analytical power without eroding trust, control, and accountability.

This chapter makes no attempt to either explain the technical aspects of AI or the details of how to use it. The reason for that is simple: things are moving so quickly that as soon as these materials are written and arrive in published form at a seminar or study, so much will have changed that the information will already be outdated. Consequently, we will look at some of the opportunities that may be missed as well as some of the risks we will face as this new technology moves through our business structures. In reality, it is more of a finance governance issue. Organizations that avoid the labor-saving and productivity improvements available through AI can miss significant cost savings. On the other hand, organizations that treat AI as a back-office productivity tool risk creating blind spots in internal control, financial integrity, and regulatory compliance. Those who fully explore and learn the opportunities as well as the risks of AI will use its adoption to strengthen decision-making, elevate the role of accounting, and improve the organization's outcomes.

The core message is simple but demanding – AI can assist judgment, but it cannot replace responsibility. Finance professionals must lead the design, governance, and cultural integration of AI within finance or risk losing control of the very systems for which we are responsible.

II. AI as a strategic finance leadership issue

Every generation of finance leaders faces a defining change in thinking and practice. For some, it was the adoption of new systems, and for others it was sharp changes in regulation. For today's finance professionals, it is artificial intelligence. Generally, we do not like change, and when it occurs at an extremely rapid rate, we can be totally frightened by it.

What distinguishes AI from prior technologies is not speed alone but how it affects our work. AI systems do not merely calculate – they generate explanations, predictions, and recommendations. They speak in language. They persuade. They act almost like humans! Consequently, our superiors and boards expect us to explain to what extent AI has been used in forecasts and planning, whether the analysis is reliable given that AI was used, how it complies with regulations such as SOX or industry requirements, and how it fits within internal controls. These questions will need significant cooperation from IT.

A. Case example: The forecast that looked too good

A global consumer products company adopted an AI-enhanced forecasting tool that consistently outperformed prior models – until it didn't. When demand unexpectedly dropped, leadership discovered that the model had been implicitly overweighting recent growth trends and underweighting macro risk signals. The issue was not the model; it was governance. Finance leaders had not required documented assumptions or challenge reviews. The CFO later noted, "We replaced debate with dashboards and didn't realize it until the dashboard was wrong."

III. AI explained: What finance professionals actually need to understand

Finance leaders do not need to know how to train AI models, but they must understand how AI behaves.

A. Deterministic vs. probabilistic outputs

Traditional accounting systems are rules-based. AI systems are probability-based. They generate outputs that are *likely*, not certain. This is a *huge* change in our thinking. Some of us have personalities that are okay with this, but others may find it very difficult to accept. It is the same with our superiors and boards, and it is our job to be able to explain the concept and have them become comfortable with the ideas. Otherwise, we won't be able to make proper use of AI.

This distinction creates new confusion such as two identical prompts producing different results, results changing as models update, and the distinction between confidence and accuracy. We need to understand that generative AI can produce plausible but incorrect explanations, fabricated citations or references, and internally consistent but externally false conclusions. We always have to remember that correlation is not necessarily causation.

Perhaps the greatest risk is human nature – professionals defer to AI because it appears sophisticated. Finance professionals must explicitly train teams to challenge AI outputs, not revere them. Years ago, computers had the same status. Psychologists found that data printed out on computer paper was far more believed than data printed out from a typewriter. Consequently, clever people were placing information on computer paper and spreadsheets just to have it be more believable by the reader.

IV. Where AI is already used in corporate finance

A. Operations

Many finance professionals have no idea of the extent to which AI is already embedded in their financial software. It is often used to:

- a. Identify unusual journal entries;
- b. Suggest accruals; and
- c. Draft various narratives.

This gives us great opportunities for faster closes and broader review coverage; however, these opportunities also bring risks of undocumented logic and greater confusion when we don't know the assumptions of the AI.

B. Modeling and forecasting

- a. Rolling forecasts;
- b. Scenario simulations; and
- c. Variance analysis.

The opportunity is obviously how AI can do these things for us faster and, in many cases, better; however, there is great risk that the assumptions baked into the AI model are hidden, bypassing established review processes and thereby weakening controls.

V. The strategic upside: When AI works well

AI enables:

- a. Review of 100 percent of transactions;
- b. Earlier identification of control failures; and
- c. Faster response to executive inquiries.

A. Elevating finance talent

By automating low-value tasks, AI allows finance professionals to focus on:

- a. Interpretation;
- b. Risk assessment; and
- c. Strategic insight.

B. Case example: Redefining the close

A mid-sized technology company reduced its close from 10 days to five days by using AI-driven reconciliation and anomaly detection. The CFO emphasized that success came not from automation alone but from **redesigning review roles**, ensuring humans focused on exceptions and judgment.

VI. The risks CFOs cannot ignore

A. Internal control risk

AI systems may:

- a. Operate outside documented controls;
- b. Change behavior without notice; or
- c. Produce outputs that are difficult to audit.

If an AI tool generates an adjustment, the CFO must still sign off.

B. Data integrity and model risk

AI magnifies data quality issues. Poor inputs produce persuasive but flawed insights – at scale.

C. Cybersecurity and confidentiality

Uploading sensitive data into third-party AI tools introduces:

- a. Vendor risk;
- b. Confidentiality exposure; and
- c. Regulatory implications.

D. Case example: The chatbot incident

A multinational firm discovered employees were pasting sensitive financial data into public AI tools to “speed up analysis.” The issue was not malicious intent; it was the absence of policy and training. Finance leadership responded by implementing clear usage rules and approved platforms.

VII. Accountability and ethics in an AI-enabled finance function

AI does not assume liability. Finance professionals do.

Ethical finance leadership requires:

- a. Clear ownership of AI-assisted outputs;
- b. Documentation of human review; and
- c. Resistance to “rubber-stamping” AI results.

Audit committees increasingly ask:

- a. Where is AI used?
- b. How are outputs validated?
- c. Who is accountable when AI is wrong?

These questions demand finance-led answers.

VIII. Regulatory and standards landscape

Regulators are not hostile to AI, but they expect:

- a. Effective controls;
- b. Transparent documentation; and
- c. Defensible judgments.

SOX, SEC reporting, and audit standards all assume human accountability. AI does not change that assumption.

IX. AI and the finance operating model

AI forces structural decisions:

- a. Centralized vs. decentralized tools;
- b. Finance-led vs. IT-led governance; and
- c. Tactical adoption vs. strategic redesign.

A. Case example: Centralizing AI governance

A manufacturing firm initially allowed departments to deploy AI independently. Within a year, finance struggled to reconcile inconsistent metrics. The CFO centralized AI governance under finance, improving consistency and auditability.

X. Why human judgment remains irreplaceable

AI cannot understand:

- a. Ethical nuance;
- b. Reputational risk; or
- c. Organizational context.

The finance professional's role as **interpreter and validator** becomes more – not less – important.

XI. Building an AI-led AI governance framework

Effective governance includes:

- a. Approved use cases;
- b. Mandatory human review;
- c. Clear documentation; and
- d. Ongoing monitoring.

Governance should be **lightweight but explicit**.

XII. Implementation roadmap for finance professionals

- a. Inventory existing AI usage;
- b. Identify high-value, low-risk pilots;
- c. Establish governance principles;
- d. Train teams on challenge and review; and
- e. Engage audit committees early.

XIII. Preparing finance talent for AI

Finance teams need:

- a. AI literacy, not coding skills;
- b. Training in skepticism and review; and
- c. Redefined career paths emphasizing judgment.

XIV. The next 5–10 years

AI will automate more tasks, but:

- a. Judgment will remain human;
- b. Accountability will remain personal; and
- c. Trust will remain the currency of finance.

XV. Conclusion: Leadership, not technology, will decide the outcome

AI is neither a threat nor a savior. It is an amplifier.

For CFOs and controllers, the defining question is not *whether* to adopt AI but *how* to do so without compromising integrity. Those who lead thoughtfully will strengthen finance's role as the steward of trust in the enterprise.

The future finance professional is not replaced by AI. The future finance professional is one who knows when to use AI and when to challenge it.

Bank Relationships and Cash Management

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Bank Relationships and Cash Management

Learning objectives

Upon completing this chapter, the reader will be able to:

- Better understand modern cash management;
- Understand how to negotiate with a bank for a loan; and
- See some of the consequences of modern banking laws.

I. Introduction

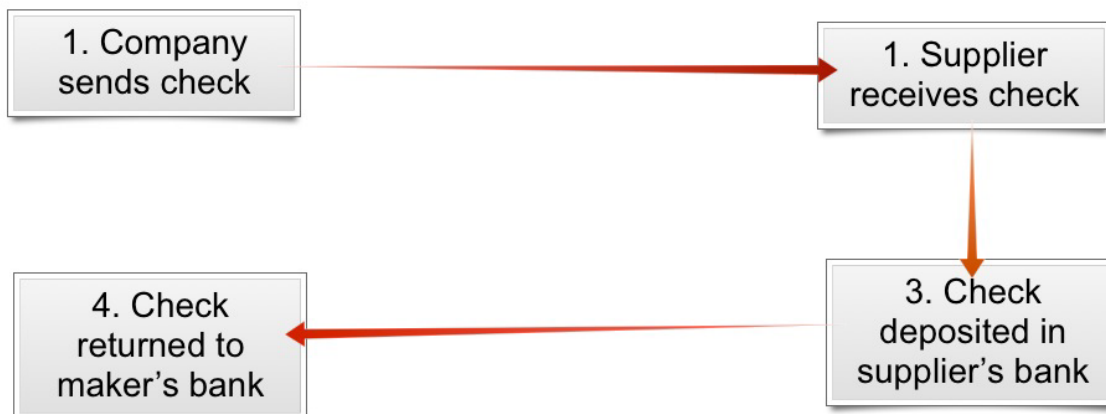
This section will explore the treasury responsibility of the finance professional involving the bank. With the advent of allowing the digital clearing of checks, traditional cash management is no longer a big deal; however, the liability side of the balance sheet is important when it comes to borrowing money.

II. Legislation

Over the past several years, much of what has been happening in the banking world has been affected by legislation coming out of Washington, DC. Specifically, we will discuss both Check 21 and the Dodd-Frank legislation.

A. Traditional check clearing

Traditional check clearing required the physical check to make the entire trip from the originating company back to its bank before it would be paid and considered to be “good” money. All of the other time that it was traveling through the system from the moment that it was put into the mail to the customer to the time it was returned to the maker’s bank, would be called “float.” That is, when the check was out there in the system, but not collected and not converted into good money that the customer can use either to invest or pay down loans.



Float is broken into three parts. Mail float is where the check is in the U.S. Postal system going from the making or originating company to the supplier. Depending on the distance, that process could take several days. Processing float is the time it takes the supplier to process the check and deposit it in the bank. That total time could be one to two days. Bank-processing float is the time it takes the bank to

process the check and return it to the original maker's bank. Whether the supplier's bank is returning the check directly to the originating bank (direct send) or returning the check through the Federal Reserve clearing system will determine how long the bank-processing float time might be. We would expect it to be around one to two days. So, if we consider that the old system could take three days of mail float, one in check processing float, and two more in bank-processing float, we have a total number of six days of float.

The value of that float obviously will depend on the amount of business being done by the company and the interest rate. For example, if the company has annual sales of \$100,000,000, that calculates to \$273,972.60 per day. That means that those six days of float amounts to \$1,643,835.62 of which the company does not have use. If short-term money is worth 5 percent to the company, the float is worth \$82,191.78 per year.

B. Check 21

The Check Clearing for the 21st Century Act, better known as Check 21, became law in the fall of 2003 and went into effect one year later. The law allows the recipient of the original paper check to create a digital version of a check, and process that check in its digital format.

The background of the law is somewhat interesting. For years, banks and the Federal Reserve have been trying to reduce the cost of clearing checks; however, lawmakers have been unwilling to make the change. Following 9/11, their sentiment changed. Since most paper checks were flown on airplanes, and those planes were grounded for several days following 9/11, the financial industry realized how dependent it was on the airline industry. Because no planes flew, the float built up to the point where the Federal Reserve had to step in and add liquidity to the system. Consequently, lawmakers suddenly saw that another way of clearing checks was needed.

By allowing this change to the system, the banks were able to digitize checks and clear the digitized image. Needless to say, this process significantly reduced the clearance time in that it virtually eliminated most of the bank-processing float.

While banks were the first to digitize the checks, the law allowed the digitizing process to take place at the first place of receipt, and banks quickly developed remote deposit systems where the company receiving the check could digitize with a simple scanner and deposit the check electronically. This will be discussed more under "remote deposit."

C. Dodd-Frank

As is often the case, Washington lawmakers pass legislation following a crisis. Obviously, they hope that the new legislation will prevent a reoccurrence of the crisis; however, the proof of that working must be decided over time. The Dodd-Frank legislation was written to try and prevent a reoccurrence of the financial crisis of 2008, but it remains to be seen if it will be effective. The one thing that we definitely know is that it has significantly changed the way banks work and make decisions. We will see those effects throughout this section.

The Dodd-Frank Wall Street Reform and Consumer Protection Act was passed into federal law on July 21, 2010. While the legislation has a lot to do with consumer regulations, we will primarily discuss the effects on the banking industry in connection with cash management and borrowing.

1. Compliance costs

The huge piece of legislation puts many more regulations into the banking industry. For that reason, banks must spend a lot of money both on software, forms, and people to comply with the regulations. This has increased bank-operating costs that they will have to eventually get from the customers. For that reason, commercial customers are finding it more difficult to negotiate fees to a lower level. The other aspect of this change is that this cost is primarily a fixed cost thus allowing the larger banks more flexibility in absorbing the cost. Consequently, we are seeing more bank mergers and the reducing of the number of smaller banks. As we will see in our discussion of bank lending, this has had a large effect on how the bank loans are made.

2. Interest on deposits

For years there was written in the banking laws a thing known as Regulation Q. This regulated how much banks could pay on deposits. Over the years, most parts of Reg. Q were abolished; however, the one remaining part was the prohibition of banks paying interest on commercial demand deposits. That part of the regulation went out with Dodd-Frank allowing banks to pay interest on demand deposits. That being said, we are not seeing banks running to pay interest on commercial checking accounts probably for two reasons. First, interest rates are historically low meaning that such payment wouldn't make a lot of difference. Second, bank-operating expenses have increased as said above.

3. Tighter credit standards

While it is too early to see exactly the long-term effects of Dodd-Frank on credit, everything is pointing to the tightening of standards. When interest rates are low, banks are usually quite anxious to lend funds; however, we are not seeing that today. Bank examiners and audit departments have been seriously condemned for making non-performing loans. Consequently, as the pendulum usually swings in the opposite direction, those same departments are telling the lenders to tighten up and make more conservative loans. For this reason, today we are seeing a period of low rates and tight standards.

