

Understanding the Financial Position of an Organization

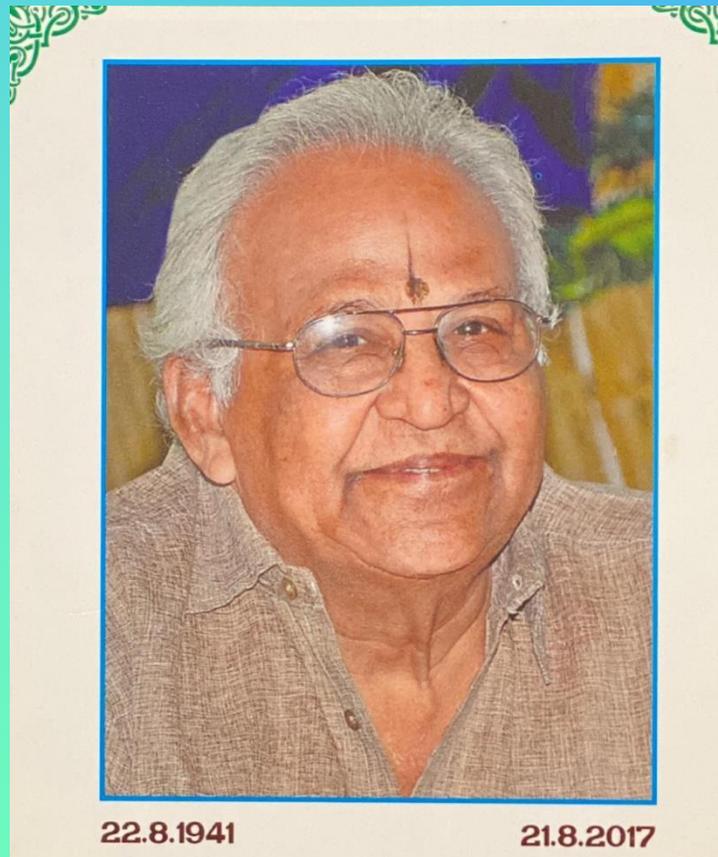
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**Dedicated to the memory of
Shri P.V.R.K. Prasad, IAS
Former DG, Dr. MCR-HRD Institute and
Center for Good Governance (CGG)**



My Sincere Thanks to

- Shri Harpreet Singh, IAS, Director-General, Dr MCR HRD Institute of Telangana
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- Dr. Ravulapati Madhavi, Senior Faculty Member, Dr. MCR-HRD Institute
- Shri Jalal Uddin, Systems Administrator, Dr MCR HRD Institute

Inspirational Video



How could this presentation be useful?

- Investigation of corporate fraud
- Developing a better understanding of ongoing fraud investigations
- Evaluation of private sector firms to whom contracts are awarded
- Investigation of companies engaging in postal fraud
- Evaluating companies for inclusion in the personal investment portfolio
- Interface between Government officers and private sector firms requires the ability to assess the financial health of companies

A Globalized World

- We live in a globalized world
- Countries are more interconnected today than they have ever been before
- The impact of what happens in one part of the world, is felt in other parts of the world
- Action taken by Dr Alan Greenspan
- The dilemma faced by Dr Raghuram Rajan

Inflation versus Recession

- What is inflation? What is hyper inflation?
- What are its consequences?
- My experience in Zimbabwe
- What is recession? What are its consequences?

Recession and its Consequences

- Economic boom help corporates to cover up cracks in their accounts
- Recession lifts the **veil of secrecy**
- Many of the biggest corporate scandals in the past 20 years have come to light during **recessions**
- The corporate fraud at Enron and WorldCom were exposed during the recession in 2001
- Warren Buffet: “You only find out who is swimming naked when the tide goes out.”

