

2015

National manufacturing policy, local real estate markets, and the missing region: prospects for urban industrial development in the U.S.

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- Livesey, F. (2006), *Defining High Value Manufacturing*. Institute for Manufacturing. Cambridge: Cambridge University Press.
- Livesey, F. (2012), 'Rationales for Industrial Policy Based on Industry Maturity', *Journal of Industry, Competition and Trade* 12(3): 349–363.
- Nathan, M., Rosso, A., Gatten, T., Majmudar, P. and Mitchell, A. (2013), *Measuring the UK's Digital Economy with Big Data*. London: National Institute of Economic and Social Research.
- Neely, A. (2008), 'Exploring the Financial Consequences of the Servitization of Manufacturing', *Operations Management Research* 1(2): 103–118.
- Obama, B. (2008), Speech on manufacturing and trade, Council on Foreign Relations, 14 April, David L. Lawrence Convention Center, Pittsburgh, Pennsylvania.
- OECD (2011), *ISIC Rev. 3 Technology Intensity Definition*. Paris: OECD Directorate for Science, Technology and Industry.
- PCAST (2011), *Report to the President on Ensuring American Leadership in Advanced Manufacturing*. Washington, DC: Executive Office of the President, President's Council of Advisors on Science and Technology.
- PCAST (2012), *Report to the President on Capturing Domestic Competitive Advantage in Advanced Manufacturing*. Washington, DC: Executive Office of the President, President's Council of Advisors on Science and Technology.
- Pierce, E. (1957), *History of the Standard Industrial Classification*. Washington, DC: Office of Statistical Standards, U.S. Bureau of the Budget.
- Pilat, D. and Cimper, A., Olsen, K. and Webb, C. (2006), 'The Changing Nature of Manufacturing in OECD Economies', *STI Working Papers*, OECD.
- Science and Technology Institute (2010), *White Papers on Advanced Manufacturing Questions*. Washington, DC: Science and Technology Institute.
- Shipp, S., Gupta, N., Lal, B., Scott, J., Weber, C., Finnin, M., Blake, M., Newsome, S. and Thomas, S. (2012), *Emerging Global Trends in Advanced Manufacturing*. Alexandria, VA: Institute for Defense Analyses.
- TSB (2012), *High-Value Manufacturing Strategy*. London: Technology Strategy Board.
- Visnjic-Kastalli, I. and Van Looy, B. (2013), 'Servitization: Disentangling the Impact of Service Business Model Innovation on Manufacturing Firm Performance', *Journal of Operations Management* 31: 169–180.

26. National manufacturing policy, local real estate markets and the missing region: prospects for urban industrial development in the U.S.

Laura Wolf-Powers

INTRODUCTION

Manufacturing policy and urban and regional policy coexist uncomfortably in the United States. Although many industrialized nations coordinate federal-level technology and innovation strategies with expressly place-based investments in the commercialization of basic research – and, concomitantly, with support for regional networks of small and medium-sized manufacturers – such mechanisms have not been a prominent feature of U.S. policy (Clark 2010). As a result, attempts to connect economic development strategy with economic geographers' knowledge about place-based innovation often falter. Descriptions and typologies of "learning regions," regional innovation networks and spatially rooted industry clusters are reasonably straightforward. But translating that knowledge into effective, implementable policy for manufacturing development is not straightforward, because there is neither a strong federal government leading regional policy from the top down nor a framework for autonomous regional governance of any sort.¹

Traditionally de-territorialized, national science and technology policy may be changing. A new manufacturing agenda recently announced by the Administration of second-term President Barack Obama has sparked hope that federal policy will attempt more explicitly to strengthen production networks in ways that draw on the specific strengths of cities and their metropolitan regions. Economic development scholars and practitioners believe that new U.S. national government initiatives in manufacturing contain the seeds of place development strategy, citing the potential to coordinate federal investments with state, regional and local ones, and to maximize the benefits of agglomeration and intra-regional networking (Helper, Krueger and Wial 2012b; Muro and Lee 2013). Many believe that by enfolding local-level assistance to manufacturing SMEs into a cohesive national technology and innovation policy, U.S. officials can seize heretofore missed opportunities to commercialize university-based research, and to diffuse it to and through strong place-based networks of firms (Clark 2012, 2013; Ezell and Atkinson 2011).

Renewed policy and media interest in manufacturing, together with the availability of place-based federal funding through two U.S. federal programs – the National Network of Manufacturing Institutes and the Investing in Manufacturing Communities Partnership, both described later in this chapter – have elevated the efforts of cities and counties pursuing industrial land use and development strategies and stimulated new such efforts (Leigh and Hoelzl 2012). The most appropriate scale for engagement with issues of innovation policy, however, is that of the region, while manufacturing

revitalization efforts (due to lack of powerful policy-implementing institutions at the level of the region) are almost inevitably implemented at the level of the municipality.

I argue in this chapter that this gap between scales of action in U.S. policy-making makes the project of manufacturing redevelopment in cities problematic. Because of the "missing region," municipal authorities struggle to meaningfully effect changes in the policy areas most compelling in the national policy discourse. Meanwhile, the national government's main areas of focus – producer networks, commercialization, technology transfer and workforce readiness – become subordinate on the local level to officials' necessary preoccupation with real estate markets and barriers to site development. To illustrate this argument, the chapter foregrounds the city of Newark, New Jersey, a city of 278,000 located ten miles from New York City. In Newark, public and civic leaders intent on rejuvenating a severely disinvested manufacturing base have enlisted the collaboration of national policy actors, aiming to find a place for their city beneath the aegis of U.S. national manufacturing policy initiatives. Newark's case illustrates the fact that while new manufacturing policies have the potential to develop businesses, attract entrepreneurs and create jobs in places that have seen decades of industrial disinvestment, actors at the national and local scales need to acknowledge and resolve their distinct approaches in order for this to happen. National actors must take property development seriously; local ones must think beyond it.