D. Check fraud prevention

Banking and Uniformed Commercial Code laws are very specific about responsible parties with respect to check fraud. Many companies are not properly informed about this and will sometimes pay for services that are not needed. Let's think about your checking account. Are you at risk if someone takes your checkbook and forges a signature? Or, what if someone reproduces your checks on an office copier? That fact is that the bank has your company signatures on file and technically, they are responsible for verifying the signatures on your checks to the ones in the file.

The truth is that most banks do not look at the checks. They "bulk file" them and never compare the signatures. Are they taking a risk? Yes, but the cost of manually inspecting the signatures is well above the losses they incur resulting from forged signatures. Banks generally have a cut-off point where they will examine the larger checks and bulk file the smaller ones. They are unwilling to tell anyone what that cut-off point might be.

While the bank may technically be responsible for this kind of check fraud, there may be some limitations. Banks are increasingly asking companies to assume this risk through their deposit agreements. In addition, they will also often try and limit their exposure by limiting the time that you can claim any fraud to one month after you have received your statement. Or they may also require you to prove that you have kept your checkbook in safe hands.

1. Positive pay

This is a service that many banks are now offering. At the time you issue checks, you also transmit an electronic file containing the information about the checks. As the checks come into the bank for clearing, they are checked against the file with any exceptions called to your attention. You then have the opportunity to return any questionable checks. While the costs for the service are low, the bank will generally charge for returning any checks. While this service may be helpful for the company, it is most advantageous to the bank since it will eliminate a lot of check fraud.

E. Modern cash management

When I first got into doing seminars for finance professionals cash management was a subject that sold a lot of seminars. The discipline was all about float management – speeding up the collections and slowing down the payments. Today, cash management is important, but its emphasis has totally changed. Today the emphasis is all about efficiently handling incoming and outgoing cash. Automatic payments, treasury workstations, and computerization are the focus of interest, but those subjects are best left to the banking systems where bank officers can guide you into the most efficient system for your operation. The most important aspect of this is that things have changed. Collecting and disbursing by paper check is still the dominant system being followed, but in most cases far from the most efficient. Remember, our objective is to serve customers better and do it more efficiently.

III. Bank borrowing

The remainder of this section will deal with the liability side of the balance sheet and discuss bank borrowing and how it has evolved with the recent regulations. We will first look at costs, and then how the decision is made.

A. Costs

When borrowing from a bank, or other financial institution, it's important to recognize that the rate being charged may be only part of the entire compensation to the lender. In fact, most banks charge for their lending services with a combination of the rate, a fee, and compensating balances. To understand the exact yield calculating those three factors, we will use the following formula:

$$(L * R * U) + (L * F) / (L * U) - (C + (L * F))$$

B = Average line balance

R= Interest rate charged

U= Usage of line

L= Amount of line of credit

F= Fee being charged online

C=Compensating balances kept at bank

As an example, let's look at a company negotiating a \$1,000,000 line of credit. We will say that the bank is going to charge a rate of 5 percent and a fee of 1 percent of the line. The company keeps an average of \$150,000 on deposit with the bank in its checking account. From past experience, the company expects that it will use about 40 percent of its line of credit over an average time. It needs the entire line because it will probably go that high during the busy season.

In the following example, we see that the final yield is well above the stated rate of 5 percent. The reason is that the compensating balances are relatively high and make a significant difference when compared against the 40 percent usage.

Line	1,000,000
Rate	5%
Balances	150,000
Fee	1%
Usage	40%
Fees and interest paid	30,000
Net funds received	240,000
Yield	12.50%

A good question to ask at this point would be: will the banker accept that analysis? The answer is probably no because the bank has no assurance that the company won't use the entire line for all of the time. If that happened, the yield would change significantly as shown below.

Line	1,000,000
Rate	5%
Balances	150,000
Fee	1%
Usage	100%
Fees and interest paid	60,000
Net funds received	840,000
Yield	7.14%

So, finally, the question must be asked. Would it be possible to renegotiate the loan where both the bank and the customer improve their respective positions? Wouldn't that be true win/win negotiation? The answer is that it is possible. Since the usage assumption is the part of the terms that causes the difference in yield, what should be done is to place more of the compensation to the bank in the form of the rate, and less in the form of the fee. Following is the same case, but with paying the bank a rate of 6 percent rather than 5 percent and reducing the fee from 1 percent of the loan to ½ percent. As you can see below, the yield with 40 percent goes down (customer view), and also the yield with 100 percent assumption (bank view) goes up. Both sides win.

Line	1,000,000
Rate	6.00%
Balances	150,000
Fee	0.50%
Usage	40%
Fees and interest paid	29,000
Net funds received	245,000
Yield	11.84%
Line	1,000,000
Rate	6.00%
Balances	150,000
Fee	0.50%
Usage	100%
Fees and interest paid	65,000
Net funds received	845,000
Yield	7.69%

Note:

It is important to note that most bankers will not accept this analysis, although from the borrower's perspective it is correct. In today's environment of low interest rates, the banker will point out that the bank's earnings on the compensating balances will be far less than the yield calculation. Most banks today have sophisticated proprietary loan pricing models that will value compensating balances at a much lower rate.

B. Decision-making

Now that we have looked at how banks charge for their loans, let's look at how they make their lending decision. Before we get into the details of the system, we need to look at how the Dodd-Frank legislation has affected decisions. The most important thing is a combination of technology and the legislation. As mentioned earlier, bank regulators and examiners are more stringent with credit decisions after having been severely criticized for having bad loans on the books. Consequently, the banks are more conservative.

The other issues are more about technology. When I was a bank lending officer, I was given loan authority, and made my credit decisions based on my experience, analysis, and knowledge. Today, that analysis is done primarily by computers, and the final decision is, to a great extent, made by computers running sophisticated algorithms. The interesting thing is that the algorithms tend to duplicate the traditional decision-making process that used to be made by individuals. Consequently, we view the decision parameters from the standpoint of being made by individuals, knowing that the same system is used by computers.

With the growth of AI in all sectors, we can definitely expect that it will be used extensively in loan decision making. This is highly regulated in the case of consumer loans where bank decision models must prove that they are not in any way discriminatory. With commercial and business loans to corporations, banks' use of AI will certainly grow, but we will continue to see a difference of regulations between consumer and commercial borrowing. But, despite the increased use of AI and loan decision models, those models will still continue to be based on a very old and respected subjective model for credit granting based on the "four Cs of credit."

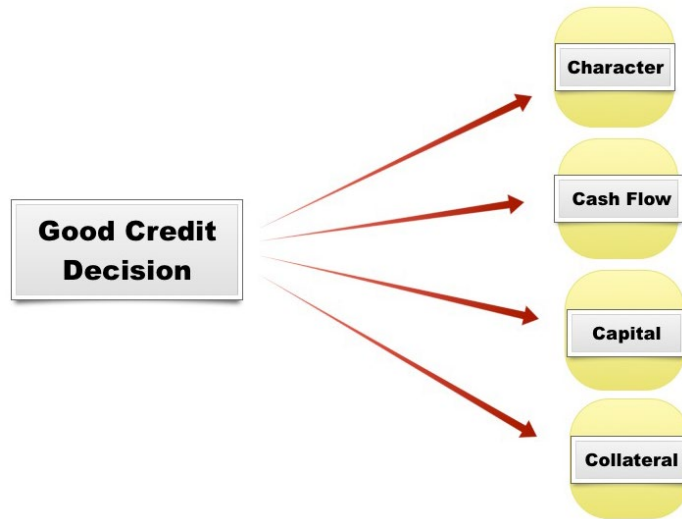
1. The four Cs of credit

For years, bankers and other grantors of credit have considered the four or five Cs of credit. When we consider four; we consider character, cash flow, capital, and collateral. When a fifth is entered, it is often conditions that are analyzed. For this program we will consider four Cs of credit. While obviously conditions are crucial, that is taken up in the section on economics and must be considered when looking at the rest of the Cs. After all, if economic conditions are deteriorating, the cash flow is apt to be reduced, the capital will be less, the collateral will have a lower value due to changes in the market conditions, and the borrower may even be tempted or forced to delay payments causing the reputation to decline. For that reason, we must always be aware of economic conditions when evaluating any of the four Cs of credit.

2. Order is significant

While the four Cs of credit are all important, there is a reason that most grantors of credit will put them in the order as shown above and discussed in detail below. There is a relative importance saying that character is the most important C, then comes cash flow, then capital, and finally collateral. When a

banker looks at a loan, the assessment should be done in this order and when we are looking at granting trade credit, we should use the same system.



3. Character

The first and most important C of credit is character. This is the character of the organization. What are the values? If things get tough, will the company want to make the payments on time, or will management take an easier way out? One banker once said that character is the borrower's desire to pay the loan.

Another way to look at character is reputation. Does this organization have a good reputation in the trade and among its competitors and customers, or is its reputation somewhat soiled? Certainly, this C of credit is a value judgment and subject to subjective thought. There is no way to accurately quantify this C and make this part of the decision completely objective.

- a. **History** – Probably the best way to evaluate the character of the company is the history we have with the company. Have payments been made in a timely manner in the past? Has management followed through on what has been promised? Looking at the history works both for the banker as well as the grantor of trade credit. When the bank has had the customer for several years, it is much easier to determine the reputation. Two important things come from this discussion. First, when you are dealing with your banker, it is important to recognize how the dealings will be analyzed in the bank's evaluation of your company's character. The other side of the coin is that you need to carefully keep files on your customers to determine their reputations both with your own company and also the competitors with which they may trade. Reputation is everything.
- b. **Rating agencies and D&B** – In the case of a new relationship, obviously there is no history on which to base the character decision. For this reason, bankers and other organizations will look to the credit agencies to get their experience. By far the best known for commercial credit is the Dun and Bradstreet Company, (D&B). This company started over 150 years ago with the mission to help companies make better credit decisions. It issues reports on large and small organizations with the idea of helping the readers of the reports grant credit with more information.

In 2010, the original D&B spun off and sold the credit monitoring and management business to a newly formed company, Dun & Bradstreet Credibility Corp.

Most organizations have had very mixed results with D&B. Many say that the information is grossly inaccurate, and others believe the reports to be extremely useful in their credit-granting operations. To better determine the accuracy of D&B, let's look at how they get their information.

- (i) **Public records** – The company gets a lot of its information by subscribing to all kinds of services producing public information. Consequently, suits, judgments, liens, and financing statements, which are all public information, will usually accurately show up in a D&B report. In the author's opinion, this is the greatest strength of D&B, and why banks and many other granters will have a contract with D&B and get reports. As a grantor of credit, you need to know the public information. For example, if you are granting trade credit, you want to know if a bank may have a lien on the company's inventory. In the same way, in determining the character C, you want to know if there are suits, judgments, or other kinds of negative information about the company.
- (ii) **Trade payment information** – D&B conducts and publishes information about trade checks. A trade check is when a company calls another company who has had experience granting credit to the subject company. The trade check will usually include high credit, outstanding amount, and the payment history over the experience.

The problem with D&B's trade checks is that they probably received the vendor list to check from the company itself, and there is little chance that the company would have given vendors with whom they were slow. For that reason, when the credit decision is important or the amount of credit is high, we recommend that a company do its own trade check always asking the informants for other possible companies with whom the company has done business.

- (iii) **Financial information** – With the exception of publicly held companies where the financial information is readily available, D&B does a very spotty job with providing financial information. If financial statements are included in a report, they probably have been obtained directly from the company. If estimates are given, then those might also have been provided by the company or are the product of the one writing up the report.
- (iv) **Financial analysis** – Using the public information, trade report, and any financial information, the writer of the report will do an analysis and even produce a percentage of chance that the company will go out of business. In the author's opinion, this information can be dangerous. I would strongly suggest that grantors of credit use the information available and do their own analysis and determine the chances of default. Having someone else do the analysis is dangerous.
- (v) **Strategy** – For granting credit, we would suggest that you obtain D&B reports as a better way to determine information that will lead to better character decisions. On the flip side, we would suggest that you obtain and keep your own report up to date so that you know what your customers and bankers are seeing.

- c. **RMA** – Almost 100 years ago at its founding, RMA was known as Robert Morris Associates. Today, they have retained the initials and changed the name to Risk Management Associates. The organization is primarily a trade society of bank credit executives who share information and receive education on how to make better credit decisions.

From the viewpoint of the financial professional, RMA does two very important things about which you should know. First, it shares financial statements with the central office where they are calculated into industry averages and sold to members and the public for financial analysis purposes. Clearly, if we can benchmark a financial ratio of a company that we are analyzing to the averages of the industry, we have some important information.

The other important thing that RMA does is to provide an important network among its members so that they can share information from one to another. In this respect it has produced an ethical statement to which members agree about talking from one to another about credit information.

Because of this network, when considering granting credit, one banker may call another banker who may have had experience with the company. In the same way, a company considering granting trade credit can ask their bank to call the potential customer's bank to get a reference. While the credit manager could conduct the bank reference call, often the banker is able to get better information due to the professional courtesy and membership of RMA.

- d. **Personal credit reports** – Over the past several years credit granting by banks has evolved to where most of the smaller loans are actually made without commercial analysis but with only the analysis of the company owner's credit reputation. Bankers have found that if the owner has a good credit score, probably the company will pay its bills on time and be a good credit risk. While there is no rule of the size break between when the bank analyzes the company credit vs. the personal credit, we have seen the break point be anywhere between \$50,000 and \$300,000. The smaller banks are more apt to have lower numbers with the larger banks having higher numbers.

The reason for this trend is almost totally economic. The bank is able to get a personal credit report in a matter of seconds at a very low cost. On the other hand, when the bank analyzes the commercial financial information of the customer, the cost is much higher.

- e. **Bank references** – When obtaining information with which to make a sound credit decision, it is necessary to get as much as possible. One great source is a bank reference; however, banks are more and more reluctant to give any information out because they are afraid of being sued. Consequently, it's crucial to, before selling to a new client, get a bank reference. When doing so, the company should have to sign a permission slip allowing the company to obtain information from the bank. The wording of the document should be as broad as possible, allowing the bank to give out the information without fear of reprisal should something go wrong.

We strongly suggest that you get a loan officer's name when getting the permission. Calling a bank to get credit information is difficult at best; however, you will generally have better luck if you can get directly to a loan officer. That person knows the customer, wants the customer to succeed, and is more apt to be candid with information. This trick is more apt to work at smaller banks and be more difficult at larger banks.

When giving credit information, banks will sometimes give it out according to the RMA ethics standards as mentioned above. That information would be as follows:

- (i) Length of time of relationship.
- (ii) History of company.
- (iii) Form of legal organization.
- (iv) Names of principals.
- (v) Line of business.
- (vi) Checking account relationship:
 - Opening date.
 - Average balances.
- (vii) Loan relationship:
 - Types of loans.
 - High point.
 - Low point or clean up.
 - Current balance.
 - Collateral if any.
 - Guarantees or endorsements.
 - Loan rating.

