

**Presented at the Midwest Innovation Initiative:
Innovations in Labor Market Information –
Institute for Work & the Economy**

Measuring Labor Shortages and Surpluses

**Malcolm S. Cohen, Ph.D.
Employment Research Corporation**

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Employment Research Corporation
305 East Eisenhower Parkway, Ste. 316 • Ann Arbor, MI 48108 • 734-477-9040
fax: 734-477-9060 • e-mail: mc@employmentresearch.com

Agenda

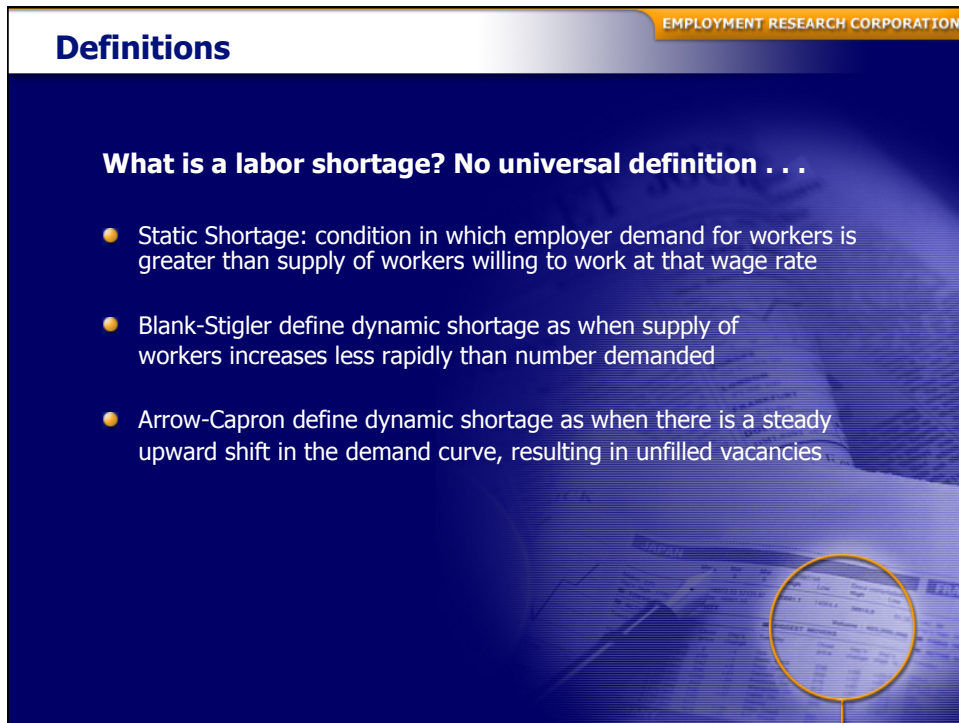
- What are labor shortages and surpluses?
 - Definitions
 - Underlying factors and trends
- Recommended methodology
 - Eight labor market indicators
 - Detailed occupations
- How to address shortages and surpluses
- Implications for the Midwest

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Definitions

What is a labor shortage? No universal definition . . .

- Static Shortage: condition in which employer demand for workers is greater than supply of workers willing to work at that wage rate
- Blank-Stigler define dynamic shortage as when supply of workers increases less rapidly than number demanded
- Arrow-Capron define dynamic shortage as when there is a steady upward shift in the demand curve, resulting in unfilled vacancies

