

Returns Checklist

Questions:	Context		
	Valuation	Business Performance	Management Performance
<p>What are Returns on <u>Existing</u> Capital?</p> <p>Measuring Existing Returns Accounting Profits (NPAT, EPS, etc..) Accounting Returns (ROA, ROE, ROFE etc) Economic Returns (IRR, NPV) Decomposing Returns (Dupont Model) Comparative Analysis - v. historic performance - v. peers - current level v. historic trend</p> <p>Quality of estimate v. True IRR</p>	<p>Are they sustainable?</p> <p>Sustainability of returns: Relative to historic performance? Relative to peers? What are cyclical trends in industry demand and capital flows? Is industry structure stable or changing?</p> <p>Changes to returns via: Increased/decreased investment Changes to margin</p>	<p>Are they attractive?</p> <p>Absolute level of returns? Are returns due to competitive positioning or stage of cycle?</p> <p>Relative to Peers? cf. industry returns (good or bad) with company returns (good or bad).</p>	<p>What are the drivers?</p> <p>Returns driven by: Operating Performance Industry Trends Financial structure Accounting</p>
<p>What are Returns on <u>Incremental</u> Capital?</p> <p>Measuring Incremental Returns Incremental Accounting Returns Unit Level Incremental Returns - SaaS and Customer Analysis - Acquisition/Roll Ups - Operating Leverage v. Changed Returns</p> <p>Change in True IRR vs Change in ROE</p>	<p>Does growth create value?</p> <p>Are returns > cost of capital?</p> <p>How much capital is deployed? Two stage valuation model</p> <p>Measured returns vs True IRR EPS v ROE v. IRR</p>	<p>How can capital be deployed?</p> <p>Organic Sales & Marketing R&D PPE & Working Capital</p> <p>Acquisitions Return on Tangible Assets vs. Acquired Goodwill</p>	<p>Is management <u>allocating</u> capital well?</p> <p>Growth Investment Organic Acquisition</p> <p>Shareholder Returns Dividends Buybacks Debt Reduction</p>
<p>Is Existing or Incremental Capital more Important?</p> <p>Existing capital dominates: Apply Cyclical Investment Framework</p> <hr/> <p>Incremental capital dominates: Adopt Growth Investment Framework</p>	<p>Change of returns on existing capital + value</p> <p>High Returns Generally Bad Returns mean revert via increased competition and business cycles</p> <hr/> <p>High Returns Generally Good Ability to create value via growth</p>	<p>What ability is there to invest ?</p> <p>Duration of cycle Payback of investment</p> <hr/> <p>Total Adressable Market Unitised Investment vs. Major Project</p>	<p>What management skills and incentives are best?</p> <p>Incentivised to optimise existing capital/shareholder returns?</p> <hr/> <p>Incentivised to maximise value creation through growth?</p>

Measuring Returns - Existing Capital

Accounting Measures of Capital Invested

ASSETS

Cash	
Inventory	- Payables
+ Receivables	- Other Curr. Liabilities
+ Other Curr. Assets	= Net Work. Capital
Property Plant & Equipment	
Under Construction	
Intangibles	
Non-Core/Investments	
Accumulated Depreciation & Amortisation	

Funds Employed (Excludes non-interest bearing sources of funding.)

Funds Employed (FE)
Tangible Funds Em'd (TFE)
Gross Funds Employed (GFE)

LIABILITIES

Payables & Other Current Liabilities	
Interest Bearing Debt	- Cash = Net Debt
Shareholders Equity	
Outside Equity Interest	
Long Term Liabilities	
- Non-Core/Inv.	
Accumulated Depreciation & Amortisation	

Invested Capital (IC)
Equity

Gross Assets (GA)
Total Assets (A)
Operating Assets (Op. A)

