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National University of Mongolia

APU COMPANY
Absolute. Pure. Unique.

National University of Mongolia
Student research

Consumer Goods Sector, Beverage industry

Ticker: MSE:APU

Date: 01/06/2017

Current price: MNT 371

Implied price: MNT 396

Recommendation: BUY

12-month Target Price: MNT 490.31 (+32%)

Figure 1: Market Profile

Closing price (2017.1.06)	MNT 371
52 week range (adj)	359.81 - 4129.00 (325.2-477.4)
Average daily volume (3 month)	1003
Shares outstanding	742,877,000
Market cap	278,578,875,000
P/E	0.0406
Enterprise value	182,474,981,829
EV/EBITDA	3.4

Figure 2: Financial Profile

	2014	2015	2016F	2017F
Rev. Growth	2.5%	5.9%	8.2%	8.1%
NI Margin	-5.1%	5.1%	-1.3%	7.6%
EBITDA	26.2	53.7	47.8	52.1
EBITDA Margin	13.2%	25.6%	21.0%	21.2%
ROE	-7.5%	7.3%	-2.2%	12.0%
ROA	-3.0%	3.5%	-1.0%	6.5%
EPS	(13.71)	14.39	(4.07)	25.19
Interest Coverage	4.69x	1.81x	5.13x	5.73x
Fixed Charge Coverage	1.39x	1.14x	1.59x	1.50x

Figure 3: Valuation

Implied Price (MNT)	396
12-Month Target Price	490.31
Dividend	4.53
Total Return	33.37%

Highlights

APU Joint Stock Company (APU) is the largest and diversified Mongolian beverage company with significant market penetration and owns the most automated manufactory.

Investment recommendation

We issue a BUY recommendation on APU with implied price of MNT 396 and an one-year target price of MNT 490 using the Discounted Free Cash Flow to Firm Method. This offers a 32% upside from its closing price of MNT 371 on January 06, 2017. Our estimation of such price change is based on the company's robust historical performance as well as its forecasted growth. Our recommendation is driven by:

- ***Sustainable market position*** **-** With 4 segments and 129 types of products, APU holds a leading position in alcoholic beverage business and a challenger position in milk industry. We forecasted APU to grow its business with CAGR of 9.6% in 2016-2021. The company aims to strengthen its market position and to deliver considerable financial results for its shareholders. For its commitment and determination to provide customers with highly-qualified products, APU has been ranked as one of the most reliable and innovative companies in Mongolia.
- ***Growth potential*** **-** Growth in price, production per capita, and gross domestic product is a key driver of APU's revenue. The main growth source for the company relies on its dairy products and beer as well as increasing sales of other existing products. We forecast the alcoholic industry to grow by 8.7% CAGR till 2021 and non-alcoholic by 13.9% CAGR, respectively. We believe that it will help APU to hold its position as a premier company and lead to a further expansion into the foreign market.
- ***Financial performance*** **-** We estimate APU to exhibit healthy financial standing that underpins our outlook for future growth. APU is forecasted to generate a revenue of MNT 359 billion (bn) at the end of FY2021. Profitability margins are expected to increase over the forecasted period. According to the company guidance, the total debt-to-equity ratio is to decrease to 0.32 by 2021. Considering APU's strong balance sheet, stable dividend growth, and high profitability margins over the next five years, the company's stock would be an attractive investment.
- ***Key risks*** **-** The main risks for APU, representing the highest uncertainty and impact, are adverse fluctuations in currency, regulatory policy and challenges in sustaining its competitive position on the market. Macro conditions, industry demand and supply assumptions may pose additional influence. APU manages to mitigate most of the risks and remains the company with low risk within the sector, so it is suitable for risk-averse investors.
- ***Monte Carlo Simulation*** **-** 65.2% of the 12-month target price simulation supports BUY recommendation.

Figure 4: Historical Price Chart

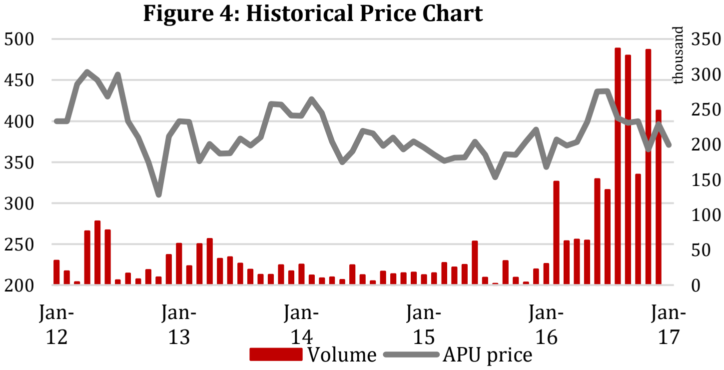


Figure 5: Monte Carlo Simulation 12-month Target Price

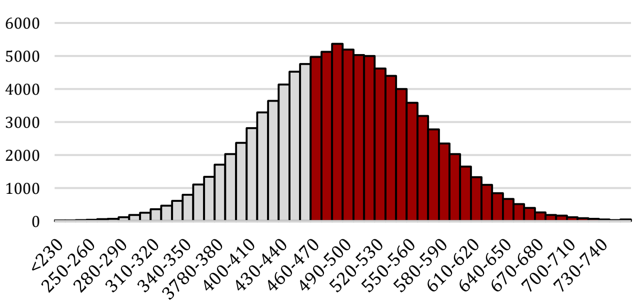
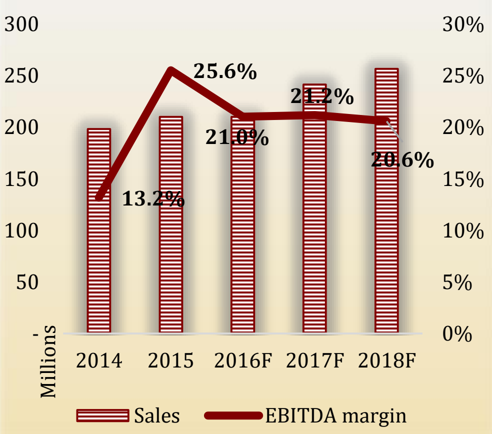
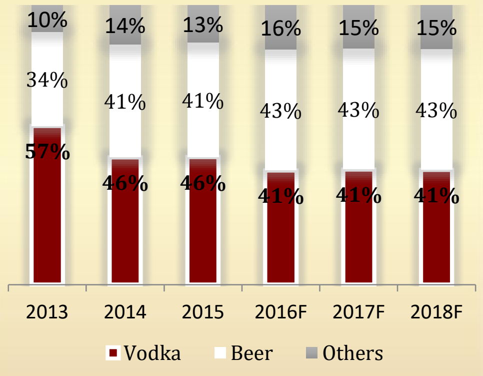


Figure 6: Sales and EBITDA margin



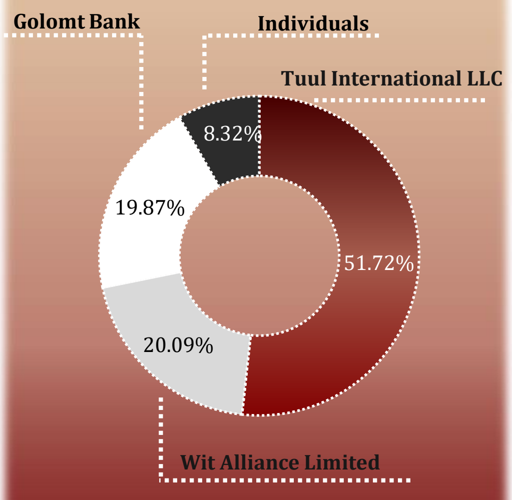
Source: Company Data , Team Estimates

Figure 7: Revenues by segments



Source: Company Data , Team Estimates

Figure 8: Shareholder Structure



Source: Company Data

Business description

APU is a key player in Mongolian beverage market

APU is the largest beverage producer and distributor in Mongolia and one of the most dynamic companies with a tradition of over 90 years in the beverage industry. The company has managed to keep its top national player position, starting from a value of sales of MNT 141 million (m) in 2011 and increasing up to MNT 210m in 2015 (Figure 6).

APU was established as the first alcohol distillery in 1924 by the state of Mongolia, listed on the Mongolian stock exchange in 1992 and transferred to private ownership in 2001. The core activity of the company is manufacturing of alcohol, alcoholic, non-alcoholic beverages and dairy product. It is the biggest company in terms of market capitalization (MNT 275bn = 20% of the total market) and is included in the TOP 20 index of Mongolian Stock Exchange.

The APU factory represents one of the most automated manufactories in Mongolia

APU holds fully automated and high tech production lines thanks to continuous modernization process. Most recently, APU finished an investment of about MNT 48.7m for modernizing and extending the production capacity of the beer factory in 2014. APU is the only Mongolian company which has certified ISO 9001, ISO 14001, ISO 22000 FSSC 22000 standard mutually.

APU is the only company in Mongolia which operates in 4 segments of beverage industry

APU is the only company in Mongolia which operates in 4 sectors of beverage industry: vodka, beer, non-alcoholic beverages and dairy products (Figure 7). The company currently provides more than 129 types of products to Mongolian market. The main product segments are:

Vodka (Strategy: Maintenance)
APU fully purchases its wheat, main raw material, and various plants grown on Mongolian soil from local farmers and reduces its alcohol content by taking account of customer's need. In mid-year of 2016, APU meets 50 % of domestic vodka demand and exports its products to 10 countries, such as Great Britain, United States, Russia and China.

Beer (Strategy: Growth)
Launching new brewery with capacity to produce 90m litres per year in 2013, APU fully meets national market need in addition to other producers' capacities. It is also important to note that APU not only makes up 62% of domestic beer market, but also operates in few foreign countries. Borgio, one of the beer brands of APU, was awarded as the "Best Lager beer" at "World Beer Awards" in 2011.

Non-alcoholic beverage (Strategy: Supportive)
Although carbonated drinks account for 34.7% of global soft drinks market, the sales of bottled water, sports, functional, and energy drinks is likely to grow rapidly further. In the case of APU, the company supplies 17 different products, such as Terelj, Selenge, by making up 4% of Mongolian non-alcoholic beverage market.

Dairy product (Strategy: Growth)
Introducing "Pure milk" brand into the market 2006 and establishing milk factory in 2014, APU made massive investment in Mongolian milk industry. Currently, 26% of total dairy products' market in Mongolia is delivered by APU. APU receives pure milk from around 300 local farmers through 12 sales points, manufactures it, and delivers 24 types of dairy products to customers.

Shareholder Base

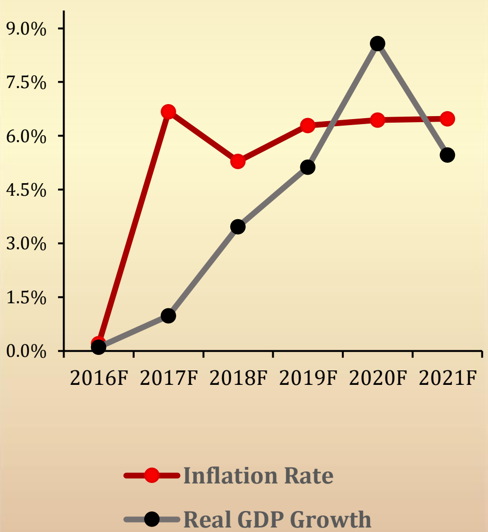
APU is owned by three major groups as well as public common shares are listed on the Mongolian Stock Exchange. Tuul International LLC owns 51.72% of the common shares, while The Wit alliance limited holds 20.09% of the common shares. The third major shareholder group is Golomt Bank LLC, which owns 19.87% of outstanding shares. Individuals own the remaining 8.32% (Figure 8).

Figure 9: Social Responsibility

Field name	Action
Education	Promote education through school support program, furnishing Badamlynhua children's center
Health and social needs	(1)Provide 6 year consumption of dairy products to 3 million's citizen, assisting for extinguishers, (2) Provide sample of dairy products to municipal company employees and disabled people
Sports	Sponsor sports facilities and activities, being a partner to children's sport Champaign V, "Faith, Hope, Opportunity" marathon
Culture	Offer a wide range of events in all spheres of visual and performing art, including 1000 chldren festival, Mongolian Fife/traditional musical instrument/ project

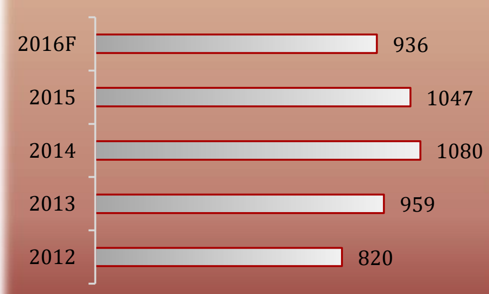
Source: Company Data

Figure 10: Macroeconomic forecast



Source: IMF, World Bank

Figure11: Household income (MNT in thousand)



Source: National Statistical Office of Mongolia

Corporate Governance

APU strives to deliver best practices in corporate governance in Mongolia. Corporate governance is structured to guarantee the alignment among management, company interests and majority and minority shareholders' objectives. APU has declared to comply with Corporate Governance Code in Mongolia. Our team evaluated APU's quality of governance in five main facets:

- ***Committees*** **-** In compliance with the laws and regulations of Mongolia, remuneration, nomination and audit committees were established by the company to oversee and handle company operations (Appendix P).
- ***Board*** **-** Board of Directors comprises of 6 ordinary members and 3 independent members, who are responsible to provide control and oversight on the company on behalf of the shareholders. With approval of nomination committee, members are appointed for 3-year tenor by shareholders (Appendix 0).
- ***Management team*** **-** Headed by Chief Executive Officer (CEO), management team consists of 6 professional members with an average of 11 years in the company and extensive experience in business administration and engineering sectors (Appendix Q).
- ***Audit & Oversight*** - APU contracted with KPMG for a risk assessment of the company to give management a better grasp of possible risks APU may face.
- ***Shareholder Rights*** - All shares issued by APU have one vote and carry equal voting dividend rights without any restrictions. There are no shares with special control rights or limitations on their transfer.

Social responsibility

Being a premier company, APU bears a responsibility to its conduct and supports activities that have positive impact on the environment, the municipalities in its vicinity and other groups involved. APU concentrates its commitment on four fields (Figure 9).

Industry Overview and Competitive Positioning

Macroeconomic analysis:

An economy driven largely by its mining industry, Mongolia had a GDP growth rate that peaked at 17.5% in 2011. However, over recent years growth has slowed dramatically with a drop in foreign direct investment and decline in commodity price. According to IMF Outlook 2016, IMF admits Mongolia has significant growth prospect in mid and long term, due to wealthy of natural resource, geographical position and having high intensity of seating behind negotiating table with foreign investors, despite foreign investors view Mongolian economic as weak and with low growth in near term (Figure 10). Private consumption is expected to be stable and has slow growth, as stable inflation and increasing competition in retail market are supportive of the purchasing power of households.

Stable inflation rate can generate growth for retail industry

Food, beverage and tobacco are important parts of the 'consumer basket', having a weight of 32.5% in the Consumer Price Index (CPI) (Appendix I1). National Statistical Office of Mongolia release that less fluctuation in alcohol, tobacco's price has been registered since end of 2014 (Appendix I2). Also IMF forecasted Mongolian inflation rate range as between 5.82%-6.47% for next 5 years (Figure 10). Price change is one of the most influential factors that reduce behavior of purchasing, especially in food and beverage, so having stable price advances consumer purchasing habit and gives an opportunity to the company to accurately expect future.

