

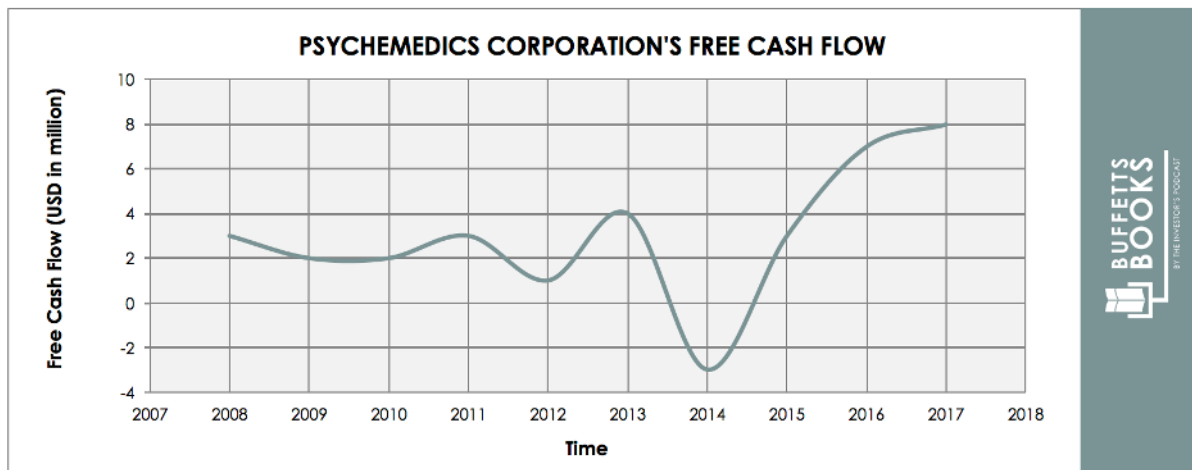
Introduction

Psychemedics Corporation is a U.S. based medical diagnostics & research company whose principal business involves providing drugs detection services through the analysis of hair samples. At the time of writing, the firm's market cap stands at around \$89.6 Million and its revenues and free cash flows for the previous financial year were around \$40 Million and \$8 Million respectively. The company's common stock has fluctuated between a high of \$22.88 and a low of \$16.11 over the past 52 weeks and currently stands at \$16.27. Is Psychemedics Corporation undervalued at the current price?

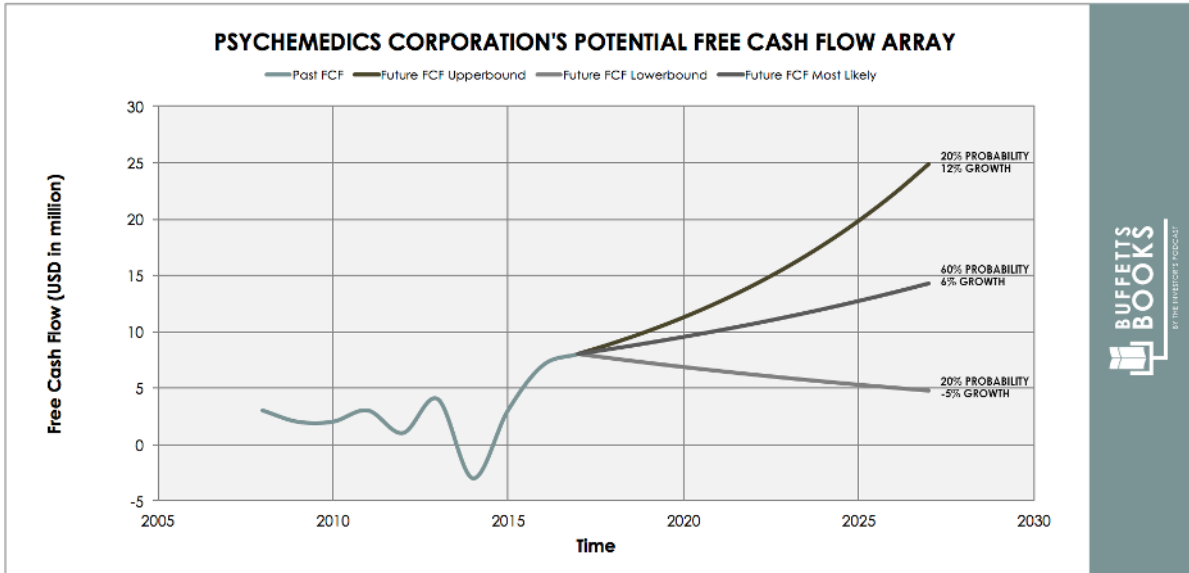
PSYCHEMEDICS CORPORATION

The Intrinsic Value of Psychemedics Corporation

To determine the intrinsic value of Psychemedics Corporation, we'll begin by looking at the company's history of free cash flow. A company's free cash flow is the true earnings which management can either reinvest for growth or distribute back to shareholders in the form of dividends and share buybacks. Below is a chart of Psychemedics Corporation's free cash flow for the past ten years.