The Covid-19 Pandemic

- The Covid-19 pandemic has **devastated** the global economy
- All the major economies of the world, led by the United States, experienced a deep recession in 2020 and 2021
- The after effects of that recession continue to be felt in 2022 due to the emergence of Omicron and other variants
- As the **specter of recession** has gripped the global economy, more and more instances of corporate fraud are starting to be exposed
- Dirty corporate secrets have started coming out
- Therefore, it is essential for corporate fraud investigators in the Police Service to have a **diagnostic tool**
- This tool, called **Ratio Analysis**, will help corporate fraud investigators in the Police Service get a better understanding of the **true financial health** of a company
- This understanding will help them **prosecute and punish** the perpetrators of corporate fraud to the fullest extent of the law

The Covid-19 Pandemic

- Besides exposing old fraudulent schemes, the pandemic has given rise to new ones
- When the economic survival of a business is threatened, there is an **increasing propensity** to cheat and engage in fraudulent behavior
- Companies may inflate revenues or indulge in other actions to create the **illusion** of financial well being (**Satyam and Enron Scandals**)
- **Knowledge of ratio analysis** will help Police officers to detect such nefarious activities

Covid and Organized Crime

- According to *The Economist* magazine, Covid may have created the ideal conditions for the spread of serious, organized crime
- New scams are proliferating that are capitalizing on peoples' fear of the coronavirus
- There have been numerous scams involving sale of PPE (Personal Protective Equipment)
- Sales of counterfeit drugs has spiked
- Ransomware attacks (in which the target is prevented from accessing critical files until a payment is made) have increased
- Under the guise of delivering food packets, gangs have been distributing drugs
- **Knowledge of Finance** will help Police Officers crack down more effectively on **organized crime**

America's 100 billion dollar Covid Scam

- <https://youtu.be/uCDAqbBX3OI>

Covid and Organized Crime

- A deep, Covid-induced recession has opened up opportunities for crooks in at least three areas:
- High unemployment has made it easier for gangs to recruit people
- Government recovery schemes has given mobsters a chance to grab lucrative public contracts
- A drop in corporate profits has given mafias the opportunity to acquire businesses that can then be used for money laundering

A Tool to Help Forest Service Officers

- There is **increasing private sector participation** in the purchase and sale of forest produce
- Indian Forest Service Officers need a tool to evaluate the financial health of companies before awarding contracts to them
- Otherwise, ulterior motives may be unfortunately ascribed to the contract-awarding actions of the government officers even though their actions may have been taken in good faith
- Ratio analysis is the tool that can help these officers to not only make the right decisions, but to also be able to justify their decisions

A Tool to help Postal Service Officers

- There is increasing incidence of mail fraud in many countries including the United States
- In India, nefarious companies float fraudulent schemes and propagate them through the postal system
- Knowledge of ratio analysis can help Postal Service Officers when they investigate companies suspected of postal fraud

A Tool to help Indian Foreign Service Officers

- If you serve as the Commercial Attaché at an Indian Mission abroad, one of your tasks will be to encourage companies in that country to invest in India and to facilitate Foreign Direct Investment
- As part of the Due Diligence process, you may need to evaluate the financial health of the company that wishes to invest in India
- Ratio Analysis is a very useful tool that can help you in this regard

The Move Away from Welfare States

- Around the world, we are seeing governments move away from the concept of a welfare state
- This is mainly due to paucity of resources that has been made worse by the Covid-19 pandemic
- Covid-related rescue packages have **blown up the budget** in many countries
- According to the IMF, across the rich world, gross government debt rose to about \$66 trillion by the end of 2020 (122% of GDP on average). It has been climbing higher since then.
- Governments in most countries are now **expecting people to take charge of their financial future as they are strapped for funds**
- They are expecting the citizens to make investments on their own, instead of expecting the government to take care of them
- Therefore, **we have to take control of our own financial future**

Making the Right Personal Investments

- All of us desire to invest our surplus funds
- Evaluating the financial health of companies before investing our hard-earned savings in them is critical
- Ratio analysis can be very useful in this regard
- It can help us avoid costly financial blunders and lay the foundation for a secure financial future for us and our families

