USAID/WASHPaLS

Enterprise Viability & Sustainability Diagnostic Toolkit

Assess Sustainability | Returns on Capital Employed Analysis

USAID
FROM THE AMERICAN PEOPLE

Enterprise Viability & Sustainability Diagnostic Toolkit Modules

1. **Preliminary research**
2. **Understand current performance**
3. **Identify factors to improve viability**
4. **Assess sustainability**

Analytical activities

Enterprise Mapping

Select diverse enterprises based on their market context and sales performance for in-depth research

Exploratory Research

Understand enterprises' contexts and operations to customize tools and research questionnaires

Profit & Loss Statement Preparation

Prepare profit & loss (P&L) statements with revenues, costs, and resulting profits to support analyses

Profit & Loss Statement Analysis

Analyze P&L statements using financial ratios to enable inter-enterprise comparisons

Enterprise Classification

Categorize enterprise based on revenue and profit

Gross Margin Variance analysis

Identify the profit drivers that differentiate performance among enterprise categories

Strategy Identification

Identify the strategies that improve profit of enterprises in different contexts

Financial Independence Assessment

Assess enterprises' ability to meet recurring future financial investments independently

Operational Independence Assessment

Assess enterprises' ability to operate independently in future market conditions

Return on Capital Employed Analysis

Compute returns from sanitation relative to other opportunities available to the entrepreneur

Focus of this document

Table of Contents

- Introduction
- Calculate ROCE
- Compare ROCE to benchmarks

Objective of this document

Intended outcomes

This document is intended to help MBS programs:

- Understand the concept of Return on Capital Employed (ROCE)
- Learn the steps to compute ROCE
- Compare ROCE with different benchmarks, and interpret results

Value for MBS programs

- **Indicates an entrepreneur's opportunity cost** of starting and operating the sanitation enterprise compared to other local alternatives (e.g., entrepreneur's other existing businesses) or the market cost of capital (i.e., the rate of return the entrepreneur could earn by lending the money instead of investing it in the business)
- **Provides an assessment of the likelihood of enterprises continuing operations without external support**, by providing a comparative view of the profit generated by different business lines utilizing the entrepreneur's capital base

Additional reference material

This document is meant to be used along side the Microsoft Excel document *Returns on Capital Employed Template* which is also part of this module.

How to use this document

MBS programs interested in conducting ROCE analysis are recommended to use this guide and the accompanying materials as follows:

- Read this document to get familiar with the basic concept of ROCE
- Refer to the *Data Requirements* document of this module for a comprehensive list of data required to compute ROCE
- If some or all of the data required is unavailable, refer to the *Sample In-Depth Research Interview Guide for Entrepreneurs* of this toolkit for questions to ask entrepreneurs to gather data for conducting ROCE analysis
- Use the guidelines provided in this document and the associated template to conduct ROCE analysis

Return On Capital Employed (ROCE) – Formula

ROCE is one among a class of financial metrics called long-term profitability ratios that are used to assess a business's ability to generate profits relative to alternate opportunities (such as other business lines). ROCE shows the unit(s) of profits generated by each unit of capital employed (such as cash or equipment) in the business.

Return On Capital Employed (ROCE) = $\frac{\text{Operating profit}}{\text{Capital employed}}$

Operating profit

Operating profits represents the profit a business earns after accounting for all costs directly related to manufacturing as well as overheads or indirect costs incurred in the day-to-day operation of the business.

P&L LINE ITEM	DESCRIPTION
REVENUE	Revenue generated by selling toilets or related services
(-) COST OF GOODS SOLD	Costs directly linked to the manufacture of toilets and only incurred when a toilet is sold
Raw materials	
Direct labor	
Transport of raw materials	
Damaged components	
(=) GROSS PROFIT	
(-) OPERATIONAL EXPENSES	Costs towards overheads that are linked to the day-to-day operations of the enterprise
Transport for delivery	
Land rent	
Utilities	
Marketing (commissions)	
Marketing (non-commission)	
Repairs	
Bad debt	
Depreciation	
(=) OPERATING PROFIT	
(-) Interest Expense	Costs towards payment of loans taken by the enterprise
(=) NET PROFIT	

Note: Excludes income and other local taxes assuming sanitation enterprises are informal and excluded from the formal tax system

Capital employed (1/4)

Capital employed is the total capital used for generating profits by a business. It is equal to the value of all assets employed in a business minus the current liabilities of the business.

