Theory and Planning of Working Capital

INTRODUCTION

- → Capital is the lifeline of every business. Any organisation, large or small, requires capital to finance each step of its operations, be it for the long-run or short-run. Working capital is what an enterprise pours into its day-to-day operations. Naturally, working capital acts as a reliable indicator of a company's financial health.
- Working capital is a measure of a company's liquidity, operational efficiency and its short-term financial health. If a company has substantial positive working capital, then it should have the potential to invest and grow.

Source: <u>https://groww.in/p/gross-working-capital-and-net-working-capital/</u>

- INTRODUCTION
- **DEFINITION**

CONTENT

- WORKING CAPITAL
- **OPERATING CYCLE APPROACH**
- **DETERMINANT OF WORKING CAPITAL**
- METHOD OF WORKING CAPITAL
- **COMPUTATION OF WORKING CAPITAL**
- POLICY AND MANAGEMENT
- LIQUIDITY AND PROFITABILITY
- SOURCES OF WORKING CAPITAL

DEFINITION

→ Working Capital is basically an indicator of the short-term financial position of an organization and is also a measure of its overall efficiency. Working Capital is obtained by subtracting the current liabilities from the current assets. This ratio indicates whether the company possesses sufficient assets to cover its short-term debt.

→ Working capital = Current assets - current liabilities

→ What makes an asset current is that it can be converted into cash within a year. What makes a liability *current* is that it is due within a year.

source: https://www.wallstreetprep.com/knowledge/working-capital-101/

Why Working Capital

- → Working capital is a daily necessity for businesses, as they require a regular amount of cash to make routine payments, cover unexpected costs, and purchase basic materials used in the production of goods.
- → Working capital is an easily understandable concept, as it is linked to an individual's cost of living and, therefore can be understood in a more personal way. Individuals need to collect the money that they are owed and maintain a certain amount on a daily basis to cover day-to-day expenses, bills, and other regular expenditures.

Working Capital can be described in two ways:-

Gross working capital is the sum of a company's current assets. These assets

represent a company's short-term financial resources, which it can convert into cash

within a year or less. It includes inventory, debtors, cash and cash equivalents,

marketable securities, and prepaid expenses.

Thus, Gross Working Capital = Trade receivables (debtors) + Inventory +

Marketable securities + Cash and cash equivalent + Prepaid expenses

source:<u>https://groww.in/p/gross-working-capital-and-net-working-capital/</u>

Net Working Capital, it represents your short-term business assets available to pay your short-term obligations and also invest in income-producing activities. It can serve as a good indicator regarding how efficiently a business is operating and how financially solvent it is in the short-term.

The net working capital (NWC) formula is:

Net Working Capital = (Cash and Cash Equivalents) + (Marketable Investments) + (Trade Accounts Receivable) + (Inventory) – (Trade Accounts Payable)

– OR –

Net Working Capital = (Current Assets) – (Current Liabilities)

source:<u>https://fitsmallbusiness.com/what-is-net-working-capital-nwc/#:~:text=Net%20working%20capit</u> <u>al%20(NWC)%20is.and%20invest%20in%20other%20activities.</u> • Need of wc Operating cycle approach.

Operating cycle method for estimating <u>working</u> <u>capital</u> is based on the duration of the operating cycle. Longer the period of the cycle, bigger will be the working capital requirements. Operating cycle means the cycle of raw material to work in progress to finished goods to accounts payable and finally to cash. Operating cycle time is the time taken starting from raw material purchases to its conversion into cash.

WORKING CAPITAL ESTIMATION – OPERATING ESTIMATION METHOD

Operating cycle means the cycle of raw material to work in progress to finished goods to accounts payable and finally to cash. Operating cycle time is the time taken starting from raw material purchases to its conversion into cash.

- ✓ Working Capital = {Estimated COGS * (Operating Cycle / 365)} +Desired Cash & Bank Balance.
- RM Stock = Estimated Production Units * Per Unit Cost of RM * (RM Holding Period / 365 Days)
- WIP = Estimated Production * {Per Unit Cost of -- RM (100%) + Labor (50%) + Overheads (50%)} * (Work In Progress Period / 365 Days)
- Finished Goods = Estimated Production * Per Unit Cost of Goods Produced * (Finished Goods Holding Period / 365 Days)
- Accounts Receivables = Estimated Production * Selling Price * (Collection Period / 365 Days).
- Accounts Payables = Estimated Production * Per Unit RM Cost * (Payment Period / 365 Days)

BENEFITS

- Provides a detailed understanding.
- ✓ Precise.
- ✓ Provides a detailed method.

