# How sustainable is PBF's pure play refinery business model?

CASE STUDY

VALUATION MASTER CLASS

by

A. Stotz INVESTMENT RESEARCH

Valuation Master Class

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***This is not investment advice or a recommendation.***

Ask Ajarn Andrew

# How sustainable is PBF's pure play refinery business model?

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PBF Energy

## Sector: Energy

*Pure play petroleum refiner, mainly of gasoline, with a daily capacity of 1m barrels; ranked among top 10 in the US*

## My value estimate:

**US$16**

**(Downside 1%)**

**HOLD**

### 3 things to know about this company

- Scaling necessary to survive in thin-margin business
- High oil price could offset gains from demand rebound
- Growing environmental burden is a poison pill for margin

### Key statistics

| Analyst consensus (16) | PB ratio | Dividend yield |
|---|---|---|
| **US$14** (Downside 13%) **SELL** | **1.1x** | ***Suspended for foreseeable future*** |



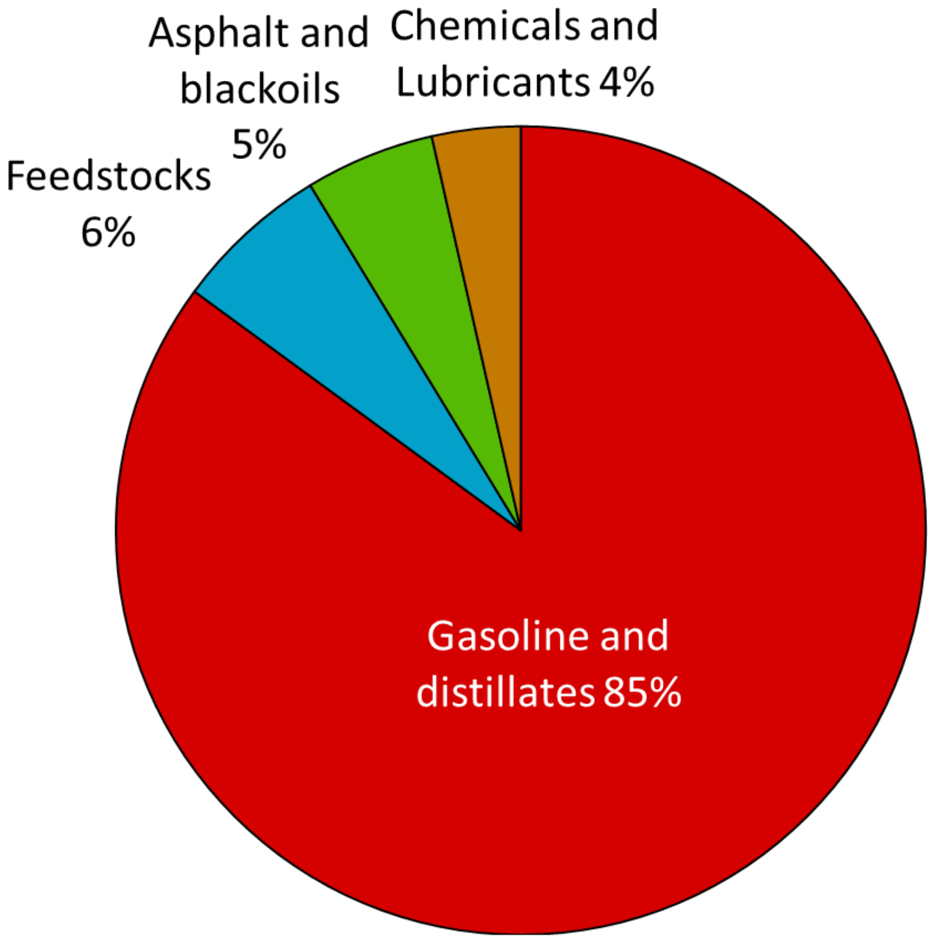
Sources: A. Stotz Investment Research, Refinitiv

**This is not investment advice and it's not a recommendation.**

# Revenue breakdown 2020



## Refinery 98%




## Logistics 2%



Sources: A. Stotz Investment Research, company data

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# Volatile price, but volume provides support

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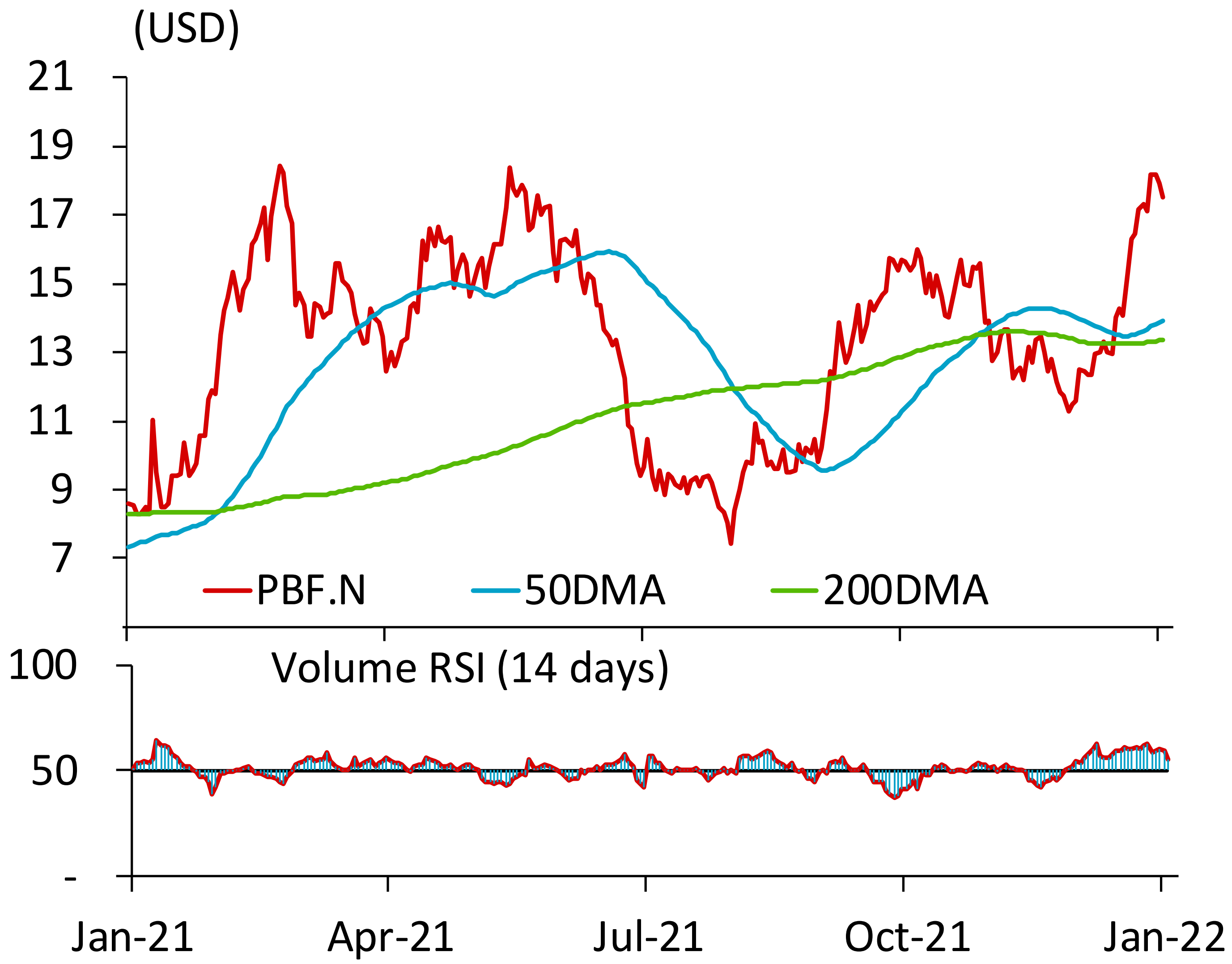


