

## **Modeling Cannabis Businesses and Costs of Legal Compliance**

**Draft**

**Luigi Zamarra, CPA**

### **Introduction**

The models constructed for this task will help the Washington State Liquor Control Board anticipate how various taxes—including the new excise tax—will impact the previously illicit cannabis industry.

In order to construct a typical business model for each of the three license-types (producer, processor, and retailer), we performed what may be the first benchmarking studies for the cannabis industry.

This study included ten producers, five processors, and ten retailers to develop profit and loss benchmark percentages. Using this raw data, we constructed an image of a typical business where all expense line items are shown as a percentage of gross revenues. We have broken down the expenses between those necessary for an illicit business and those additional expenses that are necessary for a legal business.

We then added expenses for the Washington State excise tax and all of other types of taxes that will be required of a legal operator. We have added input fields to allow the user of the model to make assumptions as to the percentage of statewide industry businesses that will be compliant for each type of tax.

We have run various scenarios with the model in order to gain an understanding of the following:

- (a) What happens to the net income of the typical business as they become compliant with all of the various taxes, assuming that the price paid by the consumer remains the same;
- (b) What happens to the price that must be paid by the consumer as the industry becomes compliant with all of the various taxes, assuming that the net income of the business remains the same?

We have built the model to allow changes to input variables easily to show the impact of various assumptions. This paper analyzes compliance factors typical for the industry that will have a bearing on understanding the dynamics of how taxes interact with previously illicit market prices and previously illicit profits for business operators.

### **Understanding Consumer Behavior**

It would be beyond the scope of this paper to consider in detail the interplay between taxes, price, and the consumer's choice between the licit and illicit markets. These issues have been more fully addressed by other members of the BOTEC Team.

Anecdotal evidence suggests that consumers will pay a higher price for legal, tested, and regulated marijuana than for black market product. What is not clear is how much more consumers would be willing to pay. If the price premium to purchase from a legal operator is set too high, consumers at some point will prefer to purchase from an illicit operator if doing so will save them significant money.

This modeling is designed to show the impact on prices and profits; we will leave the conclusions as to the effect on consumer behavior to others who may find the modeling helpful to their understanding.

### **Understanding Business Operators and Business Profits**

Business operators understand their profits by reference to what they have invested into the business, since they need to obtain a return on their investment. This return comes in many forms. For purposes of this project, we have chosen to focus on the main three forms of repayment:

- (a) Long-term loan interest payments
- (b) Executive group salaries
- (c) Actual or true net income after deductions for the previous two.

Most business models will group these three together when analyzing business values. EBITDA is a common business acronym for "earnings before interest, taxes, depreciation and amortization." However, because we want a model that takes into account depreciation and amortization, we have factored estimates for these into our modeling. The other items we have grouped together as a total of net income subject to corporate income tax.

We recognize that business owners will have a choice as to how much they take out as salary and interest versus how much they take out as dividends. We further recognize that salary and interest on loans are deductible to the business before calculating the business income taxes. However, we feel it is useful to think of these items together, since any deduction for salary and interest payments will still be taxed, only they will be taxed to the

individual business owner. For simplicity, we feel it is easiest to group these together and measure the income taxes using the corporate tax rate.

### **Compliance Rates**

Not all businesses comply completely with every tax law. Although when a business does comply, it will tend to comply with most, after a transition period from illicit operations. We have built this model to allow different assumptions regarding the percentages of compliance when analyzing the statewide industries.

### **Producer Activities versus Processor Activities**

In the data we have collected from producers, virtually all of them have performed the finishing procedures themselves: drying, trimming and curing. These procedures are part of production, not part of processing. Therefore, all of the costs for these procedures are already included in the cost data of the benchmarks presented here for producers. This conforms to existing industry practices. It may be difficult to change this industry norm to have these finishing procedures performed by a different business, i.e., the processor, since that would entail transportation of plants during a time when the plant is vulnerable to damage, disease and theft.

