Discussant's report:
LOCATION DECISIONS AND ECONOMIC GROWTH
subject 6, session 7; Tuesday, 1:30-3pm

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"Description of the session: Rural decision makers use taxes and other resources to encourage growth. The session begins with an evaluation of rural employment patterns, then evaluates three economic development policy levers."

Wojan, Timothy **"Rural Employment Growth in the 'New Economy:' A Test of the Spatial Division of Labor Hypothesis"**

It is not difficult to rationalize or explain why U.S. manufacturing has been slowly shifting from urban to rural locations. One, transport infrastructures and communication technologies have evolved so that locating to minimize site-specific costs (including labor costs) is more important than being close to the major markets (population centers). Urban rents are high for space-intensive factories. Urban areas are more expensive and less hospitable for blue-collar workers to live, than suburbs. Urban demands on power supplies, and urban congestion of transport infrastructures, also contribute to higher urban site as well as transport costs. Two, the *product cycle* and modern contract theories both suggest that once the fixed costs of R&D, advertising, and reputation have been incurred, the subsidiarization of dispersed low-cost mass-production units is both incentive-compatible and profitable (Markusen; Markusen). In sum, it should be no surprise that U.S. manufacturing has shifted not only from urban to rural locations in the U.S., where energy, land, and educated blue-collar labor is cheaper; but also to some foreign countries.

Human capital, the key ingredient in all the fixed investments named above, is also expensive. Recent *urban form* and *endogenous growth* research emphasizes the likelihood that the positive externalities associated with concentrations of smart people are subject to spatial decay (Henderson;

Abdel-Rahman). The most efficient way to employ highly-educated people who generate positive synergy is to cluster them in one place. Since educated tastes often means a taste for variety, the *new economic geography* literature theorizes that the one place will be where the largest market is (for a review of the literature, see Kilkenny and Thisse).

Thus, we expect to find higher location quotients for managerial, professional, scientific, and technical employees in metro and adjacent areas. Non-adjacent urban or rural areas should be relatively specialized in operatives and laborers. This appears to be what Wojan found. He also found that the marginal increment to initial concentrations (or lack thereof) were negative. This implies that the workforce is *highly mobile* and that labor markets are *not segmented*. Apparently, by the 80's U.S. labor had already optimally concentrated, exhausting the increasing returns to agglomeration. More in-migrants would simply lower the going rate of remuneration, so migrants would not find it preferable to cluster further. Wojan's rough estimates appear to show that labor by types are accreting in locations where their marginal returns are relatively higher--i.e., where they are relatively scarce. And, maybe, where the quality of life is higher:rural-adjacent counties.

Finally, the recent rise of just-in-time contracting has taken the risk premium out of attempting to locate centrally with respect to uncertain input supplies or market demands across locations (McCann; Hurter and Martinich). This implies lowering the concave transport and inventory holding costs, allowing vertically-linked firms to be farther apart than they would other wise be. Thus, we expect rural-adjacent manufacturing growth rates to be higher than elsewhere.

Harris, Thomas, and Rangesan Narayanan "**Relationship of Non-Basic Sector Employment Growth and the Gaming Sector.**"

A *location quotient* (LQ) measures the relative specialty of a locality with respect to *anything* by comparing the local share of the thing to the pan-territorial share of the same thing (Bendavid-Val). If all localities in the territory have the same relative amount of the thing, the LQ's will all be equal to one. Wojan (above) calculated the relative occupational specializations of the nine county types in USA (according to the Beale code county typology). Thomas and Narayanan calculate locations quotients for the state of Nevada with respect to gambling and all other sectors. Nevada's share of employment in gambling is much larger than the national average share, and like other analysts (Mills and McDonald), they interpret the extent to which the LQ exceeds unity to reflect the extent to which gambling employment there serves tourists. In other words, LQ's are used to classify how much sectoral employment is basic (for export).

Usually, it is assumed that the proportion of *non-basic* to *total* employment is some constant "β:" $E_N = \alpha + \beta E$. Since total locality employment $E = E_N + E_B$; $E = \alpha + \beta E + E_B$ Expressing this for two periods, the change in total employment is shown to be $\triangle E = 1/(1-\beta)\triangle E_B$, which implies that the *multiplier* is roughly estimated by $\triangle E/\triangle E_B$. The smaller the relative change in base employment, the larger the estimated multiplier. It would not be surprising, then, if one finds high multipliers for a small basic sector relative to the rest of the basic economy. Harris and Narayanan, however, model relative percent changes, a normalization which should avoid that problem, and still they find a significant positive relationship between gaming growth and other service sector growth. Evidence of *contemporaneous* changes are not, however, compelling evidence that growth in any basic sector causes other sectoral growth (Jung and Marshall). All sectors could be growing for other reasons (common trend or cointegration). A *Granger causality* test might be more appropriate.

Goetz, Stephan, "**Location Decisions of Energy-Intensive Manufacturing Firms: Estimating the Potential Impact of Electric Utilities Deregulation**"

Any manufacturing operation that burns, melts, mixes, and molds pulp, plastic, metal, glass, or other materials, probably operates twenty-four hours a day, for numerous years without interruption. The stream of molten material cannot be stopped without clogging the production system beyond repair. The possibility of a power interruption has an exceptionally high risk premium associated with it: the cost of rebuilding the plant. The relative cost per kilowatt hour is probably far less important. As Hurter and Martinich succinctly show, the profit-maximizing firm will choose the location that minimizes the probability of the loss. And, as in all risky situations, diversification is the key. Firms will choose sites with access to more than one supplier of electricity. The more varied the power sources of the supplies (hydroelectric vs coal), the lower the risks associated with a reduction in feedstocks. Thus, the sensitivity of manufacturing plant location to deregulation is more likely to vary by type of manufacturing operation--the kind that operate 24 hours per day, for example, than by those who just use a lot of it.

Todd Gabe and Dave Kraybill **"A Self-Selection Model for Local and Regional Economic Development Programs**"

In their paper "Firm Relocation Threats and Copy Cat Costs," Wohlgemuth and Kilkenny (W&K) work out a some decision rules for local governments and a wide array of testable implications. In particular, W&K's theoretical model shows explicitly that the awarding of an economic development incentive (a binary dependent variable) is likely to be positively related to the probability that the local government can outbid competing locations, and positively related to the magnitude of the firm's proposed expansion as well as the externalities the firm generates in the locale. Their model also implies that the granting of an incentive is likely to be negatively related to

the probability the firm is bluffing, or that the firm is immobile; and negatively related to the size of

the incentive, and the incentives that other "copy cat' firms may demand in the locale.

Gabe and Kraybill estimate a conditional logit model of the probability that a firm on the list

of Ohio firms which have requested an incentive actually received one. Among other variables that

may be related to the award, their empirical findings support most of the testable hypotheses derived

by Wohlgemuth and Kilkenny.

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