- ★ Over the past year, the stock price has been highly volatile
  - **Most recently, the 50 DMA stayed above the 200 DMA, which is a good signal**
  - **However, both lines moved close together since 4Q21**
- ★ The Volume RSI has stayed slightly above the 50%-line, which is a positive sign as well



Sources: A. Stotz Investment Research, Refinitiv

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# 1 Scaling necessary to survive in thin-margin business

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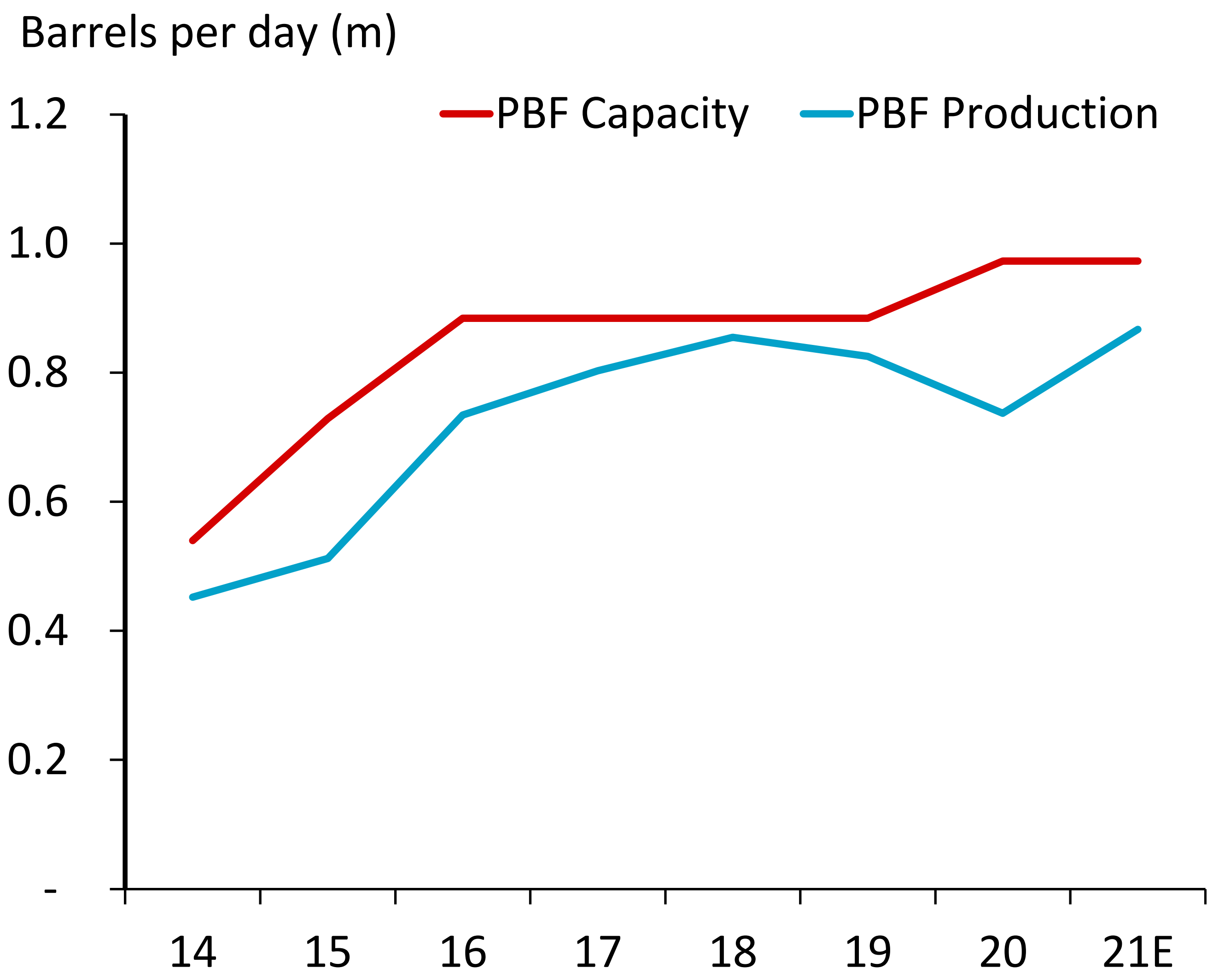
- Sales
- **Story**
- FVMR
- Value
- WCB
- Risks




- ★ Over the past 7 years, PBF acquired 3 refineries, which added 80% in capacity
- ★ Currently, it could produce up to almost 1m barrels per day, which gives it around 5% market share in the US
  - **I don't expect PBF to expand aggressively, but rather focus on integration**
  - **The recent debt accumulation limits further acquisition possibilities**



Sources: A. Stotz Investment Research, company data

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# Industry is highly competitive and dominated by large players



Sales
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Value
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Risks

## Top 3 US largest refinery players

| Marathon | Valero | Phillips 66 |
|---|---|---|
| **3m barrels per day** | **2m barrels per day** | **1.8m barrels per day** |

## Others in Top 10

ExxonMobil, PBF Energy, Koch Industries Inc., Chevron, Shell, CITGO, bp

- PBF is the only company in the top 10 that solely focuses on refinery
  - **All other players engage in further business segments along the oil supply chain**
- Large international players have access to more resources and complex refineries than PBF does
  - **Therefore, they are most likely to maintain a higher margin than PBF**


Sources: A. Stotz Investment Research, company data

# 2 High oil price could offset gains from demand rebound

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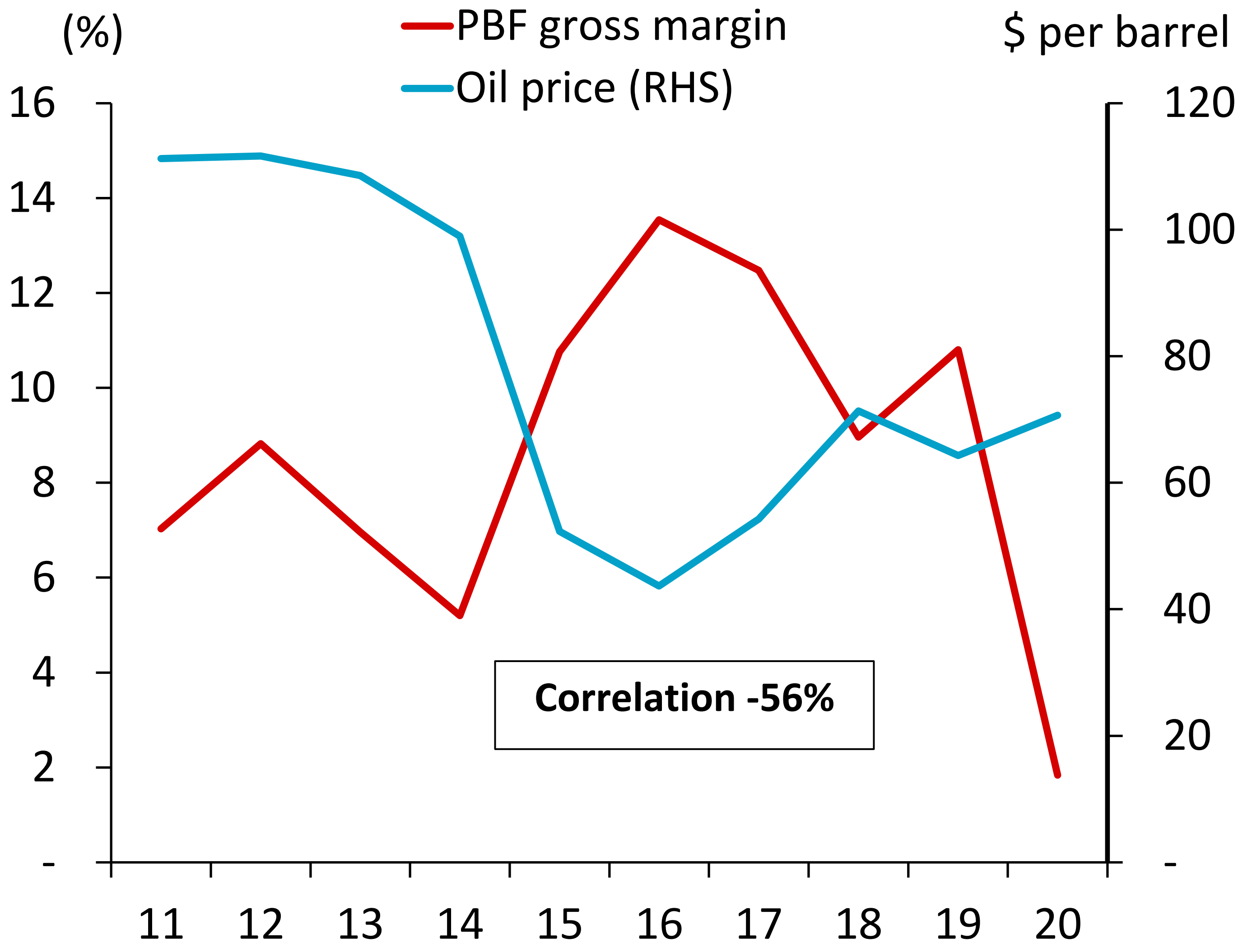