### **Producer Model**

The benchmarks for producers tell the story of a typical farmer, with very low variable costs and very high net incomes. For these businesses, revenue is generated mainly from the products of labor, rather than an investment in capital assets or from the resale of product purchased with working capital. The gross margins are very high at 79% and the net income of the base illicit operation is likewise relatively high at 53%. Total variable costs were 20.6% and total fixed costs were 26.2%.

Most producers have much lower gross revenues than retailers. We have found the average producer is grossing around \$500,000 annually under existing market conditions. Assuming industry-wide revenues to producers of \$500 million, this data suggests that Washington State might contain roughly 1,000 producers (counting both black and gray markets).

### **Producers' Added Costs for Legal Operations**

These are not as significant as we would have expected. Because of various issues related to federal enforcement against producers, fewer of these companies are operating with all of the costs needed for fully legal operations; we have had to make some assumptions. We have assumed workers compensation insurance and payroll taxes will approximate those for retailers. Other added legal costs include insurance, security and professional fees.

Please note that professional fees do not include personal criminal defense funds that are sometimes set aside. In total, these added costs were only 5.5 percent of gross revenues, resulting in a net income margin of 48.7%.

The large resulting net income all goes into the profit retained by the grower. This large net is in line with what a talented and experienced grower currently expects to receive. Based upon an average sized operation of \$500,000 gross, the grower is taking \$238,600 into income after these costs, but before excise and income taxes.

### **Producers' Added Excise Tax**

The excise tax for the average sized producer is expected to be \$125,000 per year (25% of \$500,000). Assuming a high compliance rate of 99%, the State can expect to receive \$123,750,000 annually based upon an assumed statewide producer market of \$500 million.

However, two factors affect the expected excise tax collections from producers: (a) the compliant producer will want to increase prices to recoup the cost of the excise tax, and this price increase will itself result in more taxes collected, (b) the compliance rate statewide may be materially less than 99%.

We assume that those who are compliant with the excise tax will also tend to be compliant with federal and state taxes. This is important in our analysis, since the excise tax is a deduction for federal income tax purposes, and we want to measure the impact based upon after tax take home pay of the producer.

### **Producers' Added Federal and State Taxes**

The Business and Occupation tax for wholesalers is currently .484% (or 48.4 basis points). This tax is not very material at \$2420 for the average grower size of \$500,000. Taking the statewide industry as a whole, and assuming full compliance, that computes to \$2.4 million state revenues. Because the tax rate is quite low, this tax has a relatively high compliance rate: 97% is assumed as a starting point (the WSLCB might obtain information to confirm compliance rates for the B&O tax).

Federal income taxes are much more significant. We have assumed that the grower is a corporation subject to the relatively flat 34% corporate tax rate that applies to most medium sized businesses (this assumption is made for simplicity and understanding of the model). We have also assumed that a minimal impact of IRC Section 280E, which generally allows most expenses for producers since most of the expenses may be properly treated as Cost of Goods Sold. Delivery and wholesale selling costs are not very material to the overall operation.

### **Impact of Taxes on Profits and Prices for the Producer**

If we assume that the market wholesale price of marijuana will remain the same at the current market price, the average producer will see his after-tax take home pay reduced from \$238,600 to \$73,400.

If the producer would like the same take home pay after complying with all taxes as s/he had while illicit, s/he would need to increase the wholesale price by 68%. A pound of marijuana that previously sold for \$2,500 would then have to sell for \$4,200. Since the legal market is not likely to pay this much more, it is likely the producer will be taking home much less pay.

This makes logical sense because (a) federal taxes are half of after tax take home pay, and (b) the excise tax rate is relatively large.

A more realistic price increase to anticipate from the producer would be 25%, matching the excise tax rate. The average producer would take home \$134,900 for operating a producer business that was selling the same quantity of marijuana and generating \$625,000 of gross revenues. The same pound of marijuana that sold for \$2,500 would now be priced at \$3,125.

