

Appendix B

Employment Projections

Employment projection methodologies:

Statistical models use a variety of multivariate time-series analysis techniques to project the future based on the known behavior of the recent past. This method works well in periods of steady incremental change, when the past is a good predictor of the future, but it serves less well in more tumultuous economic times with unpredictable shocks, recessions, and rapid technological change. No one could have predicted even as recently as five years ago, the huge growth in the

<p>Methods of forecasting</p> <ol style="list-style-type: none"> 1. Statistical models 2. Employer surveys 3. Focus groups 4. Business group/trade association surveys 5. Expert panel brainstorming
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number of jobs for “webmasters”, for example. Nevertheless, statistical methods do yield the “hard” numbers people and boards feel they need.

Employer surveys can go beyond the body counts in statistical models, to ask about employers’ future hiring plans, for example. However, they are costly to implement at the scale that yields statistically representative results, and they are dependent on enough employers being willing to

respond on time to a government survey. The answers they give to subjective questions about the future can be unduly influenced by the prevailing pessimism or optimism of the month, which itself may or may not be justified.

Focus groups can yield greater in-depth insight than surveys, because their interactive nature allows following up on statements made. However, the outcomes of focus groups depend heavily on the type of participants chosen, and since there are usually fewer than fifteen per group, findings may not be representative of a region’s economy. *Business group or trade association surveys*, such as those regularly conducted by chambers of commerce or economic development organizations, can overcome this limitation by reaching a larger number of employers. Such organizations can be valuable organizers of their members’ input on behalf of the LWIB, although the results also tend to reflect membership interests.

Finally, *expert panel brainstorming* can bring together key individuals with great direct personal knowledge and experience of an industry, to point out what *they* see on the horizon, given their insider strategic knowledge of business developments and coming technological change. This method can break through the disadvantage of statistical models just replicating the past, and can yield insights beyond a structured survey response. However, the results tend to be much more speculative and difficult to operationalize than those obtained through the other four methods.

It is well to remember, though, that economic forecasting is as much an art as a science, particularly in times of instability and rapid change. As the sidebar shows, even prominent private industry leaders have not always been on the mark.

<p>“Did I really say that?” Some projections of the rich and famous...</p> <p><i>“The total worldwide demand for computers will never amount to more than six machines”</i> – Thomas Watson, former head of IBM, 1956.</p> <p><i>“750k of RAM should be enough for everybody”</i> – Bill Gates, 1979.</p> <p><i>“The American mother will never see herself behind the wheel of a minivan”</i> – Senior Executive, Chrysler Motors, 1985.</p> <p><i>“The pace of technology growth in the 1990s means that recessions are now a thing of the past”</i> - Maryland politician, 1999.</p>
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Most LWIBs use a combination of methods – usually a solid statistical base leavened with business insight. One such system often held up as a national model and worth investigating further for possible adoption here, is the one developed in Florida (*see sidebar*).

Florida's "Workforce Estimating Conference"

Florida's "Workforce Estimating Conference" identifies future *high-demand/high-wage occupations*. Participants from the state's Departments of Education, Labor, and Economic development, along with other state officials, consider forecasts of job openings, employment, and earnings, furnished by the state's Department of Labor, and analyze placement information provided by the "Florida Education and Training Placement Information Program" (FETPIP), an inter-agency data collection system that gathers follow-up data on participants in state education, workforce development, and social service programs. The conference establishes by consensus an official list of high-demand/high-wage occupations from which state government agencies work, and which guides the distribution of additional financial incentives for state-funded training institutions that provide courses preparing students for occupations on the list.

For more information: http://www.state.fl.us/edr/conferences/workforce/wec_summary03-27-03.pdf

National employment projections:

The Bureau of Labor Statistics (BLS) list of the ten largest *absolute* increases in employment projected to occur between 2000 and 2010 *by industry* is dominated by the "big four" services industries of retail/eating and drinking places, computers, health care, and government. In the list of the ten largest *relative* increases in employment by industry – as measured by the projected percentage *change* in employment from 2000 to 2010 -- government is largely absent. Its place is taken by those fast-growing business services to which large organizations now contract out functions previously handled internally, such as personnel, warehousing and storage, and management and public relations.

For projections by *occupation*, the largest *absolute* growth in employment nationally is forecast to occur in the list of ten jobs ranked in the sidebar below. Alongside each is the education or training that BLS suggests is required for that job. Most of these absolute increases are in "lower level" services occupations. Six of these ten occupations require only short-term on-the-job training, and only one requires a bachelor's degree. Also, three of the top four generators of jobs have median earnings that are in the bottom half of the distribution of median earnings for all occupations, and fully half the list has median earnings in the *lowest* quartile.

The largest *relative* growth in employment by occupations, in terms of the *largest percentage growth* between 2000 and 2010, is forecast to occur in the jobs shown in the sidebar in Section 1, again listed with the education or training that BLS suggests is required for each. This list is very different from the previous list of large absolute job generating occupations. Only two occupations appear in both the absolute *and* the relative growth tables.

The largest absolute increases in U.S. employment between 2000 and 2010 are forecast to be in these occupations:

OCCUPATION	GROWTH	TRAINING
FOOD PREPARATION AND SERVING	+673,000	Short-term OJT
CUSTOMER SERVICE REPS:	+631,000	Moderate-term OJT
REGISTERED NURSES:	+561,000	Associate degree
RETAIL SALESPERSONS:	+510,000	Short-term OJT
COMPUTER SUPPORT SPECIALISTS:	+490,000	Associate degree
CASHIERS (excl. gaming):	+474,000	Short-term OJT
OFFICE CLERKS, GENERAL:	+430,000	Short-term OJT
SECURITY GUARDS:	+391,000	Short-term OJT
COMPUTER SOFTWARE ENGINEERS, APPLICS:	+380,000	Bachelor's degree
WAITERS and WAITRESSES:	+364,000	Short-term OJT

Source: BLS ("OJT" = on-the-job training).

The high *relative* growth list is almost entirely dominated by computer-related occupations, apart from two healthcare activities. In contrast to the lower-level services jobs in the absolute growth list, only one occupation with relatively high growth requires just short-term on-the-job training, while six occupations require a bachelor's degree. Moreover, six of the ten occupations have median earnings that are in the *top* quartile of the distribution for all occupations.