- In the past, high oil prices led to a margin collapse for PBF as there is usually a lag until it can pass on the higher costs to its customers
  - **The correlation between PBF's gross margin and oil prices is significantly negative**
- Usually, lower oil price is more favorable for refinery companies as the prices of end-products are more sticky



Sources: A. Stotz Investment Research, company data

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# Higher US demand for gasoline elevates PB's margin

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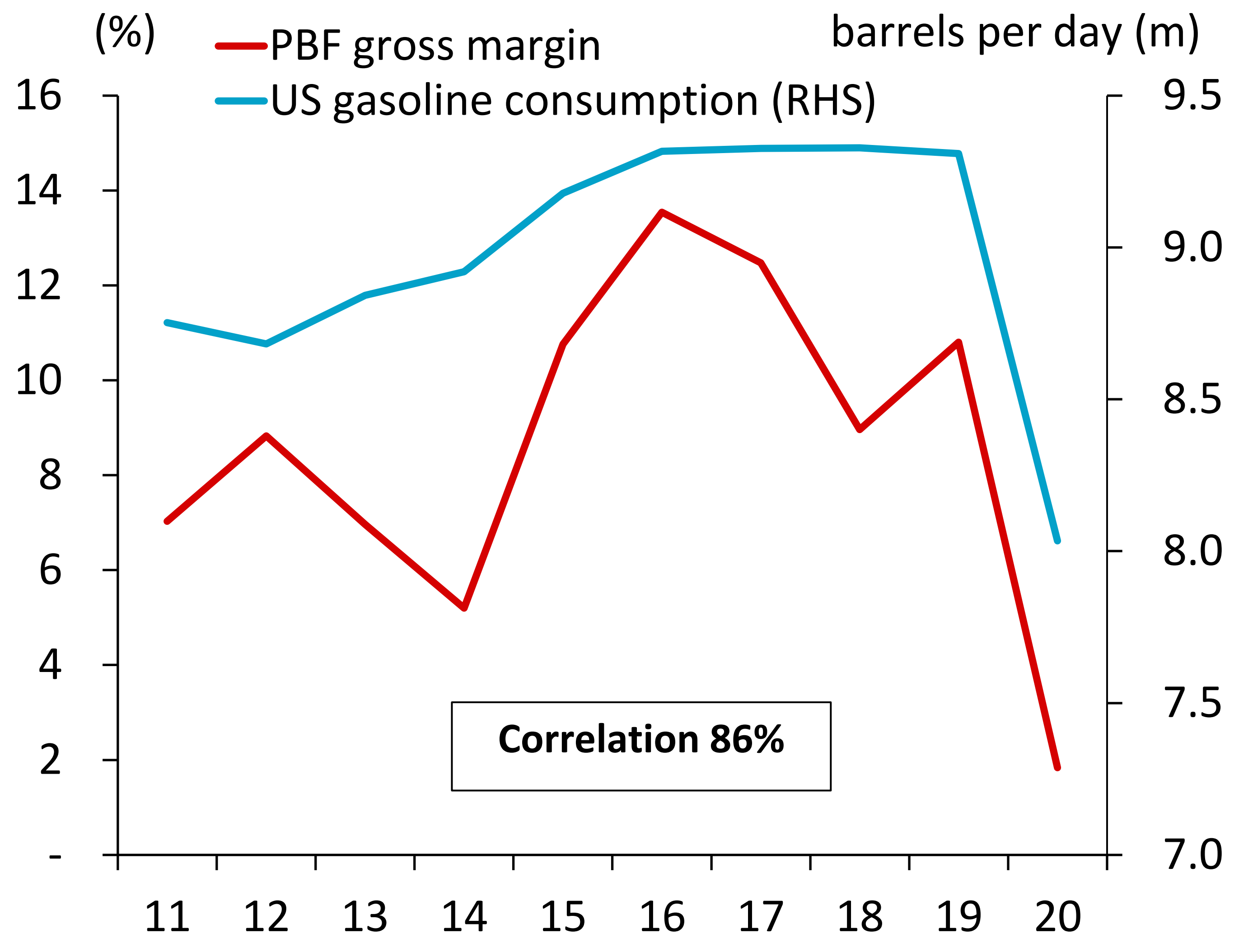


- ★ There is a high positive correlation between the country's gasoline demand and PB's margin
- ★ For the next few years, US consumption is likely to increase following the post-pandemic rebound
  - **PBF's margin over the next 3 years could return to a range between 11 and 12%**



Sources: A. Stotz Investment Research, company data

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# 3 Growing environmental burden is a poison pill for margin