Household income and Real GDP highly influence on consumer consumption

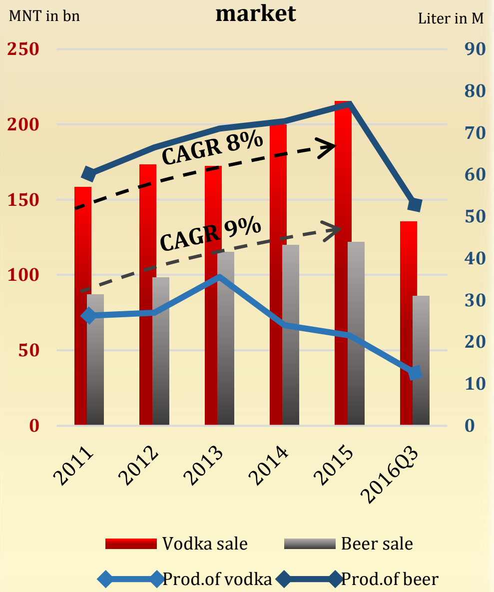
According to IMF, Mongolian unemployment rate will be stable in following years. Household income is important in assessing consumer spending as it reflects the amount consumers have available for spending on goods and merchandise. Mongolian household income has experienced negative growth with CAGRs of -0.4% from 2013-2016, which caused by economic downturn in last 2 years (Figure 11). In Mongolia, household income and real GDP have strong relation with consumption of beer per capita (correlation coefficient is 0.96, 0.93, respectively, based on data of 2002-2015, Appendix). Also domestic dairy and water, soft drink production have high correlation with real GDP (Appendix I3).

Figure 12: Food and beverage market

	Market size (USD in bn)
Hong Kong	5.06
Japan	280.2
Inner Mongolia	0.78

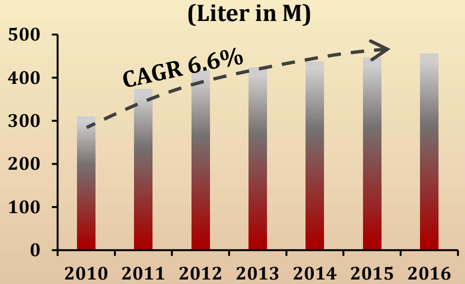
Source : National Statistical Office of the countries

Figure 13: Alcoholic beverage market



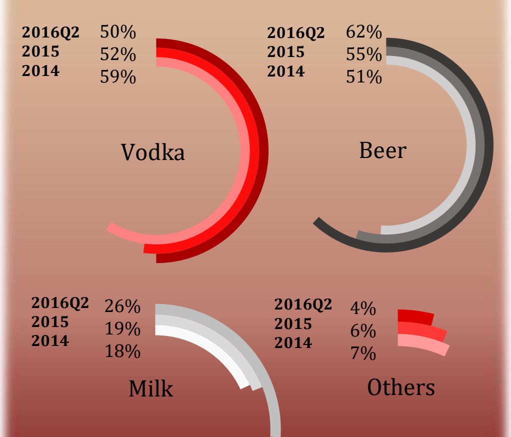
Source : General Department of Taxation

Figure 14: Milk Consumption (Liter in M)



Source : National Statistical Office of Mongolia, Team Estimates

Figure 15: Market Share



Source: Company Data

Asia region market of beverage

APU exports its dairy products to Hong Kong, alcoholic beverage to Japan and Inner Mongolia on a small amount. Asia is considered as to drive global growth in consumer expenditure on food, beverage. In accordance with 2015-2016 Outlook of Retail published by Pwc, nominal growth of food and beverage in the region over next five years is expected to 9% per year compared to global average of 6.4%. So if APU successfully accomplish its export strategy there will be magnificent opportunity to expand volume of revenue and introduce itself in the region (Figure 12) .

Industry analysis

Vodka

Based on 2011-2015 data, market of vodka is growing relentlessly and shows CAGR of 8% from 2011 to 2015, although volume of production reduced (Figure 13). Both export and import of vodka had high fluctuation in both amount and volume (Appendix J1). Until 2014 many companies in the alcoholic beverage industry incurred losses that could result from having to pay excise taxes in dollars per liter, which were subject to currency fluctuations. However, since 2015 new policies on excise taxes have improved the conditions of the industry and reduced the risk faced by companies by levying the tax in MNT per liter.

Beer

There is a positive trend in beer market. According to 2011-2015, the market had growth of 9% CAGR due to changing lifestyle of consumer and changes in society and economy (Figure 13). We forecast the growth of the market size to keep its continuous positive trend. Population has high relation with beverage industry and 57% of Mongolian population is between 15-50 ages. Domestic competitive pressure has intensified dramatically in quality of product, advertising activities, which led to growth and reduced volume of imported beers. Market share of imported beer was 16% in 2015 and this proportion is expected to decrease continuously (Appendix J2).

Dairy

Industrialized dairy market has experienced CAGR of 6.6% from 2010-2016 (Figure 14). The huge growth of industrialized milk is related to change of consumer behavior from consuming traditional to produced milk in industry. Dry and liquid milk comes by import continuously goes up which remarks that there is sufficient space in milk market, which supports domestic milk production (Appendix J3). In Mongolia, there are some factors that affect milk industry (1)The production of raw milk is widely spread in rural areas, while the main market for processed dairy products is in the urban area. Therefore, collection and distribution logistics represent a challenge for milk processors. (2) In Ulaanbaatar, 62.5% of dairy products are industry-processed. The remaining 37.5% is split between the so called 'street trade' and farm members' consumption.

Competitive Position

Diversified product portfolio and long-lasting experience

Founded in 1924, APU is the biggest beverage company in Mongolia and has constantly been growing until today by focusing on the quality of their products and gaining the trust of their customers. APU not only manufactures 4 different types of beverages – alcohol, beer, dairy products, non-alcoholic beverages, but also opened up various sources of income as well (Figure 15). With an established reputation of producing quality products and solid costumer service, APU produces 10 brand products in the alcohol industry, 6 in the beer industry, 4 in the dairy industries, and 5 in the non-alcoholic beverage industry from its total of 129 different products.

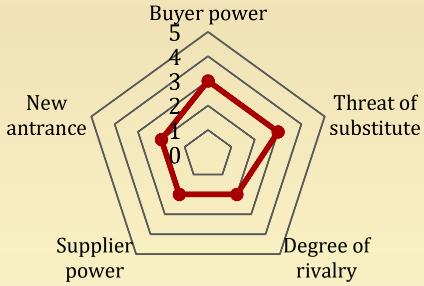
Logistic and distribution

APU contributed to the national Mongolia's Food Safety standard by introducing a new system in 2013 called Logistic, which is a modern technological program that helps them meet the new conditions for reserving bigger amounts of products and storing each product in consideration of their distinct characteristics. APU also has one of the biggest distribution lines with more than 7000 units. As having good distribution channel is a key success factor in this business, it serves as an efficiency and maintains consumer feeling.

Figure 16: Distribution Channel

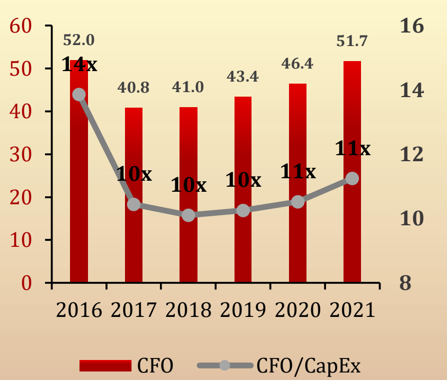
Source : Company Data

Porter's 5 factors



Source : Team Estimates

Figure 17: CFO (MNT in bn)



Source : Team Estimates

Figure 18: Financial performance

	EPS	D/EBITDA	D/E
2015	14.4	3.0x	1.1x
2016F	-4.1	3.4x	1.2x
2017F	25.2	2.5x	0.8x
2018F	31.6	1.7x	0.5x
2019F	39.7	1.1x	0.3x
2020F	49.5	1.1x	0.3x
2021F	56.9	1.1x	0.3x

Source : Team Estimates

Expansion forecast

The APU has been able to constantly increase their share in the beer and milk markets by introducing new factories, with capacities to produce 45-50m liters of beer and 45m liters of milk per year. By increasing their milk production, they not only solidified their position in the domestic market, but also increased the consumption of dairy products. Currently, APU exports their products to 10 foreign countries, and distributes to 21 provinces and 283 local towns ("sum" in Mongolian).

Porter's 5 factors

APU's power is strengthened by the large number of buyers (Figure 16). Supplier power is moderate as suppliers are able to provide the different raw materials needed within the industry. Since APU's brand recognition strengthened its awareness, entering the market would be very difficult. Established companies possess economies of scale, brand recognition and have big advantages. There are no substitutes for beverages as a whole but there are some to its segments, as tap water is seen as a possible cheap substitute to soft drinks. Rivalry is increased entirely by all these factors (Appendix K).

Investment Summary

We initiate our coverage of APU stock with a BUY recommendation and a MNT 490.31 target price, implying a 33.37% total shareholder return from closing price of MNT 371 on January 6th 2017, inclusive of dividend. This price is derived from Discount Cash Flow (DCF) . The terminal value estimated by EV/EBITDA multiple method.

Supreme brand

APU's historical qualified operation and scale advantage differentiate it from small, middle competitors while brand product and distribution system set it apart from all competitors. APU Trading LLC, owned by member of the board of directors, purchases 99% of APU's products. APU's distribution system consists of 7000 selling channels, covering all areas in Mongolia. The company made major investments in a capacity of factories and in storage system in 2013, 2014. These investments strengthened its market position and improved stability in long term. One of APU's key developments in the storage segment is the new logistic center, invested MNT 30bn in 2013. It shall computerize the entire storage system and automate a control of keeping condition to preserve quality of production.

Strategy for each section

The company is planning to adhere to an expansion strategy for the beer and milk industries, while keeping its vodka market position. It is important to the company to preserve current 50% of vodka market share. The company has aimed to capture more profit by intensely moving into milk business. APU's milk business was extended by investing MNT 45.6bn in new milk factory. This allows the company to meet market demand, diversify its revenue resource, and enhance its growth and profitability. The company continued to strengthen its beer position by launching new factory in 2013 which enabled the company to broad species, to develop innovation, and to meet consumer's need and preference.

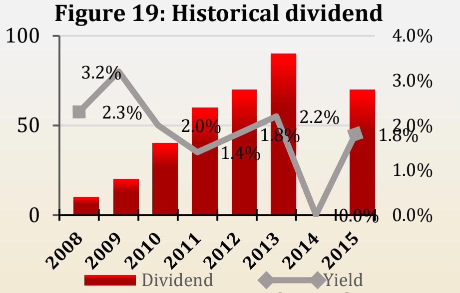
Improving financial performance

Financial profile of the company is being qualified due to a favorable cash generation model, solid profitability growth and increasing EPS. We expect a consistence in CFO/CapEx ratio over the next five year around from 10x to 11x (Figure 17). The Company's total debt fell from MNT 202bn at the end of 2014 to MNT 160bn at the end of 2015. Accordance with management, the debt to continue to fall and forecast a drop of Debt to Equity ratio from 1.1x in FY2015 to 0.32x in FY2021 and corresponding decline in debt/EBITDA from 2.98x at the end of FY2015 to 1.07x in FY2021. Currently APU has an EPS of MNT 14.39, which is expected to increase to MNT 56.91 in 2021(Figure 18). We predict unlevered cash flow will consistently above MNT 37bn from 2016 to 2021, which will attract investors' interests (Appendix L).

Stock liquidity and Dividend policy

APU's common share is classified in first category in July 2016 and in TOP20 index in Mongolian Stock Exchange, enabling insurance companies to invest in and have permission to dual register in domestic and in foreign stock exchange. The Board of Directors decided to split common share numbers by 10 in 2016 to increase share's liquidity and to catch up with demand of the share. The company maintains a conservative dividend policy and its historical dividend yield is in line with global beverage industry average (Figure 19).

Figure 19: Historical dividend



Source : Company Data

Figure 20: Comparable companies (Beverage companies in middle income countries)

№	Company name	EV/EBITDA
1	Ginebra San Miguel	5.91
2	Murre Brewery	5.95
3	East African Breweries Limited	23.7
4	Lion brewery	9.6
5	Ambev S.A	11.89
6	Campania Cerveceries Unidas S.A	9.02
7	Thai beverages	26.02
8	Xinjiang	8.99
	Mean	12.56
	Median	***9.31***

Source: Team Estimates

Figure 21: Summary of DCF method (MNT in thousand) - Base case

PV of FCFF (2017-2021)	106,379,975.82
PV of Terminal value	283,252,210.92
Terminal multiple	9.31x
Implied Enterprise Value	389,632,186.74
Total Debt	(109,857,979.84)
Cash and cash equivalent Q4 2016	13,754,086.67
Estimated Equity Value	**293,528,293.57**
Total shares outstanding	741,670,190
Intrinsic value of share	395.76
Current share price	371
Upside	6.68%

Source: Team Estimates

Figure 22: Summary of WACC calculation

Computation of Cost of equity

Risk free rate	18.19%
Market Return	25.31%
Equity risk premium	7.12%
Adjusted beta	0.8
Cost of Equity	*23.89%*

Computation of Cost of Debt

	Weighted average cost of debt (after tax)	***WACC***
2017F	6.61%	**19.07%**
2018F	8.03%	**20.14%**
2019F	9.31%	**22.10%**
2020F	9.53%	**23.89%**
2021F	9.62%	**23.89%**

Source: Team Estimates

Possible investment risk

Investors should also be aware of the risks APU could possibly face over the investment horizon, growth drivers though

Market risk: Household income and purchasing power will shrink, if economic downturn continues.

Operational risk: (1) Entrance of foreign and domestic competitors can result in loss of the market share (2) Unplanned breakdown of plant and equipment

Financial risk: APU has a big amount of loan in USD which indicates foreign exchange risk has a large impact

Legal risk: Excise taxes can effect COGS.

A detailed discussion of the risks, mitigation factors and their impacts on value is discussed in the Investment Risk section.

Valuation

We considered two main valuation methodologies: Discounted Cash Flow model and Market-based valuation. For DCF model, a detailed forecast of five-year Free Cash Flow to Firm and terminal multiple method were used to estimate intrinsic value of share.

Market-based valuation

There is no direct comparison at the local level. Selection of peers of APU is complicated for two reasons. Firstly, the company is the biggest in terms of market capitalization and the other companies are relatively too small to compare. Secondly, the product portfolio and operational scope of APU are relatively broad compared to others. Therefore, we chose several beverage companies operating in middle-income countries that have a similar product mix and competitive position in their respective countries (Mongolia is classified as middle-income country, Figure 20).

After calculating the enterprise value of APU using our estimate of 2016Q4 EBITDA, we considered that directly using the EV/EBITDA multiple of these companies on current EBITDA of APU to estimate the value of the firm is not reasonable. Thus, we believe that combining the multiples approach with our DCF model as a terminal multiple would reflect more meaningful assumption that in the future, the company will converge to mean pricing level of companies in middle-income countries.