THE U.S. MANUFACTURING AGENDA AND THE MISSING REGION

Before taking up the Newark case, I briefly review recent developments in manufacturing policy at the national level in the United States. While policy rationales and modes of implementation differ markedly under different national regimes, most industrialized nations coordinate national-level technology and innovation strategies (science, technology and innovation policy, or STI) with place-based investments in manufacturing at the regional and local scales (see Ezell and Atkinson 2011; Perry and May 2007). For example, Germany has "a long record of regionalized STI policy" (Koschatzky and Kroll 2007, 1119) through which manufacturing enterprises large and small receive technical support and conduct collaborative product and process research in conjunction with a network of 57 university-linked sector-based institutes.² In Japan, where science and technology policy has historically been dominated by the national state, regional bureaus of the national Ministry of Economy, Trade and Industry have played an increasing role in recent years; regional bureaus are implementing regional industry cluster initiatives and playing a larger role in the operation of 182 Kohsetsushi Centers, which assist small and medium-sized firms with research on new products and shop floor process improvement (Kitagawa 2007).

Science and technology policy in the United States has, in contrast, had little territorial component and little relationship to manufacturing.³ Notwithstanding the Manufacturing Extension Partnership, a U.S. Department of Commerce-funded network of technical assistance providers,⁴ the U.S. has in general left industrial development to state governments, where officials pursue it in a context of fragmentation and competition. Ezell and Atkinson contrast the approach of economic development

officials in the U.S. with that of officials in Japan, where the national state is a stronger influence:

Japanese prefectures have the attitude that they cannot co-opt a firm from another prefecture; they can only grow their economy from within through superior technology development, transfer, and commercialization. This is in contrast to the "smokestack chasing" more common in the United States, a "race-to-the-bottom" in which states dangle incentives before businesses to induce them to relocate from one state to another. (2011, 7)

But signs exist that this may be changing. Citing an uptick in manufacturing employment after a decade of steep decline, along with the potential for the "on-shoring" of jobs previously performed overseas, the Obama Administration announced a manufacturing policy agenda in 2012. In July of that year, the Advanced Manufacturing Partnership (part of the President's Commission on Science and Technology) adopted a 16-point strategy that encompasses measures to support innovation, improve the tax and regulatory environment, and invest in training and skills certification, all with the goal of strengthening domestic manufacturing. The Administration's long-term plan is to create a national network of National Manufacturing Innovation Institutes, each embedded in a regional economy.⁵

More significant from an urban policy perspective is the Investing in Manufacturing Communities Partnership (IMCP), announced by the Economic Development Administration in the Department of Commerce in April 2013. Published material on the IMCP expressly promotes alternatives to the typical strategy of attracting footloose firms one at a time via specific incentives (tax abatements, grants, land write-downs). It emphasizes that physical and human infrastructure invested in places – and available to all firms that locate in those places – can offer a return superior to that of conventional firm-oriented subsidy or "smokestack-chasing":

Through the IMCP, the President is directing Federal agencies to provide coordinated assistance to manufacturing communities through a new partnership that will align Federal economic development resources and help U.S. localities make coordinated, long-term investments in their public goods in partnership with universities and industry. These investments will ultimately help regions become more attractive for manufacturers and supply chains. (U.S. Department of Commerce 2013a).⁶

Thus despite the precarious status of these initiatives at a time when many members of Congress are demanding fiscal austerity,⁷ consensus appears to have developed in the federal government around two distinct ideas. The first is that national innovation policy should directly implicate manufacturing. The second is that manufacturing policy should function as place policy, strengthening networks of firms in ways that build on the strengths of individual cities. It is against this backdrop that Newark, New Jersey's current manufacturing strategy has evolved.

CASE: MADE IN NEWARK

The rise and decline of manufacturing in Newark follows a familiar American narrative. As an 18th century colonial town, Newark flourished as a craft manufacturing hub,