Generally, both account and loan balances and amounts are expressed in RMA General Figure Ranges. These are as follows:

Low 4 figures =	\$1,000 to \$1,999
Moderate 4 figures =	\$2,000 to 3,999
Medium 4 figures =	\$4,000 to \$6,999
High 4 figures =	7,000 to \$9,999

The ranges are adjustable to accommodate all amounts in the following manner:

Nominal =	under \$100
3 figures =	\$100 to \$999
4 figures =	\$1,000 to \$9,999
5 figures =	\$10,000 to 99,999
And so on...	

- f. **Character rating and bank consolidation** – Over the past several years there has been a great degree of bank consolidation. This has been done largely because the cost of a bank's compliance with regulations is largely a fixed expense, and therefore the percentage cost of compliance is far less for a large bank than it is for a small one. As a result, the large banks are purchasing the small banks. The unintended result of this consolidation has been that the larger banks are more able to spend money on computer-generated decision models for loans, and these models pay less attention to character as a factor in the decision. In the small bank, the loan officer will generally have a greater say in the decision and will be more influenced by their view of character. In the larger bank, the computer will make the decision based on the numbers.

4. Cash flow

The second C of credit is cash flow. For analysis purposes, this should be carefully defined and put into two categories – long-term and short-term. Unfortunately, cash flow is defined in several ways by different parties. For the purposes of this discussion, we will not resort to a specific definition but will look at a company's cash flow in its entirety.

It is important to note that lenders have taken a more conservative approach about verifying cash flow as a result of the recent pandemic. While historical cash flow is key, lenders are not looking closely to see if changes resulting from the pandemic have caused changes in that cash flow and what that will look like in the future.

- a. **Short-term cash flow** – In theory, short-term assets should be financed with short-term liabilities and long-term assets should be financed with long-term liabilities. For that reason, banks usually look at two different kinds of loans. In the case of the short-term loan, banks will often finance the operation with a line of credit designed to provide credit during the busy season with the line being paid off during the slow season. If we were to diagram the loan, it would look much like the following chart.

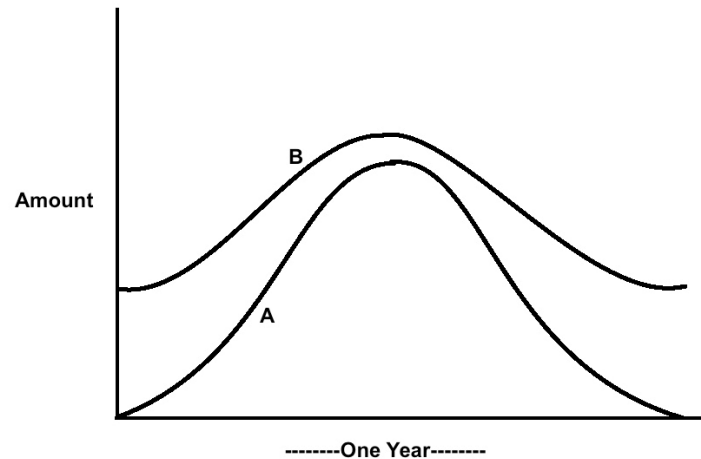
It is interesting to note that this shows the pattern of a short-term loan over a one-year period. The graph of loan A starts at zero at the beginning of the season, goes up to its high point, and returns to zero at the end of the period. The period where the company is out of debt on the line of credit is called a "clean up." Theoretically, the bank wants the company to zero its short-term obligation because it shows that it is only using the operating for peak periods in the yearly cycle.

Graph B shows a company that starts the yearly cycle already having a debt balance, increasing it as the year gets busy, and then paying it down to about where it was before. That company does not clean up its bank lines and really has a permanent amount always outstanding. In this case, often the bank will require the company to convert the permanent portion of the line to a term loan and pay it off over time since it is really permanent capital.

One way we evaluate short-term cash flow is to watch the workings of the bank lines. If the company has a borrowing history like A, it would be considered to have a better cash flow rating since it is able to clean up its loans. B, on the other hand, would be seen as having a lower cash flow rating because there is a permanent portion of the loan that is not paid down.

There is a third possibility, which would be where the company ended its short-term loan higher than at the beginning of the cycle. This would say one of two things: (i) either the company had negative cash flow causing it to borrow more during the year to make up for the deficiency, possibly caused by a loss in operations or; (ii) the company could have used some of its short-term borrowing to cover higher than expected receivables, inventory, or fixed assets. Obviously, the analyst needs to understand why the borrowing was more at the end of the year than at the beginning.

Please note that the determination of short-term cash flow can be obtained through the bank check as mentioned above. This is because the bank may tell us the details of the loan including the low point or clean up.



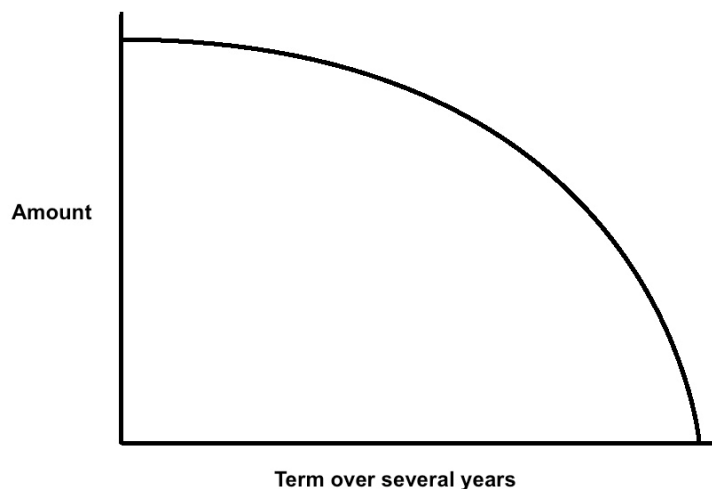
This discussion brings us to a short discussion of sustainability. When the cash flow is negative causing the short-term borrowings to end the year higher than at the beginning, we know that the company is financing its negative cash flow through an increase in debt. While that may be OK for our federal government, most companies can't do that over a long period of time. Even with good collateral, at some point probably the bank is going to say to restrict future borrowings. When or if that happens, the company will either have to obtain a different source of financing or go out of business.

From the viewpoint of the balance sheet, two ratios are key in determining the short-term cash flow. Those are the current ratio and the quick ratio. The current ratio is the ratio of current assets divided by current liabilities. The quick ratio is the ratio of cash and receivables divided by current liabilities. In both cases, these two ratios need to be benchmarked both over time and also against the industry averages.

To rate the short-term cash flow on a scale of one to ten, we should know two things. First, we should know the history of the borrowing relationship so that we can determine the information as stated above. In addition, we should look at the current and quick ratios both over time and as compared to the industry standards. With all of that information, we should be able to make a determination that the short-term cash flow is average, above average, or below average.

- b. **Long-term cash flow** – Analyzing the long-term cash flow is quite different. From a lending standpoint, long-term loans are usually obtained to purchase long-term assets such as land, buildings, and fixed assets. Long-term loans might also be obtained to substitute for equity capital if needed for growth, to purchase another business, or even to cover temporary losses.

A long-term loan would be graphed like the following:



This type of loan will be for more than one year and usually will amortize like the chart. Because usually the payments are equal, and most of the payment goes for interest at the beginning of the loan, the principal amount of the loan will reduce very slowly at the beginning and then much faster toward the end.

The cash flow needed to pay off this kind of loan is totally different than for a short-term loan. Probably the best financial ratio to analyze would be the current portions of long-term debt divided by net profit after taxes plus depreciation and amortization. The key to that ratio is to determine if the historical cash flow of the business was sufficient to pay the scheduled debt reduction for next year. It is interesting to note that the ratio covers both years. If we were analyzing the balance sheet of 12/31/12, we would take the 2012 net profit and depreciation and divide that by the current portion of the debt as shown on the balance sheet of the same period. Of course, that would represent payments that were going to be due in the year 2013. The key test here is: *Is last year's cash flow sufficient to make next year's debt payments?*

As bank analysis models have become more sophisticated, so has the use of some different ratios. Today, cash flow has become, by far, the most important C of credit. Earnings before depreciation and amortization divided by debt service is a key, as is the fixed coverage ratio. This is calculated by setting the numerator as earnings before interest, depreciation, and amortization minus unfunded capital expenditures and distributions and the denominator as total debt service. For this, banks are looking for a number somewhat above 1.1 or 1.2 to 1.

5. Capital

Assessing the capital C is relatively easy. Essentially, it is a rating of the leverage of the business. If the company is more highly leveraged, the rating would be lower and if it were less leveraged, the rating would be higher.

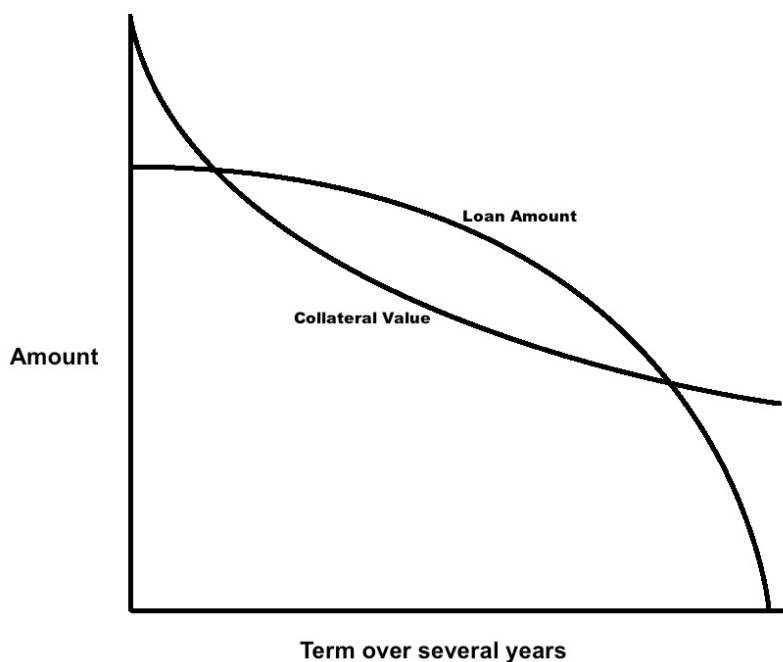
Most analysts will use either the debt/worth ratio or the debt/asset ratio for this analysis. Either ratio will show the same thing, although obviously the ratios will be different. Again, like in all the other ratios, we want to benchmark the ratios both over time and also against industry averages.

6. Collateral

The final C of our analysis is collateral. When there is no collateral for a debt extension, obviously the rating would have to be 0. On the other hand, if both the value and the liquidity of the collateral are extremely high in relationship to the loan, then the collateral would be rated as a 10.

Both value and liquidity of collateral are important. The company may have inventory that is very valuable, but if a lender had to assume title to it, it might not sell well on the open market. For this reason, most banks have advance ratios that they set for different types of collateral. For instance, a bank may advance 80 percent on receivables, only 60 percent on inventory, and anywhere from between 50 percent to 90 percent on equipment, depending on the type.

Note the following graph. This is the same term loan mentioned above but superimposing the collateral value on the same chart. In many cases, the collateral will depreciate in a different schedule than will the loan amortize. In the case of something like an automobile or boat, the greatest amount of market depreciation is when the asset goes off the showroom floor. Then the market-depreciation curve levels out. Lenders will be very careful in assessing the period when the market value of the collateral may be below the balance of the loan.



7. Rating summary

As was said earlier, most credit decision mistakes are made because the potential customer looks so good in one area that we forget to objectively look at the other areas. Consequently, we strongly suggest that you draw up a simple rating form requiring the credit decision-maker to give a rating for each of the 4 Cs and then say why they rated it as such.

Now that most banks have automated risk rating models, it is crucial for the controller or CFO to understand the model and how it works. Most banks want the borrower to understand this analysis and will be very willing to spend time with the CPA explaining the system and how the borrower can adjust its operations and plan to best meet the demands of the system.

C. Case study

ABC Manufacturing Company has applied for a \$1,000,000 credit line from your bank. While the request is for the line to be unsecured, you may need to obtain collateral to get the loan approved.

You have obtained a Dun & Bradstreet report as well as five years of financial statements, which you have analyzed. In addition, the credit department checked with the applicant's present bank with the information detailed below.

On the form at the end of the case, rate each of the 4Cs of credit giving your reasoning for each rating.

1. Dun & Bradstreet

The report shows a history section and list of officers that check out correctly with the information on the credit application. A trade check is as follows:

Respondent	High credit	Balance	Terms	Pmt. history in days
3253	10,000	4,500	30	45
6878	2,597	2,000	30	40
9887	125,000	10,000	30	60
93554	4,500	3,000	30	30

Public records show a financing statement filed against receivables and inventory by the Last National Bank.

A suit has been filed against the company for \$1,000,000 by Global Products claiming a poor product. The suit has not been resolved. The company reported that was a minor product dispute and expects it to be resolved in favor of the company.

2. Bank reference

The company has been banking with us for the past 15 years. The balances in their checking account have averaged high 5 figures, and there have been no overdrafts. We make available for the company a high six-figure line of credit that has been actively and properly used. The high point was a high six-figure amount, which was reached in July. The low point was a high five-figure amount and was reached in December. Currently, a medium six-figure amount is outstanding. The line is secured by accounts receivable and inventory and also guaranteed by the principles and their wives. We have also occasionally lent them money for equipment purchases with a high credit of a medium five-figure amount and a present balance of high four figures. There have been no late payments. We find this to be a good customer and would recommend it for its normal business obligations.

Following are the financial statements for ABC Manufacturing Company.

Year (000s omitted)	1	2	3	4	5
Cash	41	47	54	62	72
Receivables	585	683	805	958	1,156
Inventory	301	351	454	560	670
Other current	24	28	32	37	42
Total current assets	951	1,109	1,345	1,617	1,940
Land and buildings	680	680	680	680	680
Equipment	125	144	165	190	219
Less depreciation	406	467	537	617	710
Net fixed assets	399	357	308	253	189
Other assets	45	52	60	68	79
Total assets	1,395	1,517	1,713	1,938	2,207
Bank loans current	180	105	78	100	85
Current portion of LTD	65	75	86	99	114
Accounts payable	285	328	377	418	481
Accruals	45	52	60	68	79
Other current	8	9	11	12	14
Total current liabilities	583	568	611	697	772
Long term debt	353	406	467	537	617
Other liabilities	24	28	32	37	42
Total liabilities	960	1,002	1,110	1,271	1,431
Common stock	300	300	300	300	300
Preferred stock	10	10	10	10	10
Retained earnings	125	205	293	357	465
Total equity	435	515	603	667	775
Total liabilities and equity	1,395	1,517	1,713	1,938	2,206
Sales	8,455	9,301	10,588	11,766	12,943
Cost of sales	2,537	2,790	3,225	3,530	3,950
Gross profit	5,919	6,510	7,363	8,236	8,993
Operating expenses	5,622	6,184	7,125	7,838	8,621
Net profit before taxes	297	326	238	399	371
Income taxes	119	130	95	159	149
Net profit after taxes	178	196	143	239	223
Dividends	98	108	79	132	123
Net change in retained ear.	80	88	64	108	100
Ratios					
Current	1.63	1.95	2.20	2.32	2.51
Quick	1.07	1.28	1.41	1.46	1.59
Debt to worth	2.21	1.95	1.84	1.90	1.85
Debt to assets	0.69	0.66	0.65	0.66	0.65
Receivable turnover	14.45	13.62	13.15	12.28	11.20
Inventory turnover	8.43	7.95	7.10	6.30	5.90
Return on assets	12.8%	12.9%	8.3%	12.3%	10.1%
Return on equity	40.9%	38.0%	23.7%	35.8%	28.7%
Return on sales	2.1%	2.1%	1.3%	2.0%	1.7%

Ratios industry average

Quick	2.85
Debt to worth	1.6
Debt to assets	0.88
Receivable turnover	10.2
Inventory turnover	6.55
Return on assets	15.50%
Return on equity	15.00%
Return on sales	3.35%

Credit Rating Form

Client name

Bank reference

Loan officer name

On a scale of 1-10, how would you rate the reputation of the company?