Discounted Free Cash Flow - Free Cash Flow to Firm

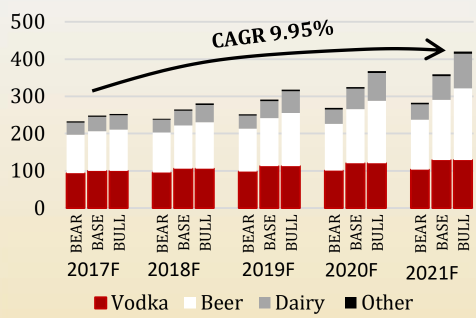
Based on stable operation, predictability of cash flows and management guidance of no high capital expenditure in next 5 years, we prefer DCF model to other methods (Figure 21). During the forecasted period, APU will pay principal and interest of debt in each year until 2019 and it leads to high outlay of cash flow that makes capital structure unstable. For that reason, we chose FCFF valuation model over FCFE model, which is less sensitive to changing capital structure. For terminal value calculation, we used terminal multiple method. Our estimation of value is dependent on following inputs.

Weighted average cost of capital

In order to estimate more accurate discount rate, we calculated different WACC in each year until 2019. The management stated that the company is not going to use large amount of external financing and invest in significant capital expenditure. Differences of WACC calculation in each year is resulted from decreasing amount of long term debt and the exchange rate movement which is estimated by using the theory of Purchasing Power Parity (PPP). The main reason of using PPP is to convert cost of debt denominated in USD to cost of debt denominated in MNT while holding the real exchange rate constant, as a conservative assumption from a valuation perspective. By the company guidance, APU will not have any long term debt remaining after 2019 and WACC will converge to cost of equity (Figure 22).

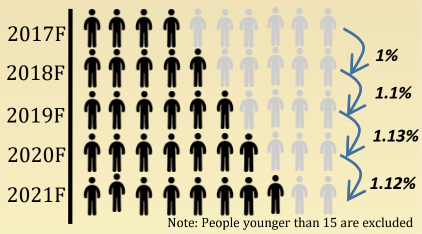
Cost of equity is calculated using CAPM. Risk free rate of 18.19% is based on the 10-year yield of Mongolian government bond yield curve (as of December 2016) and market return for CAPM is estimated on a historical basis by calculating the CAGR of MSE TOP-20 Index since its inception. Raw beta of 0.7 is computed by regressing monthly return on shares of APU against return on TOP-20 index during last 5 years. We adjusted beta using the Blume method because we consider that historical beta of 0.7 would regress towards the mean market beta.

Figure 23: Revenue growth (MNT in bn)



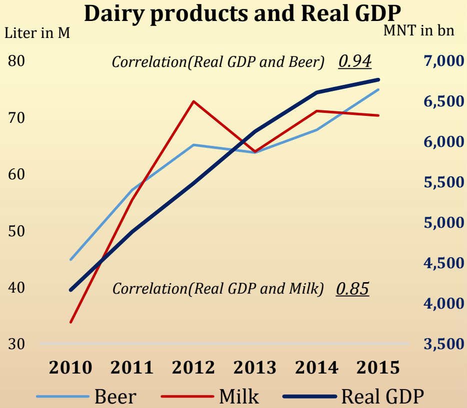
Source : Company Data

Figure 24: Population growth



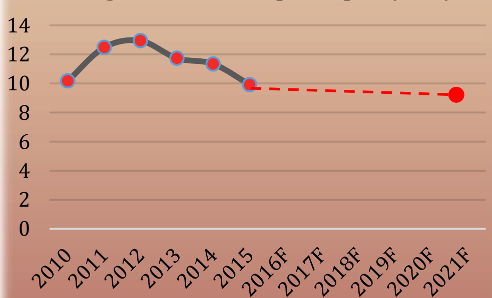
Source : Global Economic Prospects, World Bank

Figure 25: Production of Beer, Dairy products and Real GDP



Source : National Statistical Office of Mongolia

Figure 26: Vodka per capita(liter)



Source: Team Estimates, National Statistical Office of Mongolia

Revenue growth

We believe forecasting future sales by each sub-sector individually can reflect accurate value of business since APU operates in four sub-sectors of beverage industry. We detailed each factors that affect volume and price.

1.Volume Drivers

Our analysis of beverage production in middle income countries indicated that per capita production of beer, dairy products and non-alcoholic beverages have strong linear relation to Real GDP but the production of vodka has not (based on statistical analysis, Appendix B2). Therefore we used a top-down approach for beer, dairy products and non-alcoholic beverages and bottom-up approach for vodka.

- ***Population growth*** - Sales volume was forecasted on per-capita basis so that population is a crucial factor for our estimation. We used projection of population (older than 15) released by World bank. All else being equal, population growth drives sales growth by CAGR of 1.1% during the explicit forecasted period (Figure 24).

1.1 Volume drivers of Beer, Dairy products and Non-alcoholic beverages

Real GDP growth - Sales of beer, dairy products and non-alcoholic beverages do not follow real GDP trajectory exactly (Figure 25). In order to reduce this drawback of using single growth rate of real GDP, we used a historical 5-year "CAGR of each production per capita/CAGR of real GDP" ratio to get future production growth of each production relative to real GDP growth. All else being equal, real GDP growth drives sales volume of beer, dairy products and non-alcoholic beverages by CAGR of 1.2%, 2.73% and 1.97%, respectively (Appendix B1).

1.2 Volume drivers of Vodka

Historical growth – Due to the low correlation between production of vodka and real GDP, we used historical 5-year CAGR of per capita production to forecast future sales volume (Figure 26).

2.Price drivers

Inflation – Beverage is regarded as consumer good so that we took inflation effect into account in our forecast.

3. Market share

We accompanied our forecast of sales volume by the change of APU's market shares in each sub-sectors which is stated in semi-annual report of 2016 and assumed that APU is going to retain its market share in the following years as a conservative assumption from valuation perspective.

Terminal Value

We computed terminal value using terminal multiple method as long as terminal growth rate is very challenging to determine and prone to mislead, also we expect that APU has considerable growth potential after explicit forecast period. Currently, there is no company that can be compared directly to APU in Mongolia, hence we chose beverage companies that operate in countries classified as middle-income by World Bank. Because of its neutrality to capital structure effect and differences in depreciation and amortization, we prefer EV/EBITDA multiple over others. We listed 8 companies as peer companies and median of these multiples is used to arrive at terminal value (Appendix C1).

Monte Carlo Simulation

We applied a Monte Carlo Simulation to our DCF model to reflect the real world uncertainties in key valuation assumptions. By using this simulation method, we derived a complete probability distribution of possible intrinsic values and it showed that 65.4% of simulations had an implied share price greater than the current market price of MNT 371. Key assumptions that we gave distribution are:

- Real GDP growth, Per-capita vodka production growth (bottom-up approach), Market share of each sub-sector, Real exchange rate, Terminal multiple – 5%, 95% confidence level lower and upper bounds were determined by our assumptions on bear and bull case scenarios.
- 6-Month Libor – Standard deviation is calculated from its own last 5-year historical values.
- Raw beta – Standard deviation is taken from its regression output.

Figure 27: Monte Carlo Simulation output

Iterations	100,000
Minimum	131.97
Maximum	678.02
Mean	395.88
Median	395.27
Mode	397.55
Std. Deviation	61.72
Variance	3808.97
Skewness	0.06
Kurtosis	3.01

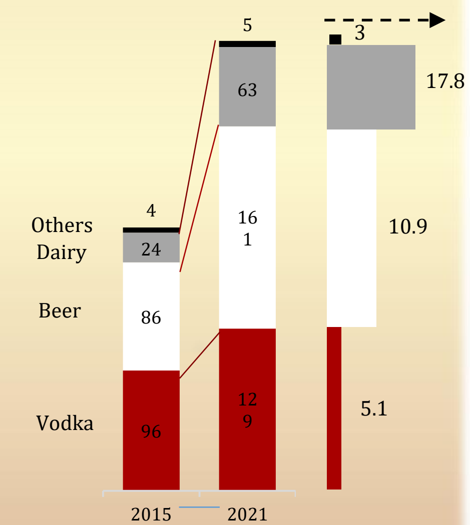
Source: Team Estimates

Figure 28: Exchange rate

	2013	2014	2015	2016
Exchange rate	1654	1886	1996	2489
Depreciation		-14.0%	-5.8%	-24.7%

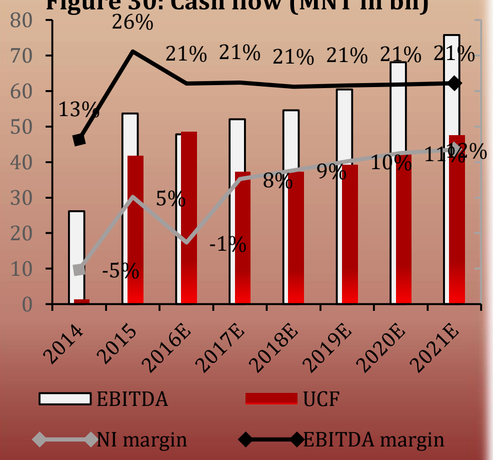
Source: Mongol Bank, Company Data

Figure 29: Revenue (MNT in bn)

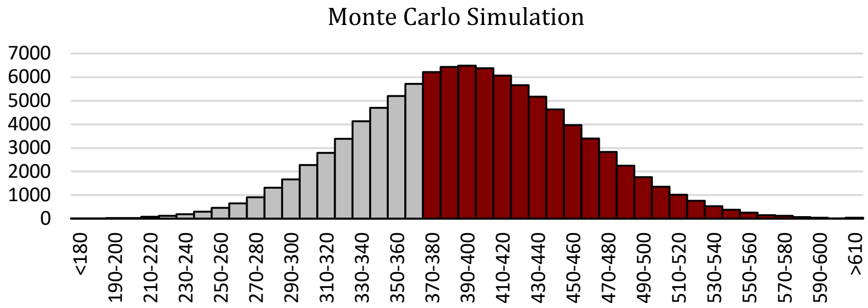


Source: Team Estimates

Figure 30: Cash flow (MNT in bn)



Source: Team Estimates



Valuation Summary

We estimate a year-end target price of MNT 490.3 that has been obtained from Discounted Cash Flow model. We did not assign a weight for Multiple analysis because of the inherent difficulties in finding a group of close comparable to APU as we explained above. Combining our target price with dividend of MNT 4.53, the implied 12-month total return is 33.37% (Figure27).

Financial Analysis

Key Ratio	2014	2015	2016F	2017F	2018F	2019F	2020F	2021F
Revenue	198.5	210.1	227.3	245.6	265.0	291.0	325.3	359.0
Revenue Growth	2.5%	5.9%	8.2%	8.1%	7.9%	9.8%	11.8%	10.3%
Net income margin	***-5.1%***	***5.1%***	***-1.3%***	***7.6%***	***8.9%***	***10.1%***	***11.3%***	***11.8%***
EBITDA	26.2	53.7	47.8	52.1	54.6	60.4	68.1	75.8
EBITDA Margin	***13.2%***	***25.6%***	***21.0%***	***21.2%***	***20.6%***	***20.8%***	***20.9%***	***21.1%***
Unlevered Cash Flow	1.3	41.7	48.4	37.1	37.2	39.3	42.3	47.4
Return on Equity	-7.5%	7.3%	-2.2%	12.0%	13.3%	14.6%	15.8%	16.4%
Return on Asset	-3.0%	3.5%	-1.0%	6.5%	8.7%	11.0%	12.0%	12.6%

(1)Increase in assets by revaluation is non-recurring item, so we did not consider it in our project. Calculation based on profit (loss) after tax.

Decline in net income in 2014 and 2016

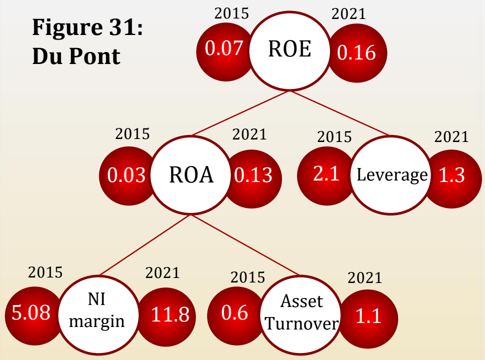
Although we expect the company experiences 8.5% growth in revenue for 2016 due to market share increase in milk by 7% and in beer by 7%, significant 6.34% downside in net income causes -1.27% margin in 2016. It is driven by currency depreciation of 24.7% MNT against USD which lead to MNT 29.6bn foreign exchange loss (Figure 28). We predict decrease in profitability margin at the end of FY2016, however progressive recovery is expected from 2017. In 2014, MNT depreciated against USD by 14% which caused decline in net income by MNT29.9bn.

Robust operation performance and cash flow generation

Revenues will grow 9.55% CAGR to MNT 355.9bn in 2021 with the EBITDA margin improving (9.67% CAGR) points with strong cash generation (Figure 29) . One of the key competitive advantages of APU is its cash generation abilities with projected CFO of MNT41-52bn during FY2016-2021, which emphasizes company's strength to finance its interest expense and operating working capital items. Moreover, strong expected CFO/CapEx ratio of 13.86 at the end of FY2014 indicates that RTL could easily cover its CapEx in following years. APU has generated greater than MNT37.2bn of unlevered free cash flow in following years (Figure 30). This has largely been influenced by its ability to grow revenue and EBITDA. According to a meeting with the management, the major investments made in 2013 and 2014, so operational capital expenditure is expected to be level of sustaining from 2016 to 2021.

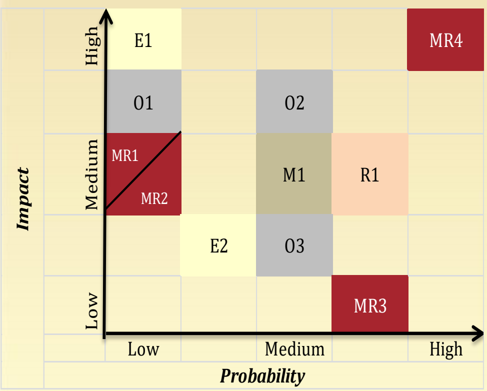
Ratio analysis	2014	2015	2016F	2017F	2018F	2019F
Current ratio	1.70	1.30	1.28	1.11	1.07	1.17
Quick ratio	0.89	0.40	0.47	0.38	0.32	0.32
Cash ratio	**0.50**	**0.13**	**0.10**	**0.15**	**0.08**	**0.07**
Total Asset Turnover	0.72x	0.59x	0.69x	0.75x	0.86x	0.99x
Equity Turnover	2.28x	1.47x	1.44x	1.66x	1.57x	1.50x
Interest Coverage	**4.69x**	**1.81x**	**5.13x**	**5.73x**	**10.41x**	**26.29x**
Fixed Charge Coverage	1.39x	1.14x	1.59x	1.50x	1.64x	1.95x

Figure 31: Du Pont



Source: Team Estimates

Figure 32: Risk Matrix



Source: Team Estimates

Figure 33: Total Revenue (1% decrease in alcoholic and dairy product's market share)

	2017F	2018F	2019F	2020F	2021F
Without change	246.00	264	291	325	359
With change	240.00	254	273	298	321

Terminal Value (MNT)

705,852,956 → 625,103,568

-11.44%

Target price (MNT)

490.31 → 431.12

-12.08%

Source: Team Estimates

Credit coverage and Liquidity

Based on calculation above, even though the company's liquidity ratios will fall from 2018 to 2019 due to the EBRD loan covenant that states the company will not get more loan from any bank until it completes their repayment. At that time, the company's interest and fixed charge coverage ratio will be 10.41x, 26.29x and 1.64x, 1.95x, respectively, which points out there is not much solvency and liquidity problem. After debt obligation in 2019, APU will have extensive cash.

