URBAN-REGIONAL ECONOMIC ANALYSIS: CONCEPTS, MEASUREMENT AND DATA

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This paper is a condensation of the first half of a manuscript written over the past academic year while enjoying a research fellowship sponsored by the Committee on Urban Economics of Resources for the Future. The parent piece is intended as a stimulus to research and a guide to research priorities in the young and rapidly growing field of urban economics. Because even the unabridged version is a potpourri of concepts, hypotheses, methodology and data references, leaving the task of separating the wheat from the chaff to reader-critics, a condensation runs the risk of becoming an almost incomprehensible kaleidoscope of (half-digested) ideas. The saving grace lies in the fact that the discussants have had access to the unabridged version and, more important, they are three of the most knowledgeable students of the subject matter in the country.

The material summarized here might be characterized as urban-regional economics -- the economics of the small-area, open economy, highly specialized and subject to easy entry and exit of labor and capital. The questions are the conventional ones: the factors and processes that bear of the level, distribution, stability and growth of income and employment. The conceptual framework is also quite orthodox: export and investment multipliers, income and price elasticity of demand, market structure as a determinant of firm behavior. The principal distinguishing feature is the heavy emphasis on location and spatial pattern -- the city in the national system of cities. (The second half of the parent work, not included, begins instead with the "awful mess" of the city planner and administrator and is more concerned with intra-urban phenomena -- traffic, taxes, slums, and the like.) Neither the omission of footnotes nor the personalization of the content should be interpreted as a broad and sweeping claim to originality, although the author hopes he has rendered a useful service by marshalling a modestly original collection of concepts in such a way as to suggest promising and even exciting lines of enquiry to others, that is, carried forward the business of the Committee on Urban Economics.

Level of Income

Most of the legacy with which the urban economist begins his comparative analysis of urban income levels is the only tenuously relevant interstate income analyses of Hanna and associates and Perloff and associates. These interstate studies of per capita income hold three principal lessons for us: first, interregional (interstate) income differentials are largely wage differentials; second, demographic patterns (age, sex) vary significantly between states leading to significantly different labor force participation ratios that appear to account for as much as 20 to 30 per cent of the observed differences; and third, the major proportion of the interstate income differentials is attributable to rural poverty coupled with widely varying urban-rural mixes between states -- both directly, and indirectly through demographic variation -- that the extension of the interstate findings to inter-urban comparisons is highly tenuous. (An interstate per capita income range of roughly 3 to 1 is compressed to about 1.75 to 1 between standard metropolitan areas.) Two conclusions are inescapable: (1) urban-regional income analysis must not be inferred from superior state data but must be conducted at the metropolitan area (labor market) level, albeit with poorer data and (2) nation-wide inter-regional income inequality is less critical to urban economics than to rural-farm economics (intra-area spatial patterns of income distribution are, however, especially critical in the urban context, as we shall see).

Local Labor Markets: Mobility and Wage Determination

It is, in fact, as a labor market -- an income generating entity -- that the economist first establishes rapport with the urban area as a significant unit of economic analysis -- comparable to the time-honored industry. The first steps in local labor market analysis can be made on the proven ground of industry-mix standardization. The conventional technique is to derive a hypothetical wage structure, imputing national wage rates to the locality, industry by industry. An expected local average wage is derived to which the actual (observed) local wage can be compared, leading to inferences about relative local productivity and "earnings rates" (local rate for a given job). But all this is complicated (and enriched) by the need to complement industry and occupational-mix standardization with an area effect (or wage "rollout").

Specifically, if the dominant local industry (steel in Pittsburgh, automobiles in Detroit) is a high wage industry, this probably raises wages generally throughout the local economy. One would guess that shoe clerks (barbers) make more in steel, auto and chemical towns than in textile and shoe towns, especially if shoe clerks (barbers) are more mobile between occupations and industries within the area (more likely to take jobs in nearby factories) than clerks all over are mobile between towns (likely to migrate to retain their trade). To ignore the area effect is to run the risk of inferring that the average earnings rate in areas with high wage export industries is above the national average (due, say, to superior local productivity), when it really is higher simply because local service wage rates have been imputed at the national rate (related to an imaginary national labor market) rather than at a distinctively higher local rate reflecting the wage rollout effect. One of the most valuable statistical projects would be to build an

econometric model of the wage determination process in local labor markets with especial reference to labor mobility as between industries, occupations and areas.

Productivity, Price Power, Politics and City Size

But a labor mobility study is largely a study of the supply side of the labor market, the demand side remains to be considered. The demand for labor is a function of its productivity, interpreted broadly to include both the physical output per worker and the price at which that output is sold. The value productivity of local labor can be traced back to the amount of capital per worker, market structure, political factors, and city size, among other factors.

