REGIONAL ECONOMIC ASSESSMENT
for the North San Joaquin Valley: Identity, Linkages, and Opportunities

SUMMARY REPORT | APRIL 2015

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The University of the Pacific’s Center for Business and Policy Research initiated the Regional Economic Assessment of the North San Joaquin Valley (NSJV) in September 2013 with the support of the U.S. Economic Development Administration. Advancing understanding about the NSJV, the project provided an unprecedented assessment of the region’s competitiveness, employment, and growth through a series of technical reports and culminating event in November 2014. This Summary Report highlights key findings from the project and initial conversations around strategies and actions to advance regional economic development in the NSJV.

As shown in Figure 1, the NSJV consists of three adjoining California counties: San Joaquin, Stanislaus, and Merced. The region is about the same size as Connecticut (4,821 square miles), and with over 1.5 million residents, its population is larger than that of 11 states. With an abundance of rich farmland, orchards and vineyards, it is noted for a large variety of agricultural...
products. However, the majority of the NSJV population lives in its growing cities, which include Stockton, Modesto, and Merced. The NSJV is also an intersection of the San Francisco Bay Area, the Sacramento Capital Region, and the South San Joaquin Valley Region. Its changing interrelationships with these regions distinguish the NSJV as a cohesive area and substantially define its economic development challenges and opportunities. Detailing the nature of this regional identity and its drivers was a central component of the assessment. Three key elements define the region:

1. **Intra-regional linkages among the NSJV counties:** In addition to similar economic systems and markets facilitating linkages, the NSJV counties are united through intra-regional commuting and migration.

2. **Growing inter-regional linkages with the San Francisco Bay Area and the Greater Sacramento Area:** While possessing distinct economic systems and socio-economic structures, the regions are strongly linked through commuting and migration patterns.

3. **Increasing distinction from the South San Joaquin Valley (SSJV):** Despite similar socio-economic structures, the two regions have limited commuting and migration connections, different inter-regional linkages, and distinct areas of comparative advantage.

The assessment also developed an unprecedented set of resources on the NSJV for development practitioners and policy makers including six detailed technical reports available at the project website: go.pacific.edu/nsjv, and described in more detail in the Appendix of this Summary Report. A few highlights include:

- A multi-faceted industrial cluster analysis.
- A knowledge-based occupational clusters analysis.
- Comprehensive intra- and inter-regional commuter and migration analyses.
- Analysis of human capital and other regional assets.

Issues identified from these analyses and discussions with stakeholders have led to the development of a list of priority indicators for monitoring and evaluation that can be iteratively updated to address evolving concerns over the region’s economic development.

### REGIONAL IDENTITY

A lack of recognition of the unique issues and opportunities facing the NSJV strongly motivated the NSJV regional economic assessment. Several prominent statewide and regional initiatives have identified the sprawling eight-county San Joaquin Valley as an economic region, an area over 300 miles in length that includes both the Tulare Basin and San Joaquin River Valley and four of the 100 largest MSAs in the United States.\(^1\) The distance between Stockton and Bakersfield is about the same as between Detroit, Michigan and Chicago,  

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The NSJV regional assessment makes the case for why the NSJV region must be considered distinct from the 5-county South San Joaquin Valley (SSJV) for economic development efforts. Illinois or between Atlanta, Georgia and Charlotte, North Carolina. The NSJV regional assessment makes the case for why the NSJV region must be considered distinct from the 5-county South San Joaquin Valley (SSJV) for economic development efforts.