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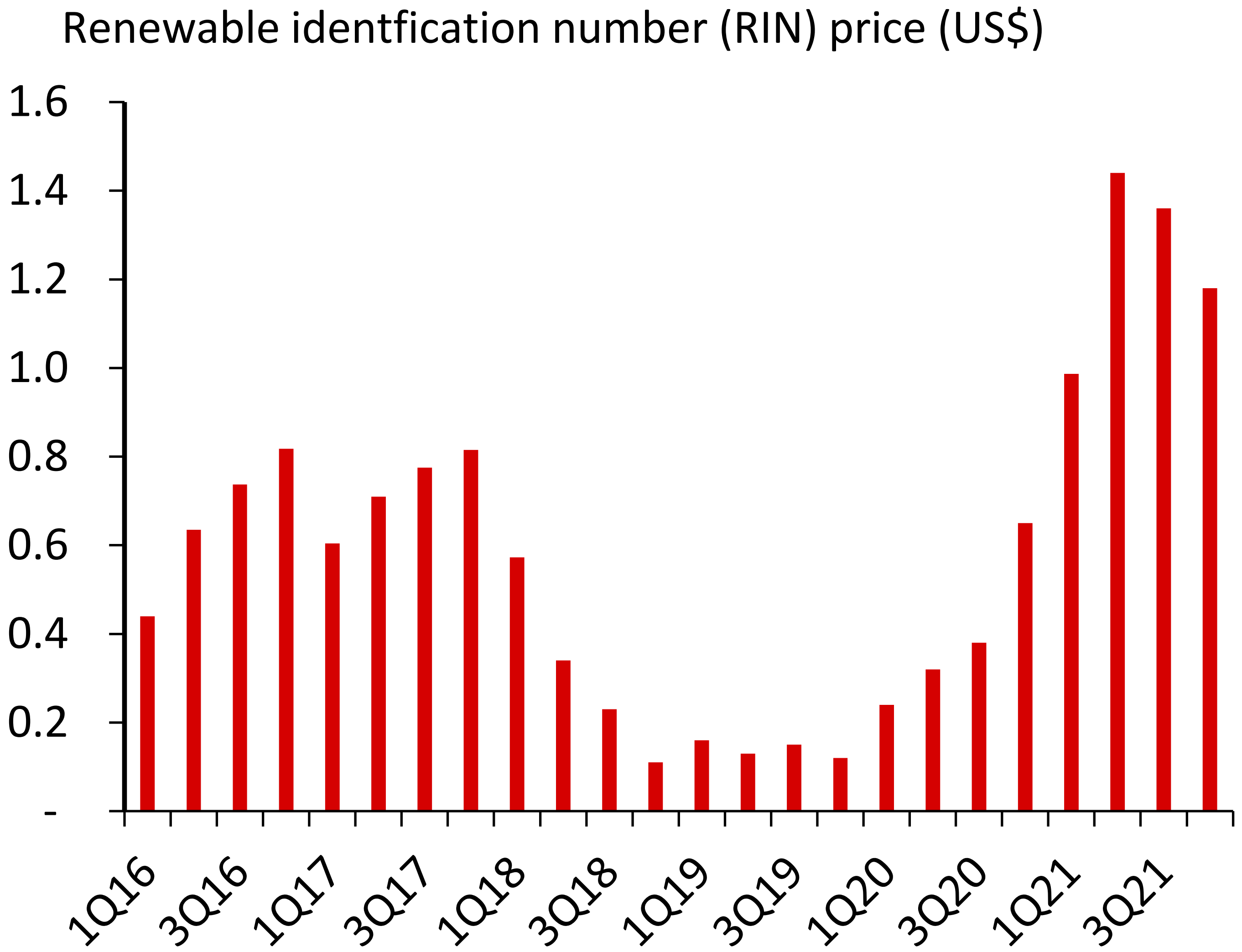


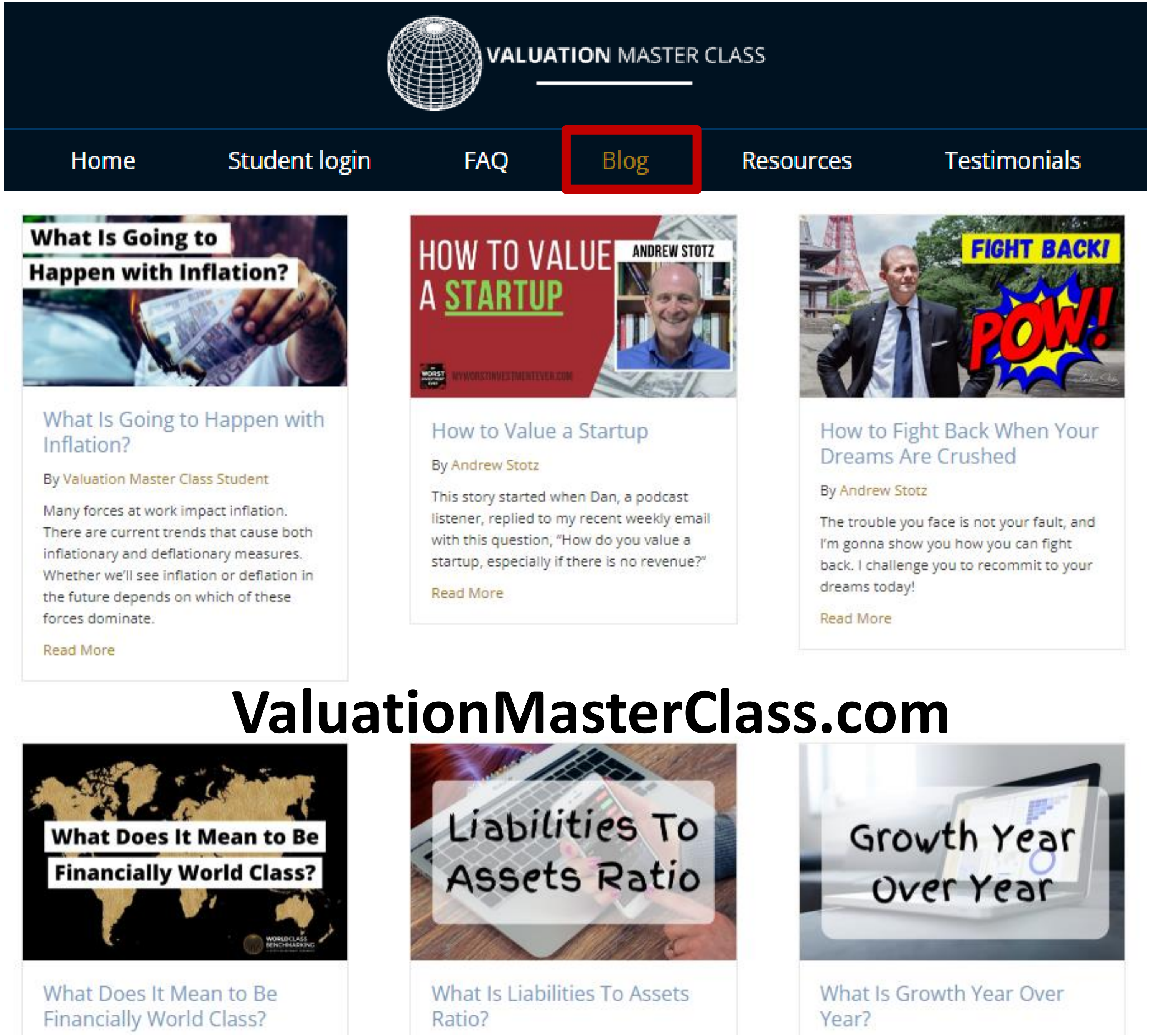

- In 2020, PBF paid $350m to comply with environmental standards
  - **This equals around 2% of its revenue, putting an additional pressure on the already thin margin**
- Each year, PBF is required to buy large amounts of RINs (see next page) to compensate for the lack of use of biofuels in its gasoline production


Sources: A. Stotz Investment Research, company data
This is not investment advice and it's not a recommendation.