Psychemedics Corporation's free cash flow has grown at an annualized rate of 11.51% over the past decade with negative free cash flow in 2014 resulting from increased capital spending for growth. In order to determine Psychemedics Corporation's intrinsic value, an estimate must be made of its potential future free cash flows. To build this estimate, there is an array of potential outcomes for future free cash flows in the graph below.



When examining the array of lines moving into the future, each one represents a certain probability of occurrence. The upper-bound line represents an 11.51% growth rate which assumes that the firm's future free cash flow growth mirrors that of the previous ten years. This upper growth line has been assigned a 20% probability of occurrence to account for the possibility of mounting competitive pressures and a narrowing of Psychemedics Corporation's moat.

The middle growth line represents a 6.34% growth rate which assumes future free cash flow falls in line with long-term revenue growth. Since revenue growth tends to be more stable over time, it can be used as a proxy for a more conservative assumption of future growth. This growth rate has been assigned a 60% probability of occurrence to account for the fact that as Psychemedics Corporation continues to grow, its growth rate will slow as the law of large numbers comes into play.

The lower bound line represents a -5% rate in free cash flow growth and assumes that the company suffers a period of contraction in earnings due to competitive and cyclical pressures. This growth rate has been assigned a 20% probability of occurrence.

Assuming these potential outcomes and corresponding cash flows are accurately represented, Psychemedics Corporation might be priced at an 11.2% annual return if the company can be purchased at today's price. We'll now look at some other valuation metrics to see if they correspond with this estimate.

Psychemedics Corporation's current earnings yield, which is the inverse of its EV/EBIT ratio, is 9.32% which is above the global medical diagnostics & research industry median of -0.98% and the firm's historical median average of 8.20%. This suggests that Psychemedics Corporation may be undervalued relative to the industry and its historical average.

Finally, we'll look at Psychemedics Corporation's book value growth and dividend yield to see whether this supports our other estimates of growth. Over the last ten years, book value has grown at an annualized rate of 4.97%, and the current dividend yield stands at 4.24%. Assuming Psychemedics Corporation can grow its book

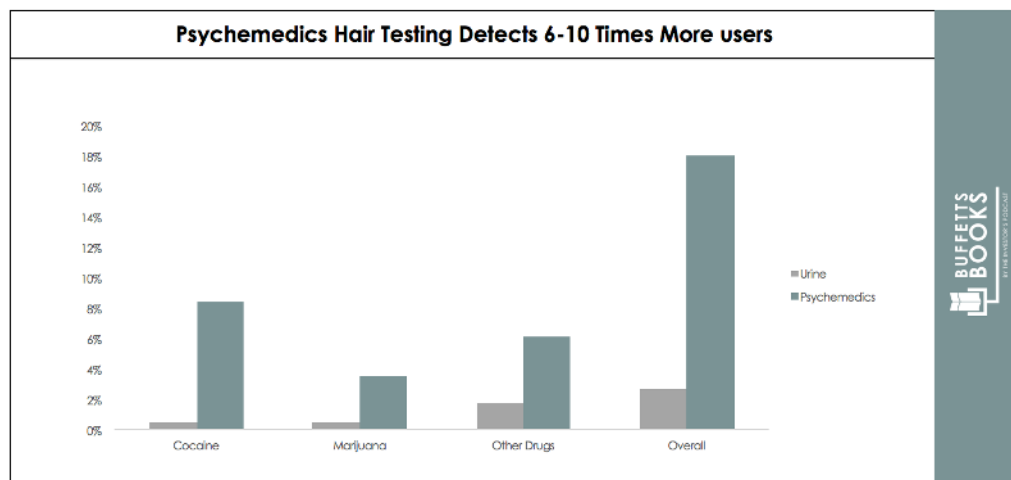
value at a similar rate for the next ten years and its current dividend yield can at least be maintained, the firm should return around 9.21% at the current price.

Taking all these points into consideration, it seems reasonable to assume that Psychemedics Corporation may currently be trading at a discount to its industry and historical averages. Furthermore, the company may return between 9-11% at the current price if the estimated free cash flows are achieved. Now, let's discuss how and why these estimated free cash flows could be achieved.

The Competitive Advantage of Psychemedics Corporation

Psychemedics Corporation has various competitive advantages outlined below.

- **Intangible Assets.** Psychemedics Corporation holds a portfolio of 11 U.S. patents which protects its proprietary technology. This collection of patents includes a number which pertains to “digesting hair and releasing drugs trapped in the hair without destroying the drugs.”
- **Technical Advantage.** Psychemedics Corporation enjoys a technical advantage over competitors which use urinary analysis for the detection of drugs. Independent side-by-side tests demonstrate that the firm's patented technology can detect 6-10 times more drug users and the data shows that around 85% of drug users detected by Psychemedics Corporation's technology would be missed through urinary analysis.



Source: psychemedics.com

- **First Mover Advantage.** Psychemedics Corporation was the first company to develop and patent technology for detection of drugs through hair analysis and as such has established itself as “the largest and leading supplier of drugs of abuse hair testing worldwide.” The company's latest annual report notes the following; “Our drug testing services are trusted by over 10% of the Fortune 500 companies, numerous international organizations, many of the largest police departments, rehabilitation programs, schools, and parents throughout the world.”