This might appear to be a reasonable outcome. The table below summarizes some of these data points (the first four rows could be viewed as the new profit paradigm and the last two rows as the old profit paradigm):

<b>Price Increase</b>	<b>Price per Pound</b>	<b>Total Gross Revenues</b>	<b>After Tax Take Home</b>
10 Percent	2,750	550,000	97,981
20 Percent	3,000	600,000	122,572
25 Percent	3,125	625,000	134,867
35 Percent	3,375	675,000	159,457
60 Percent	4,000	800,000	220,933
75 Percent	4,375	875,000	257,818

**Retailer Model**

The Benchmarks for the retailer model tells the story of a typical retailer from any other industry, where the direct Cost of Goods Sold is a little more than half of the selling price. Taking into consideration the other variable direct costs of packaging, testing, and lost/damaged inventory, the resulting gross margin is 60.4%. After factoring in fixed costs the net income margin of illicit operations averages 18.25%. Here there is more risk and costs for the initial investment in build-out and the maintenance of a workforce that is much larger than for a producer.

Because of the lower margins, most retailers tend to have much higher gross revenues than producers (at least in the historical markets). We have estimated the average retailer is grossing slightly more than \$3.1 million annually under existing market conditions (excluding outliers from this average). Note that this assumes that the retailer is a storefront, not a delivery service, as storefronts tend to be larger. Based upon this data, we might expect there to be approximately 350 retailers in Washington at full market.

### **Retailers' Added Costs for Legal Operations**

All of the retailers surveyed for the benchmark study were chosen because they were operating as legally as possible with the support of state and local governments. As a result, the data for the costs necessary for legal operation may be seen as more reliable. All of these retailers were paying payroll taxes, insurance and professional fees, and all but two were paying workers compensation insurance. In total these costs totaled 5.6% of revenues, resulting in a "modified" net income margin of 12.7%.

This "modified" net income margin is made up of three components: (a) interest on long-term debt of approximately .8% (80 basis points), (b) Executive Group Salaries of 5.3%, and (c) net income of the corporate body of 6.6%. As discussed above, these are best viewed together as a group; simplest to model and understand the income tax impact by treating all of these as subject to corporate income tax rates, so that the after tax net income available to the owners may be comparable. For the average sized retailer grossing \$3.1 million, the business can expect net income of \$392,200.

### **Retailers' Added Excise Tax**

The excise tax for the average sized retailer is expected to be \$775,000 per year (25% of \$3.1 million). Assuming a high compliance rate of 99%, the State can expect to receive \$268,537,000 annually based upon an assumed statewide retailer market of approximately \$1.1 billion.

This report analyzes the results of operations for producers, processors and retailers separately. We assume that the gross margin relationship for the retailer will hold true to the normal retail benchmarks even though excise taxes applied to producers and

processors are likely to result in higher wholesale prices. In other words, if the average producer must increase the wholesale price by 25% to maintain a viable take home pay amount, we assume that the retailer will still analyze their cost structure to peg this wholesale cost to 56% of their retail price *before making any price increase at the retailer level for the excise tax*. Please review the detailed Retailer Model to gain a deeper understanding of this assumption. Other members of the BOTEC Team are working on pricing models that factor in the effects of the multi-layered excise tax.

Just as with producers, compliance rates and price increases needed to cover the excise tax will also have an impact on the amount of excise taxes collected from retailers, and the interplay between the excise taxes, price increases to cover the taxes, income taxes, take home pay are complex.

### **Retailers' Added Federal and State Taxes**

The Business and Occupation tax for retailers is currently .471% (47.1 basis points). For the average retailer grossing \$3.1 million, this tax is \$14,601, again not very material to the overall business. For the statewide retail industry, this tax could be expected to generate \$5,110,000 for the state, assuming 100% compliance, or \$4,957,000 at a 97% compliance rate. As with the producers, we can expect a relatively high compliance rate and a minimal impact on pricing behavior.