# What are renewable identification numbers (RIN)?

- RINs are tickets assigned to a produced gallon of biofuel to track its further use
- Each refinery is required to hold a certain number of tickets for compliance
- Those tickets can be traded
  - **If a company has used insufficient biofuels, it can buy RIN tickets from other companies**
  - **In other words, refineries get penalized for excessive use of traditional fuels in their production**

Ask Ajarn Andrew

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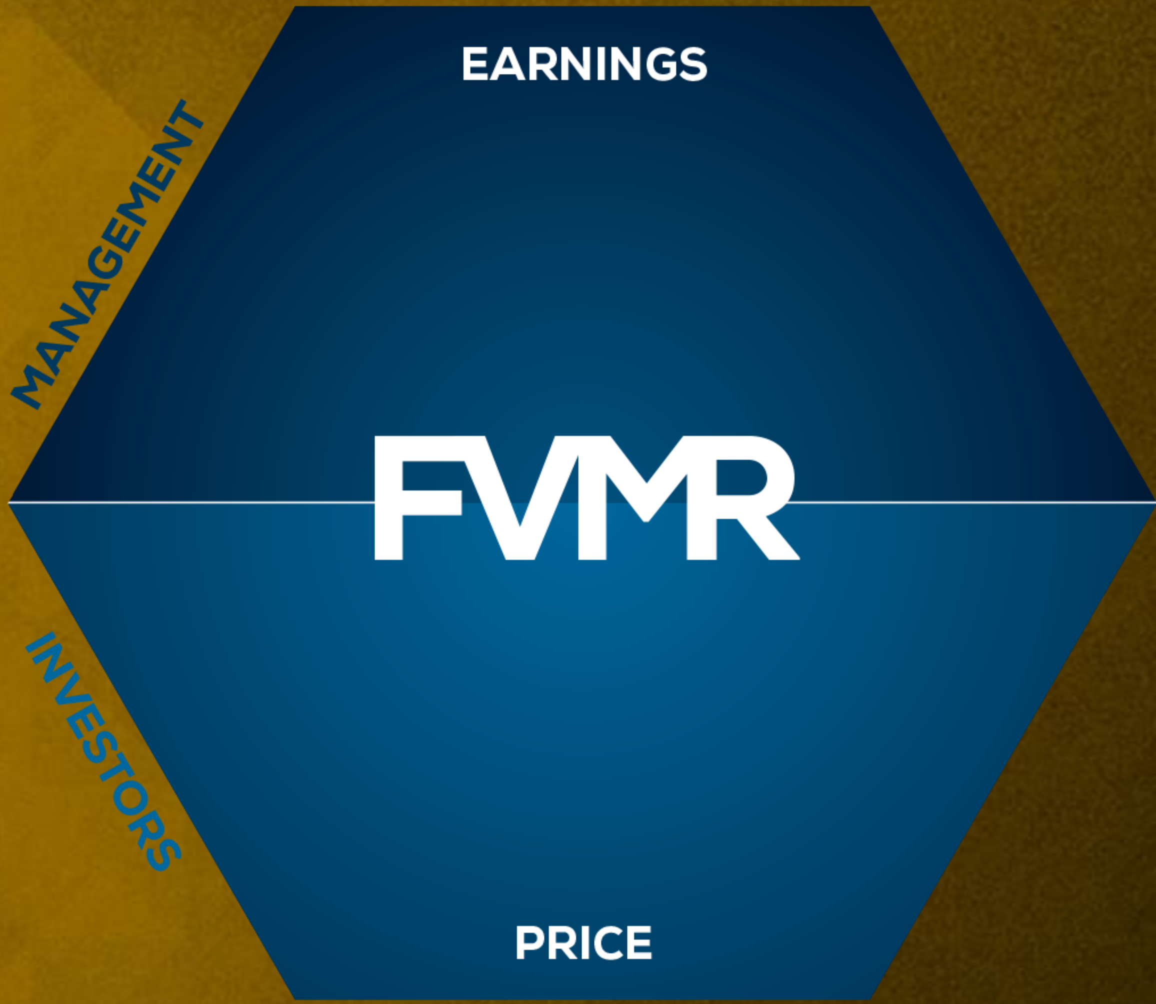
**Scan this QR code to go to the ValuationMasterClass.com blog to download all full Case Study reports for free.**

***It's usually up within 24h.**

# FVMR Scorecard

- Measures a stock's attractiveness relative to all other companies
- Attractiveness is based on four elements
  - **Fundamentals, Valuation, Momentum, and Risk**
- Scale from 1 (Best) to 10 (Worst)



# Strong momentum at a cheap price, but high beta

Sales

Story

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## Fundamentals

W ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ B

| (%) | Dec-17 | Dec-18 | Dec-19 | Dec-20 | PTM** |
|---|---|---|---|---|---|
| Operating profit margin | 3.4 | 1.2 | 2.6 | (11.8) | 0.3 |
| Recurring net margin | 2.0 | 0.3 | 1.2 | (11.5) | (0.9) |
| Asset turnover | 276.8 | 337.2 | 286.0 | 154.0 | 205.7 |
| Return on assets | 5.6 | 1.1 | 3.6 | (17.7) | (1.9) |
| Recurring return on equity | 20.4 | 3.6 | 10.7 | (74.2) | (11.4) |

## Valuation

W ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ B

| (x) | Dec-17 | Dec-18 | Dec-19 | Dec-20 | PTM** |
|---|---|---|---|---|---|
| Price-to-sales | 0.2 | 0.1 | 0.0 | 0.1 | 0.1 |
| Price-to-earnings | 8.7 | 40.5 | 2.8 | nm | nm |
| Price-to-book | 1.6 | 1.4 | 0.3 | 1.0 | 0.9 |
| PE-to-EPS growth (PEG) | 0.1 | nm | 0.0 | nm | nm |
| EV/EBIT | 8.1 | 17.9 | 4.2 | nm | 71.5 |

## Momentum

W ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ B

| (%) | Dec-17 | Dec-18 | Dec-19 | Dec-20 | PTM** |
|---|---|---|---|---|---|
| Revenue growth | 36.8 | 24.8 | (9.9) | (38.3) | 27.6 |
| Recurring EPS growth | 127.1 | (80.3) | 224.9 | (680.9) | 86.0 |
| Operating profit margin chg. (bps) | 16 | (221) | 141 | (1,437) | 822 |
| | 6mth | 3mth | 1mth | 3wk | 1wk |
| Price change | (27.8) | 31.7 | (9.6) | (18.1) | 3.7 |

## Risk

W ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ B

| (x) | Dec-17 | Dec-18 | Dec-19 | Dec-20 | PTM** |
|---|---|---|---|---|---|
| Current ratio | 1.6 | 1.5 | 1.5 | 1.6 | 1.3 |
| Net debt-to-equity (%) | 93.5 | 71.3 | 59.9 | 224.8 | 170.3 |
| Times-interest-earned | 4.7 | 1.9 | 4.0 | (6.9) | 0.2 |
| | 5yr | 3yr | 1yr | 6mth | 3mth |
| Beta | 2.2 | 2.3 | 0.6 | 1.4 | 2.4 |