While data on capital stock per worker is not available on any systematic or comprehensive basis, least so for urban areas, the Censuses and Annual Surveys of Manufactures do report annual expenditures on new plant and equipment for standard metropolitan areas at the "three digit" SIC level in Census years and at the "two digit" level in the interim Survey years. By interpolating between Census year benchmark figures, plant and equipment expenditures could be cumulated for SMAs at the three digit level for the full period 1947 to date. If some reasonable assumptions could be made about the size of the beginning stock of capital and the appropriate rate of depreciation (e.g., beginning stock proportionate to additions, or nearly valueless, or inversely related to the trend -- extrapolating backward in time), we might put together some rough but usable extimates of capital-to-labor ratios for the Census metropolitan areas. (And metropolitan areas come close to defining local labor markets.) The human side of labor productivity might be explored, simultaneously, with Census and other data on educational background (as a proxy for skill) and age and other demographic data (as proxies for energy and effort).

But the relationship between the price power of the leading export industries of an urban area and the level of local income is probably at least as critical as capital, skill and physical productivity. High (administered) prices enrich an area only to the extent that they are translated into higher wage rates (the wage component of value added becomes practically the whole amount in the case of the absentee-owned corporation -- the branch plant of the national corporation). Thus a secure and aggressive local union provides the sufficient condition for local affluence -- at national expense.

Certainly, firm price power and union aggressiveness will be difficult to quantify, but even simplistic surrogates such as degree of concentration in the industry (perhaps coupled with the trend of demand for the product) and per cent of total industry employment unionized could take us a good part of the way. And this empirical hurdle must be cleared for our tentative conclusions about physical productivity and local income level will be most tenuous in the absence of some real feeling for the role of local export price power. Who can say that a high capital-to-labor ratio has produced high local incomes through physical productivity when an equally plausible explanation is that the large investments per worker imply difficult entry into the industries of local specialization, with the fruits of local monopoly power partly shared with local labor.

The value productivity of the local labor force may also be enhanced by political intervention at the Federal level. The support of farm prices clearly enriches rural service centers and also the many manufacturing towns which supply farm equipment, fertilizer and the like (e.g., Waterloo, Iowa). Or the Federal intervention may be on the cost side, as through favorable depletion allowances; Tulsa and Houston have median family incomes that run about 20 per cent above average for similar size cities of their region. (These latter two towns combine the union-oligopoly effect sketched above and the political productivity effect at issue here.) Probably the most pervasive Federal political impact on local living standards is through tariffs, evidenced by the powerful and widespread resistence to our periodic efforts to reduce them.

Attempts have been made to "explain" urban income differentials by correlating them with city size, the inference being that bigger cities create a distinctive working environment, or perhaps they assemble a population group of higher economic productivity -- younger adults, the highly educated, the ambitious. The Hanna-Mansfield studies suggest a modest tendency for income level to rise by about 25 per cent from the lowest of eight city size classes to the highest. Some of the supporting work further suggests that variation in demographic-mix with city size is one significant factor -- the larger cities have a greater proportion of middle-aged persons in the prime of their earning power. Renewed effort on city size and income level with the 1960 Census data has a high priority, if for no other reason than the obligation of the economist to contribute to the city planners problem of optimum city size -- holy grail or not. City size decisions should not be made solely on aesthetic grounds.

From Money Income to Real Income

If the export sector is the (urban) family breadwinner, then the local service sector is analagous to the housewife who bears primary responsibility for the efficiency of the (urban) household as a consuming unit. Specifically, a big pay check won from the local manufacturing plant can be at least partly offset by a poorly managed transit system, an inefficient municipal water plant or a collusive and unenterprising retail trade industry. We know literally nothing about the relative cost of living between cities, a deplorable statistical gap.

The efficiency of the local service sector is probably a function of the spatial position of the urban area relative to natural resources and in the national system of cities, and also the population size of the city region, among other factors. An isolated city is forced to become

self-sufficient at inefficiently low levels of output in many services, or do without; a comparison of living costs between, say, Spokane and South Bend, may shed some light on the cost of enforced self-sufficiency. A high degree of local self-sufficiency may, of course, also be achieved more gracefully and economically through growth, as the larger local market pushes more and more activities across the threshhold level of economical local production. This lowers the cost of previously imported goods and/or increases consumer satisfaction by broadening the range of locally available goods. The quantification of the value of greater selection will obviously be difficult.

City size has an ambivalent effect on urban efficiency. Increasing the number of competitors (e.g., department stores) tends to lower cost and stimulate innovation in the private sector, but population expansion tends to spill across the central city limits, creating the political fragmentation of a natural economic entity and raising the cost or lowering the quality of public services by destroying efficient monopoly. Paradoxically, then, city size breaks local monopolies in both the private and public sectors, effecting gains from competition in the former and the loss of internal and external economies of scale in the latter.