Accounting Measures of Return

Formula

Use

$$ROGA = \frac{EBITDA}{\text{Gross Assets}}$$

Large one off investment with long life. Eg. Toll Road, Port etc

$$ROA = \frac{EBIT(A)}{\text{Total Assets}}$$

No detailed BS data provided/ cf. ROFE to analyse op. gearing.

$$RO_{Op.A} = \frac{EBIT(A)}{\text{Op. Assets}}$$

Adjusts IRR for assets under construction or otherwise non-core.

$$ROFE = \frac{EBIT(A)}{\text{Funds Emp'd}}$$

Approximation of pre-tax, **ungeared** IRR to total capital.

$$ROTFE = \frac{EBIT(A)}{\text{Tang. Funds}}$$

Approximation of IRR of operating business - ex acquisitions.

$$ROGFE = \frac{EBIT(A)}{\text{Gross FE}}$$

As per ROGA - use with large one off, long life investments.

$$ROIC \text{ or } ROCE = \frac{\text{Taxed EBIT}}{IC}$$

Approximation of after tax, ungeared IRR to total capital.

$$ROE = \frac{NPAT}{S/H \text{ Equity}}$$

Approximation of **geared** IRR to shareholders.

Accounting returns estimate underlying business IRR:

Quality of this estimate varies according to nature of business (long/short duration), quality of accounting etc
e.g. ROE ≠ IRR where business duration is short, asset replacement is lumpy or depreciation ≠ replacement cost.

Different measures of return:

- Highlight Drivers of IRR (e.g. leverage ROA v. ROFE. v. ROE)
- Can be used when data is limited (e.g. ROA vs ROFE)
- Estimate IRR differently (e.g. Gross Funds vs Net Funds).
- Answer different qns (ROFE = company return; ROTFE = asset return).

Note:

- Definitions are NOT standardised
- Use materiality when measuring & interpreting returns
- **ROE ≠ IRR; ROE = f(IRR)**

Measuring Incremental Returns

Top Down Measurement: DuPont Model

Current Return		Incremental Return	
$\text{Asset}^1 \text{ Turn}$	$= \frac{\text{Sales}}{\text{Assets}}$	Inc. Asset X	$= \frac{\Delta \text{ Sales}}{\Delta \text{ Assets}}$
X	X	X	X
EBIT \%	$= \frac{\text{EBIT}}{\text{Sales}}$	Inc. EBIT\%	$= \frac{\Delta \text{ EBIT}}{\Delta \text{ Sales}}$
=	=	=	=
ROA	$= \frac{\text{EBIT}}{\text{Assets}}$	Inc. ROA	$= \Delta \text{ ROA}$

Variants

1. To avoid lumpiness:

Measure over rolling average periods. (3/5 years)

Measure with lag to give investment time to take effect
(.e. $\Delta \text{ EBIT}_{T_0} / \Delta \text{ Assets}_{T-1}$)

2. Various sub measures:

$\Delta \text{ EBITDA} / \sum \text{Total Capex}$

$\Delta \text{ EBIT} / \Delta \text{ Tangible Funds}$

Refer Measuring Returns

Drivers of Incremental Returns

Short Term - Operating Leverage

	T ₁	T ₂	Δ	Comment	Example
Sales	100	120	20%	Sls growth from cyclical factors.	Extra passenger; Extra widget
GP %	70%	70%	0%	No Δ in underlying economics.	
Gross Profit	70	84	20%		Incremental Capital limited to working capital.
Fixed Costs	50	50	0%	Overheads fixed in ST.	
EBIT	20	34	70%	Leveraged impact on margins (and returns).	
EBIT%	20%	28%	8%		

Medium/Long Term - Impacts of Scale

	T ₁	T ₅	Δ	Comment	Example
Sales	100	200	100%	Long Term Sls Growth	Extra plane; Extra machine.
GP %	70%	75%	5%	High GP% from improved buying terms & efficiency.	
Gross Profit	70	150	114%		Incremental Capital may include PPE.
Fixed Costs	50	75	50%	Other costs increase, but < than sales (e.g. Overhead efficiency)	
EBIT	20	75	275%	Scale benefits to margin	
EBIT%	20%	38%	18%		