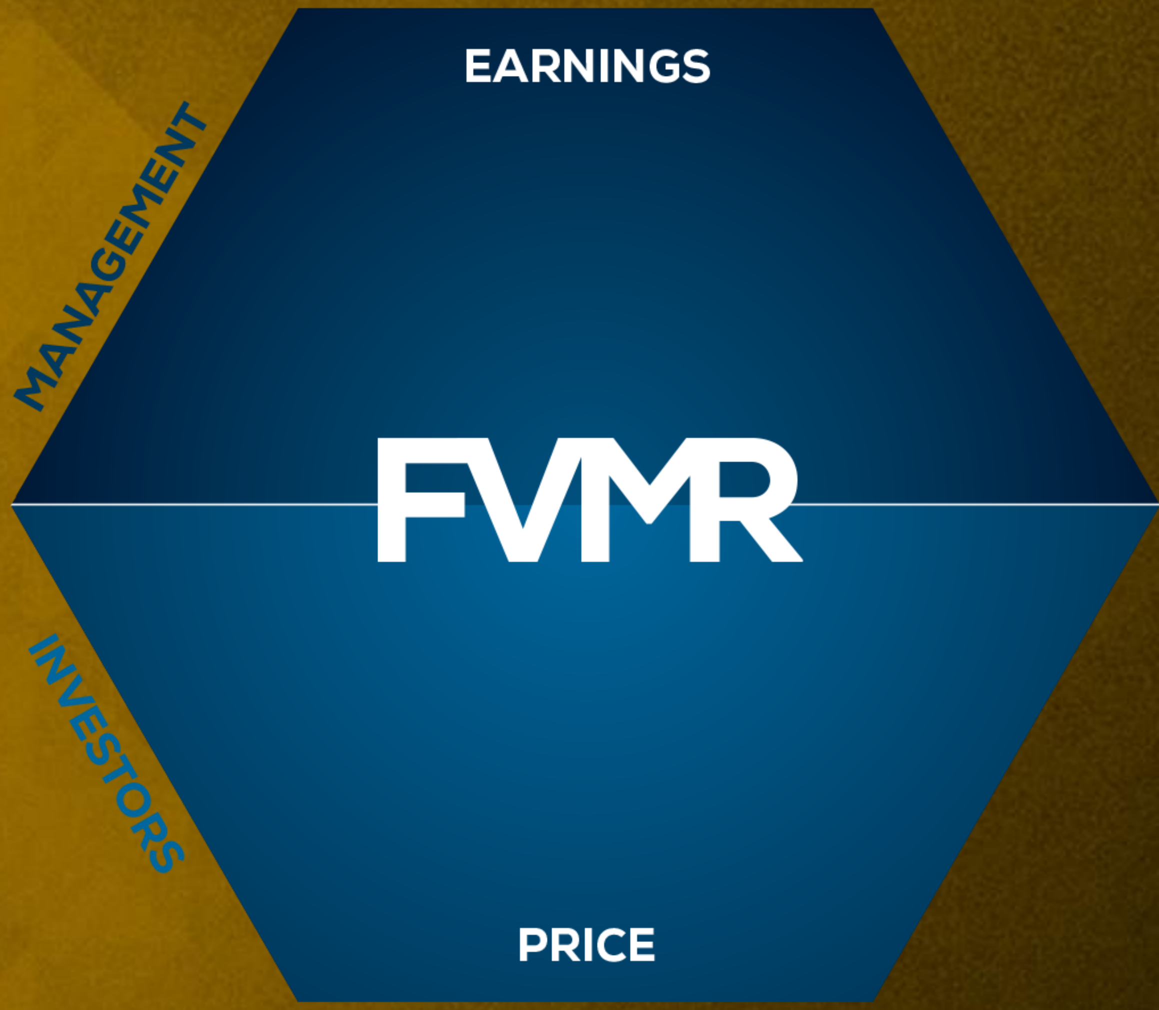
Note: Benchmarking against 2,160 non-financial companies in USA.



Sources: A. Stotz Investment Research, Refinitiv. Notes: *Bars are decile rankings of the most recent period. **Past 12 months of published data. na = not available, nm = not meaningful. Valuation is based on historical prices.

Recently, I created a short online course explaining my FVMR investing approach

I usually sell it for $97 but for a limited time I am offering it for FREE



# Analysts are pessimistic about the company's outlook

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## Analyst consensus valuation

| Recommendation | Oct-21 | Nov-21 | Dec-21 | Current |
|---|---|---|---|---|
| Strong buy | - | - | - | - |
| Buy | 1 | 1 | 1 | 1 |
| Hold | 7 | 7 | 7 | 7 |
| Sell | 6 | 6 | 6 | 6 |
| Strong sell | 2 | 2 | 2 | 2 |
| **Average score** | **3.6** | **3.6** | **3.6** | **3.6** |

| Price target | Oct-21 | Nov-21 | Dec-21 | Current |
|---|---|---|---|---|
| Median | 12 | 15 | 12 | 14 |
| Mean | 12 | 15 | 13 | 15 |

**16 analysts**

**Downside: 13%**

## Analyst consensus 3-year forecast

| (%) | 18 | 19 | 20 | 21E | 22E | 23E |
|---|---|---|---|---|---|---|
| Revenue growth | 2.5 | (9.9) | (38.3) | 74.7 | 5.7 | 4.6 |
| Gross margin | 9.0 | 10.8 | 1.8 | 11.9 | 11.8 | 11.3 |
| EBIT margin | 1.6 | 2.4 | (12.4) | (0.2) | 1.8 | 1.6 |
| Net margin | 0.5 | 1.3 | (9.2) | (1.6) | 0.3 | 0.4 |

- Currently there is only 1 BUY recommendation
  - **7 analysts recommend to HOLD, with another 8 recommending to SELL**
- Consensus expects another year of loss in 21E and low margin for the subsequent two years



Sources: A. Stotz Investment Research, Refinitiv

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# Profit & loss statement

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| (YE Dec, US$ m) | 2019A | 2020A | 2021E | 2022E |
|---|---|---|---|---|
| Revenue | 24,508 | 15,116 | 26,151 | 27,458 |
| Cost of goods & services | (21,860) | (14,839) | (23,274) | (24,300) |
| **Gross profit** | **2,648** | **277** | **2,877** | **3,158** |
| SG&A | (272) | (236) | (262) | (275) |
| Other operating (exp)/inc | (1,782) | (1,918) | (2,148) | (2,213) |
| **EBIT** | **593** | **(1,877)** | **467** | **670** |
| Interest expense (net) | (160) | (258) | (302) | (279) |
| Other non-operating inc/(exp) | 30 | 886 | 2 | 2 |
| **Earnings before taxes (EBT)** | **464** | **(1,250)** | **166** | **393** |
| Income tax | (104) | (2) | (34) | (79) |
| **Earnings after taxes (EAT)** | **359** | **(1,252)** | **132** | **314** |
| Equity income/Minority interest | (56) | (59) | (66) | (94) |
| **Earnings from cont. operations** | **303** | **(1,311)** | **66** | **220** |
| Forex/Exceptionals before tax | 16 | (82) | - | - |
| **Net profit** | **319** | **(1,392)** | **66** | **220** |

- ★ In contrast to the analyst consensus, I expect the company to record a small profit in 21E
  - **PBF was able to turn around losses and already recorded profits in 2Q21 and 3Q21**



Sources: A. Stotz Investment Research, Refinitiv

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# Balance sheet - assets

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| (YE Dec, US$ m) | 2019A | 2020A | 2021E | 2022E |
|---|---|---|---|---|
| Cash & short-term investments | 815 | 1,610 | 1,187 | 981 |
| Accounts receivable | 835 | 513 | 908 | 915 |
| Inventories | 2,122 | 1,686 | 2,651 | 2,565 |
| Other current assets | 52 | 59 | 52 | 55 |
| **Total current assets** | **3,824** | **3,867** | **4,798** | **4,516** |
| Long-term investments | - | - | - | - |
| Net fixed assets | 4,354 | 5,760 | 5,564 | 5,707 |
| Intangible assets | 24 | 10 | 9 | 8 |
| Goodwill | - | - | - | - |
| Other long-term assets | 931 | 862 | 797 | 813 |
| **Total assets** | **9,132** | **10,500** | **11,169** | **11,044** |

- ★ Refinery companies face high working cap requirements and fluctuating inventories



Sources: A. Stotz Investment Research, Refinitiv

# Balance sheet - liabilities

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| (YE Dec, US$ m) | 2019A | 2020A | 2021E | 2022E |
|---|---|---|---|---|
| Overdrafts & short-term loans | 7 | 22 | 43 | 41 |
| Accounts payable | 2,397 | 2,254 | 3,426 | 3,375 |
| Other current liabilities | 106 | 176 | 183 | 192 |
| **Total current liabilities** | **2,509** | **2,452** | **3,652** | **3,608** |
| Long-term debt | 2,083 | 4,722 | 4,227 | 4,015 |
| Other long-term liabilities | 954 | 1,124 | 955 | 860 |
| **Total liabilities** | **5,547** | **8,298** | **8,834** | **8,483** |
| **Minority interest** | **546** | **560** | **626** | **720** |
| Paid-up capital - Common shares | 2,812 | 2,846 | 2,846 | 2,846 |
| Paid-up capital - Preferred shares | - | - | - | - |
| Retained earnings | 401 | (1,027) | (961) | (829) |
| Revaluation/Forex/Others | (174) | (176) | (176) | (176) |
| **Total equity** | **3,040** | **1,643** | **1,709** | **1,841** |
| **Total liab & shareholders' equity** | **9,132** | **10,500** | **11,169** | **11,044** |