The translation of inter-urban money income differentials into real income differentials calls for an extension of economic base theory. An urban area not only earns its money wage rate but must buy it back as the cost of goods and services produced by local service industries reflects the local wage structure. If, for example, automobile and steel workers have higher than average wage rates, and if wage rollout is substantial, so that barbers and bus drivers in auto and steel towns earn more than their counterparts elsewhere, then the cost of living will be higher in these high wage towns, unless labor productivity of these latter workers is commensurately higher.

Suppose about one-third of total local economic activity (employment) is engaged in producing for export, then about one-third of total local income is used to purchase value added outside the local economy, that is value which is added at a national average wage level, and two-thirds is spent for value added in local production and reflects the distinctive local wage structure. If the local export (auto) wage runs about thirty per cent above average and raises local service wage rates to, say, twenty per cent, above average, then auto town households will face a price structure averaging about 13 per cent (2/3 x 20 per cent) above the national average, and perhaps 25 per cent more than households in a low wage (textile) town. Thus, the 23 per cent (weighted average of one-third "auto" workers and two-thirds "clerks") higher money income yields only a 9 per cent higher real income (1.23 ÷ 1.13).

We began this section by observing that inter-urban money income differentials were substantially less than interstate differentials (primarily due to the urban-rural mix differences). We close by observing that the wage rollout effect may further narrow the real income gap between rich and poor cities. This suggests that the role of the Federal authority in urban affairs may be less as an agent of regional redistribution of income (a la the farm program), and more as an agent of urban efficiency and interregional redistribution of population and capital in accordance with national objectives.

Distribution of Income

The distribution of income is even more the neglected stepchild of urban economics than of economics in general. With almost literally no precedent to guide or prejudice us, an integrated three-part framework is suggested as a point of departure. Beginning with the urban area as a whole (the local labor market), the basic amount of inter-personal income inequality can be measured and analyzed. Inter-personal income inequality can then be traced one step farther down into the political subdivisions of the metropolitan area. Finally, the variation in per capita income (and wealth) between the various political subdivisions can be computed and examined for its political-economic implications.

Area-Wide, Inter-Personal Inequality

The Decennial Census of Population data on family incomes lends itself rather well to this schema. The minor inconvenience of working with a frequency distribution with an open-end upper income class ($10,000 and over in the 1950 Census, happily raised to $25,000 and over in the 1960 Census) can be circumvented by resorting to one of the simpler measures of relative variation - using quartiles or deciles. Employing the inter-quartile variation, this author analyzed the 1950 Census family income data for 151 standard metropolitan areas and found that 46 per cent of the inter-area variation in income inequality could be "explained" by the proportion of total local employment engaged in manufacturing. The figure rose to 61 per cent when non-white as a proportion of total population was added in a multiple correlation and regression analysis. A high degree of income inequality is apparently characteristic of non-manufacturing urban economies with a high proportion of non-white population. The egalitarian hand of the union in manufacturing areas and racial discrimination in the labor market in direct relationship to the proportion of non-whites is strongly suggested by these very preliminary findings.

The opportunity for extension of this work is almost unlimited. A host of intriguing hypotheses come quickly to mind. For example, one would guess that income inequality should increase with city size because, on the supply side, large cities attract not only the most gifted workers but also enough of the most unskilled and impoverished to hold the lower end of the spectrum in place. On the demand side, moreover, large cities host the executive suite of the large corporation with its palace guard of high-priced lawyers, research directors and financiers, matched with openings for an army of cleaning women, elevator operators and parking lot attendents. Although second jobs and second earners in the household, probably more

characteristic of the big city, tend to equalize family incomes, the possibilities of earning a very large proprietorship income exists only in big cities, probably more than offsetting the former effect. All in all, the big city would seem to produce an enviornment especially conductive to greater income inequality -- a hypothesis offered to some uncommitted doctoral student.

From Residential Patterns to Public Finance and Welfare

The basic degree of income inequality exhibited by the local labor market -- the metropolitan area as a whole -- is an inequality that may be blunted or sharpened, in social implication, depending on the internal spatial pattern it assumes, relative to the spatial pattern of local government. Because houses of similar value (and households of similar income) tend to cluster, small political subdivisions can easily encompass only the rich or poor, whereas large political subdivisions must almost of necessity mix both rich and poor to some extent. A metropolitan area that is highly subdivided (politically fragmented) will tend to exhibit a high degree of inter-governmental variation in per capita income and wealth.

Local public finance problems are made greater under heavy political fragmentation not only by disparities in fiscal capacity, but also because public service needs tend to be greater among the poor. Urban life, moreover, is much more complex and interrelated than rural life (external economies and diseconomies are more significant), and "free" local public services could come to be the principal instrument of income redistribution in the coming decade, as local public budgets grow and the progressivity of the Federal income tax is reduced -- but only in fiscally balanced political entities. Perhaps no urban economic question is more pressing than the quantification and rationalization of intra-metropolitan-inter-governmental income and wealth spatial patterns.