Rating_____

Why?

On a scale of 1-10, how would you rate the cash flow of the company?

Rating_____

Why?

On a scale of 1-10, how would you rate the capital of the company?

Rating_____

Why?

On a scale of 1-10, how would you rate the collateral of the company?

Rating_____

Why?

Recommendation for requested loan:

IV. AI, cash flow, and banking

A. From reactive to predictive cash control

- a. AI-driven forecasting models analyze historical data, seasonality, and real-time transactions.
- b. Businesses can now anticipate cash shortages or surpluses weeks or months in advance.
- c. Reliance on static spreadsheets and manual projections is reduced.

B. Real-time cash visibility

- a. Continuous monitoring of cash positions across accounts, subsidiaries, and geographies.
- b. Automated consolidation of bank data provides a single, up-to-date cash view.
- c. Faster decision-making for treasury and finance teams.

C. Smarter working capital optimization

- a. AI identifies patterns in receivables, payables, and inventory cycles.
- b. Recommendations for optimal payment timing to preserve liquidity.
- c. Improved alignment between operational needs and cash availability.

D. Automated cash forecast adjustments

- a. Forecasts update dynamically as new data comes in (sales, expenses, delays).
- b. Scenario modeling allows businesses to test the cash impact of strategic decisions.
- c. Forecasting errors are reduced compared to rule-based systems.

E. Enhanced risk detection and fraud prevention

- a. AI flags unusual cash movements or anomalies in real time.
- b. Early detection of errors, fraud, or liquidity risks.
- c. Strengthened internal controls without added manual oversight.

F. Strategic role of finance teams

- a. Less time spent on data gathering and reconciliation.
- b. More focus on strategic planning, capital allocation, and growth initiatives.
- c. Cash management becomes a forward-looking strategic function rather than a back-office task.

V. AI and bank borrowing

AI is changing bank borrowing for the organization.

A. Faster loan decisions

- a. AI automates data collection and analysis.
- b. Loan approvals that once took weeks now take days or even hours.

B. Smarter credit risk assessment

- a. AI analyzes more than just credit scores and financial statements.
- b. Use of cash flow patterns, transaction history, and real-time data.

C. More accurate risk pricing

D. Reduction in human bias through standardized decision models

E. More customized loan products

F. Dynamic loan terms based on actual business performance

G. Ongoing monitoring instead of one-time underwriting

Risk Management

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Risk Management

Learning objectives

Upon completing this chapter, the reader will be able to:

- Recognize organizational risks often not detected;
- See how to establish an ERM system;
- Determine how to respond to known risks; and
- See how to determine unknown risks.

I. Introduction

Let's start with a basic and important concept – business is risky. No matter how you cut it, any organization that deals with a product or service will be forced to make decisions that will cause either benefit or detriment. Business is risk, and that must be understood. Managing that risk is the key to managing the business, and risk management has been important for many years. Recently, however, many aspects of the discipline have changed.

While risk management used to be viewed as a fancy name for insurance, now it is a much more global skill with much greater implications for the organization. ERM addresses the methods and processes used by organizations to manage risks and seize opportunities related to the achievement of their strategies and objectives.

ERM can be viewed as a four-step process:

1. It encourages organizations to identify relevant events, developments, and circumstances;
2. It then classifies potential likelihood of magnitude and impact on the organization;
3. Develops a strategy to reduce risk or seize opportunity; and
4. Monitors the organization toward those objectives.

The final objective of the process is to maximize opportunity or minimize risk for the owners.

A key element of ERM is for the organization to recognize that it is impossible to assume that management can understand the hundreds and even thousands of risk exposures. Consequently, it must develop a system that will take that analysis throughout the organization to where it can be best analyzed and managed. In this section, we will look first more conceptually and then complete the section looking more at financial risk management.

The recent pandemic has caused a significant change in how organizations view risk. Where we once never considered that our operations could be so drastically affected by such an unexpected occurrence, we now find it a reality. Consequently, we need to take another look at how we view potential risks, and how they could affect us. The most important thing that we have learned is that we have to become much more flexible so that we are in a better position to adapt to changes that may become required.

II. Recognition of the upside

Most people view risk as the possibility of loss; however, this is only half of the picture. Risk also involves the potential gain. Consequently, we must recognize that forgoing a potential gain has just as serious a consequence to the organization as sustaining a loss. As we ponder this concept, let's consider a short list of organizations that have failed, or had serious setbacks, due to their lack of taking risk and innovating. Such a list might include:

- a. Wal-Mart.
- b. Digital Equipment;
- c. Wang Laboratories;
- d. Research in Motion;
- e. Smith Corona; and
- f. Kodak.

A. Exercise

In assessing your organization, it's often helpful to ask yourself some interesting questions:

- a. Is more of your revenue coming from new and innovative products and services, or is most of it coming from more traditional items?
- b. Are you more closely watching days' sales outstanding or increases in revenue?
- c. Does management spend more time reviewing budget compliance or innovation or growth opportunities?
- d. Are you spending more time on cost control or new product development?
- e. Is management spending more time on existing product lines or on new product development?
- f. Is project management seen as a fast-track career path or is line management considered more rewarding?
- g. Does your organization encourage dissent?

From these, do the following exercises to assess both your own risk tolerance and that of your organization:

- a. Take a moment and make a list of other companies that have failed to take action, and the failure has caused serious harm.
- b. Now, think about your own organization or even department. Make a list of incidents where it has failed to take action and that failure has caused harm.
- c. Now, in the instances above, write down some possible ideas why the instances occurred.

III. Why change does not occur

I would suggest that organizations often do not innovate because they are unwilling to take risk. There is something about the organization that causes it to become risk-averse with many of the employees unwilling to take the necessary risk to cause innovation to take place. Due to the seriousness of this condition, we need to then ask ourselves why that might occur.

A. Size

Many, if not most, organizations begin as small entrepreneurial-type organizations that are often started by a single person with a passion for solving a problem or need that they see in the marketplace. That person generally takes a huge risk investing their money and time into an idea with little assurance of success. Why do they do it? Because they believe in an idea and believe that they can be successful in seeing the idea come to fruition.

Generally, those people are risk takers in that they have been willing to give up a lot to make the idea happen. They are willing to take the risk because they see that the potential risk/return equation favors the action. Have they necessarily conducted an involved analysis of the risk and return? No, they often have instinctively determined that the investment would be reasonable considering the return.

Often those people hire people into the organization who are also willing to take risk and see the dream fulfilled. After all, risk-averse people often do not go with small start-up organizations. Consequently, the organization generally grows mimicking the culture of the founder causing risk and innovation to happen.

As organizations and their respective products and services mature, they often get more risk averse. As employees get further away from the original risk-taking entrepreneur, or that person has retired, often risk taking is less rewarded. Sometimes the influence of regulation, lawyers, and compliance takes over; the risk taking becomes a thing of the past.

B. Type of organization

In my experience, the type of organization can have a significant effect on both the culture and willingness to take risk. Governments tend to be risk-averse organizations seeing far less upside gain to taking risk than from avoiding loss for failure. Consequently, organizations that are closer to the government due to regulation also tend to follow the same trend. This may be the primary reason that health care and financial organizations tend to be far more risk-averse than high-tech organizations.

Similar to governments, non-profit organizations have a greater tendency to being risk-averse even when they are very small. These organizations tend to have larger boards of directors, often with relatively little direct knowledge of operations. Consequently, those directors are usually more rewarded for preventing mistakes than fostering innovation.

C. Incentives and risk

Employees will generally do what they are incentivized to do. If the incentives are directed to taking risk, they will take risk. If not, they will not. Consequently, the organization needs to assess its incentive systems and see if employees are incentivized to take reasonable risks or be more risk averse. Stock options and stock ownership reward risk taking as the owners obviously gain when the value of the firm increases. It should be noted that when those ownership opportunities are more available at the lower levels of the organization, the employees act more like owners and take more informed risks. On the other hand, when the employees do not receive any upside gain, they more often see the downside of any risk taking.

Southwest Airlines is a case in point. It is said that it has a very high percentage of employee stock ownership causing the employees to make better decisions about what is best for the entire company. Many say that stock ownership is a key component to Southwest's unique and coveted culture.

How time affects incentives also has a lot to do with risk. There is a constant undercurrent in our corporate philosophy that says that public companies always having to meet or beat quarterly projections has a lot to do with short-term risk taking. It is true that if our incentive systems are based on shorter-term performance, then those receiving the incentives will not be long-range thinkers. Consequently, it is necessary to carefully examine the incentives and make sure that they are balanced for both long- and short-term gains.

IV. Behavioral economics and risk

From a philosophical standpoint, many people consider that there are two views of economics – one rational and the other behavioral. The rational school says that in the long run all people act in a rational way, and thus we can determine how the economy will work. The behavioral view says that in many cases, people are not rational and therefore will make decisions in a non-rational manner. The real fact is that both views are somewhat correct and need to be understood. Some of the aspects of behavioral economics are important to our understanding of an organization being staffed with risk-averse employees or a staff that is more willing to rationally manage risk.

A. Conformity

This is an obvious situation where people will tend to go along with the crowd in order to feel accepted. The condition stems from a person's desire to be accepted by others in the group; they have an irrational tendency to go along with the group's thinking. This is similar to "group think," which is seen when people go along with the behavior or decisions of the group.

These three things tend to help the process in which conformity or groupthink occurs:

- a. The group is valued as a good place to belong;
- b. The group is relatively isolated; and
- c. The group leader is relatively strong.

The more these conditions are satisfied, the more conformity can be a problem. This condition is most manifested in risk aversion when assessing risk management. In some organizations when the culture is risk-averse, members are extremely reluctant to take risks and be different.

B. Obedience

This is simply a case where people tend to follow strong leadership and don't want to disappoint authority. This has a greater tendency to become a problem in organizations that are somewhat militaristically operated.

C. Ambiguity aversion

People naturally do not like to be in situations where they cannot assign or calculate probabilities to outcomes. In such cases, they have a tendency to get out of the market. In the case of risk management, this becomes a problem where the risk is so unknown that it cannot be calculated. Consequently, there is a tendency to opt out or not take the risk.

D. Representativeness

In this case, people have a tendency to see patterns to data that may be completely random. Consequently, they believe that the trend will hold. This problem can cause the organization to either be risk-averse or prone to risk if the pattern is positive. For example, in the recent real-estate crisis, the trend

of housing prices was upward, even to the point that believing that it would continue was somewhat irrational. However, most people believed in the trend even though it was irrational.

E. Optimism

In surveys, people have been found to believe that problems will happen to others far more than they will happen to themselves. This obviously can cause irrational optimistic thinking that can cloud good risk management.

F. Self-assessment

Looking at the above factors, rate on a scale of 1–10 with 0 being the least willing and 10 being the most willing, rate your organization's willingness to take risk.

V. Risk and the business model

Since any organization represents risk, the business model or models represent the risk of the organization. For instance, if your organization is a distributor of auto parts in a particular town, your business model is to purchase your parts from the manufacturers, inventory them in a location, and distribute them to the customers. Obviously, there are plenty of risks associated with that model. They may include but are certainly not limited to the risks associated with supply, price, and distribution. In addition, there are several more macro risks that have to do with the changing economy. Just ask many distributors that have gone out of business as the internet has completely changed the availability of many items.

Higher education is another good example. Colleges and universities had the business model of taking applications from those wanting to go to college, bringing the students onto campus to hear lectures from professors, and granting degrees when the studies were complete. Again, the internet has disrupted that model. Now, more students are taking online classes and living at home. Even more disruptive is the recent advent of online classes being offered for free to huge groups of students. While at this moment, the universities don't offer degrees for completion, this is expected to change as certificates of completion are offered. The business model of the university is severely threatened.

Discussion question:

How would the business model of one of the above organizations be affected by changes in the economy, environment, internet, or social media? What could the organization do about it?

A. Risk of disruptive innovation

Disruptive innovation is a term coined by Dr. Clayton Christensen, Professor of Business Administration at the Harvard Business School. While we don't have time to go through his excellent theory in detail, it represents an important field of knowledge for any finance professional. The concept is simple – one of the greatest risks in our organization is that someone or some company will make a change in the marketplace that totally changes our assumptions. In the recent past that has happened to retail, education, travel, and many others. In the future it will happen to healthcare, and other parts of our economy where the costs of the product or service have risen significantly faster than inflation. Some of the technical developments that we are now seeing will implement those changes. These include:

1. Disintermediation

This occurs when something like the Internet allows a company to buy or sell directly to its customers without going through an intermediary.

2. Artificial intelligence (AI)

This is a system of computer programming where the computer actually gets smarter by learning from its own data. AI is being used more and more in decision making, medical diagnoses, bank loan decisions, and similar areas.

3. Blockchain

While this is a very difficult concept to understand, I have found it best to think of it as a huge spreadsheet where anyone with the proper entry codes can make entries, and all of the members can immediately see the changes. Blockchain is the concept behind cyber currencies; however, it has many more uses. Now to transfer money, or almost anything else, we have to go through an intermediary. If we use the blockchain concept, the intermediary will not be required. Obviously, this could have huge effects if your company is an intermediary.

4. 3D printing

It wasn't long ago that you went to the dentist for a crown and the dentist performed a procedure of prepping the tooth, taking a mold of the tooth, and sending the mold to a lab to have the crown made. A few days later, you went back to the dentist and the crown was fitted to your tooth. Today at many dental offices, the dentist preps the tooth and then takes some digital photographs of the tooth. Those images are sent to a 3D printer, and in less than an hour, the dentist is fitting the new crown to your tooth. From what I see, I would not want to be in the dental lab business today.

VI. Economics and risk management

Financial professionals often look at the study of economics as theoretical and less than totally practical; however, we all need to be economists if we are going to correctly assess risk. The key to this is a simple word that has been getting a lot of play of late – “sustainability.” This word was not used much until several years ago when it was adopted by the environmentalists. From them, we learned to look at various aspects of our society and make sure that energy, climate, and similar things were sustainable over a long period of time.