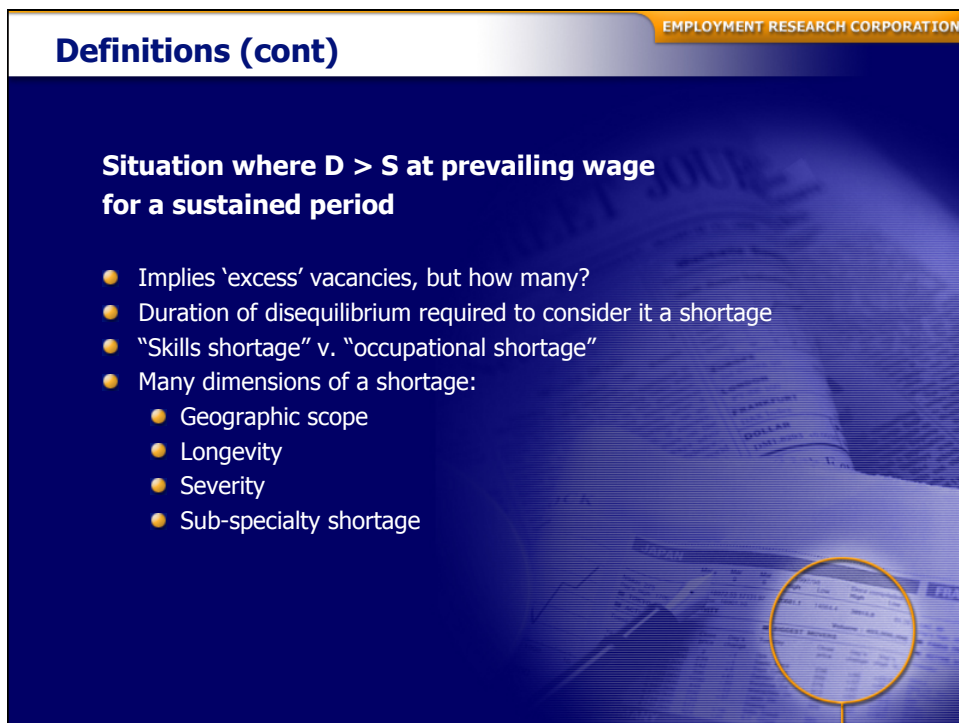


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Definitions (cont)

Situation where $D > S$ at prevailing wage for a sustained period

- Implies 'excess' vacancies, but how many?
- Duration of disequilibrium required to consider it a shortage
- "Skills shortage" v. "occupational shortage"
- Many dimensions of a shortage:
 - Geographic scope
 - Longevity
 - Severity
 - Sub-specialty shortage



Underlying Factors

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Why might labor shortages occur?

- Increase in demand for labor
- Restrictions on prices
- Movement to a higher paying occupation
- Time lags and slow adjustment
- Demographic trends and retirement age
- Education and productivity
- Immigration policy

Time Frame

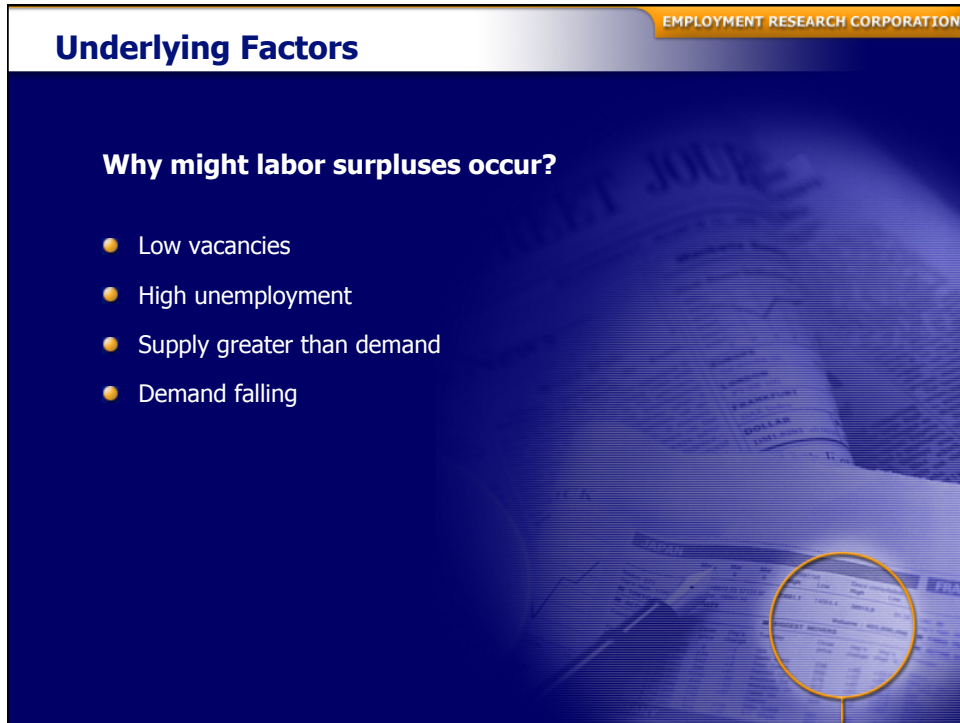
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- Last year
- Today
- Short term (1-2 years)
- Intermediate term (2-5 years)
- Long term (5-15 years)
- Seasonal considerations
 - Gardeners in the winter
 - Retail workers in December