CONSTRAINTS

- Lengthy process.
- Requires lot of estimates which may go wrong.

Period of one operating cycle can be calculated in the following format:

Particulars	Days
Raw materials holding period	
Work-in-progress holding period	
Finished goods holding period	
Receivables collection period	
Gross operating cycle	
Less: creditor's payment period	
Net operating cycle (cash sale)	

Source: basic financial management book by Surrender Singh, Rajeev Kumar

Example1 : Calculate the operating cycle of a company which gives the following details relating to its operations :

Annual raw material consumption	8,42,000
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Annual sales	19,50,000
Average value of current assets held:	
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Work-in-Progress	72,000
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The company gets 30 days credit from its suppliers.All sales made by firm are on credit basis.You may take one year as equal to 365 days.

Computation of Operating Cycle

- (a) Raw material holding period (R):
 Average stock of raw material held
 Annual raw material consumption/365
- (a) Work-in-progress (W): <u>Average work-in-progress held</u> Annual cost of production of goods
- (c) Finished goods holding period(F): Average finished goods stock held Annual cost of goods sold
- (d) Debtors collection period(D): <u>Average debtors held</u> <u>Annual credit sales</u>

 $= \frac{1,24,000 \times 365}{8,42,000} = 54 \text{ days}$

(e) creditors payment period (C) :

Average creditors Annual trade purchases/365 = 30 days (given)

Hence, operating cycle period = (R + W + F + D) - C=(54 + 18 + 29 + 49) - 30 = 120 days

Source : basic financial management book by Surender Singh Rajeev Kumar

DETERMINANTS OF WORKING CAPITAL

Nature of business:

A company's working capital requirements are basically related to the kinds of business it conducts. Generally speaking, trading and financial firms require relatively large amounts of working capital, public utilities comparatively small amounts, whereas manufacturing concerns stand between these two extremes, their needs depending upon the character of industry of which they are a part.

2. Production policies:

Depending upon the kind of items manufactured, a company is able to offset the effect off- seasonal fluctuations upon working capital by adjusting its production schedules. The choice rests between varying output in order to adjust inventories to seasonal requirements and maintaining a steady rate of production and permitting stocks of inventories to build up during off-season periods. It will thus be obvious that a level production plan would involve a higher investment in working capital.

- 3. Manufacturing process:
- ADVERTISEMENTS:
- If the manufacturing process in an industry entails a longer period because of its complex character, more working capital is required to finance that process. The longer it takes to make an approach and the greater its cost, the larger the Inventory tied up In Its manufacture and, therefore, higher the amount of working capital.
- 4. Turnover of circulating capital:
- The speed with which the circulating capital completes its round I.e., conversion of cash into inventory of raw material Into Inventory of finished goods. Inventory of finished goods into book debts or accounts receivables and book debt into cash account, plays an Important and decisive role in judging the adequacy of working capital.
- **5.** Growth and expansion of business:
- As a company grows, it is logical to expect that larger amount of working capital will be required though It Is difficult to draw up firm rules for the relationship .

• 6. Business cycle fluctuations:

• Requirements of working capital of a company vary with the business variation. At a time when the price level comes up and boom condition prevail, the psychology of the management is to pile up a big stock of raw material and other goods likely to be used in the business operations as there is an expectation to take advantage of lower prices. The expansion of business units caused by the inflationary conditions creates demand for more and more capital.

• 7. Terms of purchase and sales:

- ADVERTISEMENTS:
- A business unit, making purchases on credit basis and selling its finished products on cash basis, will require lower amount of working capital, on the contrary, a concern having no credit facilities and at the same time forced to grant credit to its customers may find itself in a tight position.

