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Date: October 6, 2009

Subject: Revenue Predictions—Cash Receipts

Table 1. Iowa Accrued Revenue Growth Forecasts

Loss Factor	*FY10*	*FY11*	*FY12*	*FY13*	*FY14*
1	3.6	6.1	4.1	4.6	4.6
2	2.6	4.9	2.9	3.4	3.4
<u>3</u>	<u>2.0</u>	<u>4.2</u>	<u>2.2</u>	<u>2.8</u>	<u>2.7</u>
4	1.7	3.7	1.7	2.3	2.3
5	1.4	3.3	1.4	2.0	1.9
6	1.2	3.0	1.1	1.7	1.6
7	1.1	2.8	0.9	1.4	1.4
8	0.9	2.6	0.6	1.2	1.2
9	0.8	2.4	0.5	1.1	0.9
10	0.7	2.2	0.3	0.9	0.8

The new revenue forecast is for <u>cash receipts</u>, and builds on the most recent *Iowa Economic Forecast*, which can be found at the Institute website

http://www.biz.uiowa.edu/economics/econinst/.

The revenue forecast makes use of the most recent available quarterly state income data, <u>*which are for the first quarter of calendar year 2009*</u>, because of a delay by the U.S. Commerce Department in releasing state income data. Because of this delay, the revenue forecast is based on *actual income* data through March 2009, and *predictions* of income data for the second and third quarters from the *Iowa Economic Forecast.* The revenue data are current through September 2009.

The tables indicate optimal forecasts corresponding to a loss function in which a deficit is regarded as being *n* times as costly as a surplus, dollar-for-dollar. The first column indicates the values of *n*. Entries are percentages. I believe that forecasts made with the 3-1 loss ratio in mind have been prudent in the past. The revenue forecasts were made using the same style Bayesian autoregressive model for total receipts and personal income that has been in use by the Institute since 1990. The model has been informed by econometric developments during this period, but the basic structure, which is the workhorse structure of economic forecasting, is the same one that correctly called the sharp slowdown in revenues associated with the recession in 1990-1991. The model did not react quickly or strongly enough to the revenue slowdown associated with the recession in 2001-2, though it did predict the direction change earlier than most states' methods.

While the revenue growth prediction is lower than the prediction made in August, it does not call for a revenue downturn for 2010. Given the other signs of weakness in the economy and revenue growth year-to-date of -5.4%, alternative forecasts may be more pessimistic; the reason this forecast calls for very modest growth in 2010 stems from the conditions under which it is made.

First, year-to-date revenue growth may be a misleading indicator because of the timing of the recession in Iowa. Iowa was hit much later than the rest of the country, and the first three months of fiscal 2009 (July-August 2008) were strong from a revenue point of view. The recession hit Iowa in 2009, and the *Iowa Economic Forecast* indicates that the roughest quarter for personal income growth in this episode is the quarter just completed (July-September 2009). Comparing what might be the trough quarter to a relatively strong quarter a year ago makes the current situation seem weaker than it may seem with hindsight.

Second, much stimulus (ARRA) spending is yet to be implemented. The amount of the stimulus funding still to come is unprecedented, and it will continue over the coming nine months. It will certainly be reflected in revenues yet to be collected. Related to this, the IJOBS is an Iowa program that will inject a planned $830 million into the economy over three years. That spending will also generate related economic activity, much of which is taxed in one way or another at the state level.

Third, the forecast is a statistical one, and is based on optimal (in a precisely definable sense) use of information in the existing data about the temporal interaction of income and tax revenue. The model uses historical relations between income and data together with the current and recent pattern of interactions in the data to make a prediction about the likely course of revenue growth over the next months and years. It takes into account how income and revenue have evolved from historical situations more or less like the one we are in now. In such past episodes, national and state economic policy reacted to then current economic conditions; the current forecast implicitly assumes that policy responses will not be "do nothing" responses, but rather will unfold much as historical responses did. The forecast is not judgemental, and can be reproduced by other researchers armed with the same structure and approach.

Fourth, the upturn is coming; the question is when. This forecast calls for the bottom to occur sometime in the next three months, with rebound to follow. There is much uncertainty in the forecast, as indicated by how rapidly the optimal forecast falls as the loss factor increases.

For these reasons, the model indicates that a prudent forecast is for 2% revenue growth. What this means is that reading history as best we can, and given our current predicament, modest revenue growth is the most likely outcome of the next nine months.