Underlying Factors EMPLOYMENT RESEARCH CORPORATION

Why might labor surpluses occur?

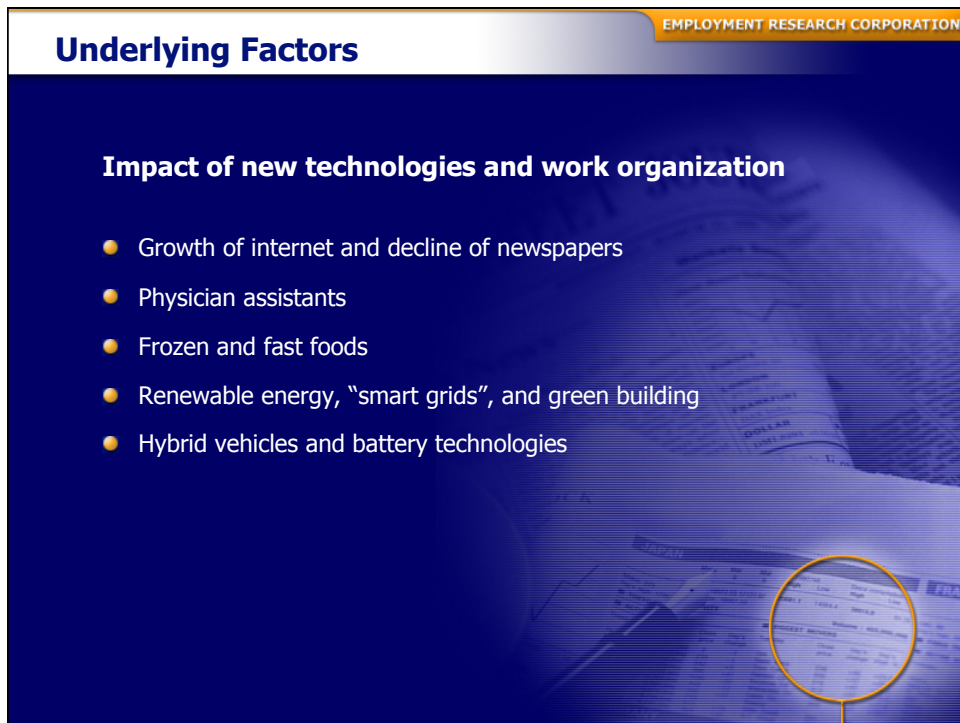
- Low vacancies
- High unemployment
- Supply greater than demand
- Demand falling

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Underlying Factors EMPLOYMENT RESEARCH CORPORATION