Increase in ROE

Return on equity of APU is expected to increase from 7.3% in 2015 to 12.4% in 2021 (Figure 31). To explain the source of this increase, DuPont decomposition formula was used (Appendix M). The research shows that even though leverage is predicted to slightly decrease, ROE is expected to increase mostly due to the increase in asset turnover (from 0.59 to 1.06), that indicates APU's operational efficiency over the predicted period. This could be caused by net amount of fixed asset. The other important driver of the increase is growth of net income margin (from 5.08% to 11.71%).

Investment risks

Operational Risks

[O1]. Unexpected equipment disruption /Low probability, High impact/

Equipment disruption can cause unplanned outages in the distribution and generation business. Recently, equipments operate at an average load factor of 70-80%. APU's beer and non-alcoholic beverage factories were built in 2013, milk factory was built in 2014 with high-quality technology which largely suggests that there would be less probability of breakdown in later 3-4 years.

Mitigation: Monitor constantly newly expanded factories, invest in sustaining capital expenditures to extend the life of old factories

[O2]. Increase in raw material and labor costs /Moderate probability, High impact/

Increase in those costs can unfavorably affect future margins obtained by APU. Labor costs weigh for approximately 30% of APU's total cost, therefore material and unexpected changes in compensation level can influence the APU's profitability. Raw material composes high amount of COGS, 70% compared to total sales. Imported raw materials may cause currency pressure as a consequence decrease profit.

Mitigation: Decrease fixed expenses by increasing production volume, support domestic supply of raw materials

[O3]. Failure to achieve performance target /Moderate probability, Low impact/

APU faces a significant amount of risk due to their aggressive growth strategy if investments will fail to perform attributable to managerial expectations. Although APU expected to earn MNT 404.7bn revenue by selling 104,8m liters in 2015, the company gained MNT 210bn, two times less than expectation, with 91m liters of sales. There is risk that they may not reach a target to earn MNT 351bn revenue in 2016 in accordance with our team's forecast.

Mitigation: Estimate future plan reasonably

Market Risks

[MR1]. Shift to new competitors /Low probability, Moderate Impact/

The entrance of foreign and domestic competitors can bring lost market share across the APU competes in. Despite this shift, APU has brand recognition, technical expertise, and customer loyalty obtained by 93 years' varied industry experience proven by leading position among its competitors. Based on our analysis, APU's target share price will drop to MNT 431.12 for a sell recommendation if vodka, beer, and milk industries' market shares decrease by 1 % per year, respectively (Figure 33).

Mitigation: Maintain leading position in beverage industry by continously serving superior goods to customers.

Figure 34: Risk Factors and Mitigation Strategies

Risks	Mitigating Factors
Operational Risk	
Unexpected equipment disruption	Constant monitor, investment in capital expenditures
Increase in raw material and labour costs	Decrease in fixed expenses, domestic supply of raw materials, currency reserve
Failure to achieve performance target	Reasonable estimation
Market risk	
Shift to new competitors	Maintenance in leading position
Price instability, low demand	Proper use of alcoholic drink, adjustment to consumption
Volatility in interest rates	Volatility decline in LIBOR
Foreign exchange risk	Foreign exchange hedge, currency reserve transfer in credit balance measurement to MNT
Regulatory risk	
Regulation uncertainty	Swift respond to sudden changes in law
Macroeconomic risk	
Influence of macroeconomic situations	Immediate actions in accordance with macroeconomic situations
Environmental risk	
Natural disaster	Back-up plan
Harsh environmental situation of CO2	Reduction and reused CO2

Source: Team Estimates

Figure 35: Sensitivity Analysis

Real GDP

WACC	-3%	-2%	-1%	0%	1%	2%	3%
-3%	554.1	557.4	560.8	564.1	567.4	570.7	574.0
-2%	528.8	531.9	535.1	538.3	541.5	544.7	547.8
-1%	504.6	507.6	510.7	513.7	516.8	519.9	522.9
0%	481.5	484.4	487.4	490.3	493.3	496.2	499.2
1%	459.4	462.3	465.1	468.0	470.8	473.6	476.5
2%	438.4	441.1	443.9	446.6	449.3	452.1	454.8
3%	418.3	420.9	423.6	426.2	428.9	431.5	434.1

Source: Team Estimates

Figure 36: Sensitivity Analysis

Sales

WACC	-3%	-2%	-1%	0%	1%	2%	3%
-3%	545.2	551.5	557.8	564.1	570.3	576.6	582.9
-2%	520.2	526.3	532.3	538.3	544.3	550.3	556.4
-1%	496.4	502.2	508.0	513.7	519.5	525.3	531.1
0%	473.6	479.2	484.7	490.3	495.9	501.4	507.0
1%	451.9	457.2	462.6	468.0	473.3	478.7	484.0
2%	431.2	436.3	441.5	446.6	451.8	456.9	462.1
3%	411.3	416.3	421.3	426.2	431.2	436.1	441.1

Source: Team Estimates

[MR2]. Price instability, low demand /Low probability, Moderate impact/
Continual demand on alcoholic beverage exists in society; however, excessive consumption can harm people's health and mind, increasing social resentment. An inflation annual growth of 1% would change target price to MNT 514.5. In addition, alcoholic and non-alcoholic beverage consumption dependency on the season can lead to price fluctuations and subsequently to a negative impact on financial statements.
Mitigation: Promote proper use of alcohol and suggest low alcohol drinks, adjust production to consumption

[MR3]. Volatility in interest rates /High probability, low impact/
Given that APU has short term and long term loans with floating rate (5.5%+6 month and 2%+6 month USD LIBOR), the company is facing the risk that arises from fluctuating interest to pay the outstanding balance on their revolving line of credit. A 0.27%, standard deviation of five years, change in LIBOR RATE would change WACC to 19.32%, 19.22% and target price to MNT 513.85, 515.1, respectively.
Mitigation: Decline volatility of LIBOR rate

[MR4]. Foreign exchange risk /High probability, high impact/
Currency instability drives to unfavorable outcome in loan obligation. Based on our estimation, APU will lose MNT 4.4bn from foreign exchange due to depreciation of 4% MNT against USD in 2017.
Mitigation: Hedge currency risk, enlarge reserve currency in times of need, transfer credit balance measurement to MNT

Regulatory Risks

[R1]. Regulation uncertainty /High probability, moderate impact/
In Mongolia, as an emerging country with an ever-changing political situation, there is a lot of uncertainty regarding adverse political decisions. For alcoholic beverages, alcohol prohibition law, established in 2000, still in reenactment, becoming more rigid. Recent changes in law have introduced a new stricter rules, restraining sell on the first day of every month as well as increasing the number of limited places. In addition, there is high probability that government may raise certain taxes or diminish some of the fiscal stimulus for companies and investors due to budget deficit.
Mitigation: Swiftly respond to sudden changes in law through adjustment to production

Macroeconomic Risks

[M1]. Influence of macroeconomic situations /Moderate probability, moderate impact/
Unfavorable macroeconomic conditions such as low economic growth will result in lower demand. For Mongolia, correlation between GDP growth and vodka, beer production is 0.875 and 0.962, respectively, that shows strong relationship. /used 2002-2015 data/. We can conclude that if GDP growth decline in future, it can not only negatively affect in production level, but also lower target price (Figure 35).
Mitigation: Take immediate actions in accordance with macroeconomic situations

Environmental Risks

[E1]. Natural disaster /Low probability, high impact/
Beverage industry is highly dependent on climate conditions, as prerequisite elements in the manufacturing process. The cultures of wheat and crops need proper weather to support alcoholic beverage and milk delivery. As APU purchases high amount of raw materials from domestic suppliers, there is high risk in production level if natural disaster, such as flood and wildfire, happens in Mongolia.
Mitigation: Have back-up plan in times of natural disaster

[E2]. Harsh environmental situation of CO2 /Low probability, low impact/
During wheat fermentation, around 590 tonnes of carbon dioxide (CO2) release into the atmosphere per year. CO2 does not have any direct impact on health; however, its dissolution in air plays a major role in global warming. Currently, there is not any social negative tendency across CO2, the company may face restrictions for environmental protection purposes in future.
Mitigation: reduce CO2 and re-use CO2 after filtration

Appendix A1: Discounted Cash Flow , Base case

	2016F	2017F	2018F	2019F	2020F	2021F
Income statement forecast (Base case)						
MNT in thousand						
Revenue	227,259,080.5	245,576,085.9	264,989,199.8	291,020,120.2	325,306,618.2	358,954,919.9
Cost of goods sold	-168,236,244.4	-180,755,592.2	-194,029,687.5	-211,626,371.9	-234,908,923.8	-257,789,893.5
Gross profit	59,022,836.2	64,820,493.7	70,959,512.2	79,393,748.3	90,397,694.5	101,165,026.3
Selling and administrative expense	-29,636,450.7	-31,319,848.6	-35,392,943.7	-38,161,090.6	-41,872,872.7	-45,363,241.0
Other income	916,992.6	990,901.9	1,069,234.0	1,174,269.0	1,312,615.4	1,448,386.6
Other expense	-2,197,684.0	-2,381,338.9	-2,280,589.5	-2,317,120.0	-2,377,030.7	-2,371,093.8
Operating Income	28,105,694.2	32,110,208.1	34,355,213.1	40,089,806.8	47,460,406.5	54,879,078.2
Finance income	3,883,446.8	4,196,451.4	4,528,186.4	4,973,007.7	5,558,902.0	6,133,890.7
Finance cost	-36,352,886.3	-9,306,826.5	-4,954,295.1	-2,530,400.4	-	-
Income before tax	-4,363,745.3	26,999,833.0	33,929,104.4	42,532,414.1	53,019,308.5	61,012,968.8
Tax expense	1,344,778.0	-8,320,554.6	-10,455,952.3	-13,107,239.4	-16,338,991.9	-18,802,403.0
Net income	-3,018,967.3	18,679,278.3	23,473,152.1	29,425,174.7	36,680,316.6	42,210,565.9
EBITDA	47,821,501.4	52,077,556.9	54,596,325.3	60,437,724.8	68,084,201.0	75,814,483.2

	2016F	2017F	2018F	2019F	2020F	2021F
Free Cash Flow to Firm (in thousand of MNT)						
Net income	-3,018,967.3	18,679,278.3	23,473,152.1	29,425,174.7	36,680,316.6	42,210,565.9
Depreciation	19,715,807.2	19,967,348.8	20,241,112.2	20,347,918.0	20,623,794.5	20,935,405.0
Capex	-3,748,277.6	-3,904,852.7	-4,054,891.0	-4,230,205.8	-4,409,328.5	-4,599,385.7
Net Work/cap investment	3,014,688.5	-2,713,064.8	-2,876,090.4	-3,832,098.2	-5,060,120.3	-4,969,769.5
Interest expense after tax	4,612,240.2	3,392,985.0	2,134,984.3	904,208.2	-	-
Unrealized exchange rate losses		2,809,900.4	809,407.4	-	-	-
FCFF		38,231,595.0	39,727,674.5	42,614,996.9	47,834,662.3	53,576,815.6
Terminal value						705,852,956.3
WACC		0.2	0.2	0.2	0.2	0.2
Present value(Implied Enterprise value)		**389,639,690.6**				
Less: Total debt 2016 Q4		**-109,857,979.8**				
Plus: Cash and Cash equivalents 2016 Q4		**13,754,086.7**				
Implied equity value		**293,535,797.4**				
Total share outstanding		**741,670,190.0**				
Implied share price		**395.8**				

Source: Team Estimates

Appendix A2: Discounted Cash Flow , Bull case

	2016F	2017F	2018F	2019F	2020F	2021F
Income statement forecast (Bull case)						
MNT in thousand						
Revenue	227,259,080.5	252,639,508.1	280,750,211.3	318,088,126.6	367,868,863.8	420,472,703.3
Cost of goods sold	-168,236,244.4	-185,507,862.7	-204,633,696.1	-229,837,726.6	-263,544,802.6	-299,179,058.2
Gross profit	59,022,836.2	67,131,645.4	76,116,515.2	88,250,400.0	104,324,061.2	121,293,645.1
Selling and administrative expense	-29,636,450.7	-31,840,268.7	-36,995,425.5	-40,913,197.3	-46,200,337.4	-51,617,987.1
Other income	916,992.6	1,019,402.9	1,132,829.9	1,283,488.7	1,484,354.5	1,696,611.5
Other expense	-2,197,684.0	-2,443,974.9	-2,372,752.3	-2,417,640.5	-2,491,170.9	-2,493,170.5
Operating Income	28,105,694.2	33,866,804.8	37,881,167.4	46,203,050.9	57,116,907.3	68,879,099.0
Finance income	3,883,446.8	4,317,152.5	4,797,513.6	5,435,551.0	6,286,213.8	7,185,118.4
Finance cost	-36,352,886.3	-9,306,826.5	-4,954,295.1	-2,530,400.4	-	-
Income before tax	-4,363,745.3	28,877,130.7	37,724,385.9	49,108,201.5	63,403,121.2	76,064,217.4
Tax expense	1,344,778.0	-8,899,082.6	-11,625,546.5	-15,133,703.7	-19,538,977.7	-23,440,755.2
Net income	-3,018,967.3	19,978,048.1	26,098,839.4	33,974,497.8	43,864,143.5	52,623,462.1
EBITDA	47,821,501.4	53,834,153.6	58,122,279.5	66,550,968.9	77,740,701.8	89,814,504.0

	2016F	2017F	2018F	2019F	2020F	2021F
Free Cash Flow to Firm (in thousand of MNT)						
Net income	-3,018,967.31	19,978,048.1	26,098,839.4	33,974,497.8	43,864,143.5	52,623,462.1
Depreciation	19,715,807.2	19,967,348.8	20,241,112.2	20,347,918.0	20,623,794.5	20,935,405.0
Capex	-3,748,277.6	-3,904,852.7	-4,054,891.0	-4,230,205.8	-4,409,328.5	-4,599,385.7
Net Work/cap investment	3,014,688.5	-3,750,174.1	-4,153,141.4	-5,492,283.4	-7,335,111.0	-7,752,976.3
Interest expense after tax	4,612,240.2	3,392,985.0	2,134,984.3	904,208.2	-	-
Unrealized exchange rate losses		2,809,900.4	809,407.4	-	-	-
FCFF		38,493,255.5	41,076,310.8	45,504,134.8	52,743,498.5	61,206,505.1
Terminal value						944,517,923.4
WACC		19.07%	20.14%	22.10%	23.89%	23.89%
Present value(Implied Enterprise value)		**486,589,977.5**				
Less: Total debt 2016 Q4		**-109,857,979.8**				
Plus: Cash and Cash equivalents 2016 Q4		**13,754,086.7**				
Implied equity value		**390,486,084.3**				
Total share outstanding		**741,670,190.0**				
Implied share price		**525.5**				