We can broaden our vision of the implications of the spatial distribution of income to local public finance by asking this question: Should we enlarge the political subdivisions of the metropolitan area or should we push income-mixing down to finer levels of areal subdivision, or both, to equalize local fiscal capacities and public service needs? Through zoning and other land use controls, public investment and other powers, we might exercise an appreciable, even if not overwhelming, influence on land use patterns. Substantial income mixing must be achieved at least as low as the level of major political subdivision of the metropolitan area if local government is to remain an autonomous, effective and viable institution.

While we are a long way away from achieving mixed income neighborhoods, at what intermediate level might we carve out the balanced income "community" that is probably the key to sophistication in our public welfare policy and to economic democracy in our schools. Wanting to help the less fortunate is not enough, we must know how, and the "culture of poverty" is not learned at great distance -- social or spatial. Further, school segregation follows from residential segregation -- color and income both -- and cross-hauling students is not the answer. How to achieve the big city equivalent of Conant's ideal small town comprehensive high school? The economist has much to contribute to the city planner's and urban administrator's work of rationalizing the spatial pattern of the city, and the Censuses of Population and Housing are exceedingly rich resources whose surfaces have barely been scratched.

Stability of Income and Activity

"Seasonals" and Efficiency

Urban economic instability manifests itself in at least three forms: seasonal patterns, business cycle fluctuations and shifts in growth trends, each of which is distinctive in the urban context. The concept of the "seasonal" is extended here to include all kinds of short period, repetitive oscillations in economic activity: the conventional monthly seasonal in department store sales, the weekly "seasonal" in the use of recreational facilities and the hourly "seasonal" in traffic flow. Seen this broadly, urban seasonals are the crux of public investment and urban efficiency, are a broad rubric covering the pervasive problem of alternating periods of congestion (too little capacity) and slack (idle capacity). In efficiency terms, the urban seasonal problem is to find the point of optimum trade-off between economizing on capital with peak period delays and supporting the extravagance of accomodating peak period traffic with no delays.

Two strategies come quickly to mind. First, we might devote more effort to stabilizing the fluctuations in demand that plague us; we might stagger working hours to eliminate traffic congestion, stagger vacation days and "week-ends" during summertime to stretch our limited outdoor recreation facilities farther, and experiment more courageously with the school year. Certainly we pay to smooth out demand -- staggering working hours relieves traffic congestion at the cost of congestion in communication channels as the period of inter-personal communication and exchange for business purposes is contracted -- but a rational decision can not be made until the net costs and benefits are struck. Second, we might create greater flexibility in the facilities which supply the seasonal demands. Local government employees may be made to double in brass -- combination policemen and firemen -- and public capital can be made to serve more than one use -- the high school auditorium as a community center and the classrooms as the workshops in which vocational re-training will transform square pegs to fit the new round holes of the automated society.

Local Business Cycles: City Size and Industry-Mix

Nowhere is the constraining influence of an economics largely developed in a national context more evident than in the matter of economic

stability. Because business cycle analysis has long been a main stream of thought, much more attention has been paid to the local business cycles than to either local seasonal or growth instabilities, despite the fact that there is probably less the locality can do about its cycle instability than either of the other kinds. But before supporting that assertion, let us examine the nature of the local cycle a bit, for it is a very interesting phenomenon even if it is not especially amenable to local treatment.

The relation between the size of an urban economy and its cyclical stability is of interest if only because a number of deductive traps are hidden here for the unwary. A too literal application of multiplier logic, for example, could lead one to conclude that big cities are more cyclical unstable than small ones. The larger the urban area, the greater the proportion of local income spent for locally produced goods and services, the lower the local marginal propensity to import, the greater the local multiplier. (This follows from the fact that large cities tend to produce a greater range of goods and services.) But to quickly conclude that the higher multiplier of the larger urban area implies greater cyclical instability would be to fly in the face of common sense and casual observation.

Briefly, the explanation of the seeming paradox is simply that the complement of a low marginal propensity to import is a relatively small export sector, therefore the larger multiplier of the big city is multiplied against a relatively small primary oscillation. In its strictest application, economic base theory assumes that the direct relationship between city size and the size of the multiplier is exactly offset by the inverse relationship between city size and the relative size of the export sector, so that the relative change in total activity is always proportionate to the relative change in the export base. The tentative conclusion of the speaker is that elaborate efforts to measure the local multiplier do not rate a high priority.

Not only do we find no deductive presumption favoring a systematic functional relationship between city size and cyclical stability operating through the multiplier effect, but neither is there much of a case for stability through size by way of some functional relationship between city size and industry-mix. Certainly, larger size does bring greater industrial diversification, but cycle peaks and troughs of the various industries tend to coincide in timing (otherwise there could not be an aggregate cycle, of course). Therefore, an urban area cannot match industries with complementary cycles -- as one might combine coal and ice seasonals -- and random industrial diversification, the usual consequence of growth, will lead toward a cycle pattern approximating the national one -- an improvement for Detroit and Pittsburgh but not for Washington, D. C. The hypothesis advanced here, then, is that large urban economies tend to have diversified industrial structures and replicate the national degree of cyclical instability; smaller urban economies exhibit a much greater range of cycle instability; smaller urban economies exhibit a much greater range of cycle instability by virtue of their heavier specialization -- in both the more unstable and the more stable industries.