Capital Employed = **Total assets** − **Current Liabilities**

An asset is any resource owned by the business. Examples of assets in the sanitation enterprise include:

- *Molds to make cement rings and pit covers*
- *Transportation vehicles to deliver toilets to customers*

Current Liabilities are a business's debts or obligations that are due within one year or within a normal operating cycle.

Capital employed (2/4)

Total assets are equal to the sum of fixed assets and current assets of the business.

Capital Employed = **Total Assets** − **Current Liabilities**

= **Fixed Assets** + **Current Assets** − **Current Liabilities**

Fixed assets are purchased for long-term use, and are considered difficult to liquidate into cash quickly, such as land, buildings, and equipment.

Molds to make cement rings and pit covers

Transportation vehicles to deliver toilets to customers

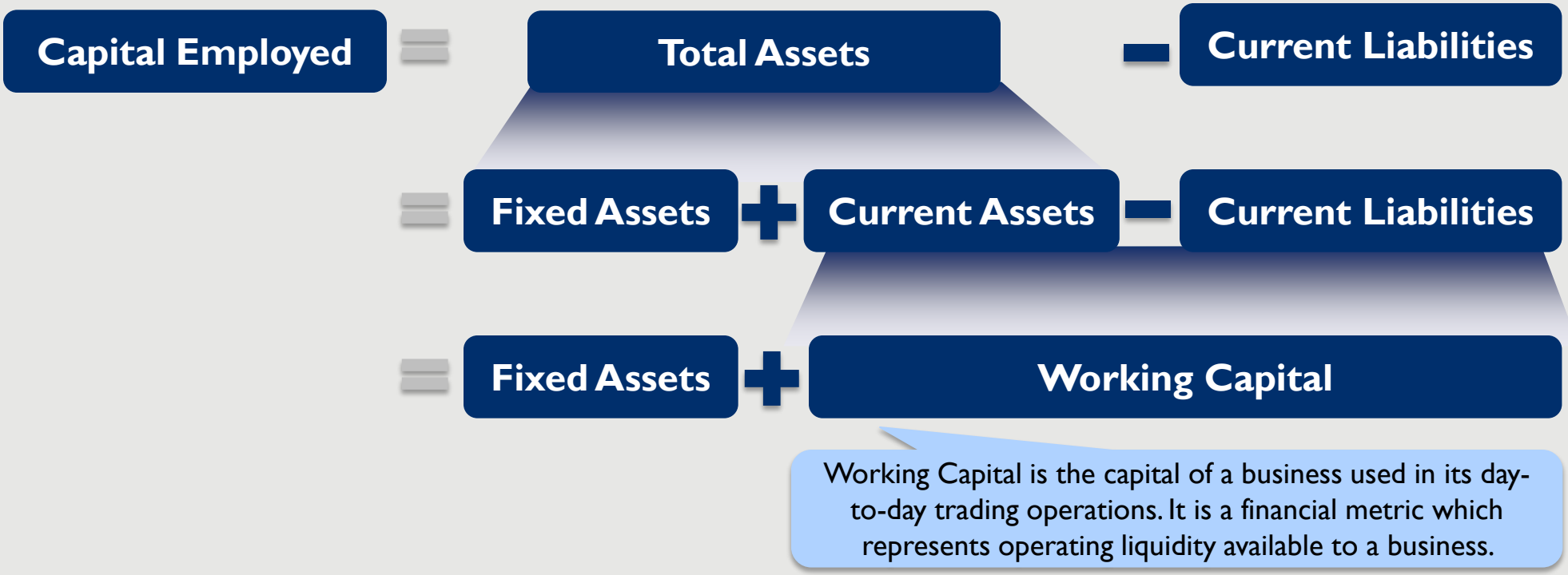
Current assets can be reasonably expected to be sold, consumed, or exhausted through the normal operations of a business within the year or operating cycle.

Cash and cash equivalents

Inventory

Capital employed (3/4)

Working capital of a business is the difference between current assets and current liabilities. As such, capital employed can also be expressed as the sum of fixed assets and working capital.



Capital employed (4/4)

Working capital constitutes inventory, credit sales, and trade credit.

Sanitation enterprises typically have negligible credit sales and trade credit relative to inventory. The example, therefore, <u>assumes working capital comprises of the value of inventory alone</u>.