The Importance of Financial Knowledge

- Executives and officers should improve their knowledge of Finance as it is an **essential and important area** in any organization (**My encounter with a leading cardiologist**)
- Most of us operate in a resource-constrained environment (**My experience at NEIU**)
- It is the responsibility of **every** person in a decision making position in **any** organization to ensure the **optimum utilization of resources**

The Importance of Financial Knowledge

- The performance of business activities is evaluated in terms of money.
- **Money is the language of business (My experience in Cusco, Peru)**
- Financially intelligent managers and officers contribute to a business or organization's health because they can make better decisions
- They can use their knowledge to help their company or organization succeed
- They manage resources more prudently; use financial information more astutely, and thereby increase their company or organization's profitability and cash flow
- By doing the above, they **enhance value creation**

The Importance of Financial Knowledge

- Due to **financial pressures** caused by the Covid pandemic, government officers are also forced to operate in a **resource-constrained environment**
- Government officers, just like their counterparts in the corporate sector, are expected to be **financially prudent**
- There is now **greater scrutiny** of financial decisions made by government officers as well as **greater accountability**
- Ratio analysis is a **very useful tool** that will help government officers to **make the right financial decisions**

Public-Private Partnerships

- Due to the paucity of Government resources, there is an increasing trend towards **greater Public-Private Partnerships**
- Government Officers have the crucial task of **choosing the best private sector participant** in these PPP projects
- Ratio analysis will be very useful in this regard as it will help Officers **evaluate the financial health** of the potential private sector participants before making the final decision
- Ratio analysis will also help Officers work closely with their private sector counterparts and monitor the PPP project after commencement of operations

Diagnosing Financial Health

- Ratios are **financial performance metrics** that provide a relative basis for comparing a company/organization with itself overtime or a company versus competitors within its industry
- **These metrics also provide a basis for evaluating suppliers, vendors, and customers**
- They can also be used for historical analysis as well as projected performance

The Need for Ratio Analysis

- Ratio analysis is a very useful **diagnostic tool** that helps the user to identify the **strengths** and **weaknesses** in a company's financial health
- The power of ratios lies in the fact that the **numbers in the financial statements by themselves don't reveal the whole story**

Balance Sheet and Income Statement (P&L Statement)

- The balance sheet is a **snapshot** of the firm's assets and liabilities at a given point in time (calendar year-end in the US and financial year-end in some countries)
- Balance Sheet Identity
 - $\text{Assets} = \text{Liabilities} + \text{Shareholders' Equity}$
- The income statement or P&L (Profit & Loss) statement shows the **results of operations** over a period of time
- **Accrual method of accounting and its implications**

Market Value vs. Book Value

- The balance sheet provides the book value of the assets, liabilities, and equity.
- Market value is the price at which the assets, liabilities, or equity can actually be bought or sold.
- Market value and book value are often **very different**.
Why?
- Which is more important to the decision-making process?

Cash Flow versus Profits

- **A profitable firm may actually face a liquidity crisis and may even go out of business!**
- The **gap** between receipts from customers and payments to suppliers may cause a **liquidity crunch**
- **This liquidity gap may result in private sector companies not being able to fulfill their contractual obligations**
- **Non-fulfillment of these obligations will become problematic for the government agency that awarded the contract and by default, the government officer who handled this process**

Income Statement (P&L Statement)

	<u>2020</u>	<u>2021</u>
Sales	5,834,400	7,035,600
Cost of goods sold	4,980,000	5,800,000
Other expenses	720,000	612,960
Depreciation	<u>116,960</u>	<u>120,000</u>
Total operating costs	<u>5,816,960</u>	<u>6,532,960</u>
EBIT (Operating Income)	17,440	502,640
Interest expense	<u>176,000</u>	<u>80,000</u>
EBT (Earnings Before Tax)	(158,560)	422,640
Taxes (40%)	<u>(63,424)</u>	<u>169,056</u>
Net income	<u><u>(95,136)</u></u>	<u><u>253,584</u></u>