Bottom Up - Unit Level Returns

$$\text{Return on Unit Investment} = \frac{\text{Lifetime Value of Unit}}{\$ \text{ Cost of Unit}}$$

$$\text{Lifetime Value of Unit} = \text{Free Cash flows from Unit} = \frac{\text{ARPU} * \text{GP\%}}{\text{Churn}}$$

For more detail, see Unit Level Returns

$$= \frac{\Delta \text{ EBIT}}{\Delta \text{ PPE}}$$

Impact of incremental investment

Organic Investment in

- Marketing: Incremental customers
- R&D: New Products
- PPE: New productive capacity

Acquisition of:

- Beach-head: New geography/product
- Bolt On: To existing beach-head
- Scale Up: Major additional capacity.
- Avoid Capex: In lieu of organic inv.

Example

- Saas/Online Retail
- Medical Drugs/Devices
- Factory/Shop/Machine

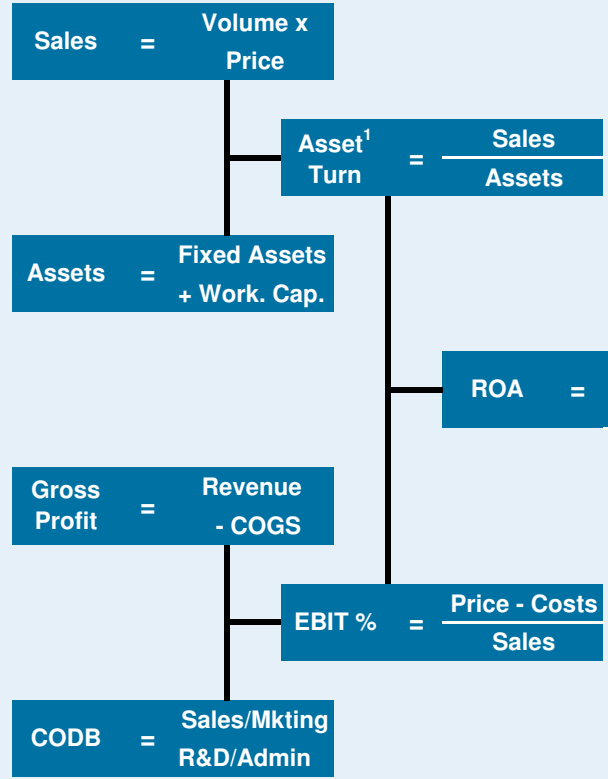
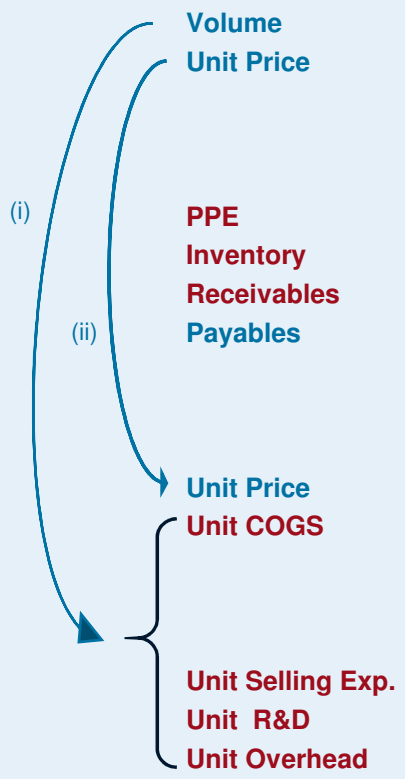
Growth capex excludes capex required to maintain competitive positioning and unit output.

- Merger of equals.
- e.g Purchase R&D

DuPont Model of Returns

First Order (Proximate) Drivers of Returns

+ve driver -ve driver



Decomposition of returns enables:

First Order

- Asset Turn } e.g high returns with low margins
- Margins }
- Leverage e.g high returns with average business.