Capital Employed = **Total Assets** − **Current Liabilities**

= **Fixed Assets** + **Current Assets** − **Current Liabilities**

= **Fixed Assets** + **Working Capital**

= **Fixed Assets** + **Inventory**

Inventory is the value of the finished products or raw materials held by a business before they are converted to sales.

ROCE Analysis - Process

Calculate ROCE of entrepreneur's business lines

Calculate entrepreneur's ROCE for the sanitation enterprise, and other business lines (if applicable) for comparison to relative benchmarks.

Business lines are other, non-sanitation related occupation(s) and income source(s) that compete for the entrepreneur's time and resources (e.g., concrete products, building material retail)

Compare ROCE to relevant benchmarks

Compare the ROCE for the sanitation enterprise to relevant benchmarks to assess entrepreneur's opportunity cost of running the sanitation enterprise

Table of Contents

- Introduction
- Calculate ROCE
- Compare ROCE to benchmarks

Calculating ROCE

The operating profit of the sanitation enterprise can be calculated **as per the guidelines in Module 2** of this toolkit. For non-sanitation business lines, the methodology (and corresponding template) in Module 2 can be modified to arrive at operating profits. Alternatively, a rough estimate of the operating profit can be obtained by asking the entrepreneur directly (though the data may not be as accurate).

ROCE for a business line

$$= \frac{\text{Operating profit of business line}}{\text{Capital employed for business line}}$$

(Explained in the subsequent pages)

Computing capital employed will typically require estimates and making several assumptions. Ideally, varying the assumptions will generate a range of ROCE values, which should be assessed instead of a single value.

Calculating capital employed

As operating profit is calculated for a given financial period (typically a year), the capital employed can be computed as the average for the same financial period. This ensures that any change in the value of the capital employed during the course of the financial period is accounted.

Average Capital Employed =

$$\left[\frac{Fixed\ Assets_{start\ of\ year} + Fixed\ Assets_{end\ of\ year}}{2}\right]$$

The value of fixed assets (except land) depreciates over time and is calculated at its current value for the start and end of the financial period (this is further explained under the *Depreciation* section of the *Profit and Loss Statement Preparation* document of Module 2).

+

$$\left[\frac{Inventory_{start\ of\ year} + Inventory_{end\ of\ year}}{2}\right]$$

The value of inventory depends on the quantity of raw materials and finished products the entrepreneur decides to stock at a given time, and can be obtained directly from the entrepreneur or through observation at the shop.