While sharing many socio-economic features, the NSJV and SSJV differ significantly in economic structure including the scale of their agricultural economies. The biggest difference between the NSJV and the SSJV is in their inter-regional linkages. The NSJV has deep and growing linkages with the San Francisco Bay Area; it also has significant ties with the Greater Sacramento Area. The growing interconnections of these regions are evidence of a developing Northern California Megaregion, characterized by interlocking economic systems, shared natural resources and ecosystems as well as common transportation networks linking population centers. In contrast, the SSJV is intra-regionally focused with the notable exception of Kern County which has significant ties to the Greater Los Angeles Area. The NSJV also has significant social and economic integration among its counties and associated sub-regions. These intra-regional linkages further differentiate the NSJV from the SSJV.
INTRA-REGIONAL LINKAGES AMONG THE NSJV COUNTIES

The Technical Reports on Migration and Commuting provide evidence of growing intra-regional linkages. Similarly, the reports on Industrial and Occupational Clustering highlight common economic systems with agricultural foundations and growing transportation and logistics sectors. Detailed demographic profiles in the Technical Report on Human Capital assessment show similar socio-economic structures and educational attainment across the NSJV as shown in Figures 2 and 3. All three counties are characterized by lagging levels of educational achievement. Another common feature is that the counties also have large Hispanic populations, especially in younger age cohorts. San Joaquin County, the closest to the Bay Area, has the highest level of educational attainment and is more diverse in race and ethnicity.

The Technical Report on Human Capital also includes detailed analysis of the geography of human capital across the NSJV. An example of that detail is contained in Figure 4, which shows higher levels of human capital as darker colors and highlights the disparate levels of human capital across the NSJV. The map shows small areas of high human capital near all of the NSJV’s cities, and concentrations of low human capital on the south side of the NSJV’s largest cities of Stockton and Modesto.

As seen in Table 1, the share of in-migrants and out-migrants among NSJV counties is rising.

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**FIGURE 3 NSJV POPULATION COMPOSITION BY HIGH SCHOOL AND BACHELOR’S DEGREE ATTAINMENT**

![Bar chart showing population composition by high school and bachelor's degree attainment for San Joaquin, Stanislaus, Merced, California, and USA.](chart)

Source: U.S. Census Bureau, 2012 American Community Survey 5-Year Estimates.

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2 In Figure 4 human capital is measured by the population’s educational attainment.
Regional Economic Assessment for the North San Joaquin Valley

Source: U.S. Census Bureau, 2012 American Community Survey 5-Year Estimates.

FIGURE 4 NSJV HUMAN CAPITAL INDEX BY CENSUS TRACT
Inflows to San Joaquin County are the exception to this trend, but the marginal decline in that instance is the result of robust in-migration from the San Francisco Bay Area which is discussed in the next section.

In-flows and out-flows of commuters (employment interchange) among NSJV counties has been consistently increasing. Employment interchange between Merced and Stanislaus counties increased by 63% from 1980 to 2010. These intra-regional commute flows exceeded 18% in 2010 leading to their being declared a new Combined Statistical Area (CSA), the Modesto-Merced CSA. Employment interchange between Stanislaus and San Joaquin counties also increased, rising from 6.9% in 1980 to 14% in 2010. This rising intra-regional commuting is one of the clearest indicators of the growing integration of the NSJV economies in recent decades.

### TABLE 1 NSJV INTRA-REGIONAL MIGRATION FLOWS 1991 & 2011

<table>
<thead>
<tr>
<th></th>
<th>Merced</th>
<th>Stanislaus</th>
<th>San Joaquin</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of All Inflows from Other NSJV Counties</td>
<td>17.3%</td>
<td>21.3%</td>
<td>15.7%</td>
</tr>
<tr>
<td>% of All Outflows to Other NSJV Counties</td>
<td>18.9%</td>
<td>21.9%</td>
<td>12.2%</td>
</tr>
</tbody>
</table>


### TABLE 2 NSJV INTER-REGIONAL MIGRATION FLOWS 1996 & 2011

<table>
<thead>
<tr>
<th></th>
<th>San Francisco Bay Area</th>
<th>Greater Sacramento Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of All Inflows from</td>
<td>28.9% 31.5%</td>
<td>6.2% 7.5%</td>
</tr>
<tr>
<td>% of All Outflows to</td>
<td>16.2% 24.8%</td>
<td>7.8% 8.9%</td>
</tr>
</tbody>
</table>


Despite the proportion of migrants as a whole being steady at about 4% of the population.