Impact of new technologies and work organization

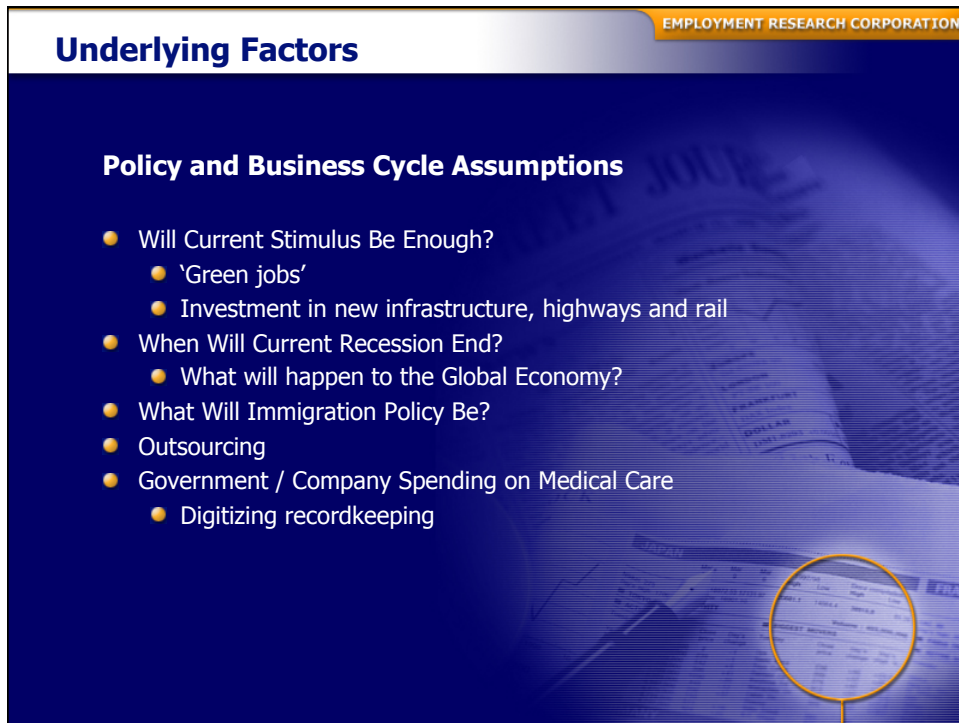
- Growth of internet and decline of newspapers
- Physician assistants
- Frozen and fast foods
- Renewable energy, "smart grids", and green building
- Hybrid vehicles and battery technologies

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Underlying Factors EMPLOYMENT RESEARCH CORPORATION

Policy and Business Cycle Assumptions

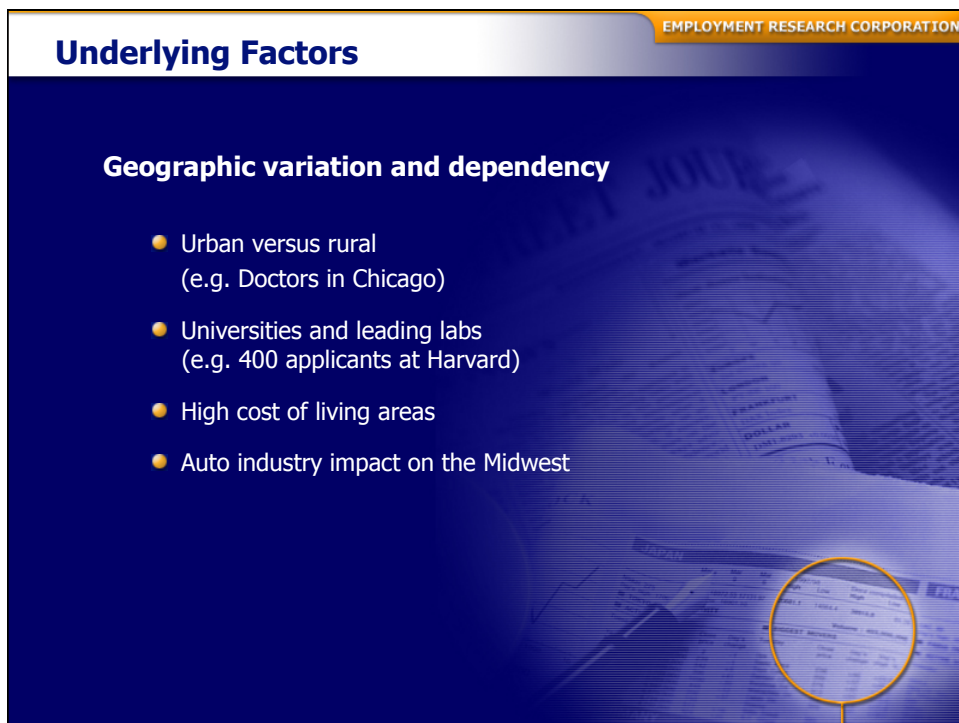
- Will Current Stimulus Be Enough?
 - 'Green jobs'
 - Investment in new infrastructure, highways and rail
- When Will Current Recession End?
 - What will happen to the Global Economy?
- What Will Immigration Policy Be?
- Outsourcing
- Government / Company Spending on Medical Care
 - Digitizing recordkeeping