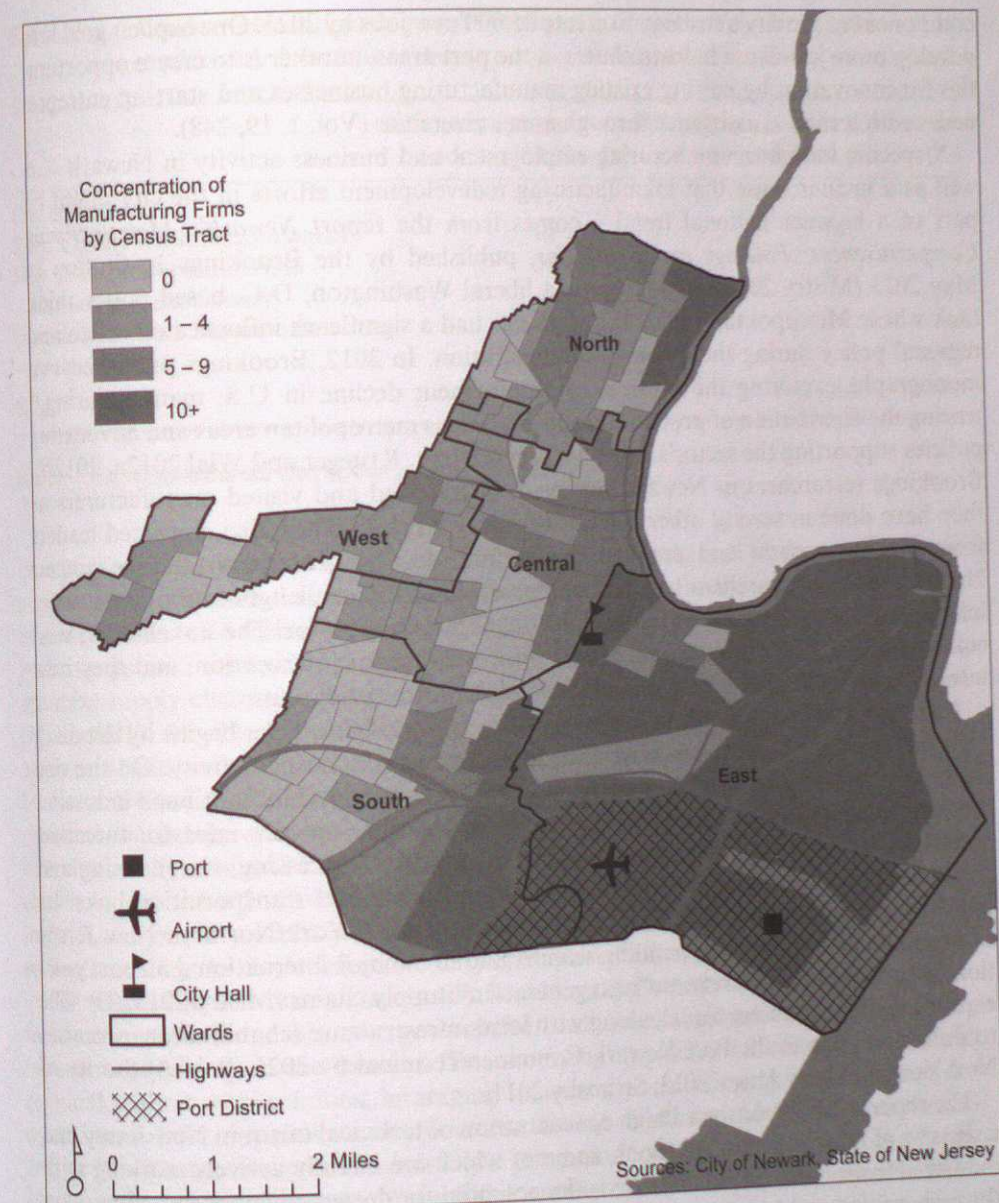
specializing in carriage-making, malleable iron and especially leather, as well as in leather goods such as boots and shoes, saddles and harnesses. With the advent of steam power and the building of canals and railroads, the city prospered in the mid-19th century, gaining exponentially in population and becoming one of the nation's leading manufacturing cities (Cunningham 1988; Jackson 1985). The city thrived as a diverse industrial center into the mid-20th century: at its early-1950s population peak of around 440,000, Newark had 100,000 people employed in manufacturing, still specializing in leather and iron but making a wide variety of other products as well, including electrical machinery, jewelry and plastics (City of Newark 2012; Cunningham 1988).

As in other U.S. manufacturing cities, however, growth through the mid-1950s masked structural changes that were gradually undermining the city economically and fiscally. Increasingly, Newark's factory workers commuted into the city from outlying suburbs, where aspirant middle-class homebuyers could receive Federal Housing Administration financing (nearly all Newark neighborhoods had been "redlined" by government agencies and real estate lenders).⁸ Factories soon followed the largely white industrial working-class population, freed by the growth of trucking from their ties to rail and water transportation. Population growth within the city limits was fueled by African American households whose members had migrated from southern states in search of work just as factories were leaving; geographically constrained by discrimination to just a few, over-crowded neighborhoods and excluded from many industrial jobs, these households were confined to a city that offered low-quality, overpriced housing and diminishing employment prospects. Civil disturbances in the struggling city in July 1967 reflected anger over political and social marginalization, discriminatory housing and employment practices, and a lack of economic opportunity (Mumford 2007). The riots also reinforced the conception that manufacturers were safer in the suburbs, and more industrial firms decentralized.

The deindustrialization that had begun with industry suburbanization soon accelerated as the global division of labor came into being and manufacturing began to be off-shored in the 1970s and 1980s. After a period of precipitous population decline and fiscal stress that lasted through the mid-1990s, a so-called "Newark Renaissance" began under the Mayoralty of Sharpe James (Strom 2002) and continued under Cory Booker, elected in 2006. But this economic and fiscal revival is built on the growth of services, entertainment and real estate – especially residential real estate (Newman 2004). The city's recent population gains (Newark's estimated 2012 population was 278,000, up from 274,000 in 2000, its lowest point in 50 years) rest on large publicly subsidized projects like the New Jersey Performing Arts Center, on the construction and absorption of new office space, on the expansion of higher education functions in the downtown, and on new housing designed to attract middle-class residents. Manufacturing jobs have continued to decline, despite the proximity of a growing seaport and airport (City of Newark 2012; Mistry 2013). While job density is greatest in the port and airport districts (Figure 26.1), that area is characterized by significant unutilized and underutilized space, including 434 vacant parcels.

A "Manufacturing Moment"?

The current state of Newark's industrial sector as a whole (defined as manufacturing, construction and utilities) is summarized in Newark's 2012 Master Plan.⁹ This docu-



Source: U.S. Census Bureau OnTheMap application.

Figure 26.1 Newark manufacturing firm density

ment, the first comprehensive plan to be developed by the city in two decades, offers insights into shifts in the city's economy and illustrates how these are paralleled in land use patterns. As obsolete industrial buildings and sites have been converted for residential and commercial use, the number of industrial parcels in the city has declined from 1188 in 1998 to 900 in 2010 (Vol. 2, 9). Nevertheless, the plan cites industrial growth as a

component of the city's strategy to create 25,000 new jobs by 2025. One explicit goal is to develop more job-dense industrial uses in the port areas; another is to create opportunities for innovation by pairing existing manufacturing businesses and start-up entrepreneurs with technical assistance through area universities (Vol. 1, 19, 248).