3 The United States Office of Management and Budget (OMB) defines CSA based on the social and economic ties between adjacent metropolitan statistical areas (MSA), it measures these ties by the level of employment interchange between the MSA.
net outflows to other parts of California and the United States as seen in Figure 5.4. While income and educational characteristics of migrants are not available by sub-region, the data does differentiate between the rest of California and other states. Details in the Technical Report on Migration show that other Californian migrants, who are primarily from the Bay Area, tend to be lower-middle class and working class. These migrant inflows have household incomes between $25,000 and $75,000 with education levels typically less than a bachelor’s degree.

As shown in Figure 6, the pattern of net migrant inflows from the Bay Area is similar to that of the Greater Sacramento Area and is markedly different from that seen in the SSJV.5 While clearly sharing a general inter-regional migration pattern with the Greater Sacramento Area, differences in the regions’ relative populations make the scale of the Bay Area’s inflow to the NSJV even more pronounced.

Inter-regional commuting is another major linkage between the NSJV, the Greater Sacramento Area, and especially the San Francisco Bay Area. Between 1980 and 2010 employment interchange between San Joaquin County and the Bay Area

4 Net migration is the difference between migration inflows less migration outflows.

5 Kern County has a significant net population inflow of migrants from the Greater Los Angeles Region, which gives the SSJV an overall net inflow in population. For further details see the Migration Technical Report.
FIGURE 6 COMPARATIVE INTER-REGIONAL
NET MIGRATION FLOWS

Source: U.S. Census Bureau, County-to-County Migration Flows, 2012 American Community Survey 5-Year Estimates.
increased dramatically from 4.1% to 19.7%, and led to San Joaquin County being included in the San Jose-San Francisco-Oakland, CA Combined Statistical Area in the latest, 2012, delineations.\(^6\)

In contrast to the intra-regional commuters where data suggests skill neutral commute flows, inter-regional commuters are characterized by a significant circulation of skills. In terms of commuter outflows, the two occupations with the highest ratio of employed residents to local jobs, an indicator of the propensity for extra-regional commuting, were the relatively skill intensive computer/mathematical and architecture/engineering occupations. Earnings data detailed in the Technical Report on Commuting also shows that inter-regional commuters to the NSJV are also relatively skilled. Hence, NSJV commuter in-flows and out-flows represent a valuable skills interchange between sending and receiving regions.

The Assessment shows that the NSJV is clearly a core part of the Northern California Megaregion along with the Greater Bay Area and the Greater Sacramento Area. In addition to the commuting and migration linkages, the Assessment highlights shared environmental resources as well as increasingly interdependent transportation systems, growing economic linkages, and a range of water, power, and distribution infrastructure that add de facto cohesion to the Northern California Megaregion. As such, enhanced coordination within the NSJV and between it and the other regions in the Northern California

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\(^6\) For a map of the CSA see the Census Website: [www2.census.gov/geo/maps/econ/ec2012/csa/EC2012_330M200US488M.pdf](http://www2.census.gov/geo/maps/econ/ec2012/csa/EC2012_330M200US488M.pdf)
FIGURE 8 CALIFORNIA’S HUMAN CAPITAL INDEX BY REGION
FIGURE 9 INDEX OF PER-CAPITA PERSONAL INCOME BY REGION
(US NATION-WIDE=100)

Source: U.S. Bureau of Economic Analysis, CA 1-3 Personal Income Summary.

FIGURE 10 INDUSTRY EMPLOYMENT BASED LOCATION QUOTIENTS
IN THE NSJV AND THE SSJV, 2012

Source: U.S. Bureau of Economic Analysis, CA2SN Total full-time and part-time employment.
Megaregion will be important to the Megaregion’s national and international competitiveness as well as its overall quality of life.