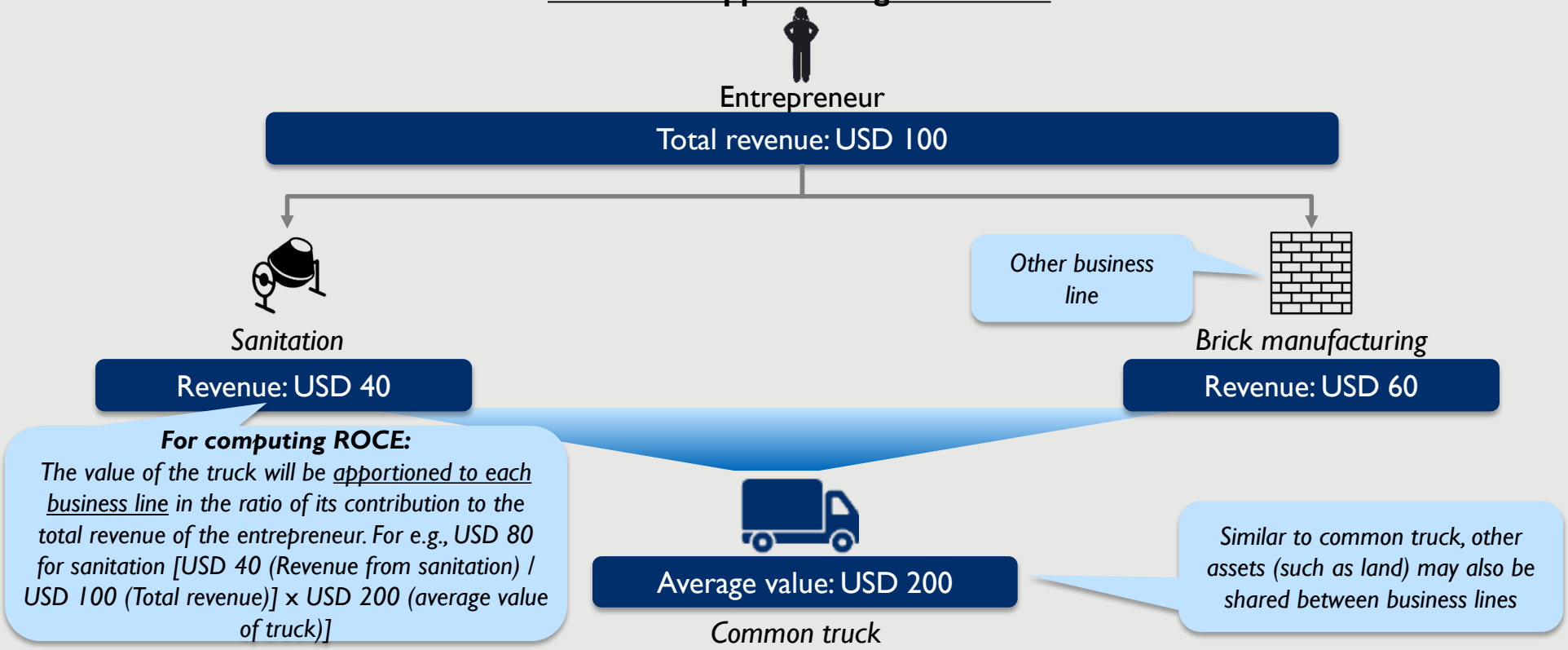
Tip

- The value of inventory is calculated by multiplying the Cost of Goods Sold (COGS) and quantity of finished products held, and the procurement cost and quantity of raw materials held. Refer to the *Profit & Loss Statement Preparation* document of Module 2 for further details on COGS.
- Inventory value can also be obtain by asking the entrepreneur for the "typical" inventory that is stocked. This will be a good approximation for "average inventory."

Apportioning value of fixed assets

If the entrepreneur uses fixed assets in multiple business lines, the total value of the fixed assets should be apportioned to different business lines for calculating ROCE to avoid underestimating the ROCE for a given business line. This apportioning can be done based on the percentage contribution of each business line to the entrepreneur's overall revenue.

Illustrative apportioning calculation



Tip Apportioning assets using their utilization rate by each business line will be more accurate. However, entrepreneurs typically do not have precise estimates of asset utilization rates. Therefore, we recommend using proportion of overall revenue **as an assumption** to apportion assets.

Calculating ROCE using the template

ROCE Calculations	
ROCE of sanitation business line	51%
ROCE of business line 1	27%
ROCE of business line 2	Not applicable

General details of sanitation enterprise	
Enterprise name	Enterprise A
No. of other business lines of entreprenuer	1

Financial information	
% revenue from sanitation	30%
% revenue from business line 1	70%
% revenue from business line 2	
Operating profit from sanitation	4,000.0
Operating profit from business line 1	5,000.0
Operating profit from business line 2	

Fixed assets	
Name of fixed asset 1	Truck
Used in sanitation?	Yes
Used in business line 1?	Yes
Used in business line 2?	
Is fixed asset land?	No
Purchase price of asset 1	10,000.0
Salvage value of asset 1	2,000.0
Useful life of asset 1 (years)	10
Age of asset 1 (at start of financial	5
Asset value at beginning of financia	6,000.0
Asset value at end of financial period	5,200.0
Average value of asset	5,600.0
Apportioned value of asset for sanitation	1,680.0
Apportioned value of asset for business line 1	3,920.0
Apportioned value of asset for business line 2	0.0
Name of fixed asset 2	Land
Used in sanitation?	Yes
Used in business line 1?	Yes
Used in business line 2?	
Is fixed asset land?	Yes
Purchase price of asset 2	20,000.0
Salvage value of asset 2	
Useful life of asset 2 (years)	
Age of asset 2 (at start of financial period in consideration)	
Asset value at beginning of financial period	20,000.0
Asset value at end of financial period	20,000.0
Average value of asset	20,000.0
Apportioned value of asset for sanitation	6,000.0
Apportioned value of asset for business line 1	14,000.0
Apportioned value of asset for business line 2	0.0