Balance Sheets: Assets

	<u>2020</u>	<u>2021</u>
Cash	7,282	14,000
Short-term investments	20,000	71,632
Accounts Receivable	632,160	878,000
Inventories	<u>1,287,360</u>	<u>1,716,480</u>
Total Current Assets	1,946,802	2,680,112
Net Fixed Assets	<u>939,790</u>	<u>836,840</u>
Total assets	<u>2,886,592</u>	<u>3,516,952</u>

Balance Sheets: Liabilities & Equity

	<u>2020</u>	<u>2021</u>
Accounts payable	324,000	359,800
Notes payable	720,000	300,000
Accruals	<u>284,960</u>	<u>380,000</u>
Total Current Liabs.	1,328,960	1,039,800
Long-term debt	1,000,000	500,000
Equity Share Capital	460,000	1,680,936
Retained earnings	<u>97,632</u>	<u>296,216</u>
Total equity	<u>557,632</u>	<u>1,977,152</u>
Total Liabs.& Equity	<u>2,886,592</u>	<u>3,516,952</u>

Other Data

	<u>2020</u>	<u>2021</u>
Share price	\$6.00	\$12.17
Number of shares	100,000	250,000
Earnings Per Share (EPS)	-\$0.95	\$1.01
Dividends Per Share (DPS)	\$0.11	\$0.22
Book value per share	\$5.58	\$7.91
Lease payments	40,000	40,000
Tax rate	0.4	0.4

What are the **five major categories of ratios**, and what questions do they answer?

- **Liquidity**: These ratios measure the ability of a firm to meet its short-term obligations and help answer the question as to how liquid the company is
- **Asset management**: These ratios measure how effectively a firm is using its assets to generate sales and help answer the question as to how effectively the company is managing its assets

- **Debt management:** These ratios measure the extent to which a firm's assets have been financed by debt and help provide insights into the **financial risk** of the company
- **Profitability:** These ratios measure management's overall effectiveness in generating profits in relation to its sales or investment and help answer the question how profitable the firm is
- **Market value:** These ratios measure the firm's relationship to the stock market and help answer the question as how the stock market perceives the company's performance

Making Ratios Meaningful

- Trend Analysis
- Industry Comparison
- Peer Group Comparison

Calculate the firm's current and quick ratios for 2021

$$CR_{21} = \frac{CA}{CL} = \frac{\$2,680}{\$1,040} = 2.58x.$$

$$QR_{21} = \frac{CA - Inv.}{CL} = \frac{\$2,680 - \$1,716}{\$1,040} = 0.93x.$$

Comments on CR and QR

	2021	2020	2019	Ind.
CR	2.58x	1.46x	2.3x	2.7x
QR	0.93x	0.5x	0.8x	1.0x

- Signs of improvement, but still below the industry average.
- Liquidity position is weak.

Fixed Assets and Total Assets Turnover Ratios

$$\begin{aligned}\text{Fixed assets turnover}_{21} &= \frac{\text{Sales}}{\text{Net fixed assets}} \\ &= \frac{\$7,036}{\$837} = 8.41x.\end{aligned}$$

$$\begin{aligned}\text{Total assets turnover}_{21} &= \frac{\text{Sales}}{\text{Total assets}} \\ &= \frac{\$7,036}{\$3,517} = 2.00x.\end{aligned}$$

(More...)

	2021	2020	2019	Ind.
FA TO	8.4x	6.2x	10.0x	7.0x
TA TO	2.0x	2.0x	2.3x	2.5x

- FA turnover is expected to exceed industry average. Good.
- TA turnover not up to industry average. Caused by **excessive current assets** (A/R and inventory).