More recently, we have started to look at economic things like pensions, health-care cost, education cost, and debt levels and ask ourselves the simple question, is the increase sustainable? The general conclusion is that if something is not sustainable, then it will have to change. Obviously, this brings risk management into the picture since it is often the lack of sustainability that brings about changes in the business model.

Take higher education as an example. Comparing the year-to-year changes in education costs, student debt and comparing those to the increases in some accepted benchmark such as a price index, we clearly see that the trends are not sustainable. The cost of higher education can't keep increasing, as is also true of the amount of student debt. Consequently, something will change. As I see it, the risk of the traditional business model of the university is subject to great risk.

So, as the CFO or someone interested in assessing risk for the organization, make sure that you have dusted off your economics books. Graph the trends affecting your organization and compare them to some kind of benchmark. If you see something out of line, dig down and investigate how the changes might affect your business model.

Discussion question:

What things in the economy might affect one or more of your business models?

VII. Risk and strategic planning

While this set of materials will not concentrate on planning, saving that for another program, it is necessary to discuss the role strategic planning has on the risk of the organization. One key to strategic planning is to develop the vision, mission, and core values of the organization. When that is accomplished, everyone in the organization has a common direction to travel under the agreement of the common values. If the organization fails to develop those three things, there is a much greater chance of disjointed planning and therefore, greater risk of poor results.

As we look at those three aspects of strategic planning, it is necessary to recognize that many different organizations put the three steps in different order. Personally, I don't think it matters a whole lot what the order is. It's most important that the organization includes all three steps.

A. Vision

This is the statement of where the organization wants to be in the future. It can be phrased in superlative terms such as, "We intend to be the most profitable and largest fine dining restaurant in the market area of 40 miles from our town." Notice, the vision statement is specific and well defined.

1. Exercise

Briefly, write a vision statement for your organization.

B. Mission

Using this system, the mission statement is a statement of how you are going to realize the vision. It's fine to state what we will become, but it is necessary to say how we will accomplish that task. For the hypothetical restaurant it might say something like: "We will accomplish that vision by creating a unique menu of only the freshest and best-cooked food based on a Cajun theme. We will have the best-trained workforce giving the finest five-star service that will be remembered by the customer."

1. Exercise

For your organization, write a brief mission statement that spells out how you will accomplish your vision.

C. Statement of core values

This is a statement of the values that the organization holds true and that cannot be violated. It is often longer than either the vision or mission statement and spells out more specifically how the organization will accomplish the other two.

1. Exercise

Write down some of the most important values of your organization that will enable it to achieve the vision and mission.

2. Johnson & Johnson credo

One of the best-known statements of core values is the Johnson & Johnson Credo. This is a statement penned in 1943 by Robert Wood Johnson, former chairman from 1932 to 1963 and a member of the Company's founding family:

We believe our first responsibility is to the doctors, nurses, and patients, to mothers and fathers and all others who use our products and services. In meeting their needs everything we do must be of high quality. We must constantly strive to reduce our costs in order to maintain reasonable prices. Customers' orders must be serviced promptly and accurately. Our suppliers and distributors must have an opportunity to make a fair profit.

We are responsible to our employees, the men and women who work with us throughout the world. Everyone must be considered as an individual. We must respect their dignity and recognize their merit. They must have a sense of security in their jobs. Compensation must be fair and adequate, and working conditions clean, orderly, and safe. We must be mindful of ways to help our employees fulfil their family responsibilities. Employees must feel free to make suggestions and complaints. There must be equal opportunity for employment, development, and advancement for those qualified. We must provide competent management, and their actions must be just and ethical.

We are responsible to the communities in which we live and work and to the world community as well. We must be good citizens - support good works and charities and bear our fair share of taxes. We must encourage civic improvements and better health and education. We must maintain in good order the property we are privileged to use, protecting the environment and natural resources.

Our final responsibility is to our stockholders. Business must make a sound profit. We must experiment with new ideas. Research must be carried on, innovative programs developed and mistakes paid for. New equipment must be purchased, new facilities provided, and new products launched. Reserves must be created to provide for adverse times.

When we operate according to these principles, the stockholders should realize a fair return.

There are several things that we see by looking at this statement. First, in the J&J system, the credo is the first statement in the strategic planning process. From the credo follows the vision and mission of the company. As was said earlier, good strategic planning includes vision, mission, and values. It is important that all three are included. It is not important which is first and which is third.

Recently, I happened to hear an address by William C. Weldon, Chairman and CEO of Johnson & Johnson. In it he made a very important statement where he said that a person would not be terminated for missing the numbers in the budget, but they would be fired for failing to live up to the credo. Clearly, this credo is at the heart of the management of J&J.

When an organization highly values its strategic plan, everyone is on the same page, and all employees know and follow the core values, the risk of the organization is reduced.

D. Are we correctly planning for the future?

Now that we have a new administration, what political, economic, and social things might happen that will either positively or negatively affect our organization? I recently heard of a money-center bank that had had an entire department devoted to researching the writings, speeches, and other public statements by the cabinet level and other leaders coming into the new administration with the specific purpose of trying to determine in what direction the country will be moving. At this point, those in that department, or in the bank's leadership, might like or dislike that direction, but it doesn't matter. The job of those people will be

to gather the information and help plan the strategic direction of the organization based on what can be expected.

1. Exercise

Regardless of your opinion of the new administration, consider the things that might be positive or negative about the direction, and add those opinions into your strategic plan for your organization.

VIII. Risk owners

Shared responsibility can be a great idea but can cause a lack of responsibility in some instances. Take, for example, a situation where several people are called upon to review documents. While the idea of many people checking to make sure something is right seems like a great idea, when a problem is uncovered, it's far more difficult to locate the source or cause. When you line up the group who approved the mistake, everyone points to someone else as the person at fault.

It is the same case with risk. Just as someone should be accountable for revenues, profits, and efficiency in each organizational unit, a single person should be responsible for each category of risk. When questions arise, we shouldn't be dealing with a committee; there should be one person on whose desk the buck stops.

That being said, for most kinds of risks within the operating departments, certain other risks that are on an organizational basis, such as culture, reputation, and leadership, might be better assigned to a group located near the top of the organizational structure.

A. Centralized risk function

Although most risks cannot be managed centrally, they should be monitored centrally. This is where we need to understand the difference between management and monitoring. Most risks must be managed on a decentralized basis with the people closest to the risk having the responsibility to manage the risk. On the other hand, someone or some group at the corporate office needs to monitor the various risks and coordinate with the various risk owners.

Many risks cross units and responsibilities. The centralized risk function can identify and monitor solutions while the actual management is left to the risk owners in the various individual functions. This works similarly to the internal auditor who identifies and reports noncompliant procedures, but the correcting of the problems is the responsibility of the operating units.

The centralized ERM function encourages the use of new software and technologies to clarify risk and opportunities. Through technology we now have the opportunity to tie together the whole story of risk throughout the organization. We can show relationships visually, isolate key factors, and prepare reports on the status of the exposures we face.

IX. Risk categories

A. Production risk

This represents the risk associated with the creation of the goods or services distributed by the organization. Subsets of this risk are:

- a. Design;
- b. Supply;
- c. Process; and
- d. Efficiency.

B. Marketing risk

This involves the various marketing exposures and opportunities. The sub-risks are:

- a. Customer needs;
- b. Distribution;
- c. Volume; and
- d. Pricing.

C. Cash-flow risk

This risk involves having adequate cash to support the organization including production, marketing, and all other aspects of the organization's vision. Sub-risks can include:

- a. Cash levels;
- b. Receivable and credit management; and
- c. Inventory management.

D. Compliance

These risks are the risks involved with making sure that the organization meets regulatory requirements. These might include:

- a. Regulatory;
- b. Financial; and
- c. Legal.

E. Technology

This risk has sharply increased as it has become more important to the operation of our organizations.

This risk can be broken down into several sub-risks:

- a. Business-support risk;
- b. Information-systems risk;
- c. Communications risk; and
- d. Cyber risk. This is a huge area of risk for any organization today, and deserves one or more days of attention, which is impossible here. Let us just say that according to recent surveys, most finance professionals underestimate the amount of risk coming from this direction. There are two important things to remember about this risk. First, most of the risk is preventable if your employees do not engage in risky computer behavior; however, getting them to stop may be next to impossible. That is why education is key. The second major factor is that this risk is insurable, and the insurance company will help you do a lot of the education in order to prevent the risk that you have just transferred to it.

F. Business-disruption risk

This represents the unexpected disruption of the operations of the organization. This is an especially dangerous risk since it is difficult to calculate. What are the chances that an earthquake will hit headquarters or the manufacturing plant? Does the organization have the ability to provide an effective response to an unexpected emergency?

G. Reputation risk?

While this used to be considered relatively minor and part of business-disruption risk, as a result of social media and the Internet, many organizations are breaking this risk out as a separate category. The risk is obvious, and the ramifications are huge.

X. Managing known risk

When we know of a given risk, we need to take the appropriate strategy to do something about that risk. Following is a simple, but often-used matrix to determine how to approach the various risks.



The matrix breaks risk down into two aspects – the likelihood of a given risk’s occurrence and its effect on the organization. To better understand the matrix, let’s look at some examples with some strategies. Obviously, the terms low and high are relative and subject to different people’s interpretation, so not everyone will necessarily agree with the examples.

In a retail organization, a certain amount of “inventory shrinkage,” better known, as shoplifting or employee theft, is inevitable. I find that the handling of this risk tends to run from one end to the other in management, but it is an interesting case.

In many organizations with reasonable controls the incidence is relatively low and the effect on the organization is also relatively low. This is especially true if the value of the merchandise is small. In these cases, the store might easily just accept the potential loss and build it into the price. Notice that if either of two things occurs, our strategy would be different. If the value of the merchandise might be high, let’s say

we are a jewelry store, then obviously we will take steps to prevent even one theft. Or, if the value of the items is low, but the incidence of shoplifting is very high, then again, we will do something to monitor the amount and manage the loss.

Another example might be the loss of key members of the executive team. That might be a very low probability but a very high cost to the organization. In these cases, we might not have “key man insurance,” but definitely have a contingency plan should the occasion occur.

It is especially important to look at the items that are likely to occur and also can be extremely costly to the firm. Things like economic cycles, interest rate cycles, commodity price changes, can often be mitigated through things like derivatives. Other possible occurrences having a lesser probability can be mitigated through insurance.

As we work through this matrix for all of the known risks in the organization, we ask ourselves some critical risk questions:

- a. What is the worst thing that can happen? What is the maximum downside with respect to the risk?
- b. What is the potential upside to taking the risk?
- c. What are the probabilities of each happening?
- d. What are the potential positive and negative effects?
- e. How will we manage and mitigate some of the risks?

XI. Financial risk management

A. In general

Financial risk analysis is part of the overall concept of Enterprise Risk Analysis that was discussed separately. The discipline encompasses the financial consequences of both good and bad management of the enterprise risk and pursuing its opportunities. Like ERM, it understands the double-edged sword that focuses both on an upside and a downside of risk. Many of the enterprise risks were covered under the ERM chapter; however, this chapter will concentrate on more of the specific accounting and financial risks.

Enterprise risk is not owned by the finance and accounting departments, but they do make many of the rules, and we must understand what they do and the inherent risks in some of those rules.

B. Accounting risk

There are many different aspects of accounting that contribute to understanding the risk of the organization. We often make the assumption that the established principles and rules force transparent presentation of financial information thus eliminating much of the risk; however, as we shall see, there is much risk within the accounting information.

1. Going concern

A going concern is a business entity that is expected to continue to operate for an indefinite period of time. This principle is followed in preparing most financial statements except where there is doubt that the organization will continue.

The financial risk is seen when the financial statements may fail to show evidence of problems or evidence that could undermine the business's ability to continue to operate.

Example: Four telecommunications companies have agreed to merge. Each company submitted audited financial statements to an independent appraiser to determine a value. One of the companies owned and operated satellites that carried sensitive and encrypted data between the continents of Africa and South America. Based on its reported profits over a six-year period, the appraisal showed the company to be worth \$12 million. It was priced at that amount in the transaction.

Six months after the agreement closed, an underwater cable was completed linking South Africa and Brazil. The company's revenues immediately dropped by 80 percent as customers switched to a faster and even more secure transmission system for data. A few months later, the unit ceased operations.

From this example, it is obvious that there is more to going concern risk than may meet the eye.

When lenders analyze financial information, they often combine the concepts of going concern and liquidation values. For example, accruals are traditionally classified as a current asset. However, lenders often treat them as slow assets since they cannot be liquidated into cash.

2. Cost basis of accounting

All expenses are recorded at actual cost as determined by the amount of cash involved or the market value of the transaction. If a machine is purchased for \$100,000, the accounting records reflect this value, even though the firm's management may feel that the machine is "worth" \$150,000. While the values of assets are static in the accounting system, they may be widely different in the marketplace. This can lead to incorrect decisions when assessing the risk of the firm.

This risk is particularly true with respect to both current and fixed assets. While most fixed assets will depreciate, certain ones will hold value or even increase in value if scarce. The concept of "marking to market" is widely debated in accounting circles and encompasses the aspect of this risk.

3. Accrual basis of revenues

Since most financial statements are prepared on an accrual basis, we assume that revenue is recognized when it occurs, and most expenses are properly tied to the revenue. But is that always the case? Therein lies the risk in this principle of accounting. Can some of the reported revenue actually belong to future accounting periods, or are some of the expenses held over to future periods? Obviously, either of these occurrences, if significant, affects the risk of the enterprise.

4. Current assets

The obvious risk question is, are the current assets really liquid? Are the receivables really collectable in this accounting period? Is the inventory really current, not out of date, and can it easily be sold or used in production during this year? While proper accounting principles may state the assets correctly, the real values may differ somewhat. There is the risk.

5. Fixed assets

What is the true value? While properly accounted for, the market may easily value the assets either greater or less than as stated on the financial statements.

6. Intangible assets

Are there even assets at all? Do they have value? When lenders analyze financial statements, they often will eliminate the intangibles, citing that in a liquidation mode the assets have no value at all. In addition, some lenders will include in intangible assets items such as molds and tools that might properly be classified as tangible fixed assets.

7. Current liabilities

When determining the true value of these liabilities it is important to understand the underlying nature of the obligations. What are the covenants to loans? Do those covenants change either the amount of interest, amortization schedule, or anything else about the loan contract?

8. Long-term liabilities

Similarly, we have to examine the loan covenants to determine if there is risk of acceleration, increase in interest rates, or anything else that could change the obligation. This is the same risk that must be considered in obligation under capital leases.

C. Cash flow risk

Financial managers know that cash is king, but exactly what does that mean? Can a firm regularly report profits on its income statement and still be short on funds? Can it have adequate assets compared to its debts and still have a liquidity crisis? The answer to both of these questions is yes. Thus, we must understand the role played by cash flows, separate from the accounting records of a firm.

