

ABSTRACTS:

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Ph.D. Dissertations

Linkages between Manufacturing and Services: A Case Study of the Semiconductor Industry

Sabina Eva Deitrick

1990

This study examines the formation of linkages between manufacturing and services through a case study of the semiconductor industry in Southeast Asia. The research focuses on two questions: do firms form linkages to other firms in a new location over time? Can these linkages, if they do exist, be developmental?

Two views of linkage formation form the case study. The first is a vertical look at firms in the semiconductor industry that established assembly production plants offshore over two decades ago. Firm-level data are used to construct a picture of linkage-formation over time, from rudimentary shop-floor activities with local metal and plastics manufacturers, to high-level inputs and advanced service functions. Services are specifically included to test whether certain service functions may be tightly linked to manufacturing. Many of these services, it was found, followed a progression of linkage development over time within the plant, as production encompassed greater engineering and maintenance functions. The move to automation in semiconductor assembly and testing drove many of the new linkage developments.

The second view cuts across one place -- Singapore. This view considers how linked service activities might have expanded with export-based manufacturing in this rapidly growing city-state. The analysis covers the semiconductor industry, as well as recently expanding activities, such as computer peripherals, computers, and advanced services in finance and software. An activist state played a key role in promoting development and encouraging greater linkage formation among firms in the country.

By focusing on one industry, the research documents one case of linkage development over time. The research draws on previous linkage studies in geography and developmental economics, and attempts to place these developments within changes in the spatial division of labor. It argues that a dynamic study is needed to understand the spread of linkages as a characteristic of development as an ongoing process.

*National and Regional Change in the Earnings Distribution:
What is Happening to the Middle?*

Nancey Green Leigh

1990

This dissertation makes a contribution to the broader area of recent inquiry into whether the middle economic class of the United States is shrinking by specifically examining change in the distribution of earnings from 1967 to 1987. Using microdata from the Current Population Survey, full-time and part-time workers' distribution of earnings among the low-, middle-, and upper-earnings segments is examined by race, sex, and education level, by three different industrial/production classifications, as well as for the nation as a whole, the rural and urban regions, and the four major Census regions and their largest states.

The underlying premise of this research is that the postwar boom era is widely perceived as a period in which the earnings of one full-time worker could purchase a middle standard of living for a household. Further, the most important consumption item of this middle standard of living was (and continues to be) homeownership. Consequently, in addition to tracking movement of the earnings distribution, change in the purchasing power of full-time earnings for homeownership is tracked between 1967 and 1987 at the national level, and, at the regional and state levels where possible.

The principal findings of this dissertation research are as follows. Overall, there has been a dramatic upward shift in the distribution of earnings for full-time workers that cuts across race and sex groups, regions, and industries. In contrast, part-time workers have seen no change in the shape of their earnings distribution, and part-time males have been shifting down the distribution. But although full-time earners have experienced improvements in their earnings levels, they have seen substantial erosion in the purchasing power of earnings. In addition, since the late 1970s, the level of benefit reciprocity among full-time earners has been declining.

Differences in the trends were found among industries and regions. Those industries declining in importance as major sources of employment tended to have the greatest upward shifts in their earnings distributions. At the regional level, the Midwest and the rural areas of the U.S. may well be becoming the last middle ground: places where achieving the middle standard of living with full-time earnings is easiest. On the other hand, the state of California, with ten percent of the nation's population, has clearly become a place where a household's ability to attain the middle standard of living with only one full-time worker's earnings is less and less possible.

Employment Suburbanization and the Journey to Work

Jonathan Levine

1990

Large-scale suburbanization of employment has dramatically changed transportation and land-use planning. Intersuburban commuting now dominates regional highway networks, and the automobile has replaced mass transit for many commutes. Planners' approaches to these developments vary from the pro-centralization approach of many environmentalists and transit advocates to the view that employment suburbanization enhances mobility. In the middle are those planners who seek a geographic match between suburban jobs and suburban housing.

This study examines one aspect of the debate on the effects of employment decentralization on regional mobility: the impact of growing suburban employment on the commutes of different income groups. The study suggests that suburban employment centers with high levels of multifamily housing will exhibit commute patterns in which household income and commute distance are largely independent. In contrast, in suburban areas where the development of dense housing has not kept pace with employment growth, it is hypothesized that new commute patterns are emerging wherein lower-income households commute greater distances than their upper-income counterparts. This pattern would be the reverse of the prediction of monocentric urban models for central city employment.