Total Asset Turnover

- It is a measure of the overall efficiency in the utilization of assets

Fixed Asset Turnover

- This ratio tells us how efficiently the firm is using its fixed assets to generate sales
- This ratio is critical because investments in plant and equipment are both large and of long duration

Inventory Turnover

- Inventory turnover is a measure of how many times inventory turns over in a year
- The higher the number of inventory turns, the tighter the management of inventory and better the company's cash position
- In the retail business, a difference in the inventory turnover ratio can spell the difference between **success** and **failure**
- In the United States, Walmart has a very high inventory turnover

What is the inventory turnover ratio as compared to the industry average?

$$\begin{aligned}\text{Inv. turnover}_{21} &= \frac{\text{COGS}}{\text{Inventories}} \\ &= \frac{\$5800}{\$1,716} = 3.38x.\end{aligned}$$

	2021	2020	2019	Ind.
Inv. T.O.	3.38x	3.87x	4.8x	6.1x

Comments on Inventory Turnover

- Inventory turnover is **significantly below** industry average
- Firm might have obsolete inventory
- No improvement is currently forecasted

Days Sales Outstanding (DSO)

- It is a measure of the **average time it takes to collect the cash from credit sales** – in other words, **how fast customers pay their bills**
- DSO is an **important tool** for assessing the **effectiveness** of a firm's credit policy
- A high DSO may be a **red flag** as it suggests that customers are not paying their bills in a timely fashion

DSO is the average number of days after making a sale before receiving cash

$$\text{DSO}_{21} = \frac{\text{Receivables}}{\text{Average sales per day}}$$

$$= \frac{\text{Receivables}}{\text{Sales}/365} = \frac{\$878}{\$7,036/365}$$

$$= 45.5 \text{ days.}$$

Appraisal of DSO

	2021	2020	2019	Ind.
DSO	45.5	39.5	37.4	32.0

- Firm collects too slowly, and **situation is getting worse**
- Poor credit policy – **Cause for concern**

Leverage Ratios

- Leverage ratios measure the extent to which a firm is financed by debt
- **Problem with excessive debt for:**
 - **companies (Example: Airline companies in the US)**
 - **countries (Example: Greece and United States)**
 - **Recycling of debt in USA**
 - <https://usdebtclock.org/>
- **Cost of the stimulus due to Covid-19**
- **Governments will have to walk a treacherous path between stimulus today and fiscal prudence tomorrow**

Calculate the debt and the TIE ratios

$$\begin{aligned}\text{Debt ratio}_{21} &= \frac{\text{Total liabilities}}{\text{Total assets}} \\ &= \frac{\$1,040 + \$500}{\$3,517} = 43.8\%.\end{aligned}$$

$$\begin{aligned}\text{TIE}_{21} &= \frac{\text{EBIT}}{\text{Int. expense}} \\ &= \frac{\$502.6}{\$80} = 6.3x.\end{aligned}$$

How do the debt management ratios compare with industry averages?

	2021	2020	2019	Ind.
D/A	43.8%	80.7%	54.8%	50.0%
TIE	6.3x	0.1x	3.3x	6.2x

Reduction of the debt level has improved the situation

Debt Ratio

- This ratio is an important indicator of the risk of financial distress that could lead to bankruptcy
- Higher the debt ratio, greater the risk of bankruptcy
- Many companies have gone bankrupt due to excessive debt

Profitability Ratios

- These ratios measure management's **overall effectiveness at generating profits**

Net Profit Margin

- This tells a company how much of each sales dollar it gets to keep after everything has been paid for-people, vendors, lenders, the government, and so on
- Net margin is a bottom-line ratio
- The best point of comparison for net margin is a company's performance in previous time periods and its performance relative to similar companies in the same industry

Profit Margin (PM)

$$PM_{21} = \frac{NI}{Sales} = \frac{\$253.6}{\$7,036} = 3.6\%.$$

	2021	2020	2019	Ind.
PM	3.6%	-1.6%	2.6%	3.6%

Very bad in 2020, but has met industry average in 2021. Looking good.