Federal income taxes will have a much larger impact on pricing behavior, especially when we start to consider implications for IRC Section 280E. Retailers, unlike producers and processors, have many costs that might be disallowed for tax deduction purposes under this law provision. In theory, if Section 280E were to be strictly applied, the retail marijuana industry simply could not exist because the economics could not support income taxes calculated on gross margins. Under this theory, the excise tax the retailers pay to Washington would not be deductible. Using the average sized retailer as an example, the federal income tax would be \$417,400, but the retailer would only net \$392,200 before payment of any excise tax or federal income tax. Thus, even excluding the retailer excise tax, the retailer would not have enough cash to pay the federal income tax (assuming strict application of Section 280E).

For this reason, in order to continue with this analysis, we must assume that 280E will not apply to retailers strictly. The user of the model can take into account Section 280E at a macro level by entering the Section 280E Disallowance Rate. Based upon the current situation with IRS auditors, it might be reasonable to assume that Section 280E will reduce expenses available for deduction by 20%; so as a baseline we have entered the Section 280E Disallowance Rate at 20%. (This is an assumption wrought with issues that are beyond the scope of this paper.)

The conclusion we have drawn from this analysis is that the conflict between federal and state marijuana laws will have a direct impact on state tax revenues actually collectible from the industry.

### **Impact of Taxes on Prices and Profits for the Retailer**

#### **Ignoring IRC Section 280E**

If we assume that the retail price of marijuana remains the same at the current market price, the average retailer will *lose* (\$397,400) after payment of the excise tax and B&O tax. Because of the loss, there will be no federal income taxes due, assuming 280E is not applied.

If the retailer would like the same take home pay it had while illicit, after complying with all of the taxes, it would need to increase the retail price by 44%; a gram that previously sold for \$12 would now have to sell for \$17.28. Various market forces would again seem to indicate that the retailer is likely to take home much less pay.

Assuming that the market would be willing to pay the equivalent of the excise tax amount in terms of higher prices in order to purchase from a legal operator, the retailer might set their prices 25% higher. The average retailer will take home \$112,800 after taxes for operating a retail business that was selling the same quantity of marijuana, previously grossing \$3,100,000 but now grossing \$3,875,000 million.

Based on salary data from other non-marijuana industries, that is at the low end of the range for take home pay for operating a business of this size. For comparison, the net income before income tax (after excise tax) would be \$170,800.

Because the profit margins for retailers are so much lower than those for producers, we see that after tax take home pay is much more sensitive to price increases.

The table below summaries some data points assuming that Section 280E will not apply:

<b>Price Increase</b>	<b>Price per Gram</b>	<b>Total Gross Revenues</b>	<b>After Tax Take Home</b>
-----------------------	-----------------------	-----------------------------	----------------------------

10 Percent	13.20	3,410,000	(169,361) loss
20 Percent	14.40	3,720,000	37,950
25 Percent	15.00	3,875,000	112,754
30 Percent	15.60	4,030,000	187,459
35 Percent	16.20	4,185,000	262,065
45 Percent	17.40	4,495,000	410,979

### **Factoring in Section 280E**

IRC Section 280E is currently a reality that retailers will have to take into account when setting prices to make a living. Currently, some IRS agents are accepting 280E allocations that disallow 20% to 25% of the expenses (other than Cost of Goods Sold).

The table below summarizes these same data points assuming that Section 280E will result in 20% fewer deductions for federal income taxes:

<b>Price Increase</b>	<b>Price per Gram</b>	<b>Total Gross Revenues</b>	<b>After Tax Take Home</b>
-----------------------	-----------------------	-----------------------------	----------------------------

10 Percent	13.20	3,410,000	(169,361) loss
20 Percent	14.40	3,720,000	25,670
25 Percent	15.00	3,875,000	100,326
30 Percent	15.60	4,030,000	174,873
35 Percent	16.20	4,185,000	249,310
45 Percent	17.40	4,495,000	397,856