These hypotheses are tested for San Francisco Bay Area communities using data from 1981 and 1989. Bivariate analyses generally supported the predicted effects of community employment base and housing stock on commute patterns by income. Nested multinomial logit models of the household residential location decision were estimated for workers in San Ramon and in northern Santa Clara County. The models appeared to demonstrate a positive effect of the availability of multifamily housing on the residential location decisions of low- to moderate-income households. In addition, workplace accessibility in general emerged as a powerful determinant of residential location. Forecasts of commute patterns using the estimated models indicated a potential for reducing long-distance commutes by low- to moderate-income households through a policy encouraging multifamily housing construction in the vicinity of suburban employment centers.

Re-interpreting the Taiwan Experience: State Planning and the Emergence of Bureaucratic-Authoritarian Pluralism

Raymond R. Wu

1990

This dissertation is a study on the role of the Kuomintang (KMT) party-state in the post-war development of Taiwan. Specifically, it seeks to monitor the evolution of the state's role in socioeconomic management by examining the changes in the overall state-society relations. Two specific issues -- the consumer protection movement and the breakthrough in trade opportunity with the Soviet Union and Eastern Europe -- are analyzed in detail. They are intended to illustrate how an increasingly assertive, self-confident private sector has demanded greater participation in policymaking and, thus, more control of their own destiny.

Despite a more aggressive private sector and recent measures to relax the once authoritarian control of the government, prospects for multi-party, pluralist democracy in Taiwan remain distant. Primarily because of (1) the Confucian cultural traditions, (2) Taiwan's peculiar international status, and (3) Taiwan's delicate relations with the People's Republic of China (PRC), a political system characterized by open confrontation and multi-party competition seems highly uninviting. It is in this respect that Bureaucratic-Authoritarian Pluralism (BAP), not pluralist democracy, will likely characterize the new type of state-society relations.

Following martial law, civil liberty in Taiwan has been expanded appreciably. In spite of the relaxation of control, there are specific boundaries, as manifested in the newly-enacted National Security Law, which no one should violate. Therefore, in this "restricted" type of pluralism, dissenting views are permitted but not conciliated; and "deviated" behaviors are tolerated but not placated. The government still retains extensive control of social groups' behaviors and activities, particularly on some politically "sensitive" matters; and it reserves the right to discipline, or outright disband, groups that violate stipulated rules and regulations. In all, martial law might have been lifted, but the age of socio-political control continues in Taiwan by merely assuming a different form -- *where the style of leadership has changed from exclusionary to inclusive, the method of governing from domination to coordination, and the pattern of management from coercive to manipulative.*

Systems Modeling for Environmental Planning in the Lake Tahoe Basin, California-Nevada

Wei-Ning Xiang

1990

Environmental planning in the Lake Tahoe basin is difficult. The environmental problems are complex, data and human knowledge are uncertain, the planning processes are multiobjective, multiparticipant, multilevel, and multicyclic in nature. To cope with these difficulties, a holistic framework for environmental planning at a regional or basin level is desirable.

As an effort to construct a systematic framework, three objectives are identified and pursued in this study.

Pursuit of an improved regional environmental planning system through a coordination of its two component systems. The dissertation demonstrates how the two environmental planning systems at the regional level of a planning hierarchy for water quality and air quality protection, which are different from each other in purpose, assumptions, methods, and outputs, can be coordinated such that they are compatible with one another as well as consistent with the planning requirements from the higher level. It also demonstrates that not only the two systems themselves, but also the entire regional environmental planning system, in which the two are parts, can be improved from such a coordination.

Establishment and application of a basinwide mitigation system. In the coordination process, a basinwide mitigation scheme is developed and applied. The dissertation demonstrates how a basinwide mitigation system can be used through a multiobjective linear programming model as a lever to balance the tradeoff between land-use development and regulation.

Development and application of a basinwide geographically-oriented research support information system. The dissertation demonstrates what a basinwide geographically-oriented planning information system should look like, how the system that is originally developed at a regional level is connected with others at community or site-specific levels, and how it supports the planning activities at the regional level.

The study results not only provide helpful insights and experience for the professionals in the Lake Tahoe basin, but also benefit the development of a more effective and efficient methodology for regional environmental planning.

Professional Reports, M.C.P. [partial listing only]

Developing an Evaluation Approach for the International Development Exchange Overseas Program

Anna Edmondson

1990

In the summer of 1989, the staff and Board of the International Development Exchange agreed on the need to evaluate the effects of five years of funding activity overseas. This study involved staff, volunteers, and the IDEX Board in a preliminary assessment of the effectiveness of the Overseas Program. Thirteen projects were reviewed, nine of which were to be the focus of field visits by staff in the summer of 1990.

