# **Relationship of Default Rates to Debt and Income**

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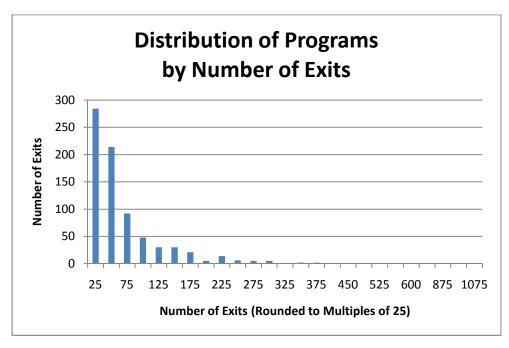
#### **EXECUTIVE SUMMARY**

Default rates increase with increases in debt, debt-to-income ratios, debt-service-to-income ratios and debt-service-to-discretionary-income ratios and with decreases in income and discretionary income.

# **METHODOLOGY**

On August 13, 2010, the US Department of Education released anonymous default, debt, income and related data for 48,803 students who separated from a set of 769 programs at 49 Missouri public and forprofit colleges in 2006 through 2008. This data includes students who dropped out from the programs in addition to students who graduated.

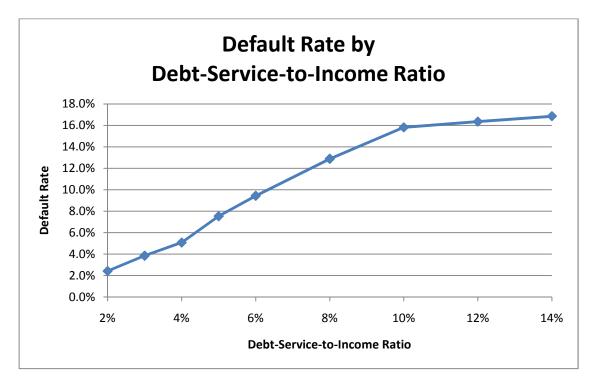
The Missouri spreadsheet is aggregated by program and does not provide borrower level data. However, there is enough data in the spreadsheet to permit comparisons of default rates by various income and debt characteristics. The number of exits per program varied from 6 to 1,068. The distribution of the number of exits per program is illustrated by the following bar chart. More than four fifths of the programs (82%) had 100 or fewer exits, with two-thirds (65%) having 50 or fewer exits. While aggregating the data by program tends to smooth trends by averaging the results, the small number of exits per program helps ensure a close approximation to the experience of individual borrowers.



The size of the Missouri data set is small enough, however, that noise is evident at the higher default rate, income and debt levels, where the number of borrowers is too small. To address this, the data is aggregated where necessary to ensure statistical significance.

#### **DEFAULT RATES BY DEBT-SERVICE-TO-INCOME RATIOS**

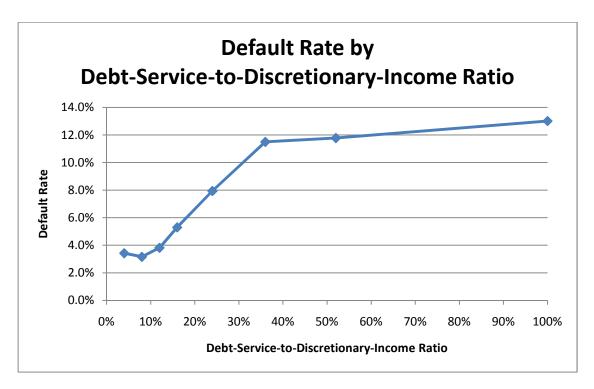
The following chart shows how the default rates increase as the debt-service-to-income ratios increase. Debt service is calculated based on the debt at the institution with an assumption of the 6.8% interest rate and 10-year repayment term of the unsubsidized Stafford loan. As this chart demonstrates, there is a much greater increase in default rates from the 8% to 10% debt-service-to-income ratios than from 10% to 12% and 12% to 14%.



The cumulative default rates for borrowers with a debt-service-to-income ratio of 8% or less is 7.4%. The cumulative default rates for borrowers with a debt-service-to-income ratio of 12% or less is 9.2%. Increasing the debt-service-to-income ratio from 8% to 12% increases the number of borrowers by 27% and the number of borrowers in default by 59%.

# **DEFAULT RATES BY DEBT-SERVICE-TO-DISCRETIONARY-INCOME RATIOS**

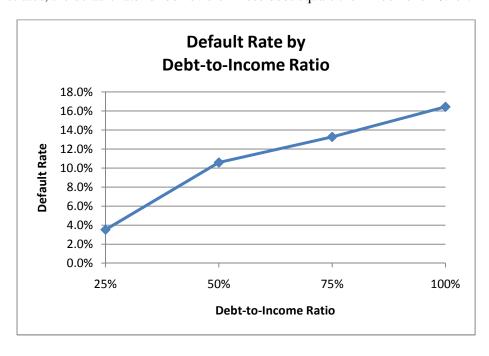
The following chart shows how the default rates increase as the debt-service-to-discretionary-income ratios increase. Debt service is calculated based on the debt at the institution with an assumption of the 6.8% interest rate and 10-year repayment term of the unsubsidized Stafford loan. Discretionary income is defined as the amount by which income exceeds 150% of the poverty line for a family size of one. As this chart demonstrates, default rates begin leveling off at debt-service-to-discretionary-income ratios greater than 36%. A much larger data set of borrower-level data might show a different trend, since the number of borrowers is relatively sparse beyond this debt-service-to-discretionary-income ratio.



The cumulative default rates for borrowers with a debt-service-to-discretionary income ratio of 20% or less is 3.9%. The cumulative default rates for borrowers with a debt-service-to-discretionary-income ratio of 30% or less is 3.9%. Increasing the debt-service-to-discretionary-income ratio from 20% to 30% increases the number of borrowers by 22% and the number of borrowers in default by 72%.

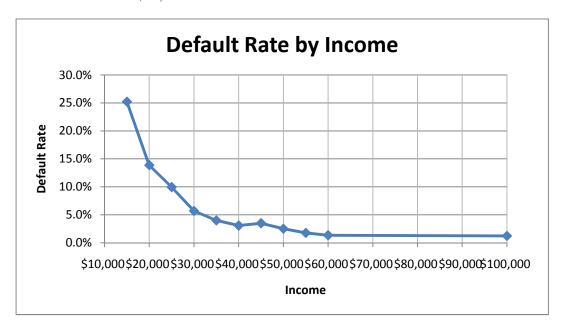
#### **DEFAULT RATES BY DEBT-TO-INCOME RATIOS**

The following chart shows how the default rates increase as the debt-to-income ratios increase. As this chart demonstrates, the default rate for borrowers whose debt equals their income is 16.4%.



# **DEFAULT RATES BY INCOME**

The following chart shows how the default rates decrease as income increases. Default rates level off at less than 2% for incomes of \$60,000 or more.



# **DEFAULT RATES BY DISCRETIONARY INCOME**

The following chart shows how the default rates decrease as discretionary income increases. Default rates level off at less than 2% for discretionary incomes of \$35,000 or more.

