

**Minnesota's Revenue Volatility**  
**Presented by Laura Kalambokidis**  
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**Minnesota taxes make varying contributions to tax policy goals**

The 2011 Tax Expenditure Review Study (of which I am one of several authors) named three generally agreed-upon, guiding principles, or goals, of tax policy. While generating adequate revenue, taxes should: (1) have a limited impact on economic decisions (the principle known as efficiency), (2) treat similarly situated people similarly (known as horizontal equity), and (3) be simple to administer and comply with.

The study cited several other relevant goals, including levying taxes according to taxpayers' ability to pay (also known as vertical equity) and having a stable source of revenue—the subject of today's presentation.

Tax policy must balance these goals, which are often in conflict with one another. For example, a tax based on ability to pay may not be the simplest, and reducing dependence on a volatile revenue source may make it harder to generate adequate revenue.

In addition, non-tax policies can be used to address the same goals. For example, income support programs can ease the burden of regressive taxes, and budget reserve policies can manage the risk of volatile revenues.

**Revenue volatility and growth vary by source**

MMB's revenue volatility analysis is based on a methodology developed by my predecessor, Prof. Stinson, and Economic Analysis economist Matt Schoeppner for the 2008 State Budget Trends Study Commission. Since then, Stinson and Schoeppner, with input from John Peloquin of Economic Analysis, have updated that analysis to take into account more recent data, including the impact of the Great Recession. The analysis is the basis of a report MMB releases on January 15 each year recommending the size of the state's budget reserve.

From that analysis, this chart shows the growth rates, estimated volatility, and share of total general fund revenues for each major Minnesota general fund revenue source. To estimate revenue volatility, we first measure the underlying trend growth rate in the revenue source and

then observe the standard deviation from that trend. The forecast shares of general fund revenues are shown for both the current (FY 2014-15) and next (FY 2016-17) biennia.

Minnesota's corporate tax is measured as most volatile of the major sources, with an estimated volatility almost 5 times that of the general sales tax, which is one of the most stable revenue sources. The two taxes generate very different shares of total revenue, however, with the corporate tax making up only 6.8 percent of revenues (in FY 2014-15), compared to more than  $\frac{1}{4}$  of revenues for the sales tax.

While still relatively low compared to the corporate income tax, the individual income tax—making up more than half of general fund revenues—is the second most volatile of the major sources.

Overall general fund volatility—the 4.3 percent you see in the second column— depends on (1) the volatility of individual sources of revenue, (2) the share of total revenue each tax contributes to the general fund, and (3) whether the revenue sources tend to deviate from their trends in the same or opposite directions (that is, whether their changes are negatively or positively correlated).

This last condition is tied to the idea of a diversified investment portfolio: the riskiness of your return is dampened to the extent you have assets in your portfolio whose deviations will offset one another over time.

The corporate tax is nearly  $2\frac{1}{2}$  times more volatile than the individual income tax, but it generates a much smaller share of general fund revenues. So, on a weighted basis, the corporate income tax contributes less to general fund volatility than the income tax.

Ignoring for a moment the relationships between the revenue sources that I just mentioned (the diversified portfolio point), shifting reliance **away from** a more volatile revenue source (e.g., corporate tax) and **to** a less volatile source (e.g., income tax) will slightly **decrease** the overall volatility of the system. However, the correlation between revenue sources can exacerbate or dampen that result. For example, the correlation between the corporate and individual income taxes is measured as slightly negative in recent years (i.e., deviations from trend tend to be opposite from year to year). Therefore, the **decrease** in volatility from shifting reliance away from the corporate tax and toward the income tax is dampened by that negative relationship.

Note also from the table that the most volatile revenue sources are often the ones with the highest historical trend growth rates: 7.0 percent for the corporate tax and 4.0 percent for the individual income tax. This means that, as in the example I just described, reweighting the tax mix to reduce volatility would often come at the expense of a higher trend growth rate.

This is another illustration of the trade-offs among tax policy objectives, one that was examined by the 2008 State Budget Trends Study Commission, of which I was a member. Informed by the work of Prof. Stinson and MMB staff, the Commission report discusses the tradeoffs among tax revenue growth, tax revenue volatility, efficiency, and the distribution of the tax burden. The report notes that adjusting the tax mix enough to significantly reduce revenue volatility will impact revenue growth and tax system progressivity. It may also reduce efficiency through increases in the rates of specific taxes.

### **Minnesota's revenue volatility has increased since the 1990s**

This chart shows MMB's most recent estimate of overall volatility of the general fund over time, along with the current estimated standard deviation of 4.3 percent. The estimates are based on current law and on analysis of the volatility of the bases of Minnesota's major taxes through 2012. The chart shows that general fund volatility nearly tripled over the last two decades, from near 1.6 percent in the early 1990s to 4.3 percent in 2012.

The vertical gray bars indicate the U.S. recessions.

### **Economic factors primarily drive increased revenue volatility**

The primary drivers of this increased volatility are economic, rather than policy, factors.

First, several components of the major tax bases have become more volatile over time. The negative shock from the Great Recession has increased the volatility of the general sales tax, and possibly also the corporate tax base. In addition, we believe the increase in volatility of wages and salaries, long one of the most stable parts of the tax base, is due to the increasing importance of performance-based compensation, such as stock options and bonuses. Also, our estimates of the volatility of non-wage income—composed of capital gains, dividends, taxable interest, business income, and others—have increased significantly since the early 1990s.

Note that non-wage income in general is much more volatile than wages and salaries. Despite the shift toward performance-based compensation, the wage component remains relatively stable, with a volatility measure of 3.3 percent. Non-wage income, on the other hand, is three

times more volatile than wages and salaries. Capital gains, with a volatility measure of 44.2 percent, is the most volatile tax base component we have examined. Other components of non-wage income—such as dividends, taxable interest, and business income—are three to six times more volatile than wages.

This brings me to the second overall economic reason for increased general fund volatility: those more-volatile, non-wage sources of income make up a larger share of income subject to tax. For example, 20 years ago, non-wage sources accounted for 24 percent of adjusted gross income on Minnesota tax returns, and that share has grown to about 30 percent today.

### **Revenue volatility and forecast inform budget reserve recommendations**

Every state revenue system has some inherent volatility, and most states manage the associated risk with some kind of budget reserve. MMB's most recent recommendation for the size of Minnesota's budget reserve was reported in our January 15, 2015, budget reserve report.

MMB's recommendation is that the budget reserve should be a percentage of forecast general fund revenues for each biennium, where the percentage is based on the volatility analysis of the current law revenue system that I have just presented. Therefore, the recommended dollar amount may change (1) because general fund revenue volatility has changed—either because the volatility of the underlying tax bases have changed, or because the tax mix—or relative shares of taxes—have changed; and (2) because forecast revenues have changed.

Based on our volatility analysis, the assumption that the budget is structurally balanced at the start of the biennium, and the objective of limiting to 5 percent the probability that a biennial deficit will exceed reserves, MMB recommends a budget reserve equal to 5.1 percent of non-dedicated general fund revenues (\$1.990 billion= $.051 * \$39.015$  billion) for FY 2014-15 and 5.2 percent of non-dedicated general fund revenues (\$2.166 billion= $.052 * \$41.653$  billion) for FY 2016-17.

**I am happy to take questions.**