All rows for business line 2 greyed out since it is not applicable

5 ROCE calculated based on information entered below

1 Enter name of enterprise and number of other business lines of entrepreneur

2 Enter financial information of sanitation and business line 1

3 Enter details of the entrepreneur's assets

4 Enter details of inventory for sanitation and business line 1

Inventory	
Inventory for sanitation	
Inventory at beginning of financial period	80.0
Inventory at end of financial period	100.0
Average inventory	90.0
Inventory for business line 1	
Inventory at beginning of financial period	500.0
Inventory at end of financial period	400.0
Average inventory	450.0
Inventory for business line 2	
Inventory at beginning of financial period	
Inventory at end of financial period	
Average inventory	0.0

Table of Contents

- Introduction
- Calculate ROCE
- Comparing ROCE to benchmarks

Comparing ROCE in sanitation to other metrics

The ROCE of the sanitation enterprise needs to be compared to appropriate benchmarks to understand the opportunity cost of the entrepreneur.

Entrepreneurs operating multiple business lines

Compare ROCE of sanitation to ***ROCE of entrepreneur's other business lines***

Entrepreneurs operating only the sanitation enterprise

Compare ROCE of sanitation to the ***market cost of capital***

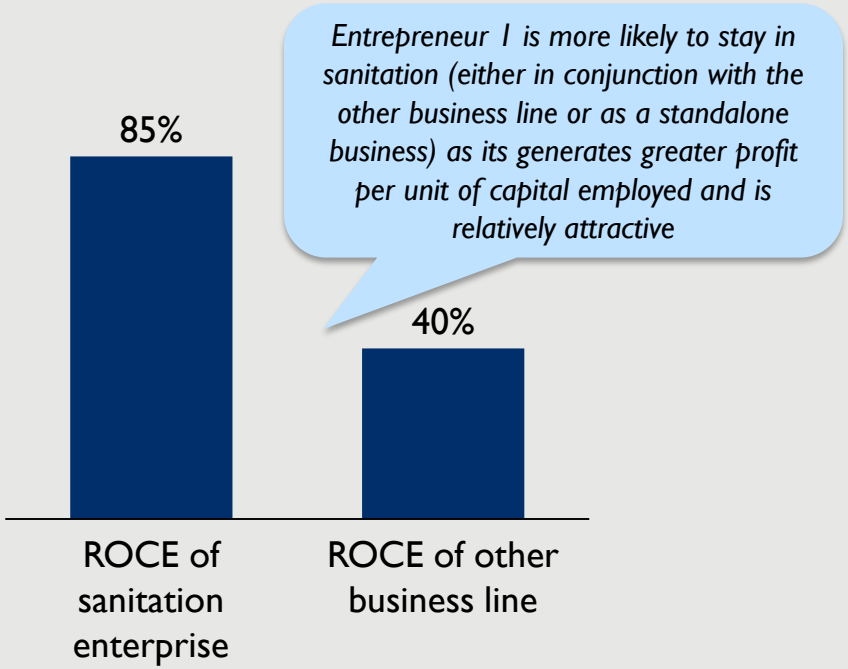
Tip

ROCE calculations often involve subjective estimates/ assumptions and, therefore, analysts should generate a range of values by altering estimates/ assumptions to inform decisions. ROCE is based on past / current values and should not be considered as a guarantee for future returns. Insights from ROCE should be analysed along with subjective assessments of potential risks.

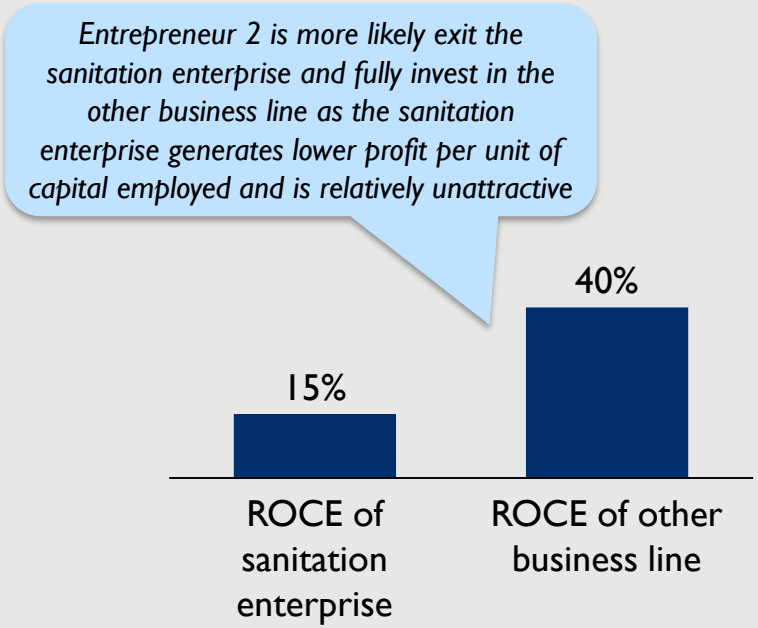
Comparing ROCE in sanitation with other business lines (1/2)