As we move down from the national economy to the smallest local economy in our income analysis, investment declines and exports rise in relative importance as the prime mover of the business cycle. Can we not deduce in reverse, and in a more dynamic framework, that as the local economy grows in size and becomes more self-sufficient, investment comes to rival exports as an income determinant? But if we open the door to investment as a second autonomous local cyclical force, we might as well open it wide and recognize autonomous shifts in the consumption function. With almost all purchases of producers durable equipment coming from outside, the business cycle in the small urban economy (50,000 population and under) can be characterized as substantially an export cycle with little violence to reality -- some minor adjustment might be made for the local construction cycle.

In the very large urban economy (500,000 or more), exports probably still account for the largest absolute amount of autonomous variation in total local income, but with exports down to perhaps one-third of total local activity and with some local investment purchasing locally produced durable equipment and with a higher local value added component in local construction (more of the building materials produced domestically), local investment expenditures begin to command attention. Not only are local investment expenditures more likely to remain within the local economy with increased city size, but such spending is probably more volatile, on the average, than export earnings which originate in a mixture of producers goods and the generally more stable consumers goods. Thus local investment fluctuations (counted only to the extent that they are reflected in local value added and income generation) almost certainly merit recognition as a secondary force in the local business cycle.

Moreover, with local consumption of local production rising with city size to account for as much as sixty to seventy per cent of total local activity (and income) in these half million population urban areas, even minor autonomous shifts in the "local-consumption-of-local-production function" (e.g. two per cent) could account for as much as 10 to twenty per cent of the total autonomous variation in spending activating the local business cycle. We may, on diligent search, find local economies (a) specialized in cyclically stable exports (e.g., cigarettes, insurance services), (b) expanding facilities rapidly, and (c) sufficiently remote from other areas that they are relatively self-sufficient in consumer goods, such that autonomous shifts in investment and in their local consumption function outweigh export impacts. Are the most unique local cycles, especially in reference to timing, in the more rapidly growing and/or out of the way places? Some unusually attractive opportunities for building econometric models are evident in this virgin territory. As a beginning, an annual manufacturing employment time series for the period 1946 to date can be pieced together from

the Census and Survey of Manufactures, OASI and Labor Market data for about sixty of the larger metropolitan areas -- those with forty thousand or more manufacturing employees.

With the business cycle primarily a demand phenomenon, the income elasticity of demand for the area's principal exports becomes the key concept. The durability (postponability) and use (producers or consumers goods) of local exports are probably the two most critical considerations, with durable producers goods producing the heaviest cycle impact and non-durable consumers goods the least. The quality line is also of interest, with deluxe line products the more income elastic and volatile. With our postwar business cycles increasingly moderated by ever greater built-in stability, the durability of local exports may come to play the dominant role in the new depression-proof, inventory-recession-prone business cycle.

The structure of the product market in which the area exporters sell may also merit attention. What is the net balance of having oligopolistic export industries? Administered (rigid) prices place the full brunt of a decline in demand on production and employment (in contrast to a soft competitive price which sags to encourage consumption). This is offset by the greater depression staying-power of oligopolies, rich in reserves built up via administered prices in the preceding prosperity period, and the easier access to emergency credit of the big, name corporation. In short, oligopolies may cut back output and employment more in early response to a recession decrease in demand, but they are less likely to fail and eliminate all employment. But, if depressions are a relic of the past, the depression staying-power advantage of the oligopoly may be less important than the tendency of rigid prices in recessions to destabilize local employment.

The internal organizational character of local export firms may be crucial in many cases. A local plant which is the branch plant of a multi-plant firm may be operated at full production during a national recession or have its output cut back drastically, depending on whether its the newest (lowest cost) or oldest facility, the plant producing the luxury or economy line of the product, the best or worst located, and other factors. The range (standard deviation) of cyclical possibilities is greatly widened in an urban economy based on branch plants over that which it would experience with single plant firms. The proportion of total automobile production accounted for by the (older plants of the) Detroit area varies directly with total sales and the national business cycle, suggesting that this phenomenon is not confined to small local economies. The financial structure of local firms -- the proportion of debt to equity capital -- and the willingness of local bankers to extend emergency credit are local cyclical factors which are not beyond hope of comparative measurement. All in all, there is a supply side to the local business cycle which cannot be ignored, even though the cycle is primarily a demand phenomenon.