General Economic Outlook

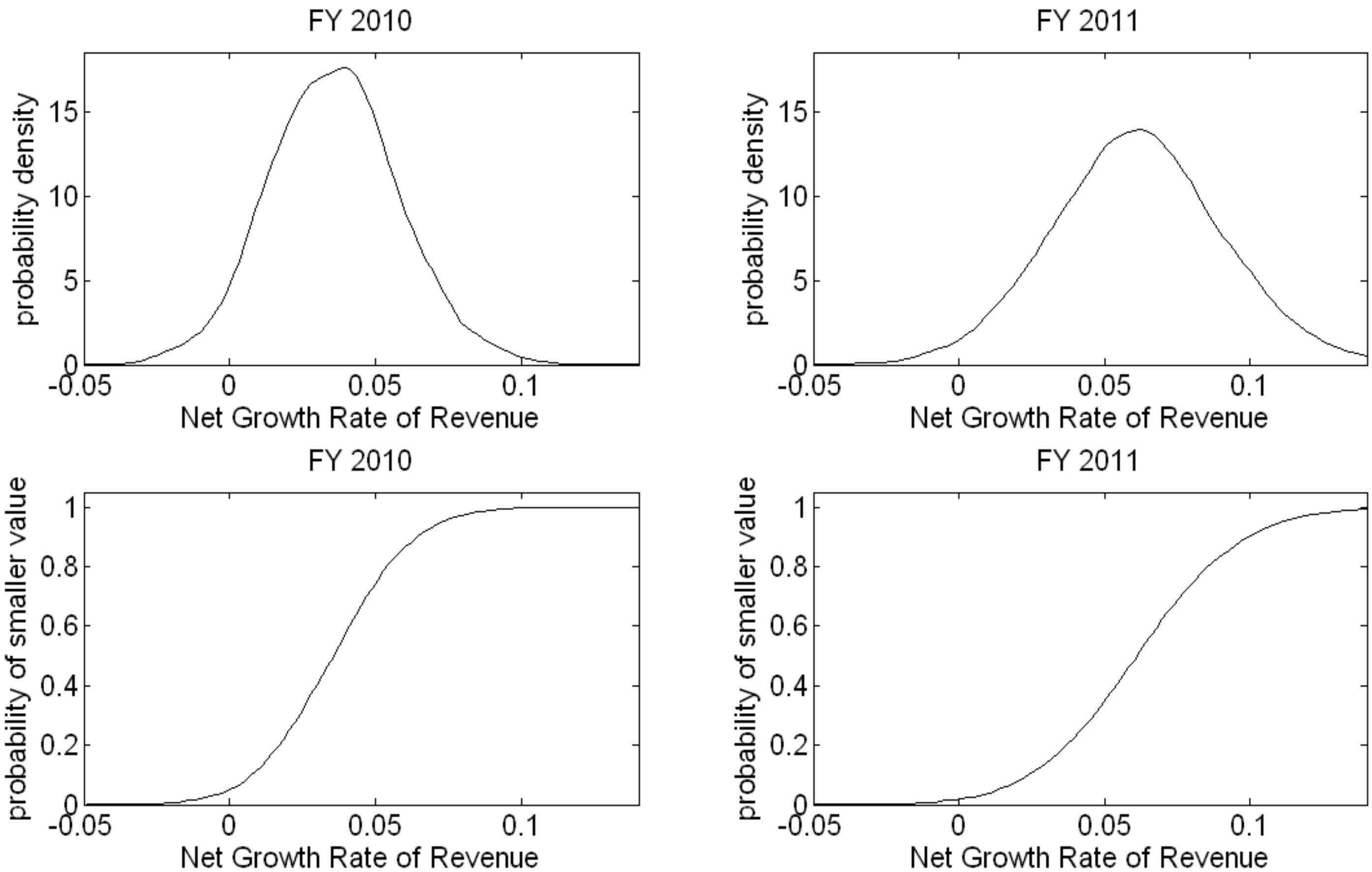
The consensus forecast published in the Blue Chip Economic Indicators (September 10th, 2009) is for **real GDP** growth of -2.6% in 2009 (unchanged from the consensus forecast available in August 2009) and for 2.4% growth in 2010 (up from 2.0% in August 2009). The Blue Chip consensus forecast is for a 2009 **unemployment rate** of 9.2% (down from 9.3% in August 2009) and a 2010 unemployment rate of 9.8% (down from 9.9% in August 2009). The **Consumer Price Index** is predicted to change by -0.5% in 2009 (up from -0.6% in August 2009) and by 1.8% in 2010 (unchanged from in August 2009). The **GDP Deflator** is predicted to rise by 1.4% in 2009 (down from 1.7% in August 2009) and by 1.4% in 2010 (unchanged from August 2009).

The Institute for Economic Research income forecasts are based on the data through the first quarter of 2009 for the state and the second quarter of 2009 for the nation. **Personal Income in Iowa** is expected to grow by -1.1% in 2009 (down from -0.9% in August 2009), and by 0.5% in 2010 (down from 1.1% in August 2009). The forecast for **Real Personal Income** growth (personal income growth adjusted for inflation) is -3.1% in 2009 (down from -2.9% in August 2009) and -0.4% in 2010 (down from 0.03% in August 2009).

Our **employment growth** forecast for 2009 (based on the data through August 2009 for the nation and the state) is -2.9% (down from -2.6% in August 2009). The employment growth forecast for 2010 is -1.3% in 2010 (unchanged from August 2009).

Likely Growth in Iowa Tax Revenue

<u>FY 2010</u> **<u>FY 2011</u>**



Mean:	**3.6%**
Standard Deviation:	**2.2%**

Mean:	**6.1%**
Standard Deviation:	**3.0%**