Drawing Inferences From Early Tax Returns; Potential Gains in Forecast Accuracy Due to Technological Innovation

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Outline

- Forecast Issues in Oregon
- Oregon Gross Income-Liability Model
- New processing system/data availability
- Data Methodology
- Analytical Results
- Conclusion
Forecast Issues in Oregon

- May forecast in odd years binds the two-year budget
- Personal Income Tax accounts for 87% of total General Fund revenues
- Gross Income-Liability Model centerpiece of the PIT Collections forecast.

Oregon GI-L Model

- Based on tax return data for full-year filers
- Models eight components of income (Wages, Dividends, Capital Gains, Retirement, Schedule E, etc.) on economic variables.
- Models gross effective tax rate to project resulting tax liability.
- Lag in availability of tax return data a major forecasting obstacle.
Use of “early” return data

- Estimated 80% of 2006 returns processed and available for analysis going into the May 2007 forecast.
- Research question: what inferences can we make from these returns regarding income and tax liability changes?

Data Availability, Faster Processing

Technology:
- New return processing system – “ITX”
- Other significant improvements
- Continued enhancements in coming years

Coordination/Planning:
- Research requests processing push – May 4th
- Work around processing limitations
- Major effort systems poeple
Effect of Faster Processing

- Unknown tax on unprocessed returns – TY 2006 vs. TY 2005

Push to process by May 4th:
- 200,000 tax-to-pay returns
- $1.2 billion (of $5.5)

Data Handling and Analysis

By May 4th, 80% are done

80% SUBSET

Biased!

TAX YEAR 2005 -- COMPLETE DATA

Expect total of 1.7 million (future)

... still biased
Analytical results . . .

Wage and Salary Income

[Bar chart showing wage and salary income from 1998 to 2006 with categories for Early Returns (80% of total) and Total Returns.]
**Capital Gains Income**

![Chart showing capital gains income percentages from 1998 to 2006.](chart)

- Early Returns (80% of total)
- Total Returns

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**Average and Standard Deviations**

![Chart showing average and standard deviations for various income sources.](chart)

- Wages
- Dividends
- Interest
- Capital Gains
- Retirement
- Proprietors
- Schedule E
- Other
- Total
- Liability

- Average
- ST Dev
Conclusions

- Some valued added to analyzing “early” returns.
- Insights should only improve with technological innovations (new processing system), increased use of electronic filing, and additional tax year observations.
- Use of early data requires analysis and coordination of technology and resources.

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Background Information

Gross Income-Liability Specifications

- GI_Wages = F[C, PL_Wages, AR(1)]
- GI_Interest = F[C, IR_3Month, AR(1)]
- GI_Dividends = F[C, PI_DIR, Corp_profits, AR(1,2)]
- GI_CapGains = F[C, MKT_W5000, AR(1)]
- GI_Retirement = F[C, Pop65, PI_Total – PI_Wages, MKT_W5000, AR(1)]
- GI_Proprietors = F[C, PI_Proprietors, AR(1,2)]
- GI_SchedE = F[C, Corp_Profits, AR(1)]
- GI_Other = F[C]
- EffTaxRate = F[CPI, (GI_CapGains+GI_SchedE)/GI_Wages, AR(1)]

Where

GI = Gross Income as reported on FY Oregon tax returns
PL = Personal Income as reported by BEA
Retirement Income

Schedule E Income
Tax Liability

![Diagram showing tax liability with Y/Y Percent Change on the y-axis and years 1998 to 2006 on the x-axis. The diagram compares Early Returns (80% of total) and Total Returns.]