• 8. Dividend policy:

- A desire to maintain an established dividend policy may affect working capital, often changes in working capital bring about an adjustment of dividend policy. The relationship between dividend policy and working capital is well established and very few companies declare a dividend without giving due consideration to its effects on cash and their needs for cash.
- A shortage of working capital often acts as a powerful reason for reducing or skipping a cash dividend. On the other hand, a strong position may justify continuing dividend payment.
- 9. Other determinants:
- The following are the other determinants of working capital:
- ADVERTISEMENTS:
- i) Absence of co-ordination in production and distribution policies in a company results in a high demand for working capital.
- ii) The absence of specialisation in the distribution of products may enhance the need of working capital.

- Methods Of Estimation of Working capital-
- Percentage of Sales Method:
- This method of estimating working capital requirements is based on the assumption that the level of working capital for any firm is directly related to its sales value. If past experience indicates a stable relationship between the amount of sales and working capital, then this basis may be used to determine the requirements of working capital for future period.
- Regression Analysis Method (Average Relationship between Sales and Working Capital):
- This method of forecasting working capital requirements is based upon the statistical technique of estimating or predicting the unknown value of a dependent variable from the known value of an independent variable. It is the measure of the average relationship between two or more variables, i.e.; sales and working capital, in terms of the original units of the data.

Computation of Working Capital



source: Basic Financial Management book by Surendra Singh, Rajiv Kumar

Example 2: Prepare an estimation of net working capital requirements of ABC Ltd company from the following information :

Particulars	(Rs. per unit)
Raw materials Direct labour Overheads	50 20 40 100

The following is the additional information:

Selling price	Rs. 240
Level of activity	52.000 units per annum
Raw materials in stock	Average 4 weeks
Work-in-progress(assuming 100% stage of completion of material and 50%	Average 2 weeks
For labour and overheads)	
Finished goods in stock	Average 4 weeks
Credit allowed by suppliers	Average 4 weeks
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Cash at bank is expected to be Rs.20,000.assume production is sustained during 52 weeks of the year.

Solution:

Computation of Net working Capital

(A) Current assets:	Rs.	Rs.
(a) desired cash balance at bank		20,000
(b) raw materials (52,000 x 50 x 4/52)		2,00,000
(c) work-in-progress:		
(i) Materials (52,000 x 50 x 2/52)	1,00,000	
(ii) Direct labour (52,000 x 20 x 2/52) x 50 100	20,000	
(iii) Overheads (52,000 x 40 x 2/52) x 50 100	40,000	1,60,000
(d) Finished goods (52,000 x 110 x 4/52)		4,40,000
(e) Debtors (52,000 x 110 x 8/52)		8,80,000
Total Current Assets (A)		17,00,000

Solution :

Computation of Net Working Capital

Particulars	Rs.	Rs.
(B) Current Liabilities		
Creditors (52,000 x 50 x 4//52)		2,00,000
Total Current Liabilities (B)		2,00,000
(C) NET WORKING CAPITAL (A - B)		15,00,000

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Working Capital policy and Management

- The <u>working capital</u> policy of a company refers to the level of investment in <u>current assets</u> for attaining their targeted sales. It can be of three types viz. restricted, relaxed, and moderate. The relaxed policy has higher and restricted has lower levels of current assets whereas moderate places itself between relaxed and restricted. Commonly, these policies are also named as aggressive, conservative and <u>hedging</u> policy.
- Three Types of Working Capital Policies
- Based on the attitude of the finance manager towards risk, profitability and liquidity, the working capital policies can be divided into following three types.
- Restricted Policy
- In restricted policy, the estimation of current assets for achieving targeted revenue is done very aggressively without considering for any contingencies and provisions for any unforeseen event.

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- Relaxed policy is just the opposite of restricted policy. In this policy, the
 estimation of current assets for achieving the targeted revenue is prepared after
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 level of current assets for achieving the same level of sales.
- Moderate Policy
- Moderate policy is a balance between the two policies i.e. restricted and relaxed. It assumes characteristics of the both the policies. To strike a balance, moderate policy assumes risk which is lower than restricted and higher than conservative. In profitability front also, it lies between the two.

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WORKING CAPITAL ESTIMATION - OPERATING ESTIMATION METHOD

Operating cycle means the cycle of raw material to work in progress to finished goods to accounts payable and finally to cash. Operating cycle time is the time taken starting from raw material purchases to its conversion into cash.