Underlying Factors EMPLOYMENT RESEARCH CORPORATION

Geographic variation and dependency

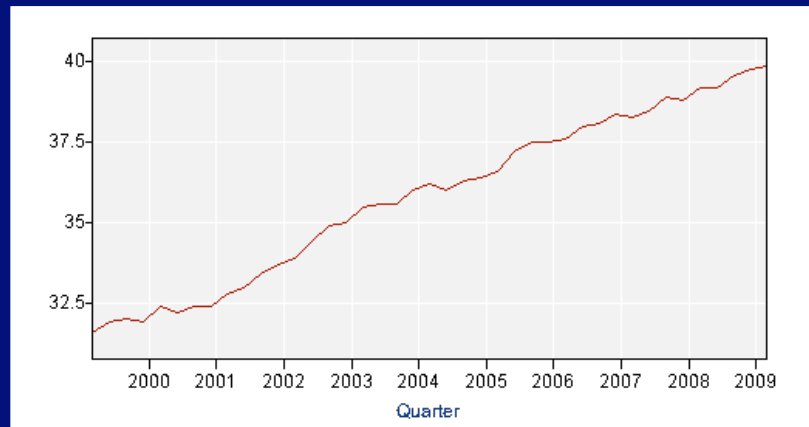
- Urban versus rural
(e.g. Doctors in Chicago)
- Universities and leading labs
(e.g. 400 applicants at Harvard)
- High cost of living areas
- Auto industry impact on the Midwest



Labor Force Trends

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US Labor Force Participation – 55 yrs and over



Source: Bureau of Labor Statistics, Current Population Survey

Measuring Shortages

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- Job vacancy surveys
 - Look for increase in number and duration of vacancies
- Employer skill surveys
 - Used to determine what requirements businesses foresee for different types of labor
- Using help-wanted advertising
- Labor demand and supply matrices
- Labor market indicators