The International Development Exchange (IDEX) is a five-year old nonprofit corporation located in San Francisco committed to fostering small-scale community-based development throughout the Third World and to increasing the awareness of its U.S.-based project sponsors of development issues. IDEX, through its Overseas Program, provides direct charitable support to small-scale development projects in Third World communities that otherwise would not have access to outside resources.

Three key objectives underline IDEX's development efforts:

- To fund community-led development efforts which are socially, economically, and politically empowering.
- To develop educational and supportive partnerships between U.S. and Third World communities.
- To educate U.S. citizens on the issues confronting developing country communities.

IDEX meets the first objective by identifying poor communities in developing countries that have minimal access to financial resources yet exhibit a strong potential for community organization, participation, and commitment toward implementing a project that will have sustainable and socially beneficial results.

It meets the second objective by organizing informational exchange in the form of letters, photographs, reports, and sometimes site visits, between project sponsors in the US and project participants abroad. Finally, education of U.S. citizens takes place through an educational outreach program to local California schools and churches. IDEX staff organize presentations, provide materials for curriculum development, and sponsor cultural activities for these local institutions.

The major findings of the evaluation were:

- The majority of projects reviewed fulfilled their stated objectives: four projects were completed in less than six months after receipt of funding; seven were completed in less than one year; two took over one-and-one-half years.
- Five projects involved very poor communities; the rest lacked data to make an assessment.
- The number of participants per project ranged from 11 to over 100, the mean being 61; all except one project directly involved female participants.
- More than half of the projects involved participants in decision-making at the start-up of the project.
- Most projects were supported by an active community group like a youth group, school board, or local church.
- Four out of six income generating projects had plans for long-term sustainability; all three water projects had plans for long-term physical maintenance.
- Educational partnership is characterized by one-way communication from the overseas community to the sponsor.
- Projects relied heavily on intermediary organizations to write the proposal for funding, for training, project management, and technical expertise; local intermediaries were more effective than foreign ones.
- Five projects were supported by a dynamic, male leader acting as sole intermediary or director of the intermediary organization.
- Less than half of the projects were replicable.
- Most people in the phone survey agreed IDEX could be more effective in communicating its purpose, criteria, and follow-up informational needs to applicants overseas.

Impacts and Implications of a Seismic Retrofit Ordinance on the Social Service Network in San Francisco

David Guyer

1990

During the 1986 legislative session, the California Legislature mandated that all cities in "seismically active" (earthquake-prone) areas of the state develop and implement mitigation standards for loss of life and property for hazardous Unreinforced Masonry Buildings (UMBs).

The City of San Francisco has been developing its ordinance to address the hazards of UMBs, and what type(s) of seismic retrofit will accomplish the most good for the greatest number of building owners and their commercial and residential tenants, while maintaining a reasonable level of costs.

An important component of the San Francisco study focuses on the "social service" issues a seismic retrofit might engender. It addresses the question of how the social service network would fare in the event of a dramatically increased caseload, and what measures can be taken to strengthen it. It contains an analysis of the network, a summary of the findings from a study of the network and, finally, a group of recommendations for strengthening and improving the structure and output of the social service network.

Opportunities For Suburban Densification: Walnut Creek, Concord, Alameda

Patrick S. McGovern

1990

This report examines the response of older East Bay suburban communities to opportunities to increase density of housing and mixed uses. The communities examined were Walnut Creek, Concord, and Alameda. Each community is in the midst of, or has the opportunity for, substantial economic change which will open up opportunities to create areas of denser housing, mixed uses, and greater use of mass regional transit, as marketable alternatives to continued regional sprawl.

Information was obtained from General Plans, Housing Elements, planning staff, and such related public documents as Redevelopment Plans, Specific Plans, or economic development proposals. Each community was analyzed in terms of its historical residential development, the current housing stock, the projected housing needs for the community and the region, and planning mechanisms or incentives used to encourage new housing forms. The economic change occurring, or pending, in the community was defined, and a study area most likely to generate an housing alternatives was defined. The planning response to that area and its opportunities was then analyzed.

Findings were as follows:

- The Central Core area of Walnut Creek, adjacent to the BART station and the new "Golden Triangle" of office blocks was examined. The 1989 *General Plan* and its Housing Element showed Walnut Creek's awareness of this opportunity, and the intention to create a new residential community in that area.

- The Downtown Core of Concord, also adjacent to BART, a new Bank of America office block, and the old downtown, was examined. This research indicates some higher-density residential development in that area, but no clear goals to create a new form.
- The probable closure of the Alameda Naval Air Station provided the study area for Alameda, a block of 2.3 square miles of land facing San Francisco, and easily accessible by ferry. Alameda provided an example of a community strongly resisting any change in its residential density.