- The company heavily increased its leverage during the pandemic
  - **Debt-to-equity ratio in 2020 stood at 2.9x compared to 1x in 2019**
  - **The company is likely to spend almost all of its cash flow to repay debt over time**



Sources: A. Stotz Investment Research, Refinitiv

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# Ratios

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Risks

| (YE Dec) | 2019A | 2020A | 2021E | 2022E |
|---|---|---|---|---|
| **General growth (YoY, %)** | | | | |
| Revenue | (9.9) | (38.3) | 73.0 | 5.0 |
| Assets | 14.1 | 15.0 | 6.4 | (1.1) |
| Gross profit | 8.7 | (89.5) | 937.3 | 9.8 |
| Operating profit | 35.2 | (416.3) | 124.9 | 43.6 |
| Attributable profit | 148.9 | (535.9) | 104.8 | 232.8 |
| EPS | 139.3 | (535.5) | 104.7 | 232.8 |
| Recurring EPS | 31.7 | (535.9) | 105.0 | 232.8 |
| **Du Pont analysis (%)** | | | | |
| Net profit margin | 1.3 | (9.2) | 0.3 | 0.8 |
| Revenue per US$100 of assets | 286.0 | 154.0 | 241.4 | 247.2 |
| Assets/equity (x) | 3.6 | 5.4 | 6.5 | 6.3 |
| Return on equity | 13.6 | (76.0) | 3.9 | 12.4 |

★ PBF could return to a remarkable efficiency of 240%+ in 21E



Sources: A. Stotz Investment Research, Refinitiv

# Ratios (cont.)

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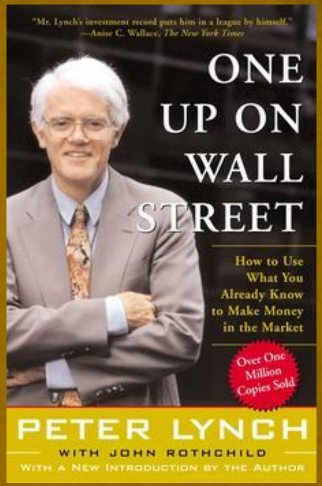
| (YE Dec) | 2019A | 2020A | 2021E | 2022E |
|---|---|---|---|---|
| **Internal liquidity (x)** | | | | |
| Current ratio | 1.5 | 1.6 | 1.3 | 1.3 |
| Quick, or acid test ratio | 0.7 | 0.9 | 0.6 | 0.5 |
| **Working cap. mgmt (Days)** | | | | |
| Inventory conversion period | 33 | 46 | 34 | 39 |
| Receivables collection period | 11 | 16 | 10 | 12 |
| Days from raw mat to coll | 44 | 62 | 43 | 51 |
| Payables deferral period | 37 | 56 | 44 | 50 |
| Cash conversion cycle | 7 | 6 | (1) | 0 |
| **Profitability ratios (%)** | | | | |
| Gross profit margin | 10.8 | 1.8 | 11.0 | 11.5 |
| EBIT margin | 2.4 | (12.4) | 1.8 | 2.4 |
| EBIT return on avg assets | 6.9 | (19.1) | 4.3 | 6.0 |
| Return on average assets | 3.7 | (14.2) | 0.6 | 2.0 |
| **Financial risk (x)** | | | | |
| Liabilities-to-assets (%) | 60.7 | 79.0 | 79.1 | 76.8 |
| Debt-to-equity | 1.0 | 2.9 | 2.5 | 2.2 |
| Net debt-to-equity | 0.6 | 1.9 | 1.8 | 1.7 |
| Times-interest-earned | 6.5 | nm | 3.3 | 4.5 |
| Effective interest rate (%) | 7.9 | 7.6 | 6.7 | 6.7 |

- ★ Growing demand for gasoline should leader to a higher gross margin in the next few years



Sources: A. Stotz Investment Research, Refinitiv

# A. Stotz Investment Research Stock Picking Checklist




- Inspired by Peter Lynch's ten baggers (A stock that has gone up 10x)
- Based on our extensive research
- 9 factors that drive long-term share price performance

# Long-term share price performance potential

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**Value**

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Good / Moderate / Weak

| A. Stotz Investment Research Stock Picking Checklist | Potential | Comment |
|---|---|---|
| **1. Management** – Management has a proven commitment to growth | Weak | In the past 7 years, PBF acquired 3 refineries; but focus shifts more to improving utilization rate |
| **2. Growth** – Product and industry can support a decade of 10%+ annual growth | Moderate | Highly volatile industry with rising demand; company is subject to rapidly changing prices |
| **3. Sustainable** – Competitive strategy creates sustainably high gross margin | Weak | PBF rather has a disadvantage compared to large well-integrated oil players |
| **4. Quality** – Good earnings quality, non-core items are small or non-existent | Weak | Subject to high fluctuating environmental liabilities payments |
| **5. Efficiency** – In the long run sales grow faster than assets | Good | The company has a high efficiency with a sales-to-assets turnover of around 240% |
| **6. Tight** – Relatively low cash conversion cycle, negative is best | Good | Cash conversion cycle stood at 6 days in 2020 |
| **7. Cash flow** – Operating cash flow is consistently positive | Weak | During the pandemic, the company suffered a severe loss, leading to a negative operating CF in 2020 |
| **8. Capacity** – Company has access to capital to fund growth | Good | The company has significantly increased its leverage, which limits access to further capital |
| **9. Inexpensive** – Valuation is reasonable, avoid very expensive stocks | Moderate | Cheap on both 22E PE and PB compared to US Energy companies, but lower ROE |



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# Free cash flow

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Risks

| (YE Dec, US$ m) | 2019A | 2020A | 2021E | 2022E |
|---|---|---|---|---|
| EBIT | 593.4 | (1,877.0) | 466.6 | 670.1 |
| *Est tax rate (%)* | *21.8* | - | *20.5* | *20.0* |
| **NOPAT** | **464.3** | **(1,877.0)** | **370.9** | **536.1** |
| Add: Depre & amort | 447.5 | 581.1 | 534.7 | 574.8 |
| Less: CAPEX | (712.6) | 149.7 | (337.7) | (716.2) |
| Chg in A/R | (116.6) | 321.9 | (395.1) | (7.3) |
| Chg in inventory | (256.4) | 436.0 | (964.4) | 85.6 |
| Chg in oth curr assets | 3.8 | (7.0) | 6.5 | (2.6) |
| Chg in A/P | 302.2 | (142.6) | 1,172.4 | (51.4) |
| Chg in oth curr liabs | 68.3 | 69.6 | 7.4 | 9.2 |
| **Less: Chg in working cap** | **1.4** | **677.9** | **(173.3)** | **33.5** |
| Less: Chg in invest cap | | | | |
| **Free cash flow to firm** | **200.6** | **(468.3)** | **394.7** | **428.2** |
| *FCF per share (US$)* | *1.6* | *(3.9)* | *3.3* | *3.6* |
| *NOPAT growth (%)* | *26.0* | *(504.2)* | *119.8* | *44.5* |
| *FCF growth (%)* | *(61.0)* | *(333.4)* | *184.3* | *8.5* |