A specific look at manufacturing employment and business activity in Newark – as well as a greater sense that manufacturing redevelopment efforts in the city might be part of a broader national trend – comes from the report *Newark's Manufacturing Competitiveness: Findings and Strategies*, published by the Brookings Institution in May 2013 (Mistry 2013). Brookings is a liberal Washington, D.C.-based policy think tank whose Metropolitan Policy Program has had a significant influence on urban and regional policy during the Obama Administration. In 2012, Brookings published two monographs exploring the reversal of employment decline in U.S. manufacturing,¹⁰ tracing the distribution of production activity across metropolitan areas and advocating policies supporting the sector's revitalization (Helper, Krueger and Wial 2012a, 2012b). Brookings researchers in Newark surveyed, interviewed and visited manufacturers as they have done in several other so-called "legacy cities."¹¹ They also convened leaders from the government and non-profit economic development sectors in the greater Newark area, guiding them toward consensus about the challenges and opportunities inherent in the city's significantly shrunken manufacturing sector. The stakeholders who collaborated on the study also identified priority areas for intervention, and they now intend to work together to implement the study's recommendations.

Newark's Manufacturing Competitiveness: Findings and Strategies begins by detailing Newark's assets and weaknesses as a location for manufacturing activity. On the one hand, the city's location, its airport and seaport, its density and its continued industrial diversity are significant assets. Newark possesses a rich logistics infrastructure that includes Class I, II and III railways, extensive industrial processing, warehousing and distribution capacity, and multi-modal freight and commuter transportation links. Its proximity to consumers (18.9 million of them in the New York/Northern New Jersey Metropolitan Area), to an expanding seaport and to a major international airport positions it to host firms that rely on "next generation" supply chains (Mistry 2013, 23). The expansion of the Panama Canal, along with local infrastructure rehabilitation, promises to double volume at the Port Newark Container Terminal by 2025 (Port Authority of New York and New Jersey 2013; Strunsky 2011).

The report also emphasizes a high concentration of technical talent in New Jersey and a density of educational institutions, some of which are already actively working with industrial firms but with which there is the potential for deeper engagement. Moreover, through an informal network they call "Made in Newark," firms are collaborating to build a joint market identity and promote enthusiasm about and loyalty toward a hometown brand. Twenty-four firms have a presence on the Newark page of the website "Makers Row," which promotes matchmaking between producers, manufacturers sourcing supplies and designers looking to manufacture products (see Schnuer 2013).

Yet Newark's industrial sector remains in decline. Currently, there are 400 manufacturing establishments in the city, employing nearly 10,000 workers and accounting for about 7 percent of the city's jobs. Its still-diverse industrial base includes firms in the food, textiles, metals, printing and furniture sectors. But this base is a shadow of what once existed. The Brookings report emphasizes that there has been little investment by current firms

Table 26.1 *Residential locations of people employed in Newark, New Jersey and employment locations of people residing in Newark, New Jersey*

	Residency status of Newark workers (134,699) (%)	Job destinations of Newark working residents (81,550) (%)
City of Newark	17	29
Essex County (excluding Newark)	16	14
New York Metropolitan Area (excluding Essex County)	56	52
Outside New York Metropolitan Area	10	5
Total	100	100

Source: U.S. Census Bureau OnTheMap application.

in new product and process development. This is particularly true of the small contract suppliers that prevail in the city. There are few start-up manufacturers testing the viability of new products and technologies, especially in the "advanced manufacturing" area that is the target of most federal policy. Incumbent firms lack the coordination required to optimize supply chain efficiency and integrate environmentally sustainable technologies (Mistry 2013, 28). Despite a highly educated workforce in the region, low educational attainment and skills in much of the city's population make the goal of "Made in Newark by Newark Residents" difficult to reach (Mistry 2013, 33). Meanwhile Newark's population and its job base are mismatched: 71 percent of Newark residents holding jobs work outside the city, while 83 percent of the jobs in the city are held by employees who live elsewhere (see Table 26.1). Labor force participation is low. Employment was 15 percent in 2012 and just 38 percent of households earned enough to be considered economically self-sufficient by the city's definition (City of Newark 2012, 22).

The plan of action articulated in the Brookings document recommends 14 specific interventions to Newark's city government and other regional stakeholders. They include capitalizing on the trend of "near-sourcing" by helping businesses connect to regional market opportunities; leveraging university partnerships to create centers for open innovation and process improvement among small and mid-sized manufacturers; drawing more Newark residents into the manufacturing workforce (and offering employers better-skilled workers) through a variety of recruitment, training and internship programs; raising the city's public profile as a "competitive crossroads for trade" (Mistry 2013, 45–46), a place to site both logistics and production; and redoubling efforts to activate vacant and underutilized industrial parcels, particularly in the port district.

The Brookings study of Newark offers a kind of pivot between the particular situation of Newark and the manufacturing revitalization vision being pursued by the Obama Administration at a national level. Brookings is a national organization whose main agenda in its Metropolitan Policy Program concerns the economic importance of metropolitan regions: urbanized areas defined by labor markets, commuting patterns and business-to-business networks. The purpose of the metropolitan focus is a political one: it provides an identity for metropolitan areas and metropolitan policy in the absence of

actual regional governance structures. But when Brookings engages with a local government on an economic development issue of major importance (as it has done here), it is in some sense standing in at the regional scale for a level of governance that exists only as an aspiration in practice. In bridging the city context with the federal one in Newark, the study downplays the real estate challenges that are of the greatest concern to those seeking manufacturing revitalization in the city.