Following is a popular formula that shows the external funds needed as a company grows.

$$EFN = \frac{SA}{S} \Delta S + \frac{\Delta FA}{S} \Delta S - \frac{SL}{S} \Delta S - (S + \Delta S) \cdot PM \cdot (1 - PO)$$

Some of the terms need to be defined:

SA – Spontaneous assets. These are assets that automatically grow with sales growth, and usually consist of cash, receivables, and inventory.

S – Sales

SL – Spontaneous liabilities. These are liabilities that automatically grow with sales growth and usually consist of payables and accruals.

FA – Fixed assets

PM – Profit margin (net of taxes)

PO – Payout ratio

One way to look at the formula is an algebraic representation of much of the cash flow statement. The formula recognizes that increases in most of the current assets require funds for financing as does increases in net fixed assets. On the other hand, retained earnings and increases in most payables contribute to available cash and thus reduce the need for financing. The formula results in a positive number when external money is needed to finance any growth, and a negative number when growth increases cash flow.

Following, I've changed the sign of the formula so that it produces a positive number when growth increases cash flow and a negative number when the cash flow is negative.

The following examples show limited financial information for the ABC Company. In this first case, note that there are no new sales projected nor is there any expected increase in net fixed assets.

Cash	10,000		
Accounts receivable	120,000		
Inventory	150,000		
Fixed assets	210,000		
Accounts payable	100,000		
Accruals	45,000		
Sales	800,000		
Net profit	50,000		
Dividends	30,000		
		Spontaneous assets/sales	0.350000
		Spontaneous liabilities/sales	0.181250
Spontaneous assets	280,000		
Spontaneous liabilities	145,000	Spontaneous assets increase	-
Profit margin	0.06250	Spontaneous liabilities increase	-
Payout ratio	0.60000	Net fixed assets increase	-
		New sales	800,000
Assumptions:		Profit	50,000
New sales	-	Dividends	30,000
New net fixed assets	-		
		Net change in cash flow	20,000

As expected, we have a company earning a profit margin of 6.25 percent with a 60 percent payout ratio leaving a net cash flow of \$20,000.

Now, if we put some growth into the picture, we notice that the cash flow drops because of the new assets created that have to be financed.

Cash	10,000		
Accounts receivable	120,000		
Inventory	150,000		
Fixed assets	210,000		
Accounts payable	100,000		
Accruals	45,000		
Sales	800,000		
Net profit	50,000		
Dividends	30,000	Spontaneous assets/sales	0.350000
		Spontaneous liabilities/sales	0.181250
Spontaneous assets	280,000		
Spontaneous liabilities	145,000	Spontaneous assets increase	28,000
Profit margin	0.06250	Spontaneous liabilities increase	14,500
Payout ratio	0.60000	Net fixed assets increase	-
		New sales	880,000
Assumptions:		Profit	55,000
New sales	80,000	Dividends	33,000
New net fixed assets	-		
		Net change in cash flow	8,500

Certainly, that is still not too ordinary since, to grow, most companies will also have to add to the fixed assets. If we keep the same 10 percent growth rate but assume that \$10,000 will be needed for net fixed assets, we arrive at the following example with a negative cash flow.

Cash	10,000		
Accounts receivable	120,000		
Inventory	150,000		
Fixed assets	210,000		
Accounts payable	100,000		
Accruals	45,000		
Sales	800,000		
Net profit	50,000		
Dividends	30,000	Spontaneous assets/sales	0.350000
		Spontaneous liabilities/sales	0.181250
Spontaneous assets	280,000		
Spontaneous liabilities	145,000	Spontaneous assets increase	28,000
Profit margin	0.06250	Spontaneous liabilities increase	14,500
Payout ratio	0.60000	Net fixed assets increase	10,000
		New sales	880,000
Assumptions:		Profit	55,000
New sales	80,000	Dividends	33,000
New net fixed assets	10,000		
		Net change in cash flow	(1,500)

If we take the example one more step to where we have a 20 percent growth assumption with a need for \$50,000 of net fixed assets, we discover a \$53,000 negative cash flow or the need to find an additional \$53,000 from either the equity or borrowing markets.

Cash	10,000		
Accounts Receivable	120,000		
Inventory	150,000		
Fixed Assets	210,000		
Accounts payable	100,000		
Accruals	45,000		
Sales	800,000		
Net profit	50,000		
Dividends	30,000	Spontaneous assets/sales	0.350000
		Spontaneous liabilities/sales	0.181250
Spontaneous assets	280,000		
Spontaneous liabilities	145,000	Spontaneous assets increase	56,000
Profit margin	0.06250	Spontaneous liabilities increase	29,000
Payout ratio	0.60000	Net fixed assets increase	50,000
		New sales	960,000
Assumptions:		Profit	60,000
New sales	160,000	Dividends	36,000
New net fixed assets	50,000		
		Net change in cash flow	(53,000)

This model points out some of the key things to watch when understanding the financial risks of cash flow.

1. Cash management

We need to have a certain amount of cash on hand for liquidity purposes, but if we were able to apply some cash management techniques and thus reduce the need for cash, we would be able to reduce our spontaneous assets.

2. Accounts receivable turnover

As we can see from the above model, accounts receivable are quite significant. If, through better methods of collection, changes of terms, or a different business model we were able to sharply reduce accounts receivable, we would succeed in reducing the amount of spontaneous assets.

3. Inventory turnover

Similarly, if we can speed up the turnover of our inventory through new automated systems or something like a just-in-time inventory system, we might be able to reduce our spontaneous assets.

4. Fixed assets

If we can find another way to grow without purchasing fixed assets, we might be able to reduce that part of our cash outflow and increase our free cash flow.

5. Gross margin

By looking at our pricing or purchasing strategy, we may be able to increase our gross margin which will, in turn, increase our net margin.

6. Operating expenses

We always know that expense control is important, but the concept shows up clearly here, as the net profit margin is an important part of the cash flow. Paying more attention to efficiency can easily increase the profit margin and resulting cash flow.

7. Dividend policy

Paying out a high dividend obviously hurts the cash flow; however, we always know that owners like dividends.

In the last example of ABC Company, we saw a \$53,000 negative cash flow with a 20 percent growth. Following, we will see the same company with adjustments made to each of the above-mentioned items and taking the negative cash flow into a positive number.

Cash	8,000		
Accounts receivable	100,000		
Inventory	120,000		
Fixed assets	210,000		
Accounts payable	100,000		
Accruals	45,000		
Sales	800,000		
Net profit	60,000		
Dividends	20,000	Spontaneous assets/sales	0.285000
		Spontaneous liabilities/sales	0.181250
Spontaneous assets	228,000		
Spontaneous liabilities	145,000	Spontaneous assets increase	45,600
Profit margin	0.07500	Spontaneous liabilities increase	29,000
Payout ratio	0.33333	Net fixed assets increase	30,000
		New sales	960,000
Assumptions:			
New sales	160,000	Profit	72,000
New net fixed assets	30,000	Dividends	24,000
		Net change in cash flow	1,400

D. Leverage risk

In this section, we will discuss two different and important types of leverage risk; operating leverage and financial leverage. In both cases, a change in income causes a greater change in either operating income or return on investment.

1. Operating leverage

In the case of operating leverage, a change in sales or revenue will cause a greater change in operating income. This is the result of a certain portion of the costs being of a fixed nature. If there were no fixed cost, there would be no operating leverage. If, on the other hand, most of the costs are fixed, then we can say that the firm has a lot of operating leverage.

Let's take a simple example showing two totally different companies, a grocery store, and a hotel. Obviously, the grocery store would primarily be a variable-cost type of company whereas the hotel would be primarily fixed-cost in nature.

	Company A (hotel)	Company B (grocery store)
Sales	10,000,000	10,000,000
Variable expenses	1,500,000	7,500,000
Marginal contribution	8,500,000	2,500,000
Fixed costs	7,500,000	1,500,000
Operating profit	1,000,000	1,000,000

Notice that both companies have the same profit; however, most of the hotel's costs are fixed and most of the grocery store's expenses are variable.

The difference is clearer if we see what happens if the revenue for each company is increased by 20 percent.

Profits with a 20 percent increase in sales:

	Company A (hotel)	Company B (grocery store)
Sales	12,000,000	12,000,000
Variable expenses	1,800,000	9,000,000
Marginal contribution	10,200,000	3,000,000
Fixed costs	7,500,000	1,500,000
Operating profit	2,700,000	1,500,000

Clearly the operating profit of the hotel went up much faster than the grocery store because of its ratio of fixed vs. variable costs. In the same way, if we decrease the revenue of both organizations by 20 percent, we get a situation as follows.

Profits with a 20 percent decrease in sales:

	Company A (hotel)	Company B (grocery store)
Sales	8,000,000	8,000,000
Variable expenses	1,200,000	6,000,000
Marginal contribution	6,800,000	2,000,000
Fixed costs	7,500,000	1,500,000
Operating profit	(700,000)	500,000

Consequently, we can say that organizations with greater amounts of fixed assets are more highly leveraged and thus riskier in that respect.

2. Financial leverage

Certainly, the most common description of leverage is financial leverage. This is the relationship of the liability side of the balance sheet between total liabilities and equity. In the following example, we see two different companies with very different balance sheets. Company A is not highly leveraged with only about 29 percent of its total assets coming from borrowed funds. In this case, the borrowing is in the form of trade debt and accruals. In company B, however, there is less equity and thus more (77.9 percent) of the assets are covered by debt including both long- and short-term debt in addition to the trade debt.

We commonly measure the amount of financial leverage with the Debt/Worth ratio, which is total liabilities divided by total net worth.

	Company A	Company B
Cash	10,000	10,000
Receivables	126,000	126,000
Inventory	175,000	175,000
Current assets	311,000	311,000
Fixed assets	100,000	100,000
Total assets	411,000	411,000
Bank debt	-	50,000
Payables	105,000	105,000
Accruals	15,000	15,000
Current liabilities	120,000	170,000
Long-term debt	-	150,000
Total liabilities	120,000	320,000
Common stock	191,000	50,000
Retained earnings	100,000	41,000
Total equity	291,000	91,000
Total liabilities and equity	411,000	411,000
EBIT margin	6.00%	6.00%
Interest rate	9.00%	9.00%
Sales	1,000,000	1,000,000
EBIT	60,000	60,000
Interest rate	-	18,000
Net earnings before taxes	60,000	42,000
Taxes (30%)	18,000	12,600
Net earnings after taxes	42,000	29,400
Return on equity	14.4%	32.3%
Debt/worth	0.41	3.52

We understand the reason for the leverage when we understand difference in the return on the equity of the company. As long as the company is able to borrow at favorable interest rates, it is generally more profitable to increase leverage. Note that Company A has a 14.4 percent return on equity whereas Company B has increased its return on equity to 32.3 percent since it has less equity on which to make a return.

But this leverage also has risks coming from two different directions. First, the more highly leveraged company automatically has more volatility in earnings. The following chart shows the two companies with different sales going from \$500,000 to \$2,000,000. Here we see the return on equity of Company A fluctuating from 7 percent to 29 percent, but the ROE in Company B going from 9 percent to 78 percent.

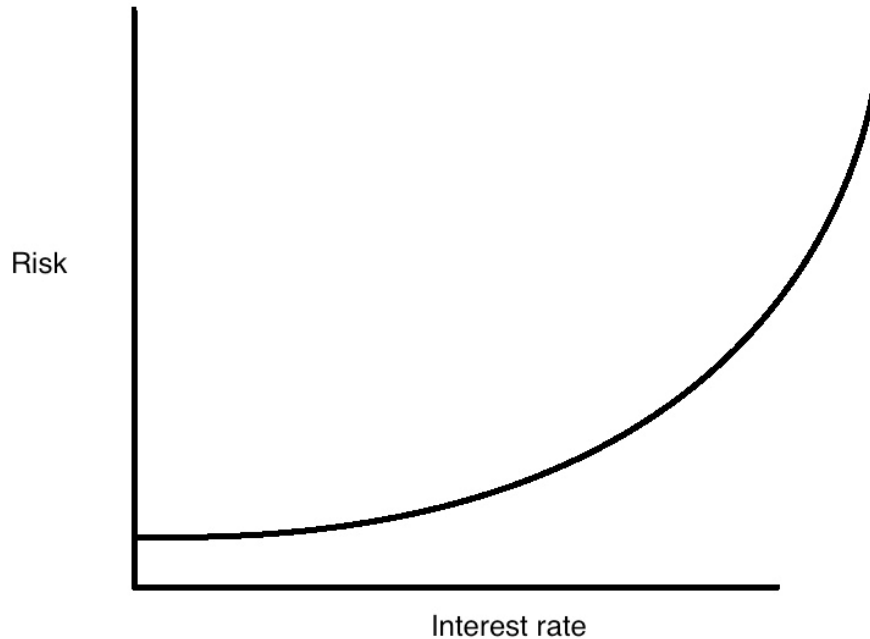
Sales	Company A	Company B
500,000	7.22%	9.23%
600,000	8.66%	13.85%
700,000	10.10%	18.46%
800,000	11.55%	23.08%
900,000	12.99%	27.69%
1,000,000	14.43%	32.31%
1,100,000	15.88%	36.92%
1,200,000	17.32%	41.54%
1,300,000	18.76%	46.15%
1,400,000	20.21%	50.77%
1,500,000	21.65%	55.38%
1,600,000	23.09%	60.00%
1,700,000	24.54%	64.62%
1,800,000	25.98%	69.23%
1,900,000	27.42%	73.85%
2,000,000	28.87%	78.46%

The other aspect of risk is in the eyes of the lender. In the case of Company A, there is no outside debt other than the trade debt. In the case of Company B, the banks or other lenders have a total of \$200,000 of debt. That may be a tolerable risk for the lender, but there will be a limit of how much more debt the company can float without having to pay a very high interest rate or not being able to get any more debt at all.

Financial leverage works because, in most cases, the cost of debt capital is less than the cost of equity capital. For example, if a company can borrow at 6 percent, it is obviously better to borrow as long as the return on equity, or the theoretical cost of that equity, is greater than 6 percent. However, as a company increases its leverage the risk gets greater. Consequently, the borrowers may want more interest in order to lend. At some point the cost of the debt capital becomes greater than cost of the equity capital.

The theoretical best amount of leverage would be where the average cost of capital is lowest, or where the cost of the debt capital is less than the cost of the equity capital. In most cases, this point will not be determined by a financial theory but will be determined by the lenders as they become less willing to advance any more debt. Then, the company would have to resort to alternative lenders where the cost may quickly become prohibitive. There is no certain spot to determine this; however, the author has found that it occurs usually when the more traditional sources of funds, such as banks, are no longer willing to increase the leverage.

The following simple graph symbolizes the relationship between risk and interest rate from the eyes of the lender. Notice that there is more of a geometric curve in that the rate does not increase much with a proportionate increase in risk until we pass a spot where the lenders start to require a much greater rate for taking much more risk. This place is often found where the more traditional lenders become unwilling to take more risk, and less traditional lenders are sought out.