Source: Team Estimates

Appendix A3: Discounted Cash Flow , Bear case

	2016F	*2017F*	*2018F*	*2019F*	*2020F*	*2021F*
Income statement forecast (Bear case)						
MNT in thousand						
Revenue	225,390,928.2	232,825,294.1	240,118,639.4	251,890,912.5	268,694,102.9	282,653,584.8
Cost of goods sold	-166,979,351.4	-172,176,859.5	-177,296,774.5	-185,300,240.9	-196,820,023.5	-206,454,355.3
Gross profit	58,411,576.7	60,648,434.6	62,821,864.9	66,590,671.6	71,874,079.4	76,199,229.5
Selling and administrative expense	-29,503,479.8	-30,380,393.6	-32,864,259.6	-34,182,675.8	-36,116,863.8	-37,605,395.2
Other income	909,454.6	939,452.4	968,881.1	1,016,382.3	1,084,183.4	1,140,510.0
Other expense	-2,181,257.1	-2,276,910.7	-2,145,977.1	-2,177,064.0	-2,228,158.4	-2,217,619.6
Operating Income	27,636,294.4	28,930,582.7	28,780,509.3	31,247,314.1	34,613,240.6	37,516,724.7
Finance income	3,851,523.5	3,978,563.4	4,103,193.5	4,304,360.3	4,591,496.5	4,830,038.8
Finance cost	-36,352,886.3	-9,306,826.5	-4,954,295.1	-2,530,400.4	-	-
Income before tax	-4,865,068.5	23,602,319.5	27,929,407.7	33,021,274.0	39,204,737.1	42,346,763.5
Tax expense	1,499,271.1	-7,273,540.9	-8,607,022.2	-10,176,185.7	-12,081,747.2	-13,050,027.4
Net income	-3,365,797.4	16,328,778.7	19,322,385.5	22,845,088.3	27,122,989.9	29,296,736.1
EBITDA	47,352,101.6	48,897,931.5	49,021,621.5	51,595,232.1	55,237,035.1	58,452,129.7

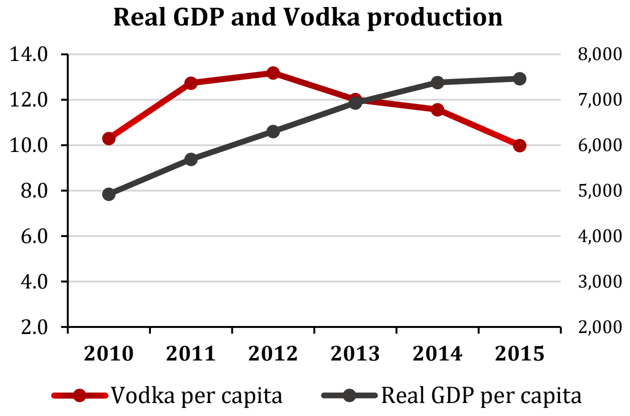
	2016F	*2017F*	*2018F*	*2019F*	*2020F*	*2021F*
Free Cash Flow to Firm (in thousand of MNT)						
Net income	-3,365,797.4	16,328,778.7	19,322,385.5	22,845,088.3	27,122,989.9	29,296,736.1
Depreciation	19,715,807.2	19,967,348.8	20,241,112.2	20,347,918.0	20,623,794.5	20,935,405.0
Capex	-3,748,277.6	-3,904,852.7	-4,054,891.0	-4,230,205.8	-4,409,328.5	-4,599,385.7
Net Work/cap investment	3,288,985.9	-1,115,186.9	-1,096,567.1	-1,738,527.2	-2,493,078.5	-2,078,896.4
Interest expense after tax	4,612,240.2	3,392,985.0	2,134,984.3	904,208.2	-	-
Unrealized exchange rate losses		2,809,900.4	809,407.4	-	-	-
FCFF		37,478,973.3	37,356,431.2	38,128,481.5	40,844,377.4	43,553,859.0
Terminal value						526,536,784.1
WACC		19.1%	20.1%	22.1%	23.9%	23.9%
Present value(Implied Enterprise value)		**310,929,776.6**				
Less: Total debt 2016 Q4		**-109,857,979.8**				
Plus:Cash and Cash equivalents 2016 Q4		**13,754,086.7**				
Implied equity value		**214,825,883.4**				
Total share outstanding		**741,670,190.0**				
Implied share price		**289.7**				

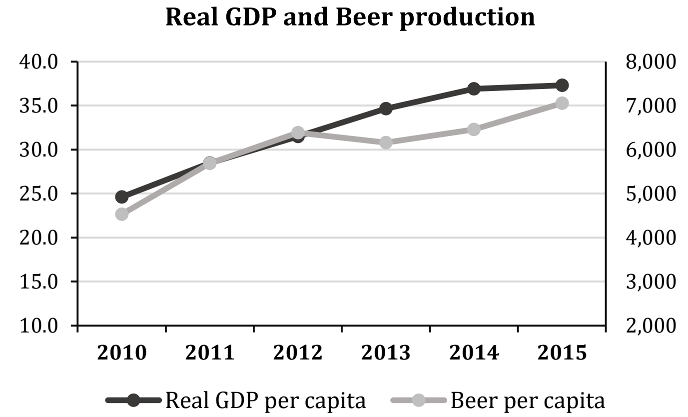
Source: Team Estimates

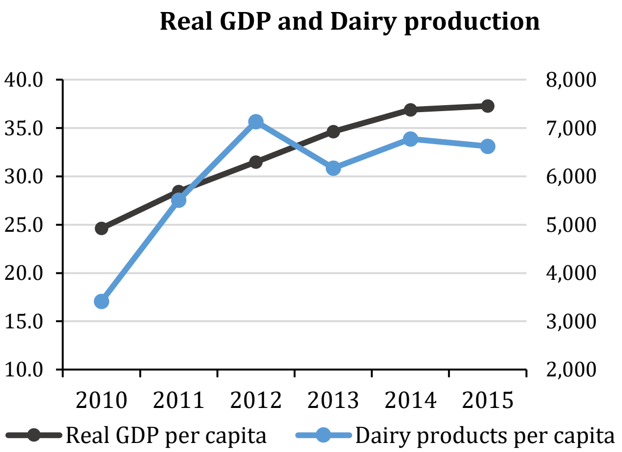
Appendix B1 : Revenue Forecast

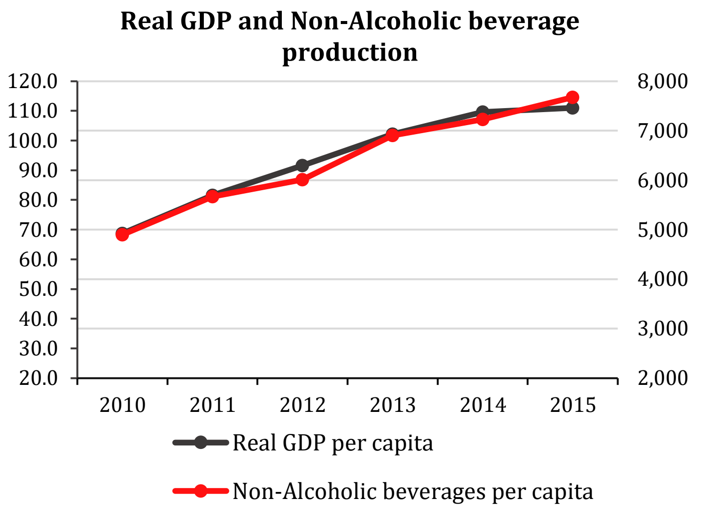
We projected sales of beer, dairy products and other non-alcoholic beverages by top down approach.

- Graphs below describes trajectory of historical Real GDP and beverage production per capita in Mongolia:









In Mongolia, beverage production per capita increased alongside with real GDP growth in recent years except vodka. We used statistical t-test for correlation coefficient. Table № summarizes our analysis of correlation between real GDP and beverage production per capita.

Summary of Hypothesis test for correlation					
Null hypothesis: Correlation coefficient equals to zero					
	Production type	Correlation between Real GDP and production per capita	t-statistic	5%, t-critical value	P-value
Mongolia	Dairy products	0.818195	2.84619	2.776445105	0.047
	Vodka	-0.0894	-0.17953	2.776445105	0.866
	Beer	0.919522	4.67904	2.776445105	0.009
	Non-Alcoholic beverage	0.98775	12.65998	2.776445105	0.000

According to our analysis, we prefer top-down approach for forecasting revenues for Beer, Dairy products and Non-Alcoholic beverages and Bottom-up for vodka.

Source: National Statistical Office of Mongolia, Team Estimates

Appendix B2 : Revenue Forecast

We chose several middle income countries that have available historical data for our analysis of relation between Real GDP and each of 4-kind beverage production per capita. Three examples of our correlation analysis in other middle-income countries, and its t-test are summarized below in order to support our use of hybrid approach for revenue forecast (top-down for products except vodka, bottom-up for vodka).

Summary of Hypothesis test for correlation (Some of middle income countries)

Null Hypothesis: Correlation coefficient equals to zero

	Production type	Correlation between Real GDP and production per capita	t-statistic	t-critical value	P-value
Mongolia	Dairy products	0.818195	2.84619	2.776445105	0.047
	Vodka	-0.0894	-0.17953	2.776445105	0.866
	Beer	0.919522	4.67904	2.776445105	0.009
	Non-Alcoholic beverage	0.98775	12.65998	2.776445105	0.000
Armenia	Dairy products	0.87436	7.20701	2.11991	0.00000
	Vodka	0.57385	2.80285	2.11991	0.01277
	Beer	0.70349	3.95937	2.11991	0.00112
	Non-Alcoholic beverage	0.82217	4.08518	2.30600	0.00086
Republic of Moldova	Dairy products	0.98491	19.71208	2.14479	0.00000
	Vodka	0.05124	0.15393	2.20099	0.87959
	Beer				
	Non-Alcoholic beverage	0.28129	1.01543	2.14479	0.32501
Ukraine	Dairy products	0.81060	4.15263	2.20099	0.00075
	Vodka	0.27507	0.85833	2.20099	0.40339
	Beer	0.86168	5.09424	2.20099	0.00011
	Non-Alcoholic beverage	0.82374	4.35861	2.20099	0.00049

Source: Team Estimates

Appendix B3 : Determining Revenue Growth

Determining consumption growth for Beer, Dairy products and Non-Alcoholic beverages by Top-down approach

In order to forecast revenue we need to determine annual growth rate for next five years. We believed that consumption of Beer, Dairy products and Non-Alcoholic beverages respond differently to real GDP growth. Thus, we avoided using single GDP growth rate as future consumption growth of each kind of products.

We used ratio of historical five-year CAGR of each production per capita to CAGR of Real GDP per capita to estimate future consumption growth driven by Real GDP.

Ratio of CAGR

Row Number	CAGR Historical 5-year		Historical 5-year CAGR ratio	
(1)	RGDP	0.10187		
(2)	Beer	0.05840	**(2)/(1)**	0.573
(3)	Dairy products	0.13367	**(3)/(1)**	1.312
(4)	Others	0.09637	**(4)/(1)**	0.946

Future revenue growth is calculated by multiplying CAGR ratio by forecast of Mongolian real GDP growth.

Future revenue growth driven by Real GDP

		2016F	2017F	2018F	2019F	2020F	2021F
Mongolian Real GDP Growth forecast		0.100%	0.976%	3.467%	5.130%	8.574%	5.467%
	Numerator of ratio						
Historical 5-year CAGR ratio	Beer per capita			0.573			
	Dairy product per capita			1.312			
	Non-Alcoholic products per capita			0.946			
Future revenue growth driven by Real GDP	Sales growth for Beer	0.06%	0.56%	1.99%	2.94%	4.92%	3.13%
	Sales growth for Dairy products	0.13%	1.28%	4.55%	6.73%	11.25%	7.17%
	Sales growth for Non-Alcoholic beverages	0.09%	0.92%	3.28%	4.85%	8.11%	5.17%

Determining future consumption growth for Vodka by Bottom-up approach

We estimated future consumption by historical 5-year CAGR of Vodka production per capita. Because of independence from Real GDP movement, we assumed that 5-year CAGR of -0.5% will continue in our explicit forecast years. This shrinkage of market will negatively affect APU's sales of Vodka.

CAGR of Vodka per capita (liter)

	2010	2011	2012	2013	2014	2015	CAGR
Vodka per capita	10.1739	12.4832	12.9452	11.7407	11.3539	9.9138	-0.0052

Source: Team Estimates

Appendix B4 : Other Driver for Revenue

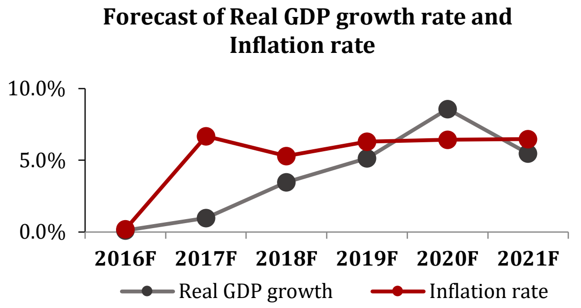
Others drivers of future Revenue:

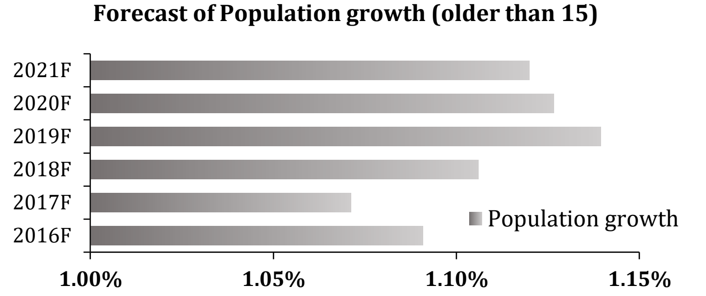
- Population growth
- Market share

According to semi-annual report of the company released in 2016, APU's market share in vodka and non-alcoholic beverage industry has declined from 52% to 50% , 6% to 4% respectively. But market share in Dairy products and Beer industry has expanded from 19% to 26% , 55% to 62% respectively. We accompanied our forecast of revenue growth in 2016 with the company's market share growth.

- Price

We use yearly inflation to adjust revenue growth in terms of volume.