Facts on the Ground

As noted above, *Newark's Manufacturing Competitiveness: Findings and Strategies* connects the condition of and outlook for the sector in the city itself with a national conversation about how to seize a "manufacturing moment." Its strategies – product and process innovation, market expansion, human capital development – are sound. Most of these strategies, however, would be most effective if pursued by a governance entity with a regional scope, operating under the guidance of a national agenda. In contrast, the tools that actors in Newark perceive as being available to effect the trajectory of manufacturing development in the city involve local land use policy and project finance. Officials working with the City of Newark and the affiliated Brick City Development Corporation are responding primarily to problems of how to make parcels suitable for industrial infill development in a city characterized by environmental contamination, multiple industrial landowners (many of whom are absentee) and obsolete buildings. Assembling parcels is difficult in this environment. Owners speculating on future zoning changes quote unrealistic prices for sites the city wants to acquire. Brownfield remediation, even when supported with state grants, adds cost. Unlike in the affordable housing sector, where urban developers are accustomed to projects involving many subsidy sources, gap financing and non-standard building types, industrial brokers and developers are accustomed to a limited range of schematics both financially and with respect to architectural typology (Interview 6).¹

Viewed in this light, Newark's challenges often seem reducible to spreadsheet math. Space is at a premium in densely built areas with proximity to ports and other transport nodes, and large lots are hard to come by (all but 15 percent of the underutilized parcels in the vicinity of Port Newark-Elizabeth are fewer than five acres in size), so land for sale is more expensive than in outlying areas and may not accommodate the large floor plates required by contemporary producers (Interview 3). Space for rent in Newark, on the other hand, is affordable on average (Table 26.2), but this has the perverse effect of making it difficult to develop structures whose up-front costs can be supported by rent flows. Much of the industrial real estate in the port district of Newark, for instance, is owned by landlords who prefer to rent it to low-end industrial users at \$2 to \$3 per square foot, earning a profit without investing the capital that would be required to attract Class-A warehousing and manufacturing uses.

Job density figures illustrate the employment impact of this status quo. A comparable port supports 8 to 20 workers per acre of industrial use; the analog in Newark is 5.5 workers per acre. Thus, while Newark has a low industrial vacancy rate, this is large in part because much vacant land and a large number of buildings have not been redeveloped or adapted for the contemporary rental market. What space is available is being rented, but many derelict parcels do not make it into the rental inventory from which

Table 26.2 *Newark industrial submarket statistics, year end 2012* (23 submarkets in total)*

Feature	Newark sub-market	In context of Northern New Jersey industrial market (23 submarkets in all)
Number of buildings	1261	7.4% of all buildings
Total rentable built area	44,729,159 square feet	5.5% of total square footage
Vacancy rate	5.7%	Average vacancy rate was 9.0% (Newark's was 2nd lowest)
Year to date net absorption	(57,980) square feet	(Absorption was negative; about 10, or 43%, of the 23 submarkets in the region experienced positive net absorption in 2012)
Year to date deliveries (of new rentable space)	180,000 square feet	18.2% of total new space delivered in region
Square feet under construction	350,000	29.3% of total space under construction in region
Quoted rates (per square foot, average)	\$5.35	Average square footage rate was \$5.72 (Newark had the 8th least expensive average quoted rate among the 23 submarkets)

Note: *The industrial market in Northern New Jersey encompasses all facilities built for "storing, producing, assembling or distributing product" (CoStar 2013, C). This categorization defies efforts to understand the relative prevalence of warehousing and manufacturing in the city and region's economies.

Source: Adapted by author from CoStar Group 2013.

vacancy rates are calculated. Many owners and even industrial developers do not have a clear understanding of the investments and returns associated with upgrading facilities to contemporary standards for advanced logistics and production (Interview 1, Interview 5).

Moving Forward

Warehouse and distribution facility development is currently the most readily accessible opportunity to effect change, and officials in Newark have made progress in doing so. A July 2012 groundbreaking on a 15 acre site at 60 Lister Avenue in the East Ward (the site of a former Sherwin Williams paint manufacturing facility) marked the first speculative industrial real estate development in the city in several decades (Khavkine, 2012). A second project in the pipeline involves an eight acre site in the port district that is on track to be developed as a mechanized storage facility in anticipation of the Port Newark-Elizabeth expansion. Both of these projects entail environmental remediation, which is being assisted through State of New Jersey brownfield development grants (together with state bonding capacity), and both deals will likely receive equity contributed through the New Jersey Urban Transit Hub Tax Credit (Interview 4).¹²

The prospects for developing or adapting spaces for manufacturing uses are more elusive. Real estate development for contemporary manufacturing may be led by the

emergence of the “next generation” supplier firms and innovative start-ups envisioned by the Brookings study. But the experiences of other cities suggest that only where both firms and city governments expressly support the development of land and buildings for manufacturing use, invoking unconventional models of financing and deal-flow, do these firms have a chance of remaining local once they do emerge (Byron and Mistry 2011). The firm most active in advocacy for the manufacturing sector in Newark, UnionWear, is a producer of made-to-order bags, hats and shirts. Mitch Cahn, the company’s CEO, says the firm has benefited from the continuous improvement and lean manufacturing training recently embraced by federal policy. He is in Newark, however, because officials there helped him to acquire and renovate a 70,000 square foot building in the North Ward that, while still proximate to an ample labor force, is economically viable for his business in a way that the real estate in Jersey City, his former location, is not. His company is now growing (Interview 2).

Another area of potential for Newark, and one that requires creative real estate strategy to an even greater degree than firms like Cahn’s, involves the development or adaptation of spaces for enterprises engaged in small-batch artisanal or DIY technology manufacturing. Enabled by several convergent trends such as anti-establishment entrepreneurialism among young people, open source technology and consumer interest in locally made or sourced products, particularly local food, clothing and furniture, the “Maker Movement” has given rise to demand for urban facilities that combine moderate rents with the potential to share tools and exchange ideas with other producers (see Friedman and Byron 2012). To the extent that start-up manufacturers in this mode access the market connections, technical assistance and university partnerships envisioned in national policy, these resources will be of value. But the fate of such firms in Newark (as well as similar cities) will likely depend more heavily on the availability of adequate spaces at workable rents. In fact, the New York City real estate conditions described by McCormick in this volume (as well of those of Jersey City) could potentially produce a migration of artisanal producers and high-tech start-ups to Newark if real estate can be adapted.

SPEAKING TO CITIES’ NEEDS

Practitioners have proposed several concrete strategies for promoting industrial real estate development in problematic urban markets such as Newark’s (Byron and Mistry 2011; Pratt Center for Community Development 2013; Urban Manufacturing Alliance 2013). One of these is the branding strategy already being employed by firms participating in the Made in Newark network. Beyond branding, however, lies the ability to affect the real property calculus of manufacturing firms and industrial developers. As Byron and Mistry argue:

[I]n strong-market cities, because of the speculative nature of real estate, [non-mission-driven] property owners generally perceive that they can receive a higher return if they convert industrial space to other uses. In weak market [i.e. legacy] cities, there is simply inadequate return to attract private investors willing to acquire, renovate, and manage older industrial buildings. (2011, 44)

They conclude that efforts to foster “manufacturing in place” in legacy cities need to involve mission-driven innovation in real estate finance. Most of those who have built

and managed affordable urban multi-tenant industrial facilities have, up to this point, been non-profit or mission-driven developers seeking social and community dividends as well as financial return.

Mainstream developers may eventually create a standard, financeable urban multi-tenant industrial product. But for now, urban manufacturing proponents are advocating for a variety of subsidies that can be accessed by mission-driven industrial developers. Similar to the gap financing infrastructure created in the low- and moderate-income housing sector, this might include a recoverable grant or very-low-interest loan program that would provide risk capital to cities or non-profits to finance predevelopment costs on difficult sites (a low-interest loan program might be capitalized by banks as a way of complying with the requirements of the Community Reinvestment Act). It might feature a tax credit designed specifically to provide equity to industrial developers undertaking qualified projects. The rules governing Industrial Revenue Bonds could be revised to allow developers of multi-tenant industrial buildings to borrow in the tax-exempt bond market (Urban Manufacturing Alliance 2013).

Unconventional financing mechanisms need to emerge for many kinds of urban multi-tenant facilities – variously oriented toward artisanal manufacturing, high-tech prototyping or university spinoffs. Some of these facilities might be able to thrive in renovated multi-story buildings¹³ while others might require new construction. In any case, they would depart typologically from the one-story greenfield spaces to which most industrial brokers and owners are accustomed. They would also likely be managed by landlords who accept returns on investment lower than would be tolerated by the private market, who encourage tenants to share equipment and ideas, and who flexibly meet the needs of tenants with fluctuating space requirements.

Governance and ownership questions loom large. The participation of non-profit, mission-driven organizations in affordable housing development in the United States has become institutionalized, but the presence of such groups in the industrial market is embryonic. It is unclear whether actors at the city level will create policy conditions under which mission-driven industrial developers survive and thrive (as occurred in the housing sector), and it is unclear what role city-owned land will play in that process. Some advocates suggest that cities, rather than remediating sites to “market-ready” condition and then selling them to developers, should retain them via long-term leases. Another model entails the creation of a distinct, mission-driven entity with a city-appointed board of directors to pursue industrial development goals on city-owned property – either a single property or a portfolio. In the case of the Brooklyn Navy Yard in New York City, an entire complex of buildings, owned by a mission-driven non-profit corporation, has been gradually renovated and repurposed for tenants of varying sizes, with rent proceeds from initial development phases reinvested in additional renovation (Pratt Center for Community Development 2013).

CONCLUSION

Local actors promoting the redevelopment of cities’ manufacturing bases construe the problem overly narrowly when they restrict their attention to parcels and property deals. Innovation, university partnerships, market expansion and human capital

development – and their manifestations in place-based policy – are also critical to manufacturing revitalization. Thinking beyond property development, creative local economic development officials inevitably will find themselves asking regional and institutional questions. Workforce is of grave importance: while there is a lively controversy about whether those who decry a “skills gap” in manufacturing are overstating the case (see Lowe, this volume), the need to prepare local workforces for contemporary and future manufacturing jobs is undeniable, as is the need to alleviate chronic high unemployment in “legacy cities” like Newark.¹⁴ Workforce policy is an arena where the “missing region” problem is most damaging from the perspective of firms and job-seekers alike (Wolf-Powers 2012). National-level leadership in workforce could make a difference here, overcoming local actors’ limited leverage and range of motion and catalyzing new experiments in skill definition and acquisition for the manufacturing labor force.

National manufacturing policy, as it moves away from its de-territorialized past, must take seriously the real estate barriers local officials face as they try to create conditions under which manufacturers will choose central city locations in the coming years. At the same time, local actors must look beyond property issues and respond as fully as they can to national policy priorities with the tools available. A mutual effort to coordinate place-based urban policy with national policy in manufacturing may yield dividends in the form of multi-tenant urban industrial spaces, place-based innovation in which urban density is a driving factor, and workers with the skills to perform production jobs that draw on new innovative capacity. In the long term, the effort could minimize the disconnect between scales of action (national and local) in economic development policymaking, perhaps developing viable regional structures that could take more responsibility for economic policy in the future.

NOTES

1. See Cortwright (2006), Motoyama (2008) and Wolf-Powers (2012) for perspectives on the challenge of operationalizing regional economic analysis, such as the analysis of industry clusters, into policy interventions that have meaningful impact.
2. Filling out the research and commercialization infrastructure that the German state makes available to its manufacturers is a long-standing commitment to production skills training and a strong interface between manufacturing employers and the country’s extensive apprenticeship and career preparation systems (Shapira, Youtie and Kay 2011).
3. The exception to this lies with defense industries, where investments made in service of enhanced military capability, especially during the Cold War, wrought huge changes in the nation’s industrial geography (Hooks 2002; Markusen, Hall, Campbell and Dietrick 1991).
4. Manufacturing modernization policies were first pursued by individual state governments in the 1980s (Feller 1992, 1997). In the early 1990s officials in the Administration of President Bill Clinton created the Manufacturing Extension Partnership as part of an effort to promote economic development by commercializing defense-bred technologies (Shapira 2008).
5. The National Additive Manufacturing Innovation Institute, a research hub centered on the use of 3-D printing to create products and components, opened in Youngstown, Ohio in August 2012. A competition to choose three other such consortia was announced in May 2013.
6. According to the Economic Development Administration’s May 9, 2013 press release for the IMCP, regions and jurisdictions successful in obtaining IMCP grants would be empowered to spend federal funding on “specialized research centers at local universities; business incubators focused on targeted technology sectors; community college programs to train workers in targeted industries; public works projects to upgrade infrastructure or enhance energy efficiency; viable export promotion plans; well-

- integrated supply chains; and an engaged community of local government, education, workforce, and business leaders” (U.S. Department of Commerce 2013b).
7. The first of the National Network of Manufacturing Innovation Institutes (the Youngstown facility and three others) and the pilot communities for the Investing in Manufacturing Communities Partnership are both funded from the existing budgets of federal government agencies. To expand these programs, the Obama Administration will need to rely on budget authority from Congress, which at the time of writing seems a slim prospect.
8. Redlining was a practice by which banks and the government agencies that insured mortgages excluded entire neighborhoods – often minority neighborhoods – from consideration for home purchase and improvement loans (see Jackson 1985).
9. Of a total of 150,000 workers in Newark, according to the plan, 18,000 work in the industrial sector and around 8000 in manufacturing. The Brookings study uses data from Moody’s Analytics, which uncovers more manufacturing establishments and more jobs than the New Jersey Department of Labor’s Quarterly Census of Employment and Wages. Thus Newark’s manufacturing sector numbers are slightly higher than those cited in the Master Plan.
10. After a decade of decline, manufacturing employment in the United States began to edge up in 2009. Manufacturing jobs increased by 4.5 percent between December 2009 and March 2013, on par with the growth rate of all nonfarm employment. Given a number of trends, including revived demand for machinery in which U.S.-based manufacturers are specialized and changes in prices and wages that favor “on-shoring” of work previously done in other countries, some analysts assert that this small revival is the beginning of a longer-term trend.
11. “Legacy cities” is a term in use in the U.S. for cities that experienced dramatic job and population decline in the 1970s and 1980s, largely as a result of the loss of industrial jobs, and have not recovered. They are typically characterized by high unemployment, high poverty and fiscal stress (Mallach and Brachman 2013).
- i. See Appendix for details of interviews.
12. According to a Newark economic development specialist, requirements for site acquisition, preparation and remediation on a typical industrial site in Newark introduce a 20 to 50 percent financing gap (Interview 5).
13. “Maker spaces” and kindred facilities often are adapted from older, multi-story industrial buildings originally designed for use by single firms. Features rendering these buildings obsolete as sites for standard industrial production, such as small floor plates, large windows and load-bearing columns, become aesthetic assets and create desirable work environments.
14. As Lowe argues, there is also a need for labor market intermediaries to participate in shaping the requirements of and training for those jobs.

REFERENCES

- Byron, J. and N. Mistry (2011), *The Federal Role in Supporting Urban Manufacturing*, Washington, D.C.: Brookings Institution and Brooklyn, NY: Pratt Center for Community Development.
- City of Newark (2012), *Newark’s Master Plan: Our City, Our Future*, Newark, NJ: City of Newark.
- Clark, J. (2010), “Coordinating a Conscious Geography: The Role of Research Centers in Multi-scalar Innovation Policy and Economic Development in the US and Canada,” *Journal of Technology Transfer*, 35 (5), 460–474.
- Clark, J. (2012), “Is There a Progressive Approach to Innovation Policy?” *Progressive Planning*, Winter (190), 17–20.
- Clark, J. (2013), *Working Regions: Reconnecting Innovation and Production in the Knowledge Economy*, London: Routledge.
- Cortwright, J. (2006), *Making Sense of Clusters: Regional Competitiveness and Economic Development*, Washington, DC: Brookings Institution Report, available at: <http://www.brookings.edu/research/reports/2006/03/cities-cortright> (accessed June 5, 2013).
- CoStar Group, Inc. (2013), *The Co-Star Industrial Report: Year End 2012, Northern New Jersey Industrial Market*, Washington, D.C.: CoStar Group, Inc.
- Cunningham, J.T. (1988), *Newark: Revised and Expanded Edition*, Newark, NJ: New Jersey Historical Society.
- Ezell, S.J. and R.D. Atkinson (2011), “International Benchmarking of Countries’ Policies and Programs Supporting SME Manufacturers,” available at <http://www.nist.gov/mep/upload/International-Benchmarking-of-Countries-SME-Support-Programs-and-Policies-2.pdf> (accessed June 18, 2013).
- Feller, I. (1992), “American State Governments as Models for National Science Policy,” *Journal of Policy Analysis and Management*, 11 (2), 288–309.

- Feller, I. (1997), "Manufacturing Technology Centers as Components of Regional Technology Infrastructures," *Regional Science and Urban Economics*, 27, 181–197.
- Friedman, A. and J. Byron (2012), "High-Tech, High-Touch, and Manufacturing's Bottom Line," *Innovations*, 7 (3), 83–95.
- Helper, S., T. Krueger and H. Wial (2012a), *Why Does Manufacturing Matter? Which Manufacturing Matters?*, Washington, D.C.: Metropolitan Policy Program at Brookings.
- Helper, S., T. Krueger and H. Wial (2012b), *Locating American Manufacturing: Trends in the Geography of Production*, Washington, D.C.: Metropolitan Policy Program at Brookings.
- Hooks, G. (2002), "Guns and Butter, North and South: The Federal Contribution to Manufacturing Growth, 1940–1990," in P. Scranton (ed.), *The Second Wave: Southern Industrialization, 1940–1970*, Atlanta: Georgia Technological Institute Press, pp. 255–285.
- Jackson, K.T. (1985), *Crabgrass Frontier: The Suburbanization of the United States*, New York and London: Oxford University Press.
- Khavkine, R. (2012), "Newark Groundbreaking for Facility Expected to Bring in 200 New Jobs," available at http://www.nj.com/news/index.ssf/2012/07/newark_groundbreaking_for_faci.html (accessed June 17, 2013).
- Kitagawa, F. (2007), "The Regionalization of Science and Innovation Governance in Japan?," *Regional Studies*, 41 (8), 1099–1114.
- Koschatzky, K. and H. Kroll (2007), "Which Side of the Coin? The Regional Governance of Science and Innovation," *Regional Studies*, 41 (8), 1115–1127.
- Leigh, N.G. and N. Hoelzl (2012), "Smart Growth's Blind Side," *Journal of the American Planning Association*, 78 (1), 87–103.
- Mallach, A. and L. Brachman (2013), "Regenerating America's Legacy Cities," available at https://www.lincolnst.edu/pubs/dl/2215_1582_Regenerating_Americas_Legacy_Cities.pdf (accessed June 24, 2013).
- Markusen, A., P. Hall, S. Campbell and S. Dietrick (1991), *The Rise of the Gumbelt: The Military Re-mapping of Industrial America*, New York and London: Oxford University Press.
- Mistry, N. (2013), "Newark's Manufacturing Competitiveness: Findings and Strategies," available at <http://www.brookings.edu/research/reports/2013/05/28-newark-manufacturing-mistry-vey-shearer> (accessed June 15, 2013).
- Motoyama, Y. (2008), "What Was New About the Cluster Theory? What Could It Answer and What Could It Not Answer?" *Economic Development Quarterly*, 22 (4), 353–363.
- Mumford, K. (2007), *Newark: A History of Race, Rights and Riots in America*, New York and London: New York University Press.
- Muro, M. and J. Lee (2013), "Revving Up Manufacturing, Region by Region," available at <http://www.brookings.edu/blogs/the-avenue/posts/2013/04/11-budget-manufacturing-muro-lee> (accessed June 16, 2013).
- Newman, K. (2004), "Newark, Decline and Avoidance, Renaissance and Desire: From Disinvestment to Reinvestment," *Annals of the American Academy of Political and Social Sciences*, 594 (July), 34–48.
- Perry, B. and T. May (2007), "Governance, Science Policy and Regions: An Introduction," *Regional Studies*, 41 (8), 1039–1050.
- Port Authority of New York and New Jersey (2013), "Bayonne Bridge Navigational Clearance Program," available at <http://www.panynj.gov/bayonnebridge/> (accessed June 15, 2013).
- Pratt Center for Community Development (2013), "Brooklyn Navy Yard: An Analysis of Its Economic Impact," available at <http://prattcenter.net/report/brooklyn-navy-yard-analysis-its-economic-impact> (accessed June 18, 2013).
- Schnuer, J. (2013), "Makers Row Ushers in a New Wave of U.S. Manufacturing," available at <http://www.entrepreneur.com/article/226869> (accessed June 24, 2013).
- Shapira, P. (2008), "Putting Innovation in Place: Policy Strategies for Industrial Services, Regional Clusters, and Manufacturing SMEs in Japan and the United States," *Prometheus*, 26 (1), 69–87.
- Shapira, P., J. Youtie and L. Kay (2011), "Building Capabilities for Innovation in SMEs: Across-Country Comparison of Technology Extension, Policies and Programmes," *International Journal of Innovation and Regional Development*, 3 (3/4), 254–272.
- Strom, E. (2002), "Let's Put on a Show! Performing Arts and Urban Revitalization in Newark, NJ," *Journal of Urban Affairs*, 21 (4), 423–435.
- Strunsky, S. (2011), "Port Newark Terminal Lease Deal to Double Volume," available at http://www.nj.com/business/index.ssf/2011/06/port_newark_terminal_lease_dea.html (accessed June 16, 2013).
- U.S. Department of Commerce, Economic Development Administration, Office of Public Affairs (2013a), "Fact Sheet: The Investing in Manufacturing Communities Partnership," available at <http://www.commerce.gov/news/fact-sheets/2013/04/17/fact-sheet-investing-manufacturing-communities-partnership> (accessed May 5, 2013).
- U.S. Department of Commerce, Economic Development Administration, Office of Public Affairs (2013b), "Obama Administration Seeks Applicants for First Phase of 'Investing in Manufacturing Communities'

- Partnership," available at http://www.eda.gov/news/press-releases/2013/05/09/obama_imcp.htm (accessed June 5, 2013).
- Urban Manufacturing Alliance (2013), "Policy Brief: Industrial Revenue Bonds," available at <http://urbanmfg.org/wp-content/uploads/2013/04/UMA-IRB-Policy-Brief-Final.pdf> (accessed June 7, 2013).
- Wolf-Powers, L. (2012), "Human Capital-Centered Regionalism in Economic Development: A Case of Analytics Outpacing Institutions?" *Urban Studies*, 49 (15), 3427–3446.