Growth Instability: Migration and Public Investment

Trends are only straight lines because we draw them that way. If we knew the true trend we might measure growth instability by the number of major changes in the rate and/or direction of growth. Illustratively, we might quantify growth instability over a given time period by the degree of the polynomial trend equation which best fits the data (degrees of freedom considered). This is not to deny the difficulty of separating trend from cycle, to say nothing of the paucity of data. But when one recalls the central place of public investment in urban planning and administration (e.g., schools, streets, sewers) and that trend shifts are more likely to induce major amounts of in- or out-migration than cycle movements, the significance of growth stability is at least as great as cyclical stability in the urban context.

Again, city size is of interest. Industry growth trends, like seasonal but unlike cyclical patterns, are probably randomly distributed in time; industrial diversification tends to produce a mix of offsetting trends. Thus, the larger the urban economy, the more diversified its industrial structure, the stabler its growth, and the more it resembles the national economy in growth rate as well as growth stability. Of interest to the planner is the corollary that "nationalizing" the local rate of growth renders it more predictable.

Economic Growth and Development

The Demand Side

In the analysis and projection of regional economic growth and development, income elasticity of demand again comes into focus; with a steadily rising per capita income, time is on the side of areas producing income elastic goods. But in tying income elasticity to regional growth, we need to distinguish between the first quick response of buyers to a sudden (cyclical) change in income and a sustained, deliberate response to a slow, steady (secular) rise in income. Thus, where the durability (postponability) of a good is most relevant in a cyclical context, growth analysis forces us to think more in terms of the inferior-superior goods context of standard micro-economic demand theory -- from grits to beef and from bus to automobile transportation.

Beyond elasticity, shifts in taste patterns are elemental to the long view. The affluent society is characterized by a growing proportion of discretionary income and its reflection, discretionary spending. If, moreover, we are becoming ever more outer-directed and steadily trading local and regional identities for a more homogeneous national culture (via nation-wide television, Madison Avenue and ever easier migration), then the stage is set for capricious shifts in individual spending to amplify into massive tides of spending which engulf the whole country and ebb and flow as fads and fashions change. Manufacturing firms which sell in a national market find themselves alternately inundated with demand then left stranded on the

beach. The small (remote) urban economy built on a single product, or even a single brand, may be becoming much less viable in the new economy.

Satellite towns within the bounds of large metropolitan areas -- within labor commuting range of a large central city and/or a host of other small towns -- would, of course, be economically viable as part of an industrially diversified local labor market. Again, care should be taken to anticipate progress in transportation by generously delimiting the future commuting range -- by not classifying an urban area as remote (and vulnerable) too quickly. A construct analagous to the metropolitan area might be applied to less densely populated areas; employment services might well begin classifying and disseminating labor market information in the context of clusters of "independent" but economically inter-related small towns. It was argued above that growth stability but not cycle stability comes with city size and industrial diversification and it is growth stability that poses the critical problem for the small urban area. We need some careful quantification and statistical analysis of growth stability by city size and spatial position in the system of cities.

The Supply Side

Labor. The supply side of regional economic growth and development has long been recognized, even antedating the demand approach; a supply approach is implicit in the inevitable inventory of local resources which is the traditional beginning (and usually ending) point of the typical area development study. But the sophistication and analytical rigor that characterizes the demand analyses are rarely matched in the local resource-supply work. Occasionally the local labor force is placed somewhere in the spectrum of development between the shirt or work-shoe factory and the precision instrument factory. Seldom, however, is this dynamic conception accompanied by a sense of the time dimension of the industrial acculturation process -- do the steps upward in labor skill span a decade? a generation? What is the mechanism of skill transmission: through the industrial base and personal contact (from father to son) or through earnings and improved public services (from income to tax base to good schools)?

It was argued above that local specialization in unionized oligopolistic industries tends to raise local wage rates above the going rate for local skills, but the day of retribution arrives when local firms begin to decentralize; the new jobs needed to accommodate a growing local labor force must be supplied by new firms. But new firms may hesitate to enter an area in which the wage rate is high relative to labor skills; wage rates won from plush durable goods oligopolists may put the more competitive non-durables and export services out of reach in local area development efforts, at least until painful adjustments have taken place through protracted unemployment.

Entrepreneurship. While we all hasten to pay our formal respects to entrepreneurship -- inventiveness, venturesomeness, promotional artistry, organizational genius, and so forth -- as the critical ingredient in economic development, we usually hurry on to consort with more familiar acquaintances -- equilibrium rates of capital formation, capital-to-labor ratios and the like. Either we must tackle the heroic labor of quantifying entrepreneurship or we can write epic poetry on this subject, but there can be no satisfying regional growth theory without explicit and central recognition of the key factor in the capitalist system, and in long run growth in particular.