XII. AI and risk management

Traditional risk management in small and medium-sized organizations tends to be reactive, manual, and resource-constrained. When the organization utilizes the new AI tools, it is more able to do the following:

- a. Shift from periodic reviews to continuous risk monitoring;
- b. Move from reactive to predictive risk management by identifying patterns and early warning signs;
- c. Enhance financial risk detection through continuous monitoring of cash flow, expenses, and receivables;
- d. Identify liquidity problems and fraud at earlier stages;
- e. Strengthen cybersecurity and operational risk control;
- f. Detect cyberattacks and data breaches through AI-driven threat analysis;
- g. Monitor network behavior and access patterns in real time;
- h. Improve supply chain and vendor risk management;
- i. Diversify suppliers or renegotiate contracts before problems escalate;
- j. Simplify compliance and regulatory risk management;
- k. Automate the monitoring of transactions and documentation;
- l. Generate alerts for policy violations and regulatory changes;
- m. Integrate risk insights into everyday business tools; and
- n. Replace complex risk reports with clear, actionable dashboards.

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Economic Update

Learning objectives

Upon completing this chapter, the reader will be able to:

- Recognize key emerging economic trends;
- See how micro and macroeconomics work together;
- Understand how new things like the cloud and social media affect our organizations; and
- Better predict what may happen to our business.

I. Introduction

In many organizations the CFO or controller has the responsibility to being the chief economist. The reason is simple – economics involves numbers, and you are probably the senior numbers person. Consequently, staying up to date with what's going on with the economy is an important part of your continuing training. In this section, we will look at both microeconomics (the study of the firm), as well as macroeconomics (the study of the national economy), to see how each can and will have an effect on your organization.

II. Microeconomics

Microeconomics is the study of what is likely to happen (tendencies) when individuals make choices in response to changes in incentives, prices, resources, and/or methods of production. In short, as the world changes, how those changes affect how the organization reacts to those changes to continue to operate successfully. While we will not talk about all of the new things happening in our economy, we will discuss a few of them to better understand what is happening and also how those changes can affect the strategy of your company. As was said earlier, this program takes no position regarding politics; however, it is impossible to talk about economics without also talking about politics. Often what happens in economics is the direct or indirect result of what is happening in politics. Consequently, political changes often cause economic changes.

We recently had a change of administration in our national leadership, and it is reasonable to anticipate that changes will occur. In addition, political views of the citizens of the nation often change over time, and consequently, organizational policy often changes as a result. While I will not take a political position on what I think is right or wrong, I will point out some of the different changes that have occurred.

A. Globalization

Everyone has been talking about globalization for years. In his 2005 economic bestseller, *The World is Flat*, Thomas Friedman focused on this as a major trend that had, and will continue to have, a huge effect on our markets. Largely due to advances in both transportation and communications, geographic boundaries are far less important than they were only a few years ago. This is also true within the United States.

A great example of this is when you drive through a McDonalds restaurant in Colorado, and someone comes on the speaker to take your order, that person may be in Texas and not inside the building that is right next-door. Why? Because it is more efficient and practical to have those people in a room taking care of multiple locations.

For this reason, knowledge is quickly becoming more of a commodity and less of an aspect of differentiation. Not long ago, our firms prided themselves on hiring and retaining the best and most knowledgeable people. Today, many companies are purchasing that knowledge offshore from the lowest bidder. Do you need a programmer, web designer, or engineer? You no longer have to recruit, hire, and keep that person happy. Today, you can get that knowledge from India or China at a much lower rate.

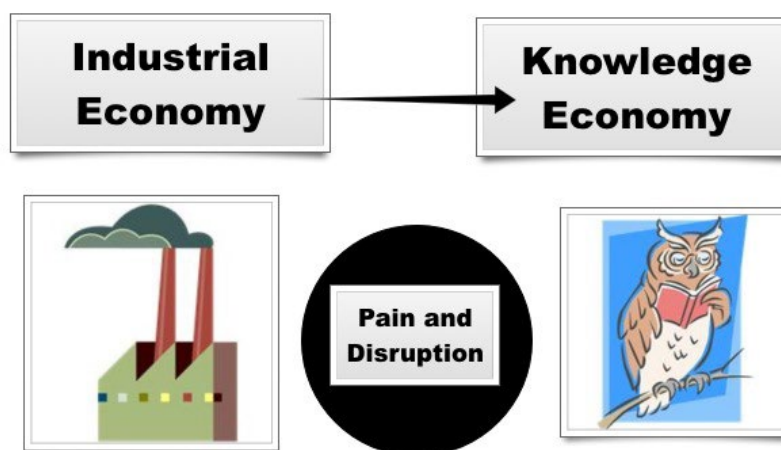
The pandemic caused change in some of the thinking about globalization. As countries shut down and international commerce slowed, supply chains and delivery times were stretched. Customers suffered, and some companies started to think about new sources of raw materials. As these materials are being written, supply chains have shown a net improvement in most situations, largely shifting to the point where needs are being met.

B. From the industrial to the knowledge economy

Another huge economic trend is the movement from the industrial to the knowledge-based economy. In the industrial economy, ushered in during the 1800s, the name of the game was economies of scale, build more for less, manage both operations and people, and value obedience over creativity. The fact is that things have changed now. We are no longer a manufacturing economy – we have switched to an information economy. Even in manufacturing operations, we more highly value creativity and knowledgeable work since most of the regular production line work has shifted to the machines.

This trend has many ramifications. The thing to realize is that it is real, and we have no choice. Unfortunately, many organizations do not seem to know that we have changed. They are still managing their operations in ways to constantly gain productivity through scientific management and trying to force people to become more productive. Unfortunately, it doesn't work, and those organizations are suffering as a result.

The ramifications of this huge change are felt in how we recruit and lead people, how we go about trying to increase productivity, and even how we institute controls in our organizations. This has everything to do with the trend from bureaucratic to more collaborative organizations.



C. The connected economy

Only a few years ago, we found ourselves in our community, our jobs, and maybe one or two social groups. Today, chances are we are involved in LinkedIn, Twitter (now X), several other business social networking groups, and probably have hundreds of friends on Facebook. Regardless of what we think of social networking, the phenomenon is upon us and probably won't go away for a while.

Not only are individuals far more connected, but businesses are far more connected, mostly through the internet. Snail mail has been replaced by electronic transmission in almost everything from invoices to receipts for expense reports.

1. Social media



Probably the most obvious aspect of the connected economy is the social media revolution. While Facebook is by far the dominant player, YouTube, LinkedIn, and others are important. Social media is a product of a quote from an Alvin Toffler book, *Future Shock*, when he talked about hi tech and hi touch. His point was that, while the world was obviously moving toward a high-tech environment, people still wanted to be individually connected. Why did we spend hours watching a group of people sitting around a bar and talking in *Cheers*? The answer is simple. We wanted to be connected, and we felt connected with the characters and their lives. The connections have been lost in many cases. We have walls around our homes and don't know our neighbors; however, we have 300 friends on Facebook. Humanity has found a high-tech way of being connected.

It is extremely important that companies pay attention to social networking trends, which networks are active with their employees, and how they are perceived in the public eye. For example, TikTok has recently gained a huge increase in followers among the younger generations. Assuming your company has members of those generations as employees and/or markets to their age group, you must understand the platform and know how it affects your company. Ignoring it will not work.

We either can have a don't-play policy with social media, or we can embrace it and make money. We can use it for marketing, recruiting, and even newsgathering. We can, for example, encourage private and closed groups on Facebook that work toward team building. Or we can try and eliminate the risk and discourage people from going on the site. Do we really think that will work?

D. Nonemployee employees

Recently the U.S. Census Bureau reported that 21 million workers represented workers in the economy who were really independent contractors. The census further said that it expected that number to grow much faster than "normal" employees. The reason is simple and is not based on tax laws. A major trend we are seeing in the employment economy is toward a system of meritocracy – where people are

rewarded not for how long they have been around or whom they know, but how much they produce for the organization. Meritocracy as the reason for hiring and promotion is a concept that has become highly political. Some believe that the concept itself discriminates against certain people; while others are firm that it is only a good concept. Now, with the new administration, we may see some changes in this thinking which will require finance professionals to keep aware of any changes.

The other reason for the rapid increase of this kind of employment is the desire for autonomy. We naturally want to be rewarded for what we produce, and not necessarily for how much time we sit in our seats.

As our country changes administrations in power and different political thinking takes over, we see changes in this trend. For example, several years ago traditional taxi cabs faced new competition from Uber and Lyft. Some states and cities have regulated these to the point where they are not much different from traditional taxis, but other states have allowed the drivers to stay as independent contractors and thus avoid some local regulations. This is an area where you have to watch for changes in political thinking to forecast what will happen in economic thinking.

E. Retail moving to the Web

After every Christmas season for the past several years we have heard the same thing from the economists – retail sales have been relatively flat with only a small increase. But internet shopping has increased by double digits. I live in a small town, and I just marvel at the retailers wringing their hands complaining about sales because of the bad economy. I have news for them: they don't offer sufficient inventory, I get hassled if I want to return something, and they are expensive. So, I go online and buy it from Amazon.

Of course, Amazon is not the only player in the field, but they sure are the biggest with the most impact. For years people have talked about Walmart and how they are hard on suppliers, ruin towns, and don't pay fair wages. Without question, online retail has and will continue to be significant competition to brick-and-mortar retail.

A study of how Amazon operated is fascinating. First, they retailed books. While we have no real way of knowing, I would imagine that they picked that particular product because it had a relatively old-fashioned delivery system that could quickly be exploited by new ideas and technology.

Next was the Kindle where they could wirelessly deliver the book to a device where all the books could be stored in some place other than home. This solution solved several problems including speed and ease of delivery.

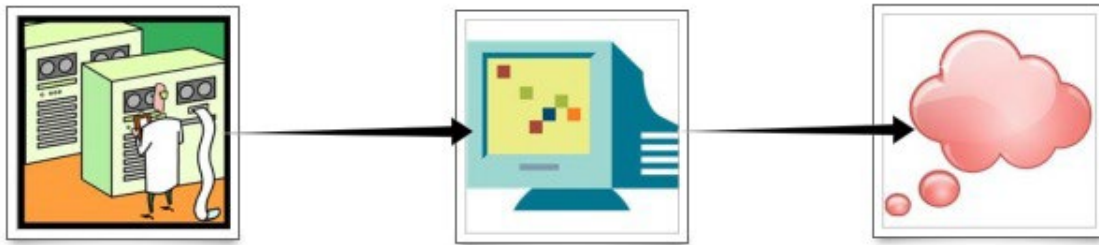
Not satisfied with books, the company then started selling just about everything else. They started with more expensive things with a high value to weight ratio and later moved into less expensive and more commodity-like products.

They then introduced "Amazon Prime," which is a system where the customer pays an annual fee and receives two-day shipping on everything. This not only makes shipping easier on the customer, but more importantly, it increases the loyalty of the customer to the point where they are more apt to go to Amazon and buy something that could be obtained at the local store. After all, if shipping is seen as free, and if it

arrives at my door in two days, why not buy that bottle of shampoo from Amazon rather than traveling up to the drug store?

Where will they go next? Cars, homes, insurance, financial services? Recently the company made a major push into prescription drugs, and obviously anyone even remotely connected to that industry must keep an eye on developments.

F. Technology to the cloud



Each year we see more and more internet storage and applications moving to the cloud and away from in-house servers. For the past few years, I have been asking my live classes who has applications in the cloud, and the percentage has increased each year. When I ask why some companies haven't moved to the cloud, the most frequently mentioned reason is security. Yet, when we look at the most noteworthy breaches of security or internet hacks, we see that they are most often from server-based applications rather than cloud-based. I hate to be branded a skeptic, but I have to ask if the people pointing out possible dangers in the security of the cloud-based programs may also be the same people who are concerned about potential job loss if the organization moves to the cloud.

G. Employee creativity needed

Because our businesses are becoming more complex, we have need for more creative employees to solve problems. The problem is that our education system generally favors teaching a rule-based system where people learn facts and not necessarily how to solve problems. Even in financial fields where rules are paramount, we need people to come up with better ways to maintain controls and increase productivity. If our workers only follow rules and keep their heads down, we will not have those increases in production that are needed for international competition.

Because of this trend, we are seeing more and more organizations recognize the need and develop ways to increase the creativity in their own workplaces. These may be problem-exercises, team building, case study training, or giving people special time to think of creative solutions to problems.

H. Spoiled customers

Regardless of liking it or not, our customers are spoiled. But we better not knock it too quickly, because we are part of that group. Due to technology, training, and creativity, giving better customer service has become a major differentiator. No longer is average customer service adequate. Our customers have become used to world-class service, and now they demand it from us.

Customer service has always been a moving bar in business, and now the bar is moving upward even faster. We might not like this trend, but it is upon us and it is only getting worse.

1. Hyper-competition

Monopolies are few and all of our organizations are finding the competition to be greater. More importantly, it is coming from more places and from all around the world. For this reason, our organizations must recognize the two required things in business: to serve the customer better and to do it more efficiently. We must constantly be putting those two things in front of all decisions. If we don't, we will fall to the competition.

Is this even true in theoretical monopolies like government? The answer is yes. Relatively few years ago public services such as trash collection or electric distribution were considered businesses of the utilities or governments. Now, more companies have come into the market and are actually starting to compete with the traditional sources of the services.

I. Disintermediation

One of the most important changes in microeconomics is disintermediation. This is the cutting out of the middleman. Modern communication, and especially the internet, has caused companies to be able to reach their ultimate customers directly rather than requiring them to go through several layers of the supply chain. For example, not long ago if a manufacturer in China developed a new hand tool for a roofing contractor, it would sell it to an exporter, who would sell it to a distributor, who would sell it to a retailer, who would sell it to the contractor. Today, the manufacturer can introduce the new product through a web page directed to contractors, either directly sell through that website or ship to Amazon and have the contractor purchase it there. At any case, the supply chain of the disintermediated model is quicker, more efficient, and cause the tool to cost less. But less business will be flowing through the exporter, distributor, and retailer.

This trend of disintermediation has been going along for several years; however, the recent pandemic, with its supply-chain problems, will probably speed up the trend. We will see this trend accelerate especially in industries where there are many steps to the supply chain and where creative entrepreneurs can devise more efficient ways of doing business.

J. The AI economy

As we move into the AI economy, we see several things changing that we can expect to continue:

- a. Productivity has increased;
- b. Labor markets are being rewired;
- c. Markets are becoming more efficient;
- d. Firm structure is changing;
- e. Inequality pressures have increased;
- f. Changes are occurring within economics itself; and
- g. Policy debates are evolving.

K. Exercise

Take your organization or another with which you have worked on a professional level. Then, reflect on what aspects of the future economy will affect that business and in what way. Take a special look at how disintermediation could affect your organization.

III. Macroeconomics

Before we can look at where we have been and where we are going, we need to understand what macroeconomics is and how it can affect our organization. Then, we will attempt to see what factors change our economy and some of the political decisions that affect those factors.