- ✓ Working Capital = {Estimated COGS * (Operating Cycle / 365)} +Desired Cash & Bank Balance.
- RM Stock = Estimated Production Units * Per Unit Cost of RM * (RM Holding Period / 365 Days)
- WIP = Estimated Production * {Per Unit Cost of -- RM (100%) + Labor (50%) + Overheads (50%)} * (Work In Progress Period / 365 Days)
- Finished Goods = Estimated Production * Per Unit Cost of Goods Produced * (Finished Goods Holding Period / 365 Days)
- Accounts Receivables = Estimated Production * Selling Price * (Collection Period / 365 Days).
- Accounts Payables = Estimated Production * Per Unit RM Cost * (Payment Period / 365 Days)

BENEFITS

- Provides a detailed understanding.
- ✓ Precise.
- ✓ Provides a detailed method.

CONSTRAINTS

- Lengthy process.
- Requires lot of estimates which may go wrong.

Period of one operating cycle can be calculated in the following format:

Particulars	Days
Raw materials holding period	
Work-in-progress holding period	
Finished goods holding period	
Receivables collection period	
Gross operating cycle	
Less: creditor's payment period	
Net operating cycle (cash sale)	

Source: basic financial management book by Surrender Singh, Rajeev Kumar

Example1 : Calculate the operating cycle of a company which gives the following details relating to its operations :

Annual raw material consumption	8,42,000
Annual cost of production	14,25,000
Annual cost of sales	15,30,000
Annual sales	19,50,000
Average value of current assets held:	
Raw materials	1,24,000
Work-in-Progress	72,000
Finished goods	1,22,000
Debtors	2,60,000

The company gets 30 days credit from its suppliers.All sales made by firm are on credit basis.You may take one year as equal to 365 days.

Computation of Operating Cycle

- (a) Raw material holding period (R):
 Average stock of raw material held
 Annual raw material consumption/365
- (a) Work-in-progress (W): <u>Average work-in-progress held</u> Annual cost of production of goods
- (c) Finished goods holding period(F): Average finished goods stock held Annual cost of goods sold
- (d) Debtors collection period(D): <u>Average debtors held</u> <u>Annual credit sales</u>

 $= \frac{1,24,000 \times 365}{8,42,000} = 54 \text{ days}$

(e) creditors payment period (C) :

Average creditors Annual trade purchases/365 = 30 days (given)

Hence, operating cycle period = (R + W + F + D) - C=(54 + 18 + 29 + 49) - 30 = 120 days

Source : basic financial management book by Surender Singh Rajeev Kumar

DETERMINANTS OF WORKING CAPITAL

Nature of business:

A company's working capital requirements are basically related to the kinds of business it conducts. Generally speaking, trading and financial firms require relatively large amounts of working capital, public utilities comparatively small amounts, whereas manufacturing concerns stand between these two extremes, their needs depending upon the character of industry of which they are a part.

2. Production policies:

Depending upon the kind of items manufactured, a company is able to offset the effect off- seasonal fluctuations upon working capital by adjusting its production schedules. The choice rests between varying output in order to adjust inventories to seasonal requirements and maintaining a steady rate of production and permitting stocks of inventories to build up during off-season periods. It will thus be obvious that a level production plan would involve a higher investment in working capital.

- 3. Manufacturing process:
- ADVERTISEMENTS:
- If the manufacturing process in an industry entails a longer period because of its complex character, more working capital is required to finance that process. The longer it takes to make an approach and the greater its cost, the larger the Inventory tied up In Its manufacture and, therefore, higher the amount of working capital.
- 4. Turnover of circulating capital:
- The speed with which the circulating capital completes its round I.e., conversion of cash into inventory of raw material Into Inventory of finished goods. Inventory of finished goods into book debts or accounts receivables and book debt into cash account, plays an Important and decisive role in judging the adequacy of working capital.
- **5.** Growth and expansion of business:
- As a company grows, it is logical to expect that larger amount of working capital will be required though It Is difficult to draw up firm rules for the relationship .