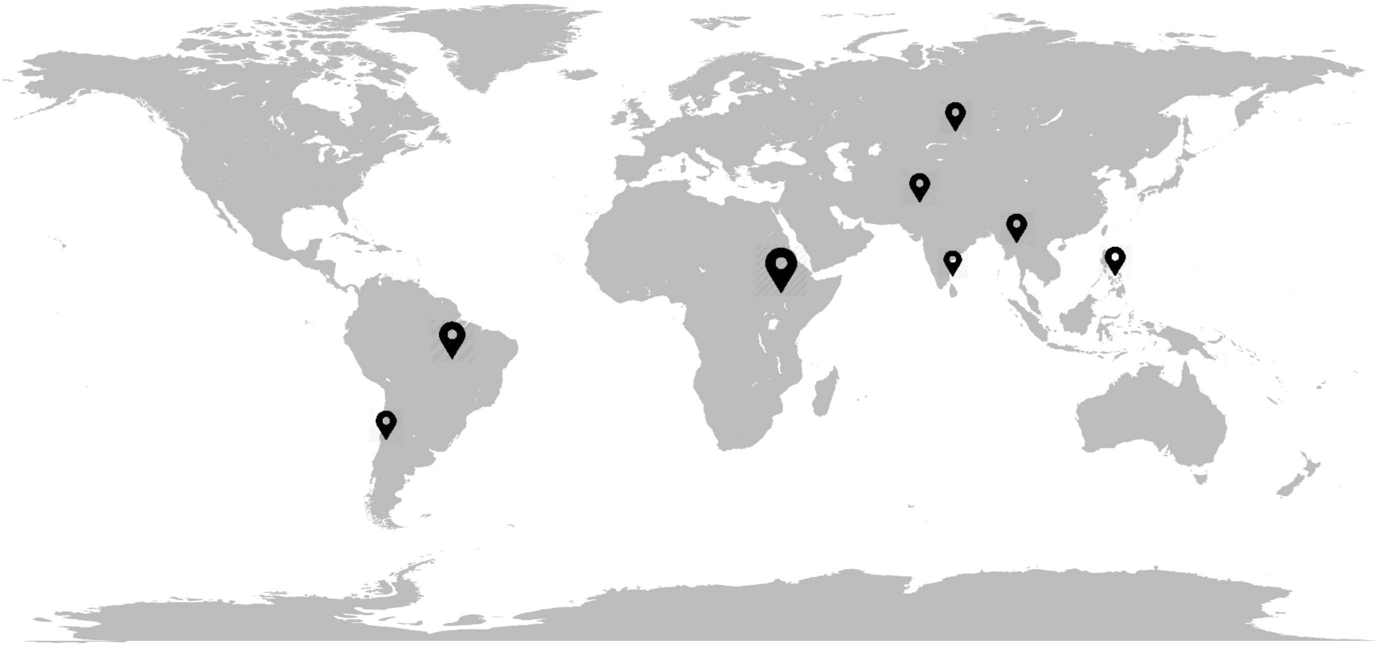
Summary of Revenue forecast(Base case)							
	2015	2016F	2017F	2018F	2019F	2020F	2021F
Population growth		**1.0908%**	**1.0713%**	**1.1060%**	**1.1395%**	**1.1266%**	**1.1200%**
Inflation		**0.20%**	**6.67%**	**5.29%**	**6.29%**	**6.44%**	**6.47%**
Revenue from Vodka (in million MNT)							
CAGR				***-0.5%***			
Vodka	95,903.89	92,927.49	99,672.66	105,560.63	112,895.58	120,895.25	129,493.41
APU's share in Vodka industry	52%	50%	50%	50%	50%	50%	50%
Revenue from Beer, Dairy products, Non-Alcoholic beverages (in million MNT)							
Real GDP growth		***0.100%***	***0.976%***	***3.467%***	***5.130%***	***8.574%***	***5.467%***
Beer	86,331.92	98,634.46	106,935.47	116,100.11	128,479.33	145,091.40	161,109.09
APU's share in Beer market	*55%*	*62%*	*62%*	*62%*	*62%*	*62%*	*62%*
Dairy products	23,673.14	32,856.74	35,877.38	39,930.51	45,815.11	54,862.90	63,305.53
APU's share in Dairy product market	*19%*	*26%*	*26%*	*26%*	*26%*	*26%*	*26%*
Non-Alcoholic beverages	4,202.22	2,840.39	3,090.57	3,397.96	3,830.10	4,457.06	5,046.89
APU's share in non-alcoholic beverage industry	*6%*	*4%*	*4%*	*4%*	*4%*	*4%*	*4%*
Total Revenue	**210,111.18**	**227,259.08**	**245,576.09**	**264,989.20**	**291,020.12**	**325,306.62**	**358,954.92**
Total Revenue(Bear)	210,111.18	225,390.93	232,825.29	240,118.64	251,890.91	268,694.10	282,653.58
Total Revenue(Bull)	210,111.18	227,259.08	252,639.51	280,750.21	318,088.13	367,868.86	420,472.70

Source: Team Estimates

Appendix C1 : Terminal Multiple

№	Comparable companies	Origin	Products	EV/EBITDA
1	Ginebra San Miguel	Philippines	Vodka, Liquor	5.91
2	Murre Brewery	Pakistan	Beer, Liquor, Soft drink	5.95
3	East African Breweries Limited	East Africa	Beer, Vodka, Soft drinks	23.07
4	Lion brewery	Sri-Lanka	Vodka, Beer, Soft drink	9.60
5	Ambev S.A	Brazil	Alcoholic beverage, non-alcoholic beverage	11.89
6	Campania Cerveceries Unidas S.A	Chile/Latin America/	Alcoholic beverage, soft drink	9.02
7	Thai beverages	Thailand	Alcoholic beverage, soft drink, Liquor	26.02
8	Xinjiang	China	Beer, Liquor	8.99
			Median	**9.31**
			60th Percentile	**10.51**
			40th Percentile	**9**

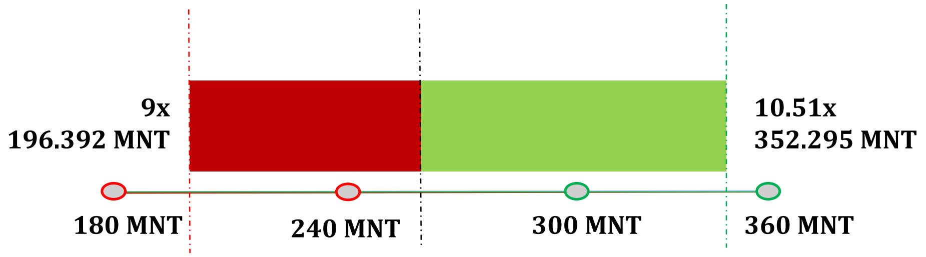
Comparable companies in middle income countries by location



We selected 40th percentile of terminal multiples as a bear scenario and 60th percentile as a bull scenario for APU company because of outliers and availability of few number of comparable.

- Bear scenario- 40th percentile of multiple spread, 9x
- Bull scenario- 60th percentile of multiple spread, 10.51x

Bear and Bull scenarios for APU (Present value of terminal value in Billion MNT)



Source: Team Estimates

Appendix D : Debt Structure and Schedule

Debt Structure and Schedule					
(in thousand of USD)		2016F	2017F	2018F	2019F
Repayment of core loan	**EBRD**	8545	8545	8545	8546
	Credit Suisse	7418	7418	7418	3656
Remaining principal amount of loan (year-end)	EBRD	25636	17091	8546	0
	Credit Suisse	18492	11074	3656	0
Weight of Loan	EBRD	**58.1%**	60.7%	70.0%	
	Credit Suisse	**41.9%**	39.3%	30.0%	

APU's debt consists of two long-term borrowings from EBRD and Credit Suisse at floating rates variable from LIBOR. We determined one-year repayment of loan from the fixed carrying amounts in short-term borrowings of last 2 years in foreign currency.

Source: Company Data

Appendix E : WACC Calculation

Summary of WACC					
	2017F	2018F	2019F	2020F	2021F
Cost of Equity	23.89%	23.89%	23.89%	23.89%	23.89%
Cost of Debt	9.55%	8.03%	9.31%	9.53%	9.62%
Equity %	0.72	0.80	0.90	1.00	1.00
Debt %	0.28	0.20	0.10	-	-
WACC	19.0703%	20.1442%	22.1029%	23.8897%	23.8897%

We calculated separate WACC in each year because of the maturing loans in 2019. Weights are calculated by using the remaining total debt amounts in each year while holding market value of equity (market capitalization) constant. Cost of equity is estimated by using CAPM.

Important inputs and assumptions:

- Beta is calculated on a monthly, five-year historical basis.
- Risk-free rate is assumed to be the 10-year yield on Mongolian Government Bond yield curve.
- Market return is calculated as the 11-year CAGR of the MSE-TOP20 Index since its inception.
- Effective tax rate of 30.8% is used to convert cost of debt into after-tax figure.
- Blume method is used to adjust raw beta.
- Cost of debt denominated in USD is converted to MNT by using ex-ante Purchasing Power Parity exchange rate forecasting method that assumes the real exchange rate to be constant, as a conservative assumption from a valuation perspective.

CAPM cost of equity calculation:

Cost of Equity	
Market return (11-year CAGR of MSE-TOP20 Index)	25.31%
Risk-free rate (10-year Mongolian Government Bond Yield)	18.19%
Raw beta	0.7014
Adjusted Beta (Blume method)	0.80093
Equity Risk Premium	7.12%
Cost of Equity	23.89%

Source: Team Estimates

Appendix G1 : Statement of Financial Position

	2013	*2014*	*2015*	*2016F*	*2017F*	*2018F*	*2019F*	*2020F*	*2021F*
MNT in million									
Assets									
Property, plant and equipment	163,195	225,887	208,295	192,973	176,910	160,724	144,606	128,392	112,056
Intangible assets	1,122	883	645	428	225	23	-	-	-
Biological investment	56	81	103	103	103	103	103	103	103
Long term investment	905	905	905	905	905	905	905	905	905
Defered tax assets	3,606	8,151	6,305	6,305	6,305	2,305	2,305	6,305	6,305
Non current assets	168,884	235,907	216,253	200,713	184,448	164,059	147,919	135,704	119,368
Inventories	47,196	70,082	56,251	66,069	70,985	76,198	83,109	92,252	101,238
Prepayments and prepaid expenses	16,414	5,218	5,280	5,021	5,395	3,791	4,316	7,011	7,694
Income tax receivables	1,347	958	1,068	1,068	1,068	1,068	1,068	1,068	1,068
Receivables	5,283	14,753	20,024	14,916	16,119	17,393	19,101	21,352	23,560
Short term investment	34	34	34	34	34	34	34	34	34
Cash and cash equivalents	28,835	9,947	6,763	13,754	7,594	6,818	12,458	49,321	85,234
Current assets	99,109	100,991	89,420	100,863	101,195	105,302	120,086	171,039	218,828
Total assets	**267,993**	**336,898**	**305,672**	**301,575**	**285,642**	**269,361**	**268,005**	**306,743**	**338,196**
Equity									
Share capital	74	74	74	74	74	74	74	74	74
Revaluation reserve	14,349	81,032	80,695	80,695	80,695	80,695	80,695	80,695	80,695
Retained earnings	70,558	53,718	64,725	56,515	75,194	95,307	120,484	151,711	176,396
Total equity	84,981	134,824	145,494	137,284	155,963	176,076	201,253	232,480	257,166
Liabilities									
Long-term debt	124,461	120,405	88,080	70,118	31,595	-	-	-	-
Defered tax liabilities	418	397	254	254	254	254	254	254	254
Other payables	-	3,492	1,938	3,162	3,297	3,538	3,881	4,081	4,338
Non current liabilities	124,879	124,294	90,273	73,534	35,146	3,793	4,135	4,335	4,592
Short term loans and borrowings	23,683	30,101	31,863	39,740	41,333	32,404	-	-	-
Deferred income	106	-	-	-	-	-	-	-	-
Trade and other payables	34,343	47,679	38,041	51,017	53,200	57,088	62,617	69,928	76,439
Current liabilities	58,133	77,780	69,905	90,758	94,533	89,492	62,617	69,928	76,439
Total liabilities	183,012	202,074	160,178	164,292	129,679	93,285	66,752	74,263	81,031
Total equity and liabilities	**267,993**	**336,898**	**305,672**	**301,575**	**285,642**	**269,361**	**268,005**	**306,743**	**338,196**

Source: Team Estimates

Appendix G2 : Income Statement

	2013	2014	2015	2016F	2017F	2018F	2019F	2020F	2021F
MNT in million									
Revenue	193,715.9	198,468.9	210,111.2	227,259.1	245,576.1	264,989.2	291,020.1	325,306.6	358,954.9
Cost of revenue	(138,446.8)	(154,521.1)	(146,597.5)	(168,236.2)	(180,755.6)	(194,029.7)	(211,626.4)	(234,908.9)	(257,789.9)
Gross profit	55,269.1	43,947.7	63,513.7	59,022.8	64,820.5	70,959.5	79,393.7	90,397.7	101,165.0
Selling and administrative expenses	(31,170.2)	(30,138.2)	(27,845.2)	(29,636.5)	(31,319.8)	(35,392.9)	(38,161.1)	(41,872.9)	(45,363.2)
Other income	839.7	898.1	1,311.4	917.0	990.9	1,069.2	1,174.3	1,312.6	1,448.4
Other expenses	(545.8)	(2,483.0)	(2,776.3)	(2,197.7)	(2,381.3)	(2,280.6)	(2,317.1)	(2,377.0)	(2,371.1)
Operating income	24,392.8	12,224.6	34,203.7	28,105.7	32,110.2	34,355.2	40,089.8	47,460.4	54,879.1
Finance income	7,298.7	3,336.4	3,648.8	3,883.4	4,196.5	4,528.2	4,973.0	5,558.9	6,133.9
Finance costs	(25,133.5)	(29,924.0)	(19,805.6)	(36,352.9)	(9,306.8)	(4,954.3)	(2,530.4)	-	-
(Loss) profit before income tax	6,558.0	(14,363.0)	18,046.8	(4,363.7)	26,999.8	33,929.1	42,532.4	53,019.3	61,013.0
Income tax benefit (expense)	(1,465.5)	4,198.2	(7,376.7)	1,344.8	(8,320.6)	(10,456.0)	(13,107.2)	(16,339.0)	(18,802.4)
(Loss) profit for the year	5,092.5	(10,164.8)	10,670.2	(3,019.0)	18,679.3	23,473.2	29,425.2	36,680.3	42,210.6
Effective tax rate		(0.3)							
Tax rate	-22.35%	-29.23%	-40.88%						
Other comprehensive income:									
<u>Items that will never be reclassified to profit or loss:</u>									
Revaluation of property, plant and equipment	-	66,683	-						
Net income	5,092	56,518	10,670						

Appendix G4 : Common-Size Income Statement

	2013	2014	2015	2016F	2017F	2018F	2019F	2020F	2021F
Revenue	100%	100%	100%	100%	100%	100%	100%	100%	100%
Cost of revenue	-71.5%	-77.9%	-69.8%	-74.0%	-73.6%	-73.2%	-72.7%	-72.2%	-71.8%
Gross profit	28.5%	22.1%	30.2%	26.0%	26.4%	26.8%	27.3%	27.8%	28.2%
Selling and administrative expenses	-16.1%	-15.2%	-13.3%	-13.0%	-12.8%	-13.4%	-13.1%	-12.9%	-12.6%
Other income	0.4%	0.5%	0.6%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%
Other expenses	-0.3%	-1.3%	-1.3%	-1.0%	-1.0%	-0.9%	-0.8%	-0.7%	-0.7%
Operating income	12.6%	6.2%	16.3%	12.4%	13.1%	13.0%	13.8%	14.6%	15.3%
Finance income	3.8%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%
Finance costs	-13.0%	-15.1%	-9.4%	-16.0%	-3.8%	-1.9%	-0.9%	0.0%	0.0%
(Loss) profit before income tax	3.4%	-7.2%	8.6%	-1.9%	11.0%	12.8%	14.6%	16.3%	17.0%
Income tax benefit (expense)	-0.8%	2.1%	-3.5%	0.6%	-3.4%	-3.9%	-4.5%	-5.0%	-5.2%
(Loss) profit for the year	2.6%	-5.1%	5.1%	-1.3%	7.6%	8.9%	10.1%	11.3%	11.8%