Chinitz has advanced the intriguing hypothesis: like father, like son; an area with many small businesses tends to spawn more new entrepreneurs than a corporate economy. To this let me add the concept of long waves in local entrepreneurship. A local inventor is successful and creates a new product or process; he probably innovates and begins manufacturing in his home town (he may hedge by retaining his old job temporarily, he can hire trusted assistants more easily at home, after Florence and Greenhut); the Cinderella firm pulls the local economy up with it; but success and large size bring bureaucracy (Parkinson's Law) and the emphasis shifts from creativity to efficiency and stability ("scientific menagement"); the maturing of the industry in which our firm is a leader will probably occur at about the time that the local firm is decentralizing operations to tap its nationwide market more efficiently; the combination of a maturing and decentralizing industry slows local employment growth below the rate of natural increase in the local labor force creating a local employment crisis; creativity is once more emphasized and perhaps more important financed and subsidized under frantic area development efforts -- the entrepreneur is king, the king is dead, long live the king. To this we may add the further condition that entrepreneurs tend to bunch in time and space as they attract each other -- to learn and steal from each other.

Turning to problems of quantification and data availability, the early returns from the manipulation of patent data, as a proxy for inventiveness, have not been exciting but with some imaginative taxonomic work we may yet gain some insights from this data. Specifically, progress needs to be made in the delicate business of linking patent classes to Census industries so that local patenting rates may be standardized for industry-mix, as patenting comes much more easily (nominally?) in some processes-industries (e.g., chemistry-chemicals).

Further, except for a passing glance from Ullman five years ago, this writer knows of no one who has experimented with the regional distribution of research and development associated persons. An urban-regional classification of natural scientists (from, say, American Men of Science), engineers (various Who is Who volumes) and others wants for nothing but labor power and/or automatic data processing. And even relative managerial skills may be compared between urban areas with imaginative surrogates, such as the degree of exposure of middle and top

management to post-graduate education, the speed with which bright young men are advanced, time lost through labor turnover and strikes, and so forth, prevailing circumstances considered of course.

Capital. Money capital is so spatially mobile that the existence of a local capital market must first be established. While large corporations probably do relate to the national capital market almost entirely and probably can be disregarded, very small local firms and especially prospective new entrants into business may well have to depend on neighboring lenders and investors. And these small fry are the stuff of which area development is made. Do urban areas differ notably in the cost and availability of debt and/or equity capital? fixed and/or working capital? Did the Detroit bankers who courageously financed the speculative infant automobile industry fifty years ago, when their eastern counterparts were hanging back hamstringing their local entrants in the automobile development and production race, also go through a "long wave" metamorphosis like their customers, growing more bureaucratic and conservative with success? Have Detroit bankers become so accustomed to the big, safe loan to the giant oligopoly that they have forgotten how to scrounge for new business and perhaps have no stomach for it, and will they respond to the challenge of the current industrial stagnation in Detroit by reverting to their old venturesomeness?

Turning to equity capital, is local wealth more inclined to sponsor local inventors and promoters than outside ones and, if so, do the local rich differ noticeable between urban areas? Are the Houston rich brash, aggressive gamblers and the Denver rich more staid and contented -- contented with low yields on geographically-diversified, high-grade bonds? Finally, do urban areas with greater income inequality (more very rich persons) provide better sources of local risk capital than more equalitarian urban economies. The quantification and data necessary to answer these questions would seem to be at least as dependent on hard work as on great insights or statistical artistry -- the bottleneck is as much research money as unusual talent. And the protection of confidential information in the sensitive financial realm -- the disclosure problem -- seems quite manageable, at least in the larger urban areas.

Land. Let me merely introduce the fourth classic factor of production, "land", with a direct quote from the manuscript:

> "Suppose automation reduces the force of the labor factor in industrial location by reducing the amount of direct labor input and unionization continues to spread its influence equalizing wages everywhere, especially for the critical skilled labor. Suppose differentials in capital supply to be of only minor importance with giant enterprise omni-present among industries and areas, creating thereby a national capital market. Entrepreneurship could then become the critical location factor as substantial inter-regional variations in inventiveness and venturesomeness remain. But what is more footloose, in aggregate, than an entrepreneurial complex; there is no obvious reason why an exciting and fruitful inventive-innovative environment might not be developed in a pleasant place to live rather than a less pleasant one. Inventors and scholars and promoters are human too -- at least their wives are. What could be more logical than for these intellectual-industrial centers to be consciously implanted in two distinctive environments: places which offer natural beauty and outdoor recreation, and places which offer the height of urban culture and indoor recreation? The case of Palo Alto and Santa Monica, California as centers of research and development does not need extended argument; it is hard to argue with success. Similarly, the superb consumer capital (e.g., museums, libraries, theatres and so forth) in New York and Boston have made it possible for those areas to hold their own in competition for research and development activity with the aforementioned garden spots."

The Matrix of Goals

"Opportunity Cost" at the Policy Level

The literature of urban economics is remarkably free of any discussion of the mutual compatibility or inter-relationships of these four goals, affluence, equity, stability and progress. To the extent that any particular couplet of goals is incompatible, then the pursuit of one goal has as its "opportunity cost" the sacrifice sustained by not emphasizing the other one instead.