• 6. Business cycle fluctuations:

• Requirements of working capital of a company vary with the business variation. At a time when the price level comes up and boom condition prevail, the psychology of the management is to pile up a big stock of raw material and other goods likely to be used in the business operations as there is an expectation to take advantage of lower prices. The expansion of business units caused by the inflationary conditions creates demand for more and more capital.

• 7. Terms of purchase and sales:

- ADVERTISEMENTS:
- A business unit, making purchases on credit basis and selling its finished products on cash basis, will require lower amount of working capital, on the contrary, a concern having no credit facilities and at the same time forced to grant credit to its customers may find itself in a tight position.

• 8. Dividend policy:

- A desire to maintain an established dividend policy may affect working capital, often changes in working capital bring about an adjustment of dividend policy. The relationship between dividend policy and working capital is well established and very few companies declare a dividend without giving due consideration to its effects on cash and their needs for cash.
- A shortage of working capital often acts as a powerful reason for reducing or skipping a cash dividend. On the other hand, a strong position may justify continuing dividend payment.
- 9. Other determinants:
- The following are the other determinants of working capital:
- ADVERTISEMENTS:
- i) Absence of co-ordination in production and distribution policies in a company results in a high demand for working capital.
- ii) The absence of specialisation in the distribution of products may enhance the need of working capital.

- Methods Of Estimation of Working capital-
- Percentage of Sales Method:
- This method of estimating working capital requirements is based on the assumption that the level of working capital for any firm is directly related to its sales value. If past experience indicates a stable relationship between the amount of sales and working capital, then this basis may be used to determine the requirements of working capital for future period.
- Regression Analysis Method (Average Relationship between Sales and Working Capital):
- This method of forecasting working capital requirements is based upon the statistical technique of estimating or predicting the unknown value of a dependent variable from the known value of an independent variable. It is the measure of the average relationship between two or more variables, i.e.; sales and working capital, in terms of the original units of the data.

Computation of Working Capital



source: Basic Financial Management book by Surendra Singh, Rajiv Kumar

Example 2: Prepare an estimation of net working capital requirements of ABC Ltd company from the following information :

Particulars	(Rs. per unit)
Raw materials Direct labour Overheads	50 20 40 100

The following is the additional information:

Selling price	Rs. 240
Level of activity	52.000 units per annum
Raw materials in stock	Average 4 weeks
Work-in-progress(assuming 100% stage of completion of material and 50%	Average 2 weeks
For labour and overheads)	
Finished goods in stock	Average 4 weeks
Credit allowed by suppliers	Average 4 weeks
Credit allowed to debtors	Average 8 weeks

Cash at bank is expected to be Rs.20,000.assume production is sustained during 52 weeks of the year.

Solution:

Computation of Net working Capital

(A) Current assets:	Rs.	Rs.
(a) desired cash balance at bank		20,000
(b) raw materials (52,000 x 50 x 4/52)		2,00,000
(c) work-in-progress:		
(i) Materials (52,000 x 50 x 2/52)	1,00,000	
(ii) Direct labour (52,000 x 20 x 2/52) x 50 100	20,000	
(iii) Overheads (52,000 x 40 x 2/52) x 50 100	40,000	1,60,000
(d) Finished goods (52,000 x 110 x 4/52)		4,40,000
(e) Debtors (52,000 x 110 x 8/52)		8,80,000
Total Current Assets (A)		17,00,000

Solution :

Computation of Net Working Capital

Particulars	Rs.	Rs.
(B) Current Liabilities		
Creditors (52,000 x 50 x 4//52)		2,00,000
Total Current Liabilities (B)		2,00,000
(C) NET WORKING CAPITAL (A - B)		15,00,000

Source: basic financial management book by Surender Singh Rajiv Kumar

Working Capital policy and Management

- The <u>working capital</u> policy of a company refers to the level of investment in <u>current assets</u> for attaining their targeted sales. It can be of three types viz. restricted, relaxed, and moderate. The relaxed policy has higher and restricted has lower levels of current assets whereas moderate places itself between relaxed and restricted. Commonly, these policies are also named as aggressive, conservative and <u>hedging</u> policy.
- Three Types of Working Capital Policies
- Based on the attitude of the finance manager towards risk, profitability and liquidity, the working capital policies can be divided into following three types.
- Restricted Policy
- In restricted policy, the estimation of current assets for achieving targeted revenue is done very aggressively without considering for any contingencies and provisions for any unforeseen event.