SIMILARITIES AND DIFFERENCES WITH THE SSJV

While Figure 6 illustrates the distinct nature of geographic mobility in the NSJV compared to the SSJV, similar divisions exist in inter-regional commuting patterns. NSJV employment interchange with surrounding regions are represented in Figure 7. The rapidly increasing interchange with the Bay Area is again illustrated as is significant growth with the Greater Sacramento Area. However, the small interchange and limited growth between the NSJV and the SSJV stands in stark contrast to these other linkages. While in 2010 the NSJV’s employment interchange equaled 4% with the Greater Sacramento Area and was over 13% with the Greater Bay Area, it remained below 2% with the SSJV.

Despite the lack of inter-regional integration, the NSJV and the SSJV regions share similar socio-economic structures and economic development challenges. The Assessment’s Technical Report on Human Capital identifies two important dimensions to this congruence: the relatively low levels of human capital formation and divergence from national levels of prosperity. These challenges are clearly illustrated in Figures 8 and 9, showing levels of regional human capital formation and per capita income respectively.

Another similarity between the regions is their large agricultural base, though agriculture’s dominance is much greater in the SSJV, which can be seen in Figure 10. Furthermore, the NSJV demonstrates a comparative advantage in the transportation and warehousing (TWU) and manufacturing (MFG) sectors that is not seen in the SSJV. Increasing linkages with the Bay Area creates an opportunity for the NSJV to further build the manufacturing, transportation and warehousing sectors, and thereby enhance differences between industry clusters in the NSJV and SSJV economies.

While there are areas where agents are working together, building regional identity and coherence may require development of new institutions to foster collaboration and market the region’s distinctiveness to external audiences.
IMPLICATIONS AND REGIONAL DIRECTION

This assessment contributes to better understanding the NSJV as a distinct region. It shows numerous dimensions through which the people, businesses, and governments across the area are connected, and that the region is part of a growing and developing Northern California Megaregion. In addition to detailing these connections, the assessment clarifies what differentiates the NJSV from the SSJV. As a result, it provides a new lens through which to examine economic development opportunities and challenges within the region and across the Megaregion.

There is increasing global consensus around the challenges faced by communities that are not able to develop increasing knowledge intensive economies. While focus of this literature tends to be on technology, science, and R&D intensive sectors, the idea is that overall economic competitiveness increasingly depends on an economy’s knowledge and innovation intensity. In this context divergence of incomes in the NSJV from the economies of the Greater Sacramento Area and the San Francisco Bay Area reflects the region’s inability to transform its traditional economic bases into more knowledge intensive activities. While transformation of the NSJV economy is a major challenge, its growing connections with the San Francisco Bay Area create an opportunity to realize substantial returns from carefully planning and developing a fostering human capital and business environment.

While the NSJV is emerging as an integrated and distinct economic region, its many political, social, and economic systems and institutions are not as well integrated. While there are areas where agents are working together, building regional identity and coherence may require development of new institutions to foster collaboration and market the region’s distinctiveness to external audiences.

However, increased regional coordination does not necessarily require development of regional government. Impacts on regional welfare as a result of initiatives undertaken by these structures need to be assessed and incorporated into regional monitoring, evaluation, and learning processes.

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7 See for example: Gibbons et al. (1994), Moretti (2012)

8 See Figure 9.
This assessment has identified several critical issues to be considered in future economic development strategies for the component counties of the NSJV as well as the Northern California Megaregion. Actionable initiatives associated with this assessment include:

- Building and strengthening a regional perspective on the economic development of the NSJV.
- Developing institutions to increase regional visibility and improve coordination of marketing and critical infrastructure systems such as transportation, education, and workforce development.
- Increasing inter-regional collaboration and coordination across natural, political, social, and economic systems in the Northern California Megaregion.
- Shifting regional economic development discussