

The Challenge for Regional Development

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THE CHALLENGE FOR REGIONAL DEVELOPMENT

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Abstract

This working paper reproduces the speech by Professor Geoffrey J.D. Hewings at the Nomination Ceremony as Member of the Andalusian Regional Science Academy, on 28 May 2018 at Loyola Andalusia University. Professor Hewings reviews the evolution of Regional Science since the sixties, highlighting the key and forgotten role of the space when the outcomes of the economic policies are assessed in terms of developments. In addition, the challenges posed by demographic change are drawn, pointing out the future research directions to be addressed by regional modelers.

Keywords: Regional Science, Regional Development, Demographic change

PREAMBLE

In the more than thirty years that I have been coming to Spain, I have felt a warmth in the welcome that I have received. Since the formation of the Regional economics Applications Laboratory at the University of Illinois, we have had the pleasure of hosting a large number of Spanish scholars, especially younger scholars and PhD students. It has been a great pleasure to have been able to follow their careers, to watch them achieve promotion and international recognition. One of the very first Spanish visitors was Professor Manuel Alejandro Cardenete Flores, at that time at the very beginning of his career; now, he is Profesor Catedrático and Vice Rector at Loyola University of Andalucía and a prominent international scholar in regional science – and also the promoter of my nomination today. There has always been a bond between REAL and Andalucía that continues to this day with visitors from Pablo Olavide and Sevilla. Hence, it has been a great pleasure for me to receive this invitation to join the Academy and I thank you for this honor and thank you to Professor Cardenete for nominating me. You can be sure that we will continue to sustain and enhance our interactions in the coming years.

INTRODUCTION

As a new entrant in the 1960s into the field of what was to become regional economics, I was surprised to learn that one of the first studies to explore the spatial dimension of economic development was published in the early 1940s Full Employment in a Free Society. In this book, the author, Lord Beveridge, presented data on the spatial distribution of unemployment rates by region in the U.K. Readers were startled to find that during the Great Depression (1929-1937), unemployment rates varied by a factor of 2 or 2.5 times between SE UK (London-centered region) and Wales, Scotland and the North of England. The impact of the Depression was uneven over space; the Beveridge Report sought to understand the causes and the outcomes. In 2014, the differences persist although the unemployment rates vary from 5.3% in SE to 10.3% in Northeast, a difference is slightly less than 2 times. In the interim between the 1940s when “regional policy” began to take a formal role in economic growth and development strategy and the present day, we have witnessed some major changes in these policies, in the structure of regional economies, in the models that have been developed to help us understand regional dynamics and in our capacity to be humble enough to realize that the success of regional policy remains, for the most part, an aspiration yet to be realized.

UNDERSTANDING A REGIONAL ECONOMY

In the regional development literature, intervention on the part of government is often justified as a way to correct market failures. There is a further, often unstated, belief that only spatially targeted government policies influence regional development; for a long time, this belief was also accompanied by a view that the loci of benefits from spatially targeted policies were the regions in which the investments were made. Consider the cases of the Northeast of Brazil and Irian (Jaya) in Indonesia, both the least prosperous of the macro regions in their respective countries. After several decades of targeted development investments, the gap in per capita income between these regions and their national levels has remained virtually unchanged. These findings have generated a great deal of introspection in regional development ministries in both countries; perhaps the targeted investments were not chosen correctly, or the regional development strategies that were chosen were inappropriate. These myopic perspectives anticipate a direct cause-effect relationship between targeted spatial development strategy and outcomes but they fail to appreciate broader, system-wide structural effects often having nothing to do with explicit spatial development strategy that often serve to undermine the success of anticipated outcomes for targeted development policies. These system-wide effects are part of a set of characteristics of an economy that can be collectively referred to as spatially blind policies.

It is important to appreciate that the apparent tension between spatially blind and spatially targeted policies is rarely articulated in this fashion but it is also clear that the distinction provides important insights into the apparent lack of success of spatial development strategies in many countries, both developed and developing. In some ways, the outcome should not be unexpected given the enormous discrepancy in the size of funds allocated to spatially targeted investments as opposed to the rest of the investment portfolio of central governments. Further, spatially blind does not imply spatially neutral. For example, the US federal government budget allocates about 20% of total spending and almost half of discretionary spending to defense; the defense expenditures are decidedly not spatially blind. Military installations and associated personnel are not spread evenly throughout the fifty states; further, defense procurement is decidedly concentrated but the total spatial impacts of these purchases are difficult to trace because of the complex web of supply chains associated with the production of final goods and services for the various parts of the defense establishment.

In many developing economies, spatial policies are often assigned to a prominent federal agency with a high profile with the concomitant belief that allocations assigned to other agencies will be spatially blind. Rarely has an integrated assessment of the

impact of the total budget allocations been a prominent feature of the ex ante or ex post evaluation of the success of the spatial policies. In fact, it would be fair to state that this is a feature of spatial development strategy that has rarely been addressed. Far more attention has been focused on the rationale for the policies – import substitution industrialization, key sector identification, growth poles and growth centers, cluster development and so forth. Given the sheer magnitude of the non-spatially targeted components of central government budgets, it would be more of a surprise if they did not have a more profound impact on spatial development. Yet, in so many of the evaluations of the success (or failures) of policy promoting for example income convergence, attention has rarely been directed outside the purview of the spatially-targeted policies while it is entirely possible that the spatially blind allocations may end up either unraveling the benefits of the spatial policies or even generating countervailing tendencies.

REGIONAL COMPETITION BUT WHAT ABOUT REGIONAL COMPLEMENTARITY?

In addition, too often, regional development policies have essentially been dominated by regional competition policies. Attention is directed to ways of enhancing a region's competitive position through strategic investments in infrastructure, human capital or targeted investments in key industries. This strategy ignores the fact that as a result of fragmentation forces, firms have reorganized production processes by breaking them into more specific tasks that are allocated to individual establishments to exploit the advantages of economies of scale within an individual plant and economics of scope across multiple establishments. The production in value chains are often spread across multiple regional economies that are often located in different economies. For example, the average component in a US automobile crosses between two and three state (region) boundaries before ending up in the final product. Hence, regions are becoming more complementary as evidenced by the significant increase in interregional trade while regional policy only focuses on the competitive dimension. Most of this interregional trade is heavily concentrated in intra-industry trade (movement between similar sectors) providing further evidence of the increasing tendency towards fragmentation.

TRADE POLICIES: NATIONAL INITIATIVE BUT SPATIALLY DISTINCTIVE IMPACTS

While the new trade theory provides convincing evidence that multilateral trade policies provide enhanced welfare benefits over bi-lateral agreements, many see the latter as a first step towards enlarged, liberalized multinational markets. The promotion of first US-Canada Free Trade Agreement and then NAFTA were based on the premise that an

enlarged market would provide mutual benefits to participant countries. Almost all the analysis and the presentation of the outcomes were considered at the national level; but what of the spatial impacts?

Using a multiregional CGE model, Gazel et al. (1996) documented the regional (state-level) impacts of the US-Canada FTA that were of the order of 1-2% in the Midwest states (which had the greatest volume of trade with Canada) and up to 5% in states like Texas with more modest levels of trade. The analysis revealed that the relative regional gains from the FTA depended on factors other than export and import share of each region with Canada and their respective economic size – especially with respect to the size of the trade flows. However, as Gazel (1996) noted, the internal economic structure and the nature and volume of interregional trade played an important role in determining the outcome of the gains from trade. He further noted that the gains from the trade agreement, while still modest, were significantly enhanced if interregional labor mobility was considered (but still without international mobility). The additional gains were of the order of 1-5 percentage higher for a set of four macro regions of the US; hence, labor mobility serves to enhance the more efficient allocation of resources and thus generates larger gains from the trade agreement.

The spatial impacts of NAFTA turn out to be much more complex; one major structural change generated by this trade agreement was the significant spatial restructuring of the supply chains of many automobile companies. As a result, the sectoral impacts were often much more varied than the spatial impacts. Andresen (2009) measured the impacts of NAFTA on Canadian provinces and found impact on inter-provincial trade more important than province-US trade; once again, the larger impact was on within country trade. The US results were mixed – model specifications often fail to capture complex interplay between national and interregional trade, assuming somehow that the two are not connected.

The dominant role and impacts on interregional trade should not be surprising – especially in the North American context. The growth rates of interstate commodity trade in the US compared with the growth of GDP. Revealed differences of between 5 and 15 percentage points between 1993 and 2007. A similar result has been found when global trade growth is compared with changes in global gross product.

Further, the impact of international trade changes on interregional trade is often significant and spatially concentrated. Looking at the Midwest part of the US, we found that the proportion of intraregional flows (those circulating within the Midwest or the Rest of the US) declined over the two decades of the analysis, even while total flows increased. Secondly, intra-activity flows (those between the same sectors) increased while inter-activity flows (between different sectors) decreased. Interregional flows

accounted for an increasing share of total flows with, once again, intra-activity flows increasing and inter-activity flows decreasing. Flows within the Midwest but between different states increased as did trade between the Midwest and the Rest of the US (in both directions).

Further, when the indirect effects of trade flows are considered, we find significant spillover effects that vary from state to state. For example, the state of Michigan retains about 30.9% of the indirect effects but almost an equal percentage (28.9%) spills over to the other Midwest states and only 34% finds its way to the Rest of the US. A recent analysis by Carlos Llano has found equally important and complex trade patterns and spillover effects among the regions of Spain.

These processes have been generated by a combination of two forces – hollowing out of individual state economies and a concomitant change in the spatial organization of production. The former effect has seen the average establishment more dependent on inputs located outside the state or region in which it is located and, at the same time, more likely to ship its products outside its home region. This process has come about largely as a result of significant decreases in real transportation costs. Firm reorganization has also taken advantage of these decreased costs; production is now fragmented into more discrete operations in a sequenced value chain of production. While both hollowing out and fragmentation have facilitated and responded to increased interregional trade, this trade is not evenly spread over all states.

The Brazilian case is even more interesting. As noted in the prior section, even with significant proactive spatial development policies to address issues of regional disparities, per capita income in the Northeast is only 50% of that in Center-South (where São Paulo is located). These disparities have persisted over many decades and have been the locus of almost every policy ever formulated to address regional development. In Brazil, trade policy has been promulgated primarily on basis of need to enhance the competitiveness of national economy and to enhance the welfare of Brazilians by promoting competition (between domestic and international suppliers of goods and services); spatial issues were rarely if ever considered. The initial focus was on MERCOSUL/MERCOSUR but subsequent attention has been directed to the potential gains from the development of an Americas Free Trade Area (AFTA) and also the possibility of greater affiliation with the EU.

The analysis was conducted with models built on the B-MARIA system initially developed by Haddad (1999), a multiregional CGE model stylized on the Monash system (originally developed as ORANI by Dixon and colleagues in Australia). The initial motivation for the construction of the model was to explore the degree to which trade liberalization policies were spatially blind – i.e., the degree to which unilateral

reductions in tariffs on Brazilian imports would generate similar impacts across the regions of Brazil. Primary factor movements play a major role in the results achieved for the long-run. The Northeast is the most harmed region; when national tariffs are decreased, all the sectors reveal output results below the base case level. These sectors are ones that would suffer from increased importation of very regionally competitive goods. The Northeast sectors would experience declines in demand for their goods as consumer switched to less expensive foreign alternatives. As capital moves away from the region, multiplier effects operate, further deteriorating the regional economy. The increase in the demand for investment in the other regions operates in the opposite direction. Increasing demand for capital goods generates a round of expenditures in these regions especially in the North and Center-South regions.

Capital goods industries use a greater number of regional commodities (especially construction) and face lower elasticity of substitution of the Armington type (both for substitution between foreign and the domestic composite, and between goods from different regions in the country). Hence, the overall outcome is positive for almost all sectors. Once again, interregional trade plays a major role in the outcomes; it turns out that there are some important asymmetries in interregional indirect effects: Northeast sectors are much more dependent on the Rest of Brazil than the corresponding sectors in the latter region are on the Northeast.

The implications of this asymmetry provide insights into the reasons for the persistence of spatial disparities in Brazil; development funds expended on projects in the Northeast generate significant leakages to the Rest of Brazil and thus a more muted economic impact within the Northeast itself. The implication is that the economic structure of the Northeast does not provide enough opportunities to locally source inputs into the supply chain, necessitating dependence on inputs produced in other parts of the country.

SPATIAL IMPACTS OF MACRO POLICY: REGIONAL BUSINESS CYCLES

Fiscal decentralization represents a specific policy initiative that while spatially blind clearly has the potential to generate very different impacts across space. What about the impact of other types of macroeconomic policies? Here the analytical difficulties present significant challenges; one approach, that will be described here, is to analyze the issue through consideration of regional business cycles. If the portfolio of policies embraced in national economic policy (monetary, fiscal, trade etc.) is spatially blind, then regional business cycles should mirror their national counterparts. Using two studies, one for the Midwest of the US and the other for all regions in Japan, the findings suggest that regions rarely move in parallel with the national economy – and

certainly not with each other, even regions with which there are major trading relationships.

Starting in the 1960s, as regional economics (or regional macroeconomics as it was often labeled) began to emerge as a recognized area of research, there was considerable interest in applying national macroeconomic analysis to regional systems. The objective was to explore the degree to which national policies that were not spatially targeted generated differential effects on regional economies. Research focused on regional growth, impact analyses, fiscal issues, and regional problems such as the identification of regional Phillips curves and consideration of trade (e.g. Thirlwall's (1980) contention that regional problems were balance of payments problems). Underlying much of this research was the notion that the variations in the economic performance of regions could be traced in large part to differences in economic structure. The much-maligned shift and share analysis was proffered as a way of uncovering the degree to which differences in economic structure could be traced to differential economic performance. However, some formal testing (e.g., Brown, 1969; James and Hughes, 1973) cast doubt on this finding. The fascination with growth center ideas in the 1970s and 1980s drew attention to the importance of interindustry linkages but ultimately failed to achieve traction as a sustainable tool of analysis. More recently, Carlino and Defina (1998) and Carlino and Sill (2000) have returned to explore the regional impacts of "traditional" macroeconomic concerns – monetary policy and business cycles, while Kurre and Woodruff (1995) looked at regional variations in performance in terms of portfolio theory.

The Midwest states of Wisconsin, Illinois, Indiana Ohio and Michigan are each other's largest trading partners with 38-40% of each partner's exports destined for the other 4 states. Given these findings, it would not be unreasonable to posit that states that are major trading partners will probably experience economic fluctuations in common. Park and Hewings (2003) explored the issue by constructing business cycles for each of the Midwest states and then comparing economic performance with the US as a whole and one state with another.

Using a variety of standard test, it was found that the business cycles of Michigan, Ohio, Indiana and Wisconsin coincide with the national cycle while the cycle of Illinois lags the national cycle by 3 to 4 months. This phenomenon turns out not to be generated from the differences in industry structure. Illinois has transformed its structure so that it now looks more like the US than its Midwestern neighbors, yet it is not in sync with national business cycles! So a conundrum persists. A state that trades predominantly with its neighbors has transformed itself in terms of structure to look more like the US than these neighbors yet lags the US in business cycles and has added jobs since 1990 at about half the rate of the US as a whole.

In the search for explanation, many analysts have begun to explore the way in which production fragmentation has changed the nature of inter-national and inter-regional linkages. In addition, it is entirely possible for regions to become more integrated and competitive at the same time; clearly, the nature of trade and the increasing domination of intra- over inter-industry trade generates a different dynamic that has changed the competitive advantage of regions. Many of these changes have been propelled by significant transformations of firm ownership and organization.

DEMOGRAPHIC CHALLENGES

Regional modelers have spent a great deal of time and energy worrying about the level of sectoral aggregation in their models but relatively little time considering the implications of aggregation of households into a single, representative household. In the US, households account for 70% of GDP (just under 60% in Spain) on the expenditure side and increasing concerns about rising income inequality suggest that greater household disaggregation might be warranted. Hence, any change in the composition of this consumption could have important direct and indirect (ripple) effects on the economy. These changes could be generated by:

- changes in the age composition of households since consumption patterns change with age;
- changes in income distribution, since there are important differences in the way income is allocated depending on the level of income;
- changes in in- and out-migration, not only in terms of volume but also in terms of composition (e.g., skills or human capital endowments);
- changes in the way and when individuals invest in human capital;
- changes in retirement patterns and especially the propensity for retirees to remain in a region;
- the changing role of non-wage and salary income (wealth) over time;
- changes in social security costs and the way these are allocated across households over time;
- changes in the way households evaluate the role of savings and precautionary measures to address idiosyncratic risks and retirement.

Although international (legal and illegal) immigration is an increasingly important component of national population change, the region's demographic structure is determined by the combination of natural increase (births - deaths), and two types of migration, international and interregional. However, as regional fertility and mortality have become more uniform throughout the United States, migration has become by far

the more important factor in changing regional populations. One of the most important reasons, of course, is that fertility changes may take many years to register in terms of a significant change in the labor force; in contrast, immigrants have an instantaneous impact on labor supply.

The population over 65 in both Chicago and the U.S. is expected to exceed 20% by 2030. The evidence suggests that it is important to pay attention to age if for no other reason than changes in the rate of growth by age are so different – with shrinking contributions to the prime labor force (25-45 years old) and significant increases in the post 65-year-old groups.

However, it is not just the rate of growth but also differences in consumption patterns; there are some important differences in the way households allocate income. For example, on average in 2003, households allocated almost 13% of their income for food, 36% for housing (including mortgage, other loans, maintenance expenditures etc.) and 17% for all forms of transportation. The food expenditure allocation varied from 12.4% (45-54 age group) to 14.5% (under 25) while the transportation allocations varied from 18.1 (under 25) to 14.7 (over 65). Over time, many of these expenditures are forecast to change. For example, people over 65 will spend a declining share of their income on food but an increasing share on other goods and services that include restaurants. When we compared forecasts with a single household and compared them to those with disaggregated households (income and age), we found significant differences in total consumption and consumption by sector.

In summary we found that:

- Household consumption varies by age and income level; as the composition (age structure or income structure) of households change, there are likely to be important changes in the type of goods and services demanded
- Ageing in the absence of immigration will have important consequences for social security funding and the allocation of expenditures on health care by pre-retirement age cohorts
- An ageing population in the absence of immigration and with continued out-migration of retirees will likely have a longer term (next 20-30 years) impact on the Chicago economy
- Immigration at the current level (0.6% of the base population) is likely to generate positive impacts on the economy
- Expansion of the labor force and potential depressing of wage levels is more than compensated by the stimulus to demand and contributions to social security by the immigrants

- Without sustained investment in skill acquisition in the children of immigrants, the effects of immigration could turn potentially negative when the immigrants who entered in the 1980s and 1990s start to retire
- The combination of ageing and immigration is likely to change, in significant ways, what is purchased in Chicago generating an endogenous stimulus to structural change in the economy; this, in turn, could generate a positive or a negative effect on what is produced in the region to meet local consumer demand
- The synergies among ageing, immigration, retirement year and social security funding generate complex interactions that provide different effects on the Chicago economy over time

NEW INITIATIVES

We now have more sophisticated models but regional policies have not been modified to embrace more complex economic structures. Over the last four decades, regional policy has embraced one new initiative after another but we have spent little time in either monitoring the effectiveness of regional policies or conducting rigorous ex post evaluations. At the present time, cluster-based development strategies and approaches using the concepts of smart specialization seems to be very popular – but I have found it difficult to identify documents that have carefully evaluated these options. In the US, policy-makers seems reluctant to conduct this sort of analysis.

In addition, the increasing interest in income distribution needs to be embraced in our regional modeling. In Chicago, we have modified a proposal by Miyazawa to estimate the relationships between households with different income – the interrelational income multiplier matrix. We feel that this is more valuable than the calculation of a Gini index of inequality since it reveals how income inequality arises and is either sustained or enhanced. In essence, increases in income to low-income households result in increases in income to high-income households but the reverse is not the case. “Trickle-down” effects do not seem to characterize income formation; the results are decidedly asymmetrical.

IMPLICATIONS FOR ANDALUCÍA

The unemployment rate in Spain increased to 16.74 percent in the first three months of 2018; in the regions, Extremadura (25.94 percent), Andalucía (24.74 percent) and Castilla-La Mancha (20.68 percent) recorded the highest jobless rates while Navarra (10.54 percent), País Vasco (10.76 percent) and La Rioja (11.03 percent) the lowest. Research by Ana Gómez-Loscos has found the co-movements in the business cycles among regions to be low with differential effects during expansions and contractions.

Hence, recovery from the Great Recession in Spain can be expected to be uneven. The complications from a potential separation of Cataluña from the rest of Spain and the impacts of BEXIT on the regions of Spain reveal very complex patterns of change that reflect the increasingly complicated way in which regional economies interact.

The lingering effects of the crisis persist and generates concern about the longer-term trajectory of employment opportunities for those who entered the labor force in 2000. Do we have effective training and re-training programs that will provide the flexibility to offer ways for labor to adapt and re-adapt to changing demands? In the US, the answer is most definitely “no;” this is all the more disconcerting given the expectation that a person entering the labor force now can be expected to have to re-train 5-7 times over the course of a lifetime. There is a significant group of regional economists/regional scientists in Andalucía and there are similar concentrations in Extremadura, Asturias, Madrid, and Barcelona; policy-makers need to challenge them to be more pro-active in the formulation and evaluation of policy. In turn, the modelers need to provide convincing documentation that attention to regional problems will be essential to ensure the sustainable recovery of the Spanish economy as a whole. It is not a “luxury” than can be addressed only in good times.

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