- Relaxed Policy
- Relaxed policy is just the opposite of restricted policy. In this policy, the
 estimation of current assets for achieving the targeted revenue is prepared after
 careful consideration of uncertain events such as seasonal fluctuations, a sudden
 change in the level of activities or sales etc. After the reasonable estimates also,
 a cushion to avoid any unforeseen circumstances is left to avoid the maximum
 possible risk. In the diagram, it represents the point Rx which uses the highest
 level of current assets for achieving the same level of sales.
- Moderate Policy
- Moderate policy is a balance between the two policies i.e. restricted and relaxed. It assumes characteristics of the both the policies. To strike a balance, moderate policy assumes risk which is lower than restricted and higher than conservative. In profitability front also, it lies between the two.

Liquidity vs Profitability

The risk-return trade-off involved in managing the firm's working capital is a trade-off between the firm's liquidity and its profitability. By maintaining a large investment in current assets like cash, inventory etc., the firm reduces the chance of :-

(1) production stoppages and the loss from sales due to inventory shortage and

(2) the inability to pay the creditors on time.

However, as the firm increases its investment in working capital, there is not a corresponding increase in its expected returns. As a result the firm's return on investment drops because the profit is unchanged while the investment in current assets increases.

/https://arts.brainkart.com/article/liquidity-vs-profitability---working-capital-management--dimension-of-working-capital-mana gement-1084/

Sources of Working Capital Finance

- Sources of <u>working capital</u> can be spontaneous, short term and long term. Spontaneous working capital includes mainly <u>trade credit</u> such as the sundry creditor, <u>bills payable</u>, and <u>notes payable</u>. Short term sources are tax provisions, dividend provisions, <u>bank overdraft</u>, <u>cash credit</u>, trade deposits, public deposits, bills discounting, short-<u>term loans</u>, inter-corporate loans, and commercial paper. Long-term sources are retained profits, provision for <u>depreciation</u>, share capital, long-term loans, and <u>debentures</u>.
- SHORT TERM SOURCES Public Deposits, Trade Deposits, Bank Overdraft,Commercial Paper.
- LONG TERM SOURCES- Retained Earnings, Debentures, Share Capital, Provision.
- SPONTANEOUS SOURCES Trade Credit, Outstanding Labour, Other Expenses.
SOURCES OF WORKING CAPITAL



Source: https://efinancemanagement.com/working-capital-financing/sources-of-working-capital



approach

Approaches to Determine Financing of Working Capital

Hedging approach or matching approach: this approach means matching the maturities of debt with the maturity of financial needs. It means the sources of funds should match with the nature of assets to be financed. There are two types of working capital permanent and temporary working capital. The hedging approach suggests that the permanent working capital requirement should be financed through long term funds, while temporary working capital should be financed through the short term funds.

source: https://managementation.com/approaches-to-determine-financing-of-working-capital/

Approaches to Determine Financing of Working Capital

- → Conservative approach: as the name suggests it is a conservative approach which suggests that the entire requirement of current assets should be financed through long term sources and short term sources should be used only in case of emergency. There is high cost, low risk and low profit in this approach.
- → Aggressive approach: as the name suggests it is an aggressive approach which suggests that the entire requirement of current assets should be financed through short term sources. There is low cost, high risk and high profit in this approach.

source: https://managementation.com/approaches-to-determine-financing-of-working-capital/

Working Capital management

Working Capital is the amount of Capital that a Business has available to meet the day-to-day cash requirements of its operations

- → Working Capital is the difference between resources in cash or readily convertible into cash (Current Assets) and organizational commitments for which cash will soon be required (Current Liabilities) .It refers to the amount of Current Assets that exceeds Current Liabilities (i.e. CA CL)
- → Working Capital refers to that part of the firm's Capital, which is required for Financing Short-Term or Current Assets such as Cash, Marketable Securities, Debtors and Inventories.
- → -Working Capital is also known as Revolving or Circulating Capital or Short-Term Capital.

source:<u>https://arts.brainkart.com/article/liquidity-vs-profitability---working-capital-management-dimension-of</u> -working-capital-management-1084/

THANK YOU