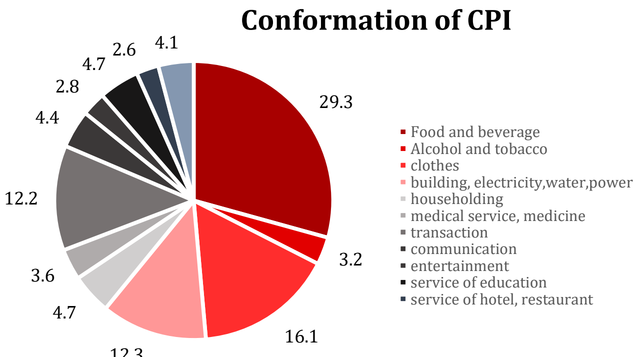
Source: Team Estimates

Appendix G3 : Common-size Statement of Financial Position

	2013	2014	2015	2016F	2017F	2018F	2019F	2020F	2021F
Assets									
Property, plant and equipment	60.90%	67.05%	68.14%	63.99%	61.93%	59.67%	53.96%	41.86%	33.13%
Intangible assets	0.42%	0.26%	0.21%	0.14%	0.08%	0.01%	0.00%	0.00%	0.00%
Biological investment	0.02%	0.02%	0.03%	0.03%	0.04%	0.04%	0.04%	0.03%	0.03%
Long term investment	0.34%	0.27%	0.30%	0.30%	0.32%	0.34%	0.34%	0.29%	0.27%
Deferred tax assets	1.35%	2.42%	2.06%	2.09%	2.21%	0.86%	0.86%	2.06%	1.86%
Non current assets	63.02%	70.02%	70.75%	66.55%	64.57%	60.91%	55.19%	44.24%	35.30%
Inventories	17.61%	20.80%	18.40%	21.91%	24.85%	28.29%	31.01%	30.07%	29.93%
Prepayments and prepaid expenses	6.12%	1.55%	1.73%	1.67%	1.89%	1.41%	1.61%	2.29%	2.28%
Income tax receivables	0.50%	0.28%	0.35%	0.35%	0.37%	0.40%	0.40%	0.35%	0.32%
Receivables	1.97%	4.38%	6.55%	4.95%	5.64%	6.46%	7.13%	6.96%	6.97%
Short term investment	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
Cash and cash equivalents	10.76%	2.95%	2.21%	4.56%	2.66%	2.53%	4.65%	16.08%	25.20%
Current assets	36.98%	29.98%	29.25%	33.45%	35.43%	39.09%	44.81%	55.76%	64.70%
Total assets	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Equity									
Share capital	0.03%	0.02%	0.02%	0.02%	0.03%	0.03%	0.03%	0.02%	0.02%
Revaluation reserve	5.35%	24.05%	26.40%	26.76%	28.25%	29.96%	30.11%	26.31%	23.86%
Retained earnings	26.33%	15.94%	21.17%	18.74%	26.32%	35.38%	44.96%	49.46%	52.16%
Total equity	31.71%	40.02%	47.60%	45.52%	54.60%	65.37%	75.09%	75.79%	76.04%
Liabilities									
Long-term debt	46.44%	35.74%	28.82%	23.25%	11.06%	0.00%	0.00%	0.00%	0.00%
Defered tax liabilities	0.16%	0.12%	0.08%	0.08%	0.09%	0.09%	0.09%	0.08%	0.08%
Other payables	0.00%	1.04%	0.63%	1.05%	1.15%	1.31%	1.45%	1.33%	1.28%
Non current liabilities	46.60%	36.89%	29.53%	24.38%	12.30%	1.41%	1.54%	1.41%	1.36%
Short term loans and borrowings	8.84%	8.93%	10.42%	13.18%	14.47%	12.03%	0.00%	0.00%	0.00%
Deferred income	0.04%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Trade and other payables	12.81%	14.15%	12.45%	16.92%	18.62%	21.19%	23.36%	22.80%	22.60%
Current liabilities	21.69%	23.09%	22.87%	30.09%	33.09%	33.22%	23.36%	22.80%	22.60%
Total liabilities	68.29%	59.98%	52.40%	54.48%	45.40%	34.63%	24.91%	24.21%	23.96%
Total equity and liabilities	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

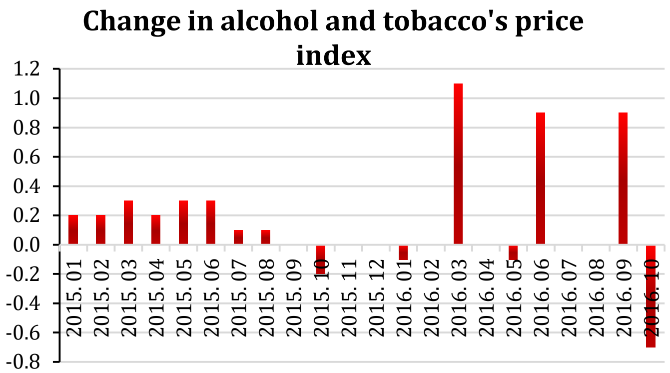
Source: Team Estimates

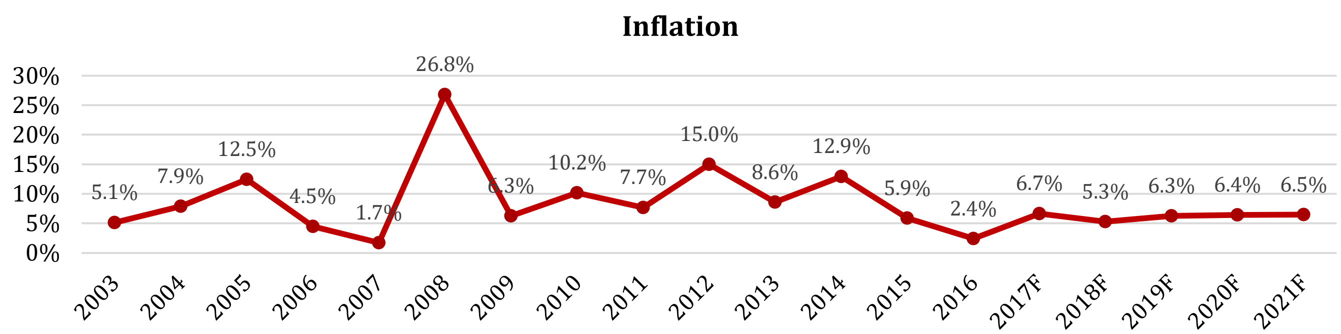
Appendix I1 : Fluctuation in CPI index of food, beverage and tobacco



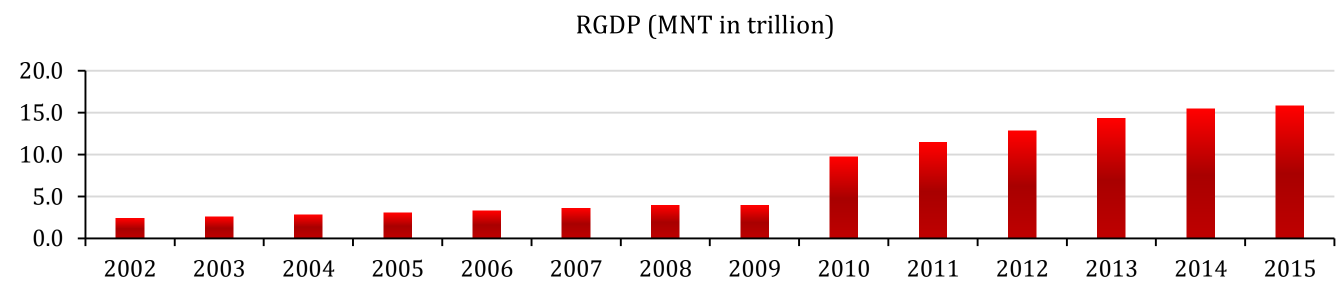
Source: National Statistical Office of Mongolia

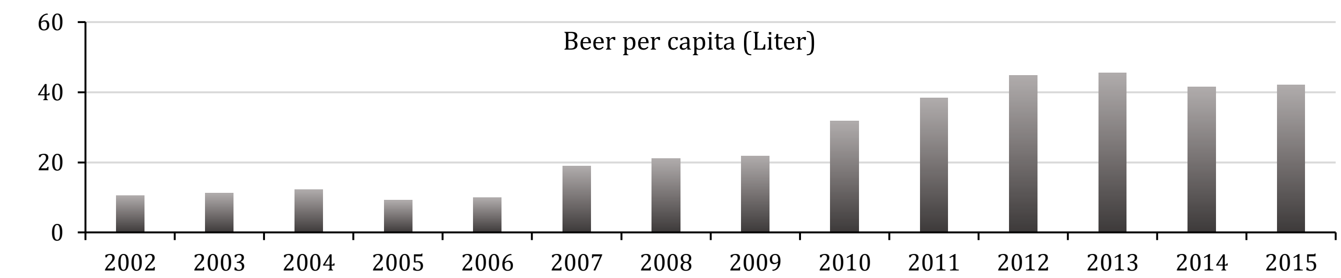
Appendix I2 : Fluctuation of CPI index in food , alcohol and tobacco

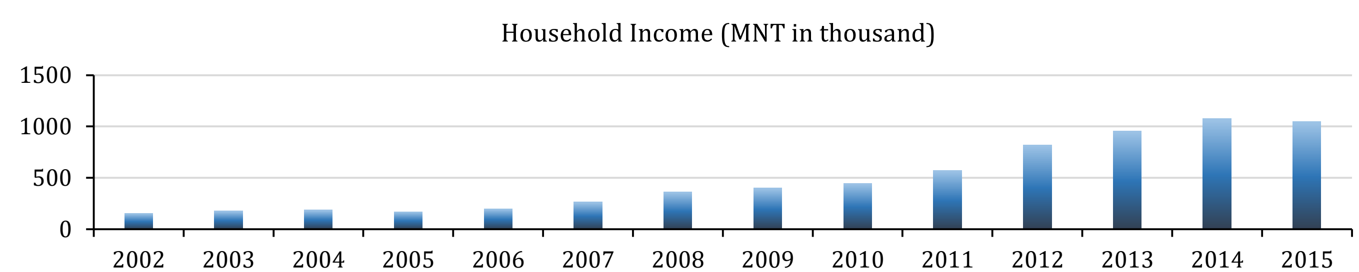




Based on 2002-2015 data, correlation coefficient between RGDP and beer per capita is 0.96.







Source: National Statistical Office of Mongolia

Appendix N : SWOT Analysis

Strengths

- Brand recognition and distribution system (covers all areas in Mongolia and export to 10 countries)
- Cutting edge technology which enhances efficient production
- Enough capacity to maintain growth of each section (made major investments)
- Leading position in alcoholic beverage
- Improving financial performance (after debt obligation, APU's liquidity and solvency will be advanced as revenue preserves its growth)

Weaknesses

- Fluctuation of exchange rate (loan payment complete in USD)
- Loan covenant (restricted to get extra loan until accomplish debt obligation)
- Family business (decision making process can be influenced by family members)

- Expanding market share in each business
- Positive lookout for milk and beer industry
- Growth in global market, especially in Inner Mongolia
- High entry barrier in alcoholic business
- Consumers' appreciation of products as quality

Opportunities

- New competitors on dairy market, including important private label brands
- Substitute product, especially in milk industry
- Instability of legacy (any change of taxes impact on company performance)
- Slow economic growth (it will contract potential growth)

Threats

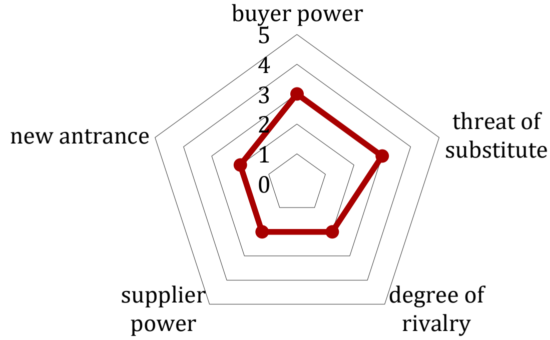
Source: Team Estimates

Appendix K : Porter's 5 Factors Analysis

LEGEND

0	No threat to APU
1	Insignificant threat to APU
2	Low threat to APU
3	Moderate threat to APU
4	Significant threat to APU
5	High Threat to APU

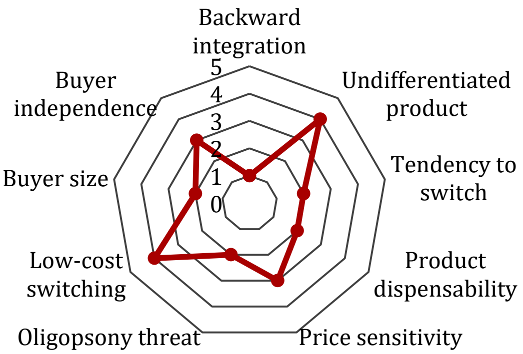
Vodka	46%
Beer	41%
Milk	11%
Others	2%



Methodology
We estimated index of factors by weighted average of each field. Weight is based on proportion of revenue.

Buyer Power

Driver buyer power in APU



Buyer Power is Moderate

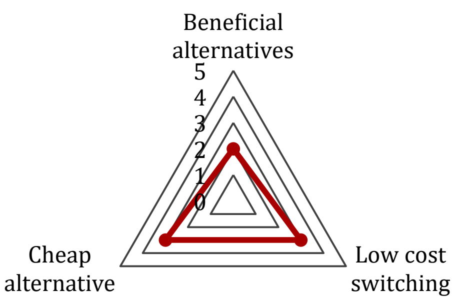
Switching costs are mostly low and can boost buyer power, however, overall consumer demands forces them to stick to popular products , which reduces their buyer power. Because there are several other strong competitors that take up a big share of the market, the APU Company always analyzes consumers' preferences and tastes, and tailors their products to fit them.

	Backward integration	Undifferentiated product	Tendency to switch	Product dispensability	Price sensitivity	Oligopsony threat	Low-cost switching	Buyer size	Buyer independence
Vodka	1	4	3	2	3	2	4	1	2
Beer	1	2	2	2	2	2	4	2	3
Dairy	1	2	1	3	2	2	4	2	3
Others	1	5	3	2	3	2	5	1	4

Source: Team Estimates

Threat of Substitute

Factors influencing the threat of substitutes in APU Company



Threat of Substitute is Moderate

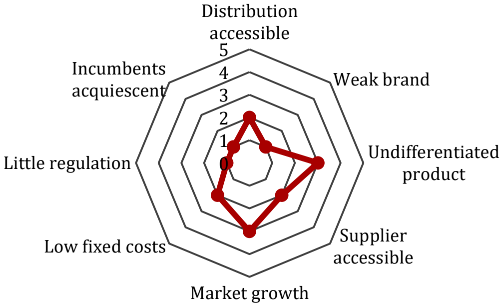
Other beverages, such as tea, coffee, milk, and tap water, are the main substitute for soft drinks and alcoholic beverages. The switching costs for retailers are low for they can stock their stores with other popular products. Tap water is a cheaper substitute for bottled water. Most of the leading players in the market have diversified products by producing different types of beverages from soft drinks to coffee, which reduces the threat of substitutes. It is very hard to define the benefits of alternatives as it highly depends on user preferences.

Source: Team Estimates

Appendix K : Porter's 5 Factors Analysis (Continued)

New entrance

Factors influencing the likelihood of new entrants APU



There is low threat for new entrants in the market

There is an increasing opportunity to enter the market on a small scale . Demand for organic products has been increasing. To seriously compete with the leading companies, new entrants should operate on a large scale. This is a barrier to entry that requires a significant amount of capital as many consumers are not immediately guaranteed. Additionally, leading players have already established brand recognition which is very significant in the beverage market. New entrants target areas where big players tend to have little interest in.