Of course, the matrix of goal associations may reveal at least an equal number of positive correlations -- conjoined, consistent goals. This latter situation might seem, on first blush, to connote the best of all possible worlds-- to be able to have one's cake and eat it. But further reflection reminds one that, if the darker side of each picture still remains, a rash of positive correlations between these goals may mean the compounding of good fortune one place and ill fortune another. For example, if the rapidly growing areas are also the most stable, then the stagnating areas are doubly cursed by having heavy cyclical unemployment piled on top of heavy structural unemployment -- not too inaccurate a description of a distressingly large proportion of the local economies in Pennsylvania, West Virginia and Michigan.

Substitutability and Complementarity of Goals

Limitations of time and space prevent elaborate detailing of the probable interrelationships

between the level, distribution, stability and growth of income and employment, for there are twelve separate couplets to be explored (counting opposite directions of causation separately). Still, some feeling for the analytical power inherent in the concept of a matrix of goals can be gained from even a highly impressionistic sketch.

Level-Distribution. The level and distribution of income may be linked through the industry-mix, with the durable goods towns exhibiting both affluence and egalitarianism largely through the aegis of a third force, unionization. But if the impact of automation continues greater in manufacturing than in services, and the (income elastic?) services continue to grow faster, chronic unemployment will plague manufacturing areas. We may witness the evolution of an ambivalent income pattern in factory towns in which a relatively equal distribution of income among the upper four-fifths of the population is associated with an unusually impoverished lowest fifth. Thus relative high per capita income, relatively equally shared by the majority may be associated with a relatively large indigent class. The highly productive, automated-factory worker would be financially able to assume the heavy local welfare load; what is in question is whether "solidarity" is translatable into noblesse oblige.

Level-Stability. Again, working through the local industry-mix, a tenuous case can be made for the association of high income levels with cyclical instability. It is presumably well accepted that durable manufactures are more unstable than non-durables and services are the most stable of all. If wage rates run from high to low in the same order, then affluence and stability become substitutive goals and a trade-off is a bitter fact of life to be faced by the area development commission. Reversing the causation, stability operates to raise real income by eliminating alternating periods of excess capacity and capital shortages, economizing on urban capital.

Level-Growth. Traditional economic analysis has been more concerned with the income level-economic growth interrelationship than any of the others because relative wage rates (and job availabilities) are the key labor allocating mechanism. But if we face a decade of heavy structural unemployment, the interregional redistribution of labor may not proceed smoothly. While a job may induce an unemployed worker to move from a declining area, an increased probability of gaining employment may not: moving to an area with a lesser rate of unemployment does not provide a job. Depressed area legislation and Federally-extended unemployment compensation, however desirable, further complicate labor allocation. Forecasting local income levels and aggregate population change is increasingly an exercise in political economy.

Stability-Distribution. Apriori, one might argue either side of the income stability-distribution case, pointing up the need for empirical work. Clearly, a heavy local cycle implies severe unemployment, poverty and income inequality, but we can return again to the fact that the unstable durables are the most heavily unionized and hence most subject to that egalitarian influence. Thus a fluctuating aggregate local income would seem to be associated with a fluctuating coefficient of local income inequality. In prosperity the high income heavily-unionized durable goods areas may be relatively more egalitarian and in recessions relatively less so.

Growth-Stability. One feels intuitively that a rapid rate of aggregate growth should foster cyclical stability, if for no other reason than that it would swamp the local cycle, especially in an era of mild recessions. The verification of this impression is complicated by a subtle measurement problem. While the cycle in a rapidly growing local economy may be rather large when measured around the trend (with trend removed), a cycle trough that is barely lower than the preceding prosperity peak is a local "recession" only in a very special sense -- a reduced rate of in-migration with local employment holding steady is relatively painless (e.g., Los Angeles and San Diego in the 1954 recession).

But rapid rates of growth are hard to maintain; often they are built on the transitory stage of most rapid growth of a single industry or firm, and even if area growth spawns new industries (via growth of the local market, input-output linkages and so forth) transitional discontinuities are inevitable. In short, rapid growth probably almost ensures growth instability.

Growth-Distribution. Rapid aggregate growth serves to reduce cyclical and structural unemployment, reducing income inequality. A partial offset lies in the tendency of growing areas to attract the poor unskilled rural migrants, continually replenishing the local stock of low income residents. Rapid aggregate growth also contributes to intra-area, inter-governmental income inequality by creating suburbs and satellites (political fragmentation), politically separating the rich and the poor, and divorcing tax base from public service needs. This is reinforced by the tendency of the poor in-migrants to settle predominantly in the older (lower rent) central city.

Obviously, we might next move to a higher level of analysis and look for patterns combining three or more of the attributes (goals) and, ultimately, describe common syndromes by which urban economies might be classified. We have here also an unexcelled opportunity for the application of multiple correlation and regression analysis and other multi-variate analysis.