A. How our organization is affected by macroeconomics

In the case of most organizations, the connection is simple. When the economy is stronger as measured by Gross Domestic Product (GDP), there are more people employed at higher salaries, they have more money to spend, and the demand for our products and services will be higher. Non-profits are also affected by the economy. When GDP is strong, they receive more donations and often people will use their services more (such as an arts center); however, for some non-profits that serve the poor, their demand may increase in times of a slow economy since people need more social services. In any case, finance professionals need to keep an eye on the economy.

B. Money supply

Possibly the most important single thing affecting our economy is the amount of money in circulation. When there is more money, the demand for goods and services is increased. The relationship is simple. When you have received a nice raise and have more money in the bank, you naturally have a tendency to purchase some of those items that have been delayed. More money=more demand=stronger economy.

But too much money supply can also have a detrimental effect. If there is too much money in the economy, to the point where the growth in the money supply is greater than the amount of the goods and services, then the old law of supply and demand takes over. Demand is greater than supply thus causing prices to go up. We call that inflation.

Money is defined as a medium of exchange and/or a store of value. The Federal Reserve defines money as cash and currency plus demand deposits (checking accounts) at commercial banks. (Technically, when the Fed measures the money supply it has several different levels, but we will not go into that detail at this time.)

There are two totally different ways that cause the amount of money supply to change. The first is due to decisions made by the federal government having to do with spending and taxing (fiscal policy). The other is by banks, which increase the money supply when they make loans (monetary policy).

C. Fiscal policy

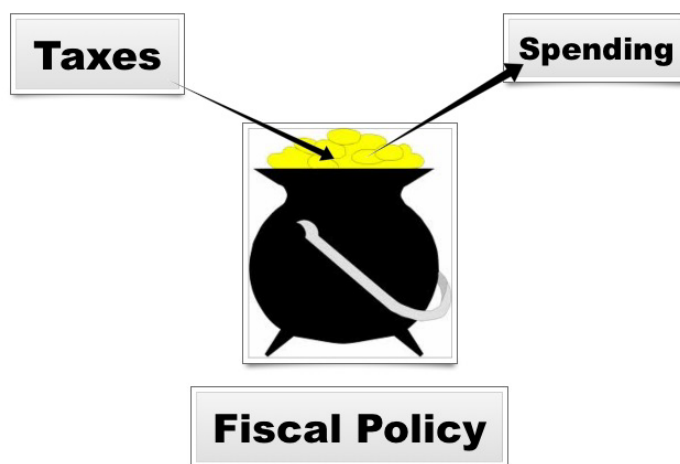
This policy has to do with Washington's taxing and spending decisions. If we think of our federal government as a big business, we see that it takes in income primarily from tax revenue and spends that money on its operations, security, funding wars, and everything else it does, including servicing the debt. Theoretically, it would be great if it took in the same amount that it spent, but that is usually not the case. When it spends more than it takes in, we have what we call a "deficit." In a business, we would call that a "loss."

If our business has a deficit, it has to fund that loss either by eating into reserves or borrowing more. It is the same with government. When it runs a deficit, it has to borrow more money to fund the loss. The federal debt represents the accumulated deficits and is in the form of government bonds and notes.

Our federal government has an advantage that we don't have in our business or homes. It can print money but that really becomes treasury bonds and bills which is the national debt. Simply put, when the federal government runs a deficit, that deficit is funded with debt.

Fiscal policy has an effect on our economy because, theoretically, the economy is stimulated when the government spends more money than it takes in. When it spends money, more money goes into the system in the form of wages, supplies, equipment, and similar items. When more money is going out than coming in, it makes up for that deficit by printing more money, thus increasing the money supply, and thus stimulating the economy.

From all indications, even with a new administration, we can probably assume that spending will be greater and thus, we can expect larger deficits until there is a significant change of heart in Washington. Coming up to this new administration, there has been little discussion about the national debt with few exceptions. The new administration promises to concentrate on being more efficient; however, with discretionary spending being a small part of all spending, greater efficiency will probably have a relatively small effect on total spending. Therefore, we can probably expect that fiscal policy will continue to be a deficit.



D. Monetary policy

The other major economic policy is monetary policy. This is the workings of the banking system that have great effects on interest rates, money supply, and the workings of the economy. In fiscal policy, the government creates money when it needs to spend more than it takes in. In monetary policy, money is created by the banking system and is controlled by the Federal Reserve System.

Better known as the Fed, the Federal Reserve Bank functions as the country's central bank deriving its power from Congress with its creation in 1913. Despite its close ties to government, technically it is an independent central bank, in that it is owned by its member banks and neither the executive nor the congressional branch of government controls its day-to-day policies.

This is very significant understanding of the huge powers the Fed has over economic activity. Because it is a central bank, it has powers to create money and place it into the system. It does that by purchasing government bonds in the open market and then paying for those bonds in the form of reserves. When

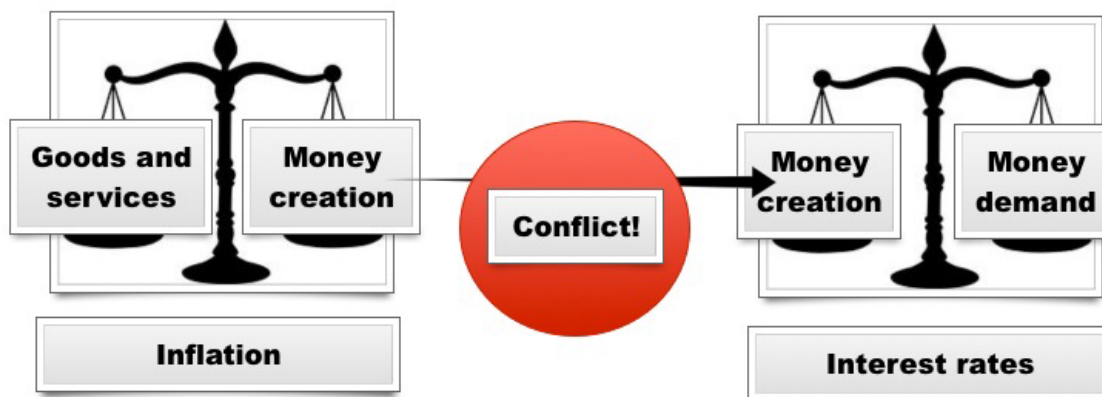
bank reserves are increased, banks have more money to lend, and that lending increases the overall supply of money. Theoretically, this creation of money in the system will stimulate economic activity as individuals and businesses spend it.

Some interesting problems develop when we recognize how everything ties together. People who want to stimulate the economy would like to see money creation; however, when money is created faster than the goods and services in the economy, the price of those goods and services generally will increase since demand is greater than supply. The other side of the same conflict is with the price of money. When money creation is greater than money demand, the price of that money decreases. The price of money is interest rates.

The key strategy therefore is to carefully balance the growth of GDP with the growth of money supply. If money supply is too small with a given GDP, that means that the demand for money will be higher causing the price of money (interest rates) to which will have the effect of slowing down the economy. If, on the other hand, there is too much money being created, then the prices of goods and services will increase, manifesting itself in inflation.

E. What's happening now?

Prior to the pandemic, the Fed was following an expansionary policy with creating a lot of money to stimulate the economy and support strong economic growth. Fiscal policy was also expansionary with deficit spending, but the two policies were working together, and we saw a strong and stable economy with a relatively small amount of inflation since the negative effects of the monetary expansion were balanced with economic growth.



When the pandemic came, things rapidly changed. Governments (federal and state) closed major parts of the economy for health and safety reasons causing the GDP to crash. At the same time, the federal government sharply increased its deficit spending with social programs to help people and businesses that were affected by closing the economy. Unfortunately, this was totally uncharted territory, and Congress really had no idea of how much money should be given to these people and businesses and what the effects might be. The legislation was more of a "shot in the dark." The unintended consequence was that there was a lot more money created than was needed to stay in balance with inflation being the result. Consequently, the Fed stepped in with a monetary policy strategy of curtailing money supply growth thus causing interest rates to go up in the hope of slowing the inflation.

Increasing interest rates by the Fed worked, drawing the inflation rate down from a high of close to 8 percent to close to 3 percent. While that is a sharp decrease, it is still about a point higher than the target of the Fed. Consequently, we will probably see rates that are higher than normal until the inflation rate is down to about 2 percent.

F. Two-year economic forecast (2026–2027): Consensus of professional economists

Across a broad range of professional forecasters, including the Federal Reserve, IMF, OECD, major banks, and academic surveys, the dominant outlook for the U.S. economy over the next two years is one of **moderate, stable growth**. Most economists believe the economy is transitioning into a “soft-landing” phase following the inflation surge and rapid interest-rate increases of the early 2020s.

The consensus projections cluster around three central expectations:

- a. **GDP growth:** steady but modest, roughly 1.5–2.5 percent annually.
- b. **Unemployment:** stable at historically low levels near 4–5 percent.
- c. **Interest rates:** gradually declining but remaining higher than pre-pandemic norms.

Overall, economists expect normalization rather than dramatic shifts – neither recession nor rapid expansion but a return to long-term trend growth.

IV. GDP outlook

A. Consensus growth forecast

Most institutional forecasts fall within a narrow range for economic growth. Major projections generally expect U.S. real GDP growth to average about **2 percent in 2026** and slightly slower in 2027. International organizations like the IMF anticipate growth near the upper end of this range, while the OECD and private forecasters tend to estimate slightly lower rates.

By 2027, most economists expect growth to converge closer to the U.S. economy’s long-term potential rate of about 1.8 percent. This reflects structural factors such as slower population growth and maturing economic expansion.

In short, the consensus trajectory is:

- a. **2026** – Moderate expansion around 2 percent.
- b. **2027** – Slight deceleration toward long-term trend.

Few forecasters expect a recession during this period, though growth is projected to remain below the rapid pace seen during the post-pandemic recovery.

B. Key drivers of growth

1. Consumer spending

Consumer spending is expected to remain the primary engine of economic activity. Household balance sheets remain relatively strong, and wage growth continues to support purchasing power. However, higher borrowing costs are expected to restrain spending somewhat compared with earlier years.

Economists widely expect consumption growth to slow gradually but remain positive, preventing a broader economic downturn.

2. Business investment

Investment, especially in technology and artificial intelligence, is expected to play an increasingly important role in sustaining growth. Large investments in AI infrastructure, automation, and digital transformation are projected to boost productivity over time.

Many forecasters believe these productivity gains could offset some structural challenges such as labor shortages and aging demographics.

3. Fiscal policy

Government spending is expected to remain supportive but increasingly constrained by rising deficits and debt servicing costs. Interest payments on federal debt are projected to consume a growing share of government budgets, which may limit future fiscal stimulus.

Despite these constraints, ongoing infrastructure projects and industrial policy initiatives are expected to provide moderate support for economic growth.

C. Structural constraints

Several long-term factors are expected to limit growth potential:

- a. **Demographics** – Slower population growth and aging workers reduce labor force expansion.
- b. **Immigration trends** – Lower immigration levels could tighten labor supply.
- c. **Global trade tensions** – Geopolitical uncertainties may dampen exports and investment.

Taken together, these factors suggest that the U.S. economy will likely settle into slower but more sustainable growth compared with earlier decades.

V. Unemployment outlook

A. Consensus forecast

Economists broadly agree that unemployment will remain low by historical standards. Most forecasts expect unemployment to average between **4 and 5 percent** over the next two years.

The labor market has cooled from extremely tight conditions earlier in the decade but remains strong. Job creation is expected to slow gradually rather than collapse.

B. Labor market trends

The labor market is widely described as transitioning from “overheated” to “balanced.” Hiring remains steady, but job openings have declined from peak levels.

Several structural forces are shaping employment trends:

- a. Aging population reducing labor supply;
- b. Continued demand for skilled workers; and
- c. Shifts in job composition due to automation.

Economists generally expect these trends to keep unemployment stable while limiting rapid job growth.

C. Artificial intelligence and employment

AI is expected to significantly reshape the labor market. Most economists do not anticipate widespread job losses; instead, they foresee changes in job types and increased productivity.

AI adoption may lead to:

- a. Higher output per worker;
- b. Shifts toward high-skill occupations; and
- c. Gradual displacement in routine tasks.

Overall, economists expect AI to boost long-term growth more than it harms employment.

VI. Interest rate outlook

A. Current context

Interest rates remain elevated compared with pre-pandemic levels, reflecting the Federal Reserve's efforts to combat inflation earlier in the decade. However, inflation has been gradually declining, allowing policymakers to consider easing monetary policy.

B. Consensus rate forecast

Most professional forecasts anticipate **gradual interest rate reductions** over the next two years. The Federal Reserve is expected to lower rates cautiously to avoid reigniting inflation.

By 2027, economists generally expect policy rates to settle modestly below current levels, but they will still be higher than the near-zero environment of the 2010s.

C. Structural reasons for higher rates

Several long-term factors are expected to keep interest rates elevated relative to past decades:

- a. Persistent government deficits;
- b. Demographic shifts affecting savings and investment;
- c. Ongoing inflation risks; and
- d. Strong demand for capital investment.

These factors suggest the era of ultra-low interest rates is unlikely to return soon.

VII. Inflation context

Inflation is projected to continue declining gradually toward the Federal Reserve's 2 percent target. However, economists expect inflation to remain somewhat volatile due to supply-chain risks, energy prices, and geopolitical uncertainties.

Moderating inflation is a key factor supporting the soft-landing scenario, allowing interest rates to fall without triggering economic contraction.

VIII. Risks to the forecast

A. Downside risks

The most significant risks identified by economists include:

- a. **Fiscal challenges** – Rising government debt and deficits could constrain growth.
- b. **Global instability** – Trade conflicts or geopolitical crises could disrupt markets.
- c. **Financial tightening** – Higher-than-expected interest rates could slow investment and consumption.

B. Upside risks

Potential positive surprises include:

- a. Strong productivity gains from AI;
- b. Faster-than-expected inflation declines; and
- c. Continued robust consumer spending.

Such developments could push growth above consensus expectations.

IX. Global economic context

The global economy is expected to grow at a moderate pace over the next two years, providing a stable external environment for the United States. However, trade fragmentation and geopolitical tensions remain ongoing risks.

X. Overall consensus narrative

The dominant economic narrative for 2026–2027 is one of **normalization**. After years of extraordinary shocks, including the pandemic, inflation surge, and rapid monetary tightening, the economy is expected to return to a more typical growth pattern.

Key elements of this narrative include:

- a. Stable but slower GDP growth;
- b. Low but gradually rising unemployment; and
- c. Interest rates settling at moderately elevated levels.

In essence, economists foresee a steady transition toward long-term equilibrium rather than dramatic economic shifts.

XI. Conclusion

The consensus among professional economists is that the U.S. economy will experience **moderate, sustainable expansion** over the next two years. Growth is expected to remain positive but modest, unemployment should stay low, and interest rates will likely decline gradually while remaining above historic lows.

Although risks remain – from fiscal pressures to global instability – the prevailing expectation is that the economy will avoid recession and continue expanding at a stable pace. The defining theme of the period ahead is therefore not rapid growth or crisis but a return to steady economic normalcy.