Return on Assets (ROA) and Return on Equity (ROE)

$$\text{ROA}_{21} = \frac{\text{Net income}}{\text{Total assets}}$$

$$= \frac{\$253.6}{\$3,517} = 7.2\%$$

(More...)

Return on Assets

- **A very high ROA is a red flag**
- If it is too good to be true, it isn't true!!
- An ROA that is considerably above the industry norm may suggest that the company isn't investing in new machinery and equipment
- If that's true, its long-term prospects will be compromised, however good its ROA may look at the moment

Return on Assets

- Another possibility if ROA is very high is that executives are manipulating the balance sheet, using various accounting tricks to reduce the asset base and therefore making the ROA look better
- Enron of USA, for instance, set up a host of partnerships partially owned by CFO Andrew Fastow and other executives, then transferred company assets to these partnerships
- The company's share of the partnerships' profits appeared on the income statement, but the assets were nowhere to be found on its balance sheet
- Enron's ROA was great, but Enron wasn't a healthy company

Return on Equity

- ROE tells us what percentage of profit is made for every dollar of equity invested in the company
- ROE can be used to compare a company with its competitors
- From an investor's perspective, ROE is a **key ratio**

$$\text{ROE}_{21} = \frac{\text{Net income}}{\text{Total equity}}$$

$$= \frac{\$253.6}{\$1,977} = 12.8\%$$

	2021	2020	2019	Ind.
ROA	7.2%	-3.3%	6.0%	9.0%
ROE	12.8%	-17.1%	13.3%	18.0%

Both below average but improving.

Market-Related Ratios

- These ratios incorporate current share price into the performance metrics
- They give us the stock market's perception of the company's performance

Some Market Related Ratios

Price = \$12.17.

$$\text{EPS}_{21} = \frac{\text{NI}}{\text{Shares out.}} = \frac{\$253.6}{250} = \$1.01.$$

$$\text{P/E}_{21} = \frac{\text{Price per share}}{\text{EPS}} = \frac{\$12.17}{\$1.01} = 12x.$$

Price-Earnings Ratio

- The higher the growth rate of the firm, the higher the price/earnings ratio
- Price/earnings ratios during the Internet bubble period (Example: Yahoo)
- The wisdom of Warren Buffet

Limitations of Ratio Analysis

- Comparison with industry averages is difficult if the firm is a **conglomerate**
- Effect of **inflation**
- Seasonal factors can distort ratios
- “Window dressing techniques” can make financial statements look better

(More...)

- Different accounting and operating practices can distort comparisons.
- Often, different ratios give different signals, so it is difficult to tell, on balance, whether a company is in a strong or weak financial condition
- Differences in GAAP across countries can distort comparison of firms across countries (IFRS)

What are some qualitative factors investigators should consider when evaluating a company's likely future financial performance?