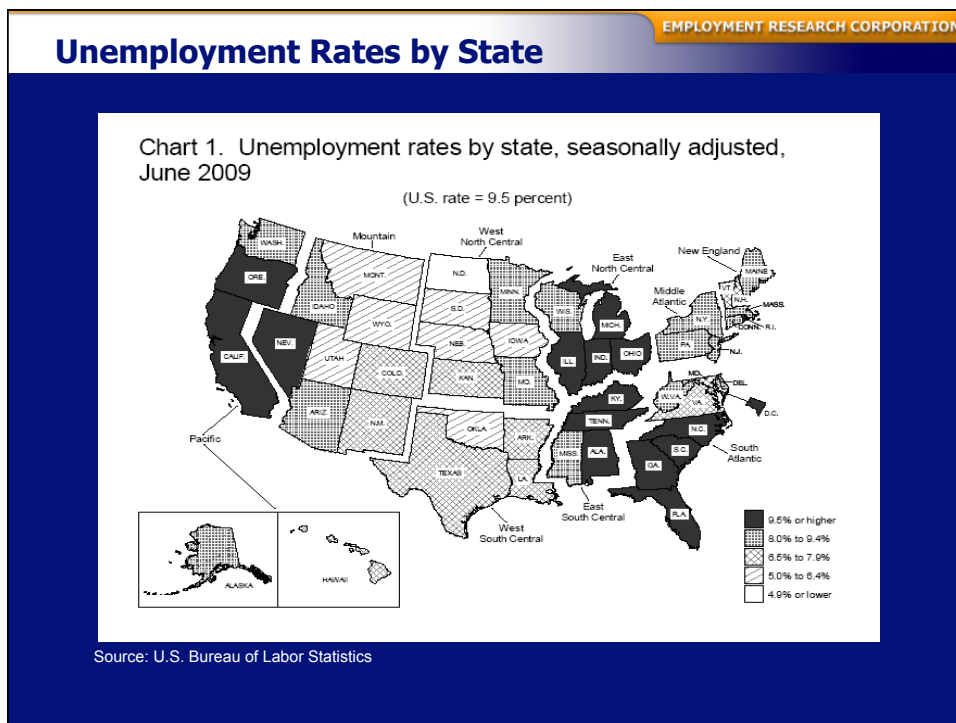
Methodology		EMPLOYMENT RESEARCH CORPORATION
Labor Market Indicators		
1	Past Employment Change	
2	Past Unemployment Rate	
3	Past Wage Change	
4	Training Required	
5	Replacement Demand	
6	Forecasted Demand	
7	Immigrants Certified	
8	Vacancy Rates	

Labor Market Indicators		EMPLOYMENT RESEARCH CORPORATION				
US 2005-2008						
Indicator	All Occupations	Architecture/ Engineering Occupations	Electrical & Electronics Engineers	Special Education Teachers	Physical Therapists	Grounds Maintenance Workers
Past Employment Change						
Annual % Change 2005-2008	0.8%	1.6%	-0.2%	-2.8%	3.6%	2.1%
Past Unemployment Rate						
Average 2006 -2008 rate	4.6%	2.1%	1.6%	1.3%	0.8%	10.5%
Past Wage Change						
Annual % Change 2005-2008	3.5%	4.0%	2.3%	2.8%	4.3%	2.6%

Computed from BLS *Current Population Survey* Source Data

Labor Market Indicators						
US 2 nd Quarter 2008 to 2 nd Quarter 2009						
Indicator	All Occupations	Architecture/Engineering Occupations	Electrical & Electronics Engineers	Special Education Teachers	Physical Therapists	Grounds Maintenance Workers
Past Employment Change						
Annual % Change Q2.2008-Q2.2009	-3.8%	-4.7%	-7.0%	4.6%	-26.0%	-5.3%
Past Unemployment Rate						
Average Q2.2008-Q2.2009 rate	6.6%	4.9%	5.8%	1.3%	0.7%	10.8%

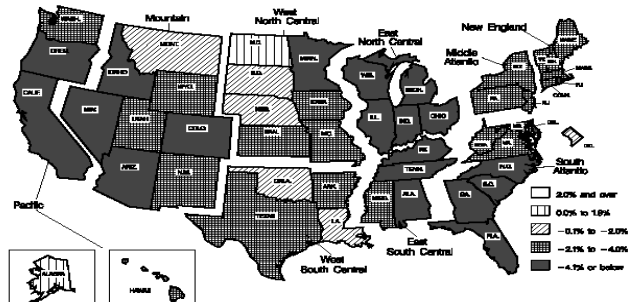
Computed from BLS Current Population Survey Source Data



Percentage Change in Nonfarm

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Chart 2. Percentage change in nonfarm employment by state, seasonally adjusted, June 2008—June 2009



Source: U.S. Bureau of Labor Statistics

Employment in Midwest

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Fastest Growing Occupations /Midwest