- CAPEX in 21E still expected to be half the usual budget



Sources: A. Stotz Investment Research, Refinitiv

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# Value estimate

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- Sales
- Story
- FVMR
- **Value**
- WCB
- Risks

## Forecast assumptions

| 3-year average | Consensus | My assumptions |
|---|---|---|
| Revenue growth (CAGR) | 24.6 | 23.2 |
| Gross margin | 11.7 | 11.2 |
| EBIT margin | 1.1 | 2.2 |
| Net margin | (0.3) | 0.7 |

## My valuation method

| Market: United States of America | |
|---|---|
| Market risk-free rate | 2.0 |
| Market equity risk premium | 9.0 |
| **Market return** | **11.0** |
| Company beta (x) | 1.5 |
| **COE** | **15.5** |
| | |
| WACC | 9.8 |
| Terminal growth rate | 2.0 |

**Valuation Method: FCFF**

★ My revenue forecast is roughly in line with analyst's consensus

★ However, I expect that the company will record a profit in 21E, as 4Q21 results should be like the previous quarter



Sources: A. Stotz Investment Research, Refinitiv

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# Value estimate



Sales

Story

FVMR

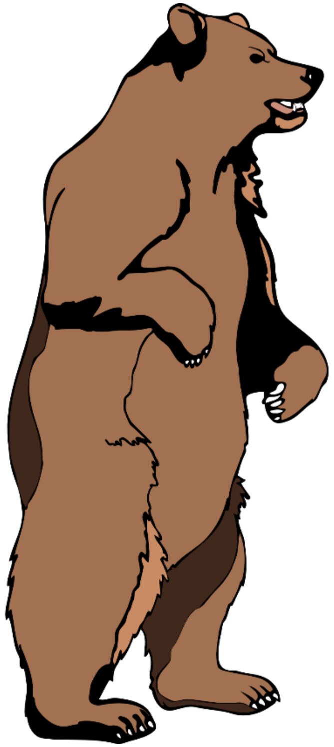
WCB

Ratios

**Value**

Risks

| Bear | Base | Bull |
|---|---|---|
| **US$14** | **US$16** | **US$18** |
| **(Downside 14%)** | **(Downside -1%)** | **(Upside 12%)** |





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# World Class Benchmarking Scorecard

- We identify a company's competitive position relative to global peers
- We use a composite rank of profitability and growth, called "Profitable Growth"
- Scale from 1 (Best) to 10 (Worst)

# Bad profitability drags overall score





**Poor profitability**

**Growth rebound**

| Profitable Growth | | | | |
|---|---|---|---|---|
| '17 | '18 | '19 | '20 | PTM |
| 4 | 8 | 3 | 10 | 9 |

| Profitability | | | | |
|---|---|---|---|---|
| '17 | '18 | '19 | '20 | PTM |
| 4 | 8 | 5 | 10 | 9 |

| Growth | | | | |
|---|---|---|---|---|
| '17 | '18 | '19 | '20 | PTM |
| 4 | 9 | 1 | 10 | 4 |

Benchmarked against 310 large Energy companies worldwide.



Sources: A. Stotz Investment Research, Refinitiv

# Key risk is fluctuations in oil price

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Sales

Story

FVMR

Value

WCB

**Risks**

- ★ A heightened level of oil price has an adverse impact on margins
- ★ Debt accumulation limits access to further capital
- ★ Growing environmental pressure can make business model unattractive



Sources: A. Stotz Investment Research, company data

# CONCLUSION

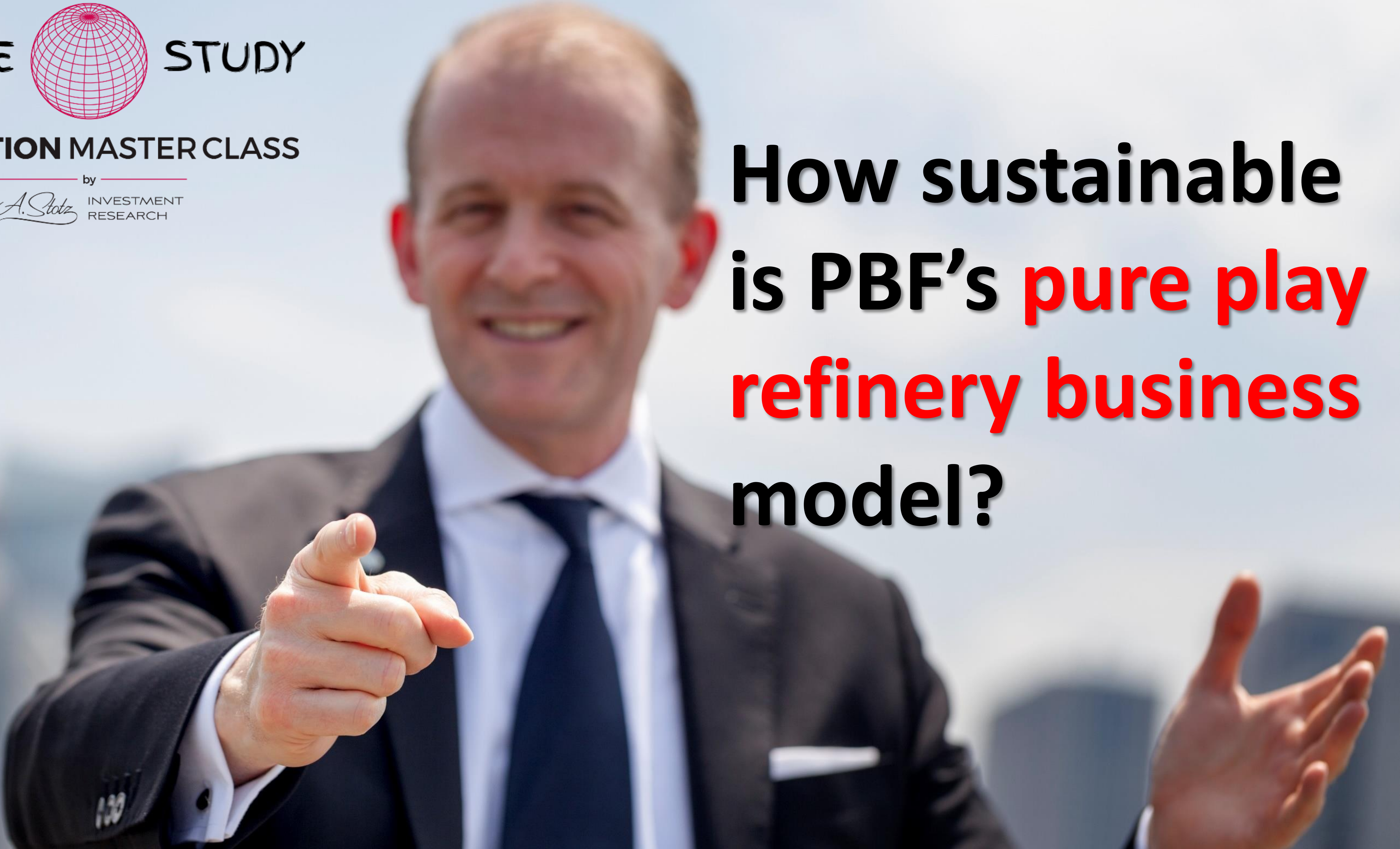
- Margins under high pressure when oil price remains high
- Rising debt level might hinder growth acquisitions
- Future cash flow proceeds serve debt repayments; don't expect any dividends in near term

CASE STUDY

VALUATION MASTER CLASS

by

A. Stotz INVESTMENT RESEARCH



# How sustainable is PBF's pure play refinery business model?