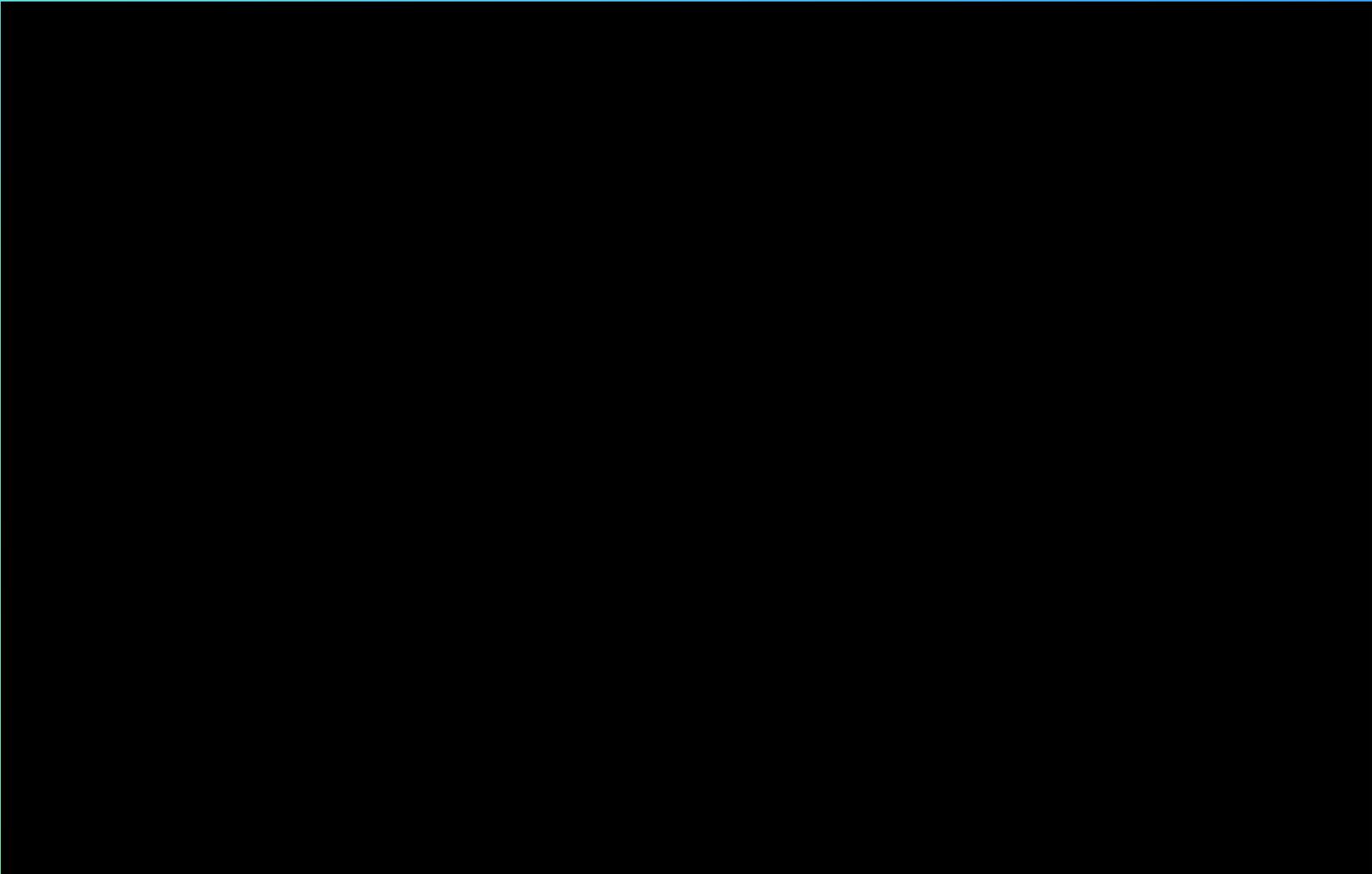
- Are the company's revenues tied to a single customer?
- To what extent are the company's revenues tied to a single product?
- To what extent does the company rely on a single supplier?

- What percentage of the company's business is generated overseas?
- What is the competitive situation?
- What does the future have in store?
- What is the company's legal and regulatory environment?