Occupation Title	Total Employment 2008	% Employment Change 2005-2008
Compliance officers, except agriculture, construction, health and safety, and transportation	43,940	39.89%
Home health aides	215,870	39.06%
Physicians and surgeons, all other	58,090	37.69%
Network and computer systems administrators	79,890	31.57%
Network systems and data communications analysts	49,030	31.45%
All Occupations	31,077,450	1.16%

Computed from BLS Occupational Employment Statistics Data

Employment in Midwest		
Fastest Declining Occupations/Midwest		
Occupation Title	Total Employment 2008	% Employment Change 2005-2008
All Occupations	31,077,450	1.16%
Chefs and head cooks	18,770	-27.36%
Computer operators	22,060	-24.74%
Cooks, short order	42,760	-24.12%
Cooks, fast food	124,210	-24.04%
Switchboard operators, including answering service	31,920	-23.67%

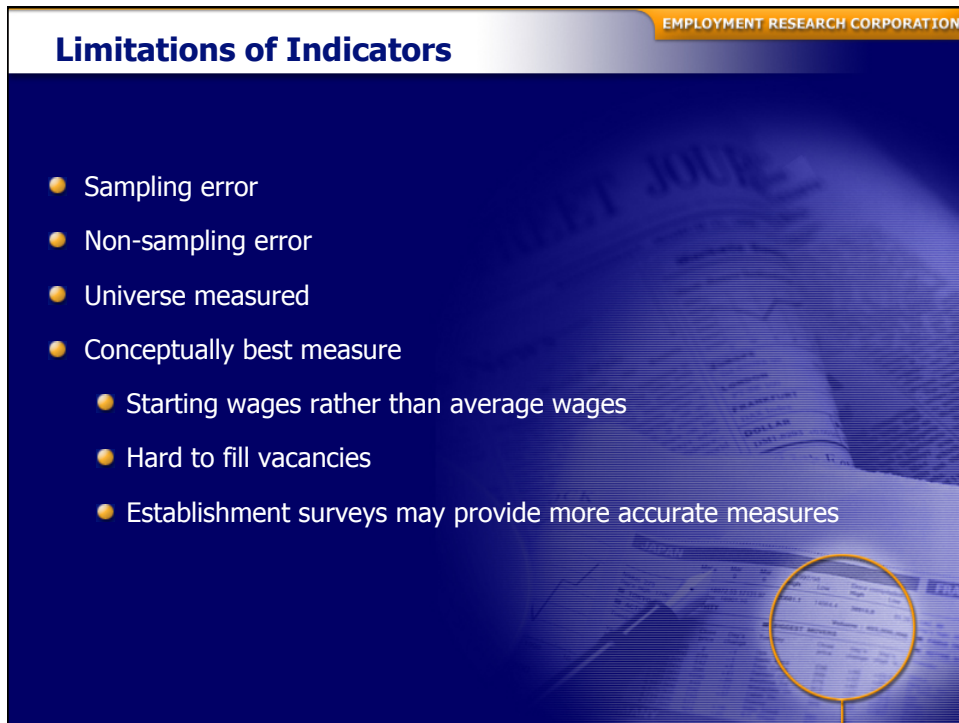
Computed from BLS Occupational Employment Statistics Data

Job Vacancies – Minnesota 2008				
	2 nd Quarter		4 th Quarter	
	JV	JVR	JV	JVR
All Occupations	51,722	1.9%	31,066	1.2%
Architecture and Engineering Occupations	1,170	2.3%	932	1.8%
Electrical Engineer	139	4.3%	81	2.5%
Landscaping and Groundskeeping Workers	1,152	8.2%	208	1.5%
Special Education Teachers - Preschool, Kindergarten, and Elementary School	33	0.6%	38	0.7%
Physical Therapists	235	8.0%	114	3.9%

Source: MN Department of Employment and Economic Development, Labor Market Information Office, Minnesota Job Vacancy Survey
Compiled by: Rachel Vilsack, Regional Labor Market Analyst Date: May 15, 2009