Second Order

- Feedback effects
- Ultimate/Systemic Causes

Second Order (Feedback) Effects

e.g. Lower Prices increases returns



- 1st order linkages:**
- (i) Higher volume lowers unit costs from scale/cost absorption.
 - (ii) Higher prices increase sales & GM%

E.g. Analysis of Lower Prices

1st Order	Lower Asset Turn & Lower Margin	=	Lower Returns
2nd Order	Higher vol., +ve sales feedback	=	Sustainable Returns

Note: Assets can be restated as Funds Employed

For more feedback loops see: Systems Frame

Unit Level Returns

Business Type	Incremental Unit ¹	Lifetime Value ²	Incremental Investment ³	Returns Calculation ⁴	Notes
SaaS	Customer	$\frac{\text{ARPU} * \text{GP}\%}{\text{Churn}}$	SAC	$\frac{\text{LTV}}{\text{SAC}}$	LTV will be overestimated at very low churn; Churn unreliable at early stage growth; What costs are included in SAC?; What is true GP%?
Online Transactional	Customer	$(\text{GTV}_1 + \text{GTV}_2 + \dots + \text{GTV}_n) * \text{GP}\%$	SAC	$\frac{\text{LTV}}{\text{SAC}}$	Is SAC repaid in first transaction? Key value driver is repeat transaction volumes.
Bricks and Mortar Retail	New Store	$\text{Sales per Store} * \text{EBIT Margin}$	Inventory + Fit Out + Lease	$\frac{\text{EBITR}}{\text{Investment}}$	Use EBIT/(Fit Out + work capital) to measure returns post lease leverage. Incorporate start up losses in investment if material.
Infrastructure	Lane/Runway /Berth etc	$\text{NPV}(\text{Concession Yrs} * \Delta \text{EBITDA})$	Capex	$\frac{\Delta \text{EBITDA}}{\text{Capex}}$	Concession life a key driver of value. Is maintenance capex meaningful?
Manufacturing	Equipment /Machine	$\text{Sales per Unit} * \text{FCF Margin}$	Capex + Working Capital	$\frac{\text{FCF}}{\text{Investment}}$	Free Cash Flow (FCF) = EBITDA - maintenance capex. How much investment is maintenance of competitive position vs unit growth?

Notes:

1. Incremental Unit

Bottom up analysis of individual economic units is an indicator of incremental returns. In all companies, there is a hierarchy of units with different cashflows, costs and investment at each level of the hierarchy. Returns on an individual incremental unit at the bottom of this hierarchy will not directly translate to true incremental returns from the company as a whole.

2. Lifetime Value.

Two considerations: (i) Duration of Unit - Customer life/asset life etc. Always an estimate. (ii) True gross profit - definitions vary by company; variable costs are often reflected in SG&A line. Incremental margins must be cross checked against ultimate margin potential.

3. Incremental Investment

What is true incremental investment? E.g. Does SAC include all marketing or just direct marketing. Does it include working cap investment etc?

4. Returns Calculation

Returns can be measured as ROI %, Total \$ Value or Payback Period.

Terminology

- ARPU** = Average Revenue Per User
- Churn%** = % of customers leaving each period
Measured gross (total) or net (of upsells).
Can refer to customer (logo) churn or revenue .
- 1/Churn** = Proxy for average customer life/duration
- GP%** = Gross Profit %
- GTV₁** = Gross Transaction Value for Initial Transaction
- GTV_n** = GTV for subsequent nth transaction
= Ave. GTV * Probability of nth repeat transaction
- LTV** = Lifetime Value
- SAC** = Subscriber Acquisition Cost (or **CustomerAC**)

Calculations should use consistent:

Time periods - e.g monthly/annual measures.

Input/Output - e.g. lease expense/lease investment.