Psychemedics Corporation's Risks

Now that Psychemedics Corporation's competitive advantages have been considered, let's look at some of the risk factors that could impair my assumptions of investment return.

- Psychemedics Corporation's Brazilian subsidiary currently accounted for around 1/3 of the company's revenue. Given that Brazil is experiencing a quite severe recession, there is an increased likelihood that revenues and earnings could be negatively affected in the near to mid-term.
- Psychemedics Corporation's business is cyclical. The company's business is dependent on the staffing and recruitment levels of its clients, and in a recessionary environment, they are likely to see a decline in business.
- Psychemedics Corporation's Brazilian subsidiary, 'Psychemedics Brazil,' recently lost a legal battle with Omega Labs, a competitor who claimed that Psychemedics Corporation had engaged in anti-competitive practices. This unfavorable ruling is likely to facilitate increased competitive pressure in the coming years.

Opportunity Costs

Whenever an investment is considered, one must compare it to any alternatives to weigh up the opportunity cost. At the time of writing, 10-year treasuries are yielding 2.86%. If we take inflation into account, the real return is likely to be closer to 1%. The S&P 500 Index is currently trading at a Shiller P/E of 30.3 which is 79.3% higher than the historical mean of 16.9. Assuming reversion to the mean occurs, the implied future annual return is likely to be -1.9%. Psychemedics Corporation, therefore, appears to offer a much better return for investors at present, but other individual stocks may be found which offer a similar return relative to the risk profile.

Macro Factors

Investors must consider macroeconomic factors that may impact economic and market performance as this could influence investment returns. At present, the S&P is priced at a Shiller P/E of 30.3. This is 79.3% higher than the historical average of 16.9 suggesting markets are at elevated levels. U.S. unemployment figures are at a 30-year low suggesting that the current business cycle is nearing its peak. U.S. private debt/GDP currently stands at 202.80% and is at its highest point since 2009 when the last financial crisis prompted private sector deleveraging.

Summary

Psychemedics Corporation's historical performance has been quite strong with the firm has been profitable for the past 25 consecutive years and has paid dividends for the past 88 quarters consecutively. Even though the firm's Brazilian subsidiary has experienced issues in recent years, there are some positive developments afoot.

Psychemedics Corporation notes the following in their most recent annual report;

- "1. It is a large and expanding market. The Brazil professional driver market is large by law. All professional drivers must pass a hair test in securing and renewing their driver's license. And it is also expanding by law. That law requires that commencing in September 2018; professional drivers must renew their licenses every 2 ½ years, instead of the current requirement of every [five] years. This virtually doubles the size of that major portion of the market in the near-term.*
- 2. The results of this Brazil driver program thus far have been very dramatic and Have had a major positive impact on the people of Brazil. Recently published data from the Brazil Federal Highway Police show that in the first year of the program, the numbers of highway deaths and disabilities have been reduced by 39% --- a reduction of approximately 39,000! Also, 31% of professional drivers chose not to renew their license, showing this test to be a major deterrent as well.*

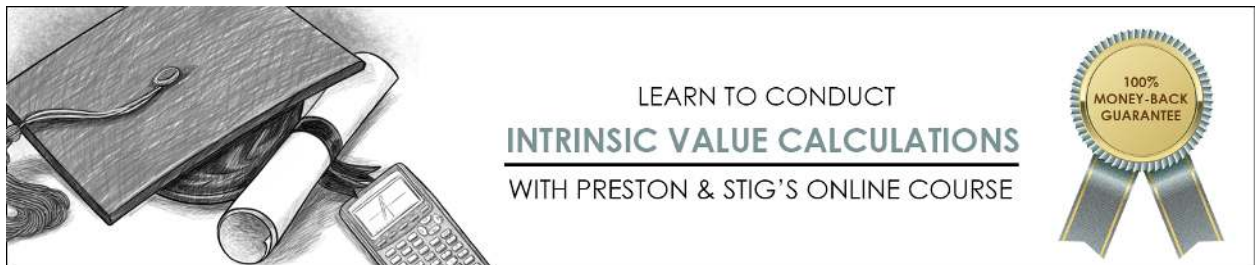
3. The great success of this professional driver program has the government discussing and considering possibly requiring a hair test for some other types of driver's licenses."

This is very good news for the shareholders of Pychemedics Corporation as revenues from its Brazilian subsidiary, which account for around of 1/3 of consolidated revenues, have the potential to increase dramatically in the coming years.

The company is currently in a strong financial position with a D/E ratio of 0.14 and a robust liquidity position as evidenced by the firm's quick ratio of 2.73. Return on invested capital has averaged 24.95% over the previous decade, and free cash flow as a percentage of sales has averaged 10.78% over the same period.

In summary, Pychemedics Corporation is likely to experience some short-term challenges due to cyclical pressures, but its long-term economic future appears quite favorable. Providing that the company can maintain its competitive position, it should be able to capitalize upon favorable regulatory changes which look likely to significantly increase potential revenue streams.

Based on the conservative assumptions used in the analysis of the company, Pychemedics Corporation may return around 9-11% at the current market price.



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