These new players need access to distribution channels. This is a big problem as retailers are more likely stock popular brands that consumers are familiar with. Since the economic downturn, producers needed to find cost-efficient that will help in differentiating products. This resulted to the expanded usage of alternative packaging materials, such as barrier films and pouches. Innovative packaging of additional features aims to attract more customers. On the other hand, alcohol beverage production has a lot of rules which hinders new entrants.[3]

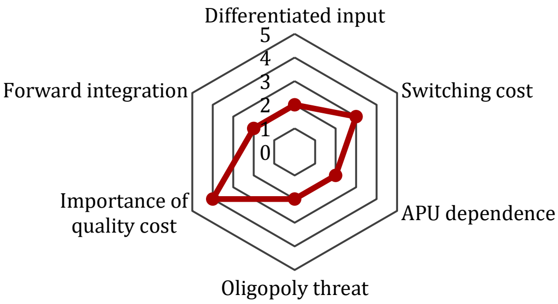
	Distribution accessible	Weak brand	Undifferentiated product	Supplier accessible	Market growth	Low fixed costs	Little regulation	Incumbents acquiescent
Vodka	2	1	2	1	3	2	1	1
Beer	2	1	3	3	3	2	1	1
Dairy	2	2	4	4	4	2	1	2
Others	2	2	4	3	3	2	1	2

Source: Team Estimates

Supplier Power

Supplier power is moderate

Drivers of Supplier power in APU Company



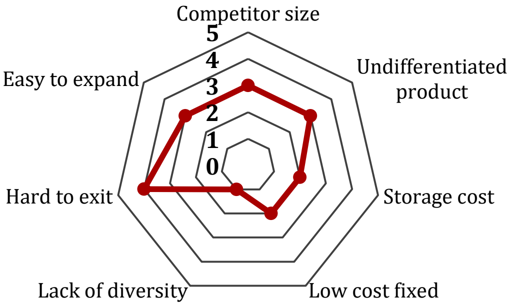
Depending on the type of beverage, its production requires various raw materials and processes. Brewing beer requires malted grain and hops and manufacturing soft drinks requires sweeteners, thus, requiring a range of suppliers in the market. The required raw materials are highly specific and so the market is reliant on specific suppliers. However, these materials are much undifferentiated and can choose alternatives if necessary. Some producers are producing their own raw materials, disposing their need for suppliers. Alternatively, suppliers can also sell their products to the market, for example, barley as animal feed. Furthermore, suppliers can produce their own products, especially in milk manufactory, though established companies will significantly reduce the chance of success.

	Differentiated input	Switching cost	APU dependence	Oligopoly threat	Importance of quality cost	Forward integration
Vodka	2	3	1	1	4	2
Beer	3	3	3	2	4	2
Dairy	2	2	1	1	4	2
Others	1	2	1	1	2	2

Degree of Rivalry

Factors influencing the degree of rivalry in APU Company

There is low threat for degree rivalry in the market



In 2015, APU Company was the largest player on the vodka and beer market in Mongolia. The following companies are its major competitors: MBC, GEM International. The concentration of the vodka, beer and milk market is relatively high. The top 5 companies hold over 80% of the domestic markets(reference?). Consequently in beer market, each company has a desire to win a larger share of the market. Due to increased competition, APU Company adopted new packaging and processing technologies in order to improve products in terms of quality.

Source: Team Estimates

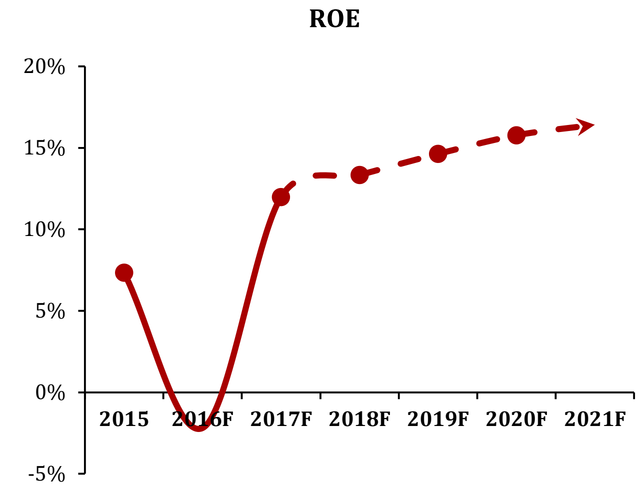
Appendix L : Key Financial Ratios

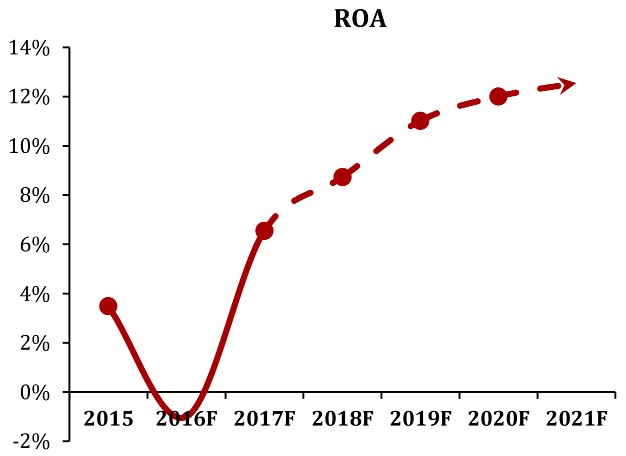
Key Financial Ratio	2014	2015	2016F	2017F	2018F	2019F	2020F	2021F
Cash flow								
Revenue (MNT in bn)	198.5	210.1	227.3	245.6	265.0	291.0	325.3	359.0
Revenue Growth	2%	6%	8%	8%	8%	10%	12%	10%
EBITDA (MNT in bn)	26.2	53.7	47.8	52.1	54.6	60.4	68.1	75.8
Unlevered Cash Flow (MNT in bn)	1.3	41.7	48.4	37.1	37.2	39.3	42.3	47.4
Cash Flow of Operation (MNT in bn)	11.3	45.2	52.0	40.8	41.0	43.4	46.4	51.7
Profitability Ratio								
Net income margin	-5.1%	5.1%	-1.3%	7.6%	8.9%	10.1%	11.3%	11.8%
Operating income margin	6.2%	16.3%	12.4%	13.1%	13.0%	13.8%	14.6%	15.3%
EBITDA Margin	13.2%	25.6%	21.0%	21.2%	20.6%	20.8%	20.9%	21.1%
Unlevered Cash Flow Yield	0.6%	19.9%	21.3%	15.1%	14.0%	13.5%	13.0%	13.2%
Return on Equity	-7.5%	7.3%	-2.2%	12.0%	13.3%	14.6%	15.8%	16.4%
Return on Asset	-3.0%	3.5%	-1.0%	6.5%	8.7%	11.0%	12.0%	12.6%
Liquidity								
Current ratio	1.70x	1.30x	1.28x	1.11x	1.07x	1.17x	1.90x	2.42x
Quick ratio	0.89x	0.40x	0.47x	0.38x	0.32x	0.32x	0.57x	1.10x
Cash ratio	0.50x	0.13x	0.10x	0.15x	0.08x	0.07x	0.18x	0.68x
Solvency								
Debt-to-Asset	0.60x	0.52x	0.54x	0.45x	0.35x	0.25x	0.24x	0.24x
Debt-to-Equity	1.50x	1.10x	1.20x	0.83x	0.53x	0.33x	0.32x	0.32x
Financial Leverage	2.50	2.10	2.20	1.83	1.53	1.33	1.31	1.31
Interest Coverage	4.7x	1.8x	5.1x	5.7x	10.4x	26.3x		
Fixed Charge Coverage	1.4x	1.1x	1.6x	1.5x	1.6x	1.9x		
Activity Ratio								
Total Asset Turnover	0.72x	0.59x	0.69x	0.75x	0.86x	0.99x	1.09x	1.07x
Equity Turnover	2.28x	1.47x	1.44x	1.66x	1.57x	1.50x	1.45x	1.40x

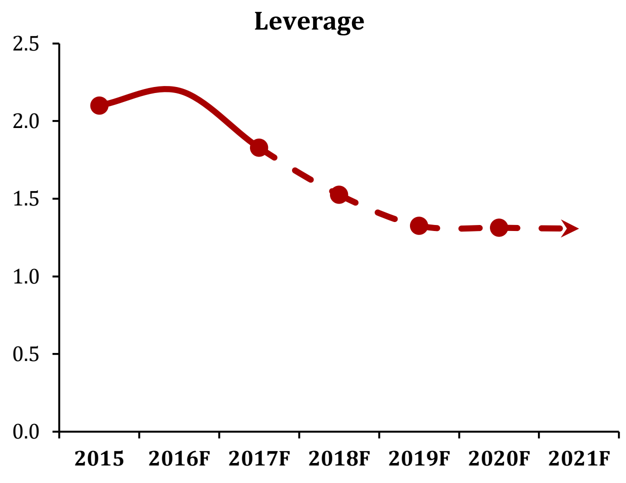
Source: Company Data, Team Estimates

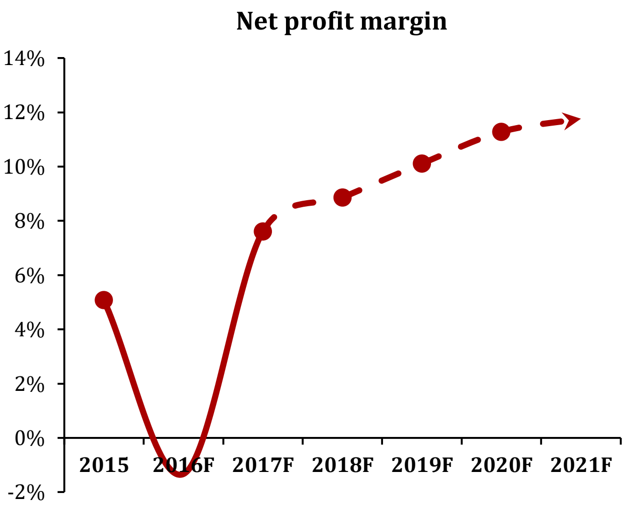
Appendix M : Du Pont Analysis

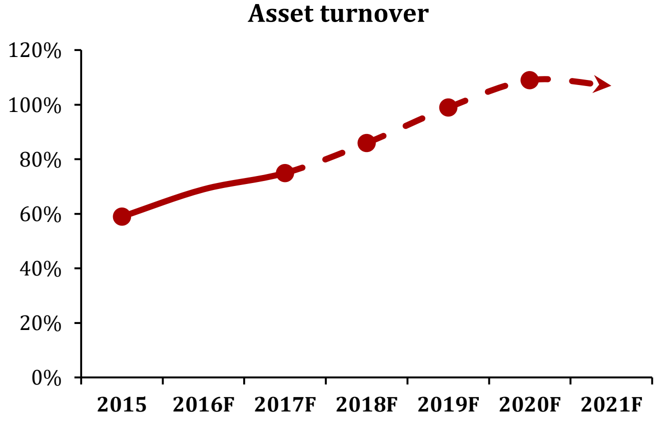
DuPont analysis of ROE	***2015***	***2016F***	***2017F***	***2018F***	***2019F***	***2020F***	***2021F***
ROE (Net income/Avg equity)	7.33%	-2.20%	11.98%	13.33%	14.62%	15.78%	16.41%
ROA (Net income/Total assets)	3.49%	-1.00%	6.55%	8.74%	11.02%	12.02%	12.55%
Leverage (Total assets/Total equity)	2.10	2.20	1.83	1.53	1.33	1.31	1.31
Net profit margin (Net income/Revenues)	5.08%	-1.33%	7.61%	8.86%	10.11%	11.28%	11.76%
Asset turnover (Revenues/Total assets)	59.00%	69.00%	75.00%	86.00%	99.00%	109.00%	107.00%











Source: Company Data, Team Estimates

Appendix P : Board Committee Positions

Audit Committee	Title
J. Unenbat	Chairman
B. Batbayar	Member
S. Erdene	Member
Nomination Committee	***Title***
P. Batsaikhan	Chairman
S. Erdene	Member
Kh. Khamkhoev	Member
Compensation Committee	***Title***
S.Gromov	Chairman
A. Sivaev	Member
Kh. Barrett	Member

Source: Company Data

Appendix Q : APU Management team

Name	Title	Tenure	Educational Background	Other Position	Career Background
Ts. Erdenebileg	Chief Executive Officer since 2008	9 years	Masters of Engineering from Technical University of Kiev	Board Member of Corporate Governance Development Center Winner of the Best CEO award of the Bloomberg Awards 2014	Engineer, Chief Manager in Gobi JSC, CEO in Erdenet Carpet JSC
G. Enkhbileg	Chief Operating Officer since 2012	13 years	Masters of Business Administration degree from La Trobe University of Australia	Member of the Association of Certified Public Accountants and the Council of Certified Tax Accountants of Mongolia	Chief accountant in local private companies, Finance director of Capital Group LLC
B. Tuvshin	Chief Financial Officer since 2003	13 years	Masters of Business Administration from MIB University of Italy,	Member of the Association of Certified Public Accountants and the Council of Certified Tax Accountants of Mongolia	Economist in Trade Development bank, Chief Accountant in Erel bank
A. Mendbayar	Project Director since 2012	12 years	Graduate of University of Applied Sciences FHTW, Germany		Manager in Hanns-Seidel Foundation
D. Ariunaa	Corporate Communications and Innovation Director since 2013	11 years	Master sof Business Administration from the Moscow State University		Have a rich experience in marketing of beverages
M. Battseren	Aministrative and HR Director	No information	Graduate of The Riga Institute of Civil Aviation, Citi&Guilds of London Institute		Director of HR Department in New Progress Group LLC

Source: Company Data

Appendix R: Questionnaire Survey

Total participants: 305			
Question type	Answer	Response percentage	Response number
Gender:	Female	60%	183
	Male	40%	122
Personal average income:	below than 300,000	32%	97
	300,000-500,000	12%	37
	500,000-800,000	24%	73
	800,000-1,100,000	13%	41
	1,100,000-1,500,000	8%	24
	above than 1,500,000	11%	33
Which company's dairy product do you consume?	Suu /СҮҮ/	57%	175
	APU /АПУ/	17%	53
	Teso /Тэсо/	4%	12
	Monfresh /Монфреш/	1%	4
	Vitafit /Витафит/	1%	4
	Gum /ГУМ/	0%	0
	Bottled milk, dairy products /Задгай сүү, тараг/	16%	49
	Other	3%	8
Do yo always buy same company's product?	Yes	60%	181
	No	41%	124
Based on your opinion, dairy product's consumption is expected to:	Increase	65%	199
	Decrease	7%	20
	Show no change	28%	85
If your income increases, dairy product's consumption will:	Increase	49%	150
	Decrease	51%	155
	Show no change	0%	0
Which company's beer do you consume?	APU /АПУ/	40%	122
	SBB /Спирт бал бурам/	37%	114
	Gem International /Жем Интернэшнл/	3%	8
	Casstown /Касстоун/	4%	12
	Other	16%	49
Do yo always buy same company's product?	Yes	35%	107
	No	65%	198
Based on your opinion, beer's consumption is expected to:	Increase	25%	77
	Decrease	19%	57
	Show no change	56%	171
If your income increases, beer consumption will:	Increase	19%	57
	Decrease	8%	24
	Show no change	73%	224
Which company's vodka do you consume?	APU /АПУ/	57%	175
	SBB /Спирт бал бурам/	8%	24
	Gem International /Жем Интернэшнл/	17%	53
	Other	17%	53
Do yo always buy same company's product?	Yes	23%	70
	No	77%	235
Based on your opinion, beer's consumption is expected to:	Increase	13%	41
	Decrease	39%	118
	Show no change	48%	146
If your income increases, beer consumption will:	Increase	13%	41
	Decrease	12%	37
	Show no change	75%	228

Source: Team Survey

Disclosures:

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