Limitations of Indicators EMPLOYMENT RESEARCH CORPORATION

- Sampling error
- Non-sampling error
- Universe measured
- Conceptually best measure
 - Starting wages rather than average wages
 - Hard to fill vacancies
 - Establishment surveys may provide more accurate measures



How to address shortages in Midwest EMPLOYMENT RESEARCH CORPORATION

Supply-driven strategy

- Develop inventory of Midwest employee skills
- Identify industries that utilize these skills
- Develop a program to attract employers in these industries to the Midwest



How to address shortages in Midwest EMPLOYMENT RESEARCH CORPORATION

Demand-driven strategy

- Identify fastest growing occupations
- Offer training funds for workers to retrain in these occupations

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How to address shortages in Midwest EMPLOYMENT RESEARCH CORPORATION

Policy and funds strategy

- Project budgets of government agencies
- Project research and development funding by corporations
- Analyze occupations needed for projected funding
- Offer training funds for workers to retrain in these occupations

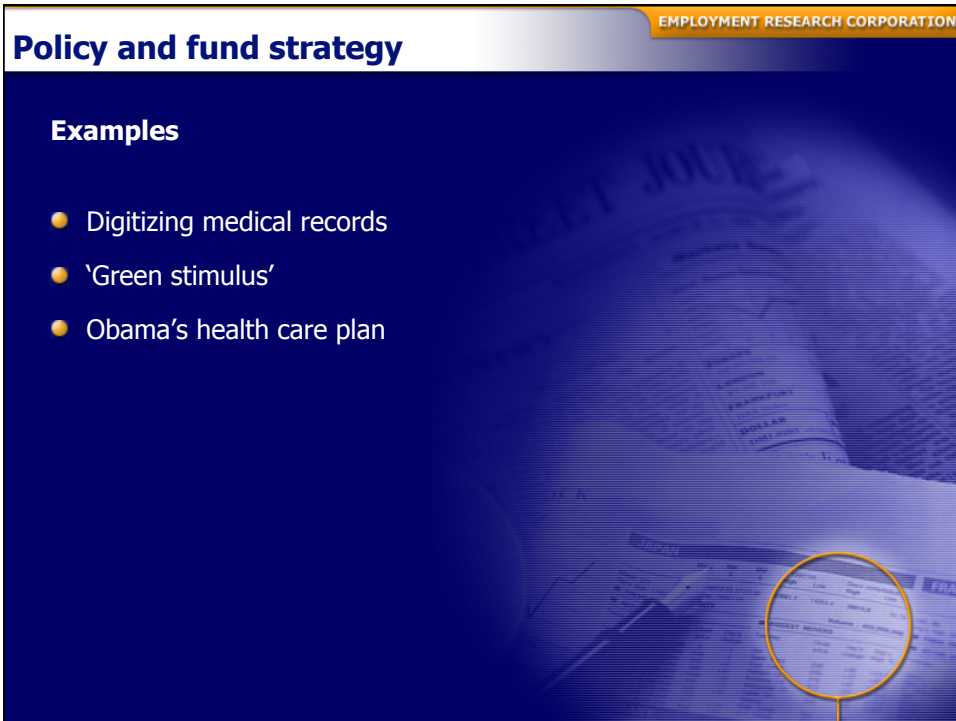
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Policy and fund strategy

Examples

- Digitizing medical records
- 'Green stimulus'
- Obama's health care plan

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Implications of LMI Research for Midwest

- Labor market indicators
 - Assist in analyzing current and future labor shortages and surpluses
 - Can be customized for the Midwest and individual states
 - Helpful in designing and optimizing training dollars in the Midwest
 - Useful in labor market analysis
 - Used in conjunction with additional labor market data to understand workforce needs in the Midwest

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How to Contact Us

EMPLOYMENT RESEARCH CORPORATION

Employment Research Corporation
305 East Eisenhower Parkway, Suite 316
Ann Arbor, MI 48108

Phone: 734-477-9040

Fax: 734-477-9060

mc@employmentresearch.com

www.employmentresearch.com