Enterprises with a higher ROCE in sanitation, relative to the entrepreneur's other business lines, are more likely to be sustainable, whereas enterprises with a lower ROCE risk closure by the entrepreneur.

Sample entrepreneur 1



Sample entrepreneur 2



Tip While entrepreneurs typically do not calculate ROCE, they often qualitatively compare business lines in terms of the profit generated per unit capital and effort invested. ROCE is used here to quantify this intuition.

Comparing ROCE in sanitation with other business lines (2/2)

A higher ROCE in sanitation can either be driven by a significantly higher operating profit, or a significantly lower capital employed, relative to the other business line.

Higher ROCE in sanitation can be driven by...

Operating profit of sanitation > **Operating profit of other business line**

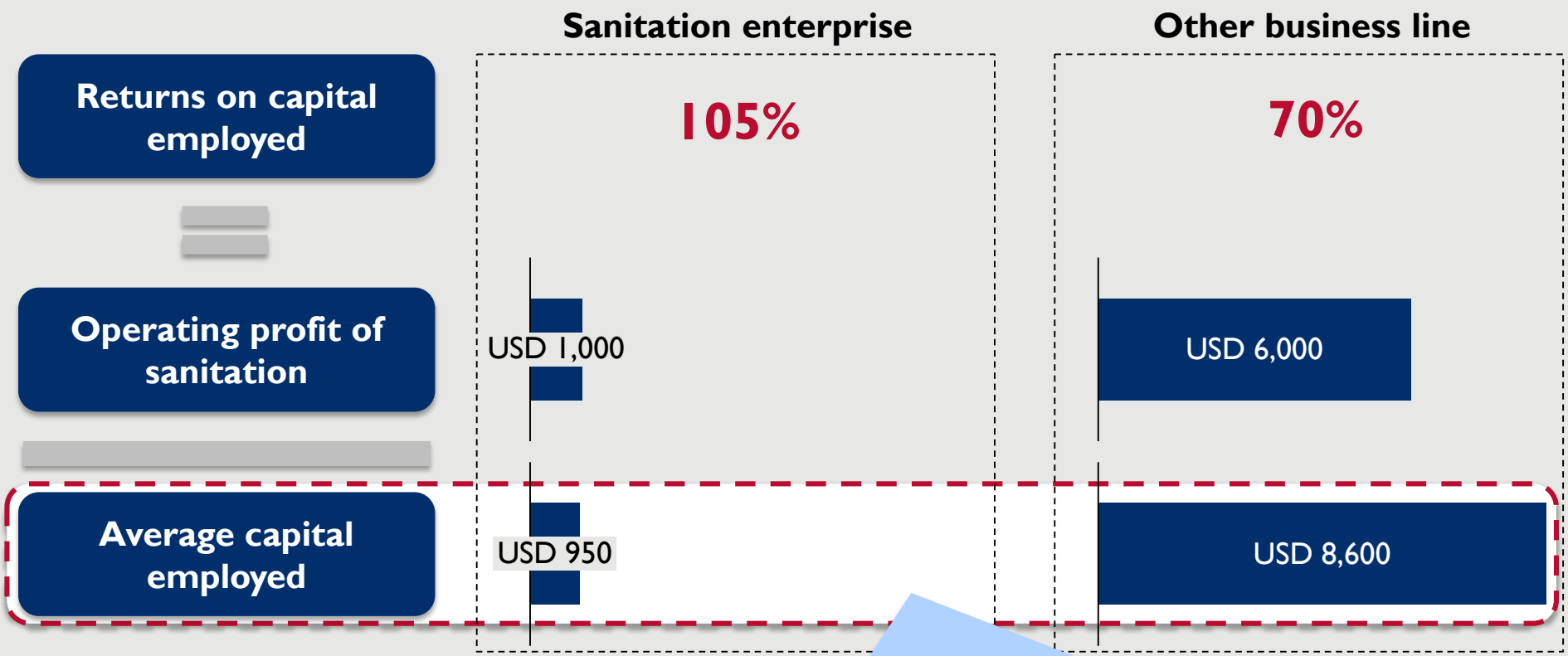
OR

Capital employed for sanitation < **Capital employed for other business line**

*A significantly higher operating profit in the sanitation enterprise indicates that **sanitation is the primary source of income** for the entrepreneur. As such, entrepreneur is likely to continue operating the business.*

*A significantly lower capital employed in the sanitation enterprise indicates that sanitation generates profit **more efficiently at a lower investment of capital**. As such, the entrepreneur is likely to continue operating the sanitation enterprise, even if it is not the primary source of income.*

Comparing ROCE in sanitation with other business lines – example (1/2)

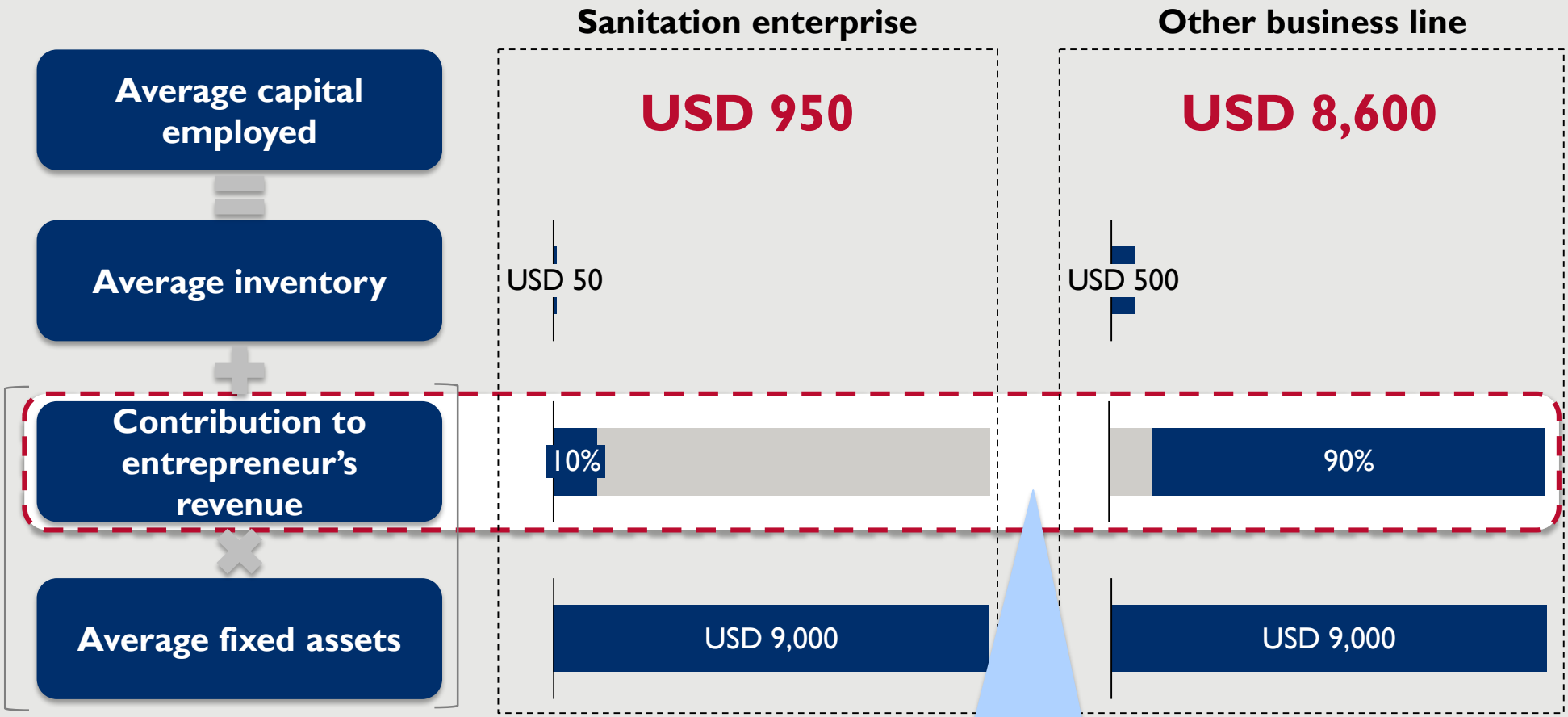


The entrepreneur has a **higher ROCE in sanitation**, even though operating profits are lower for sanitation. The primary driver of difference in ROCE between business lines is the **difference in average capital employed**

Tip

Certain entrepreneurs will have abnormally high values of ROCEs (greater than 100%) when assets are shared between business lines. This is due to the apportioning of assets, which shrinks the denominator (as evident in the next slide). In such situations, the ROCEs should not be interpreted as absolute values, but in relation to the ROCE of the other business line.

Comparing ROCE in sanitation with other business lines – example (2/2)



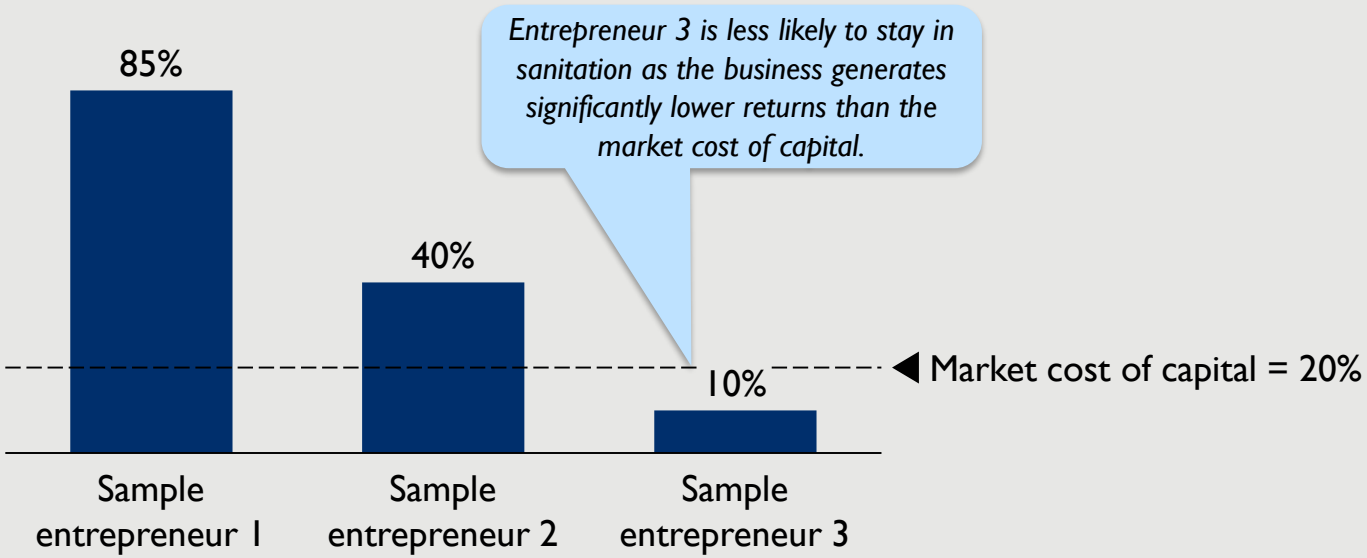
The **major driver of difference** in capital employed is the **revenue share of each business,** which decides the apportioning of fixed assets across businesses. It indicates that the entrepreneur in this example can use her/his primary assets from the other business line for sanitation at a **low incremental cost** rather than **purchase new assets**.

Tip If another method of apportioning (such as utilization rates) is used, the differences in ROCE between business lines in this example will change. However, entrepreneurs are unlikely to have accurate estimates of utilization rates. Hence, using revenue for apportioning is recommended.

Comparing ROCE in sanitation with the market cost of capital

Enterprises with a ROCE significantly lower than the market cost of capital are less likely to be sustainable, as entrepreneurs can theoretically sell their assets and invest the money at the market cost of capital, without the expending the effort of running a business.

ROCE in sanitation enterprise (%) for 3 sample entrepreneurs



Tip Entrepreneurs may still prefer to operate the business if returns are comparable or only slightly lower than the market cost of capital, due to reasons ranging from a desire for employment to a limited market of borrowers or a high risk of default associated with lending.