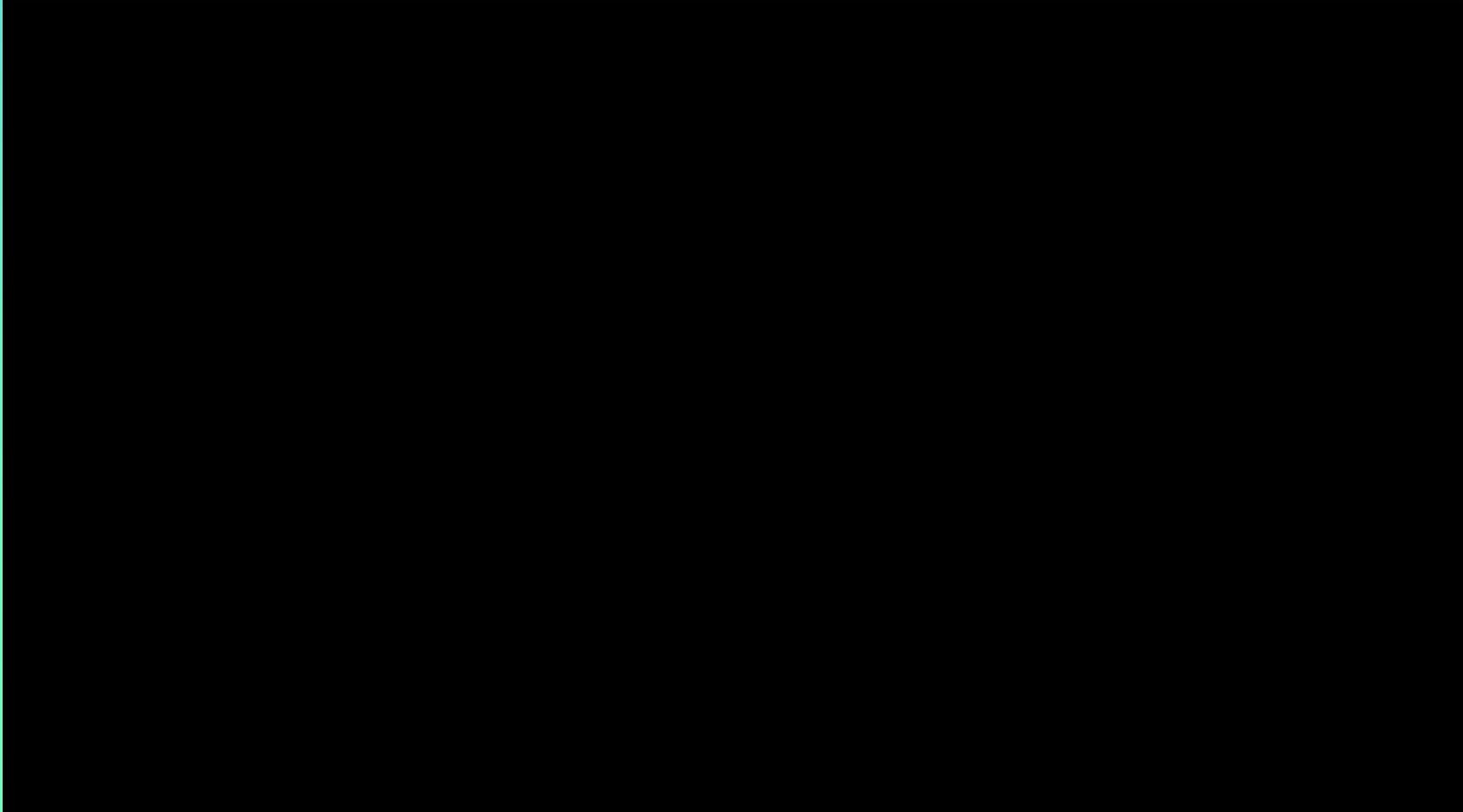
Key Takeaways

- **Knowledge of finance** is **essential** for persons in every walk of life
- Ratio analysis is a **diagnostic tool** that can be useful to Police Officers who are engaged in corporate fraud investigations
- This tool can also be useful to officers in other streams such as the Indian Forest Service, Indian Postal Service, etc. when they may need to evaluate vendors before giving out contracts to them
- Ratio analysis can also be a **very useful tool** for evaluating companies before investing in them. It can help officers to build and manage their personal wealth portfolio

The Butterfly Effect



Attitude is Everything!



**Be the change you want to see in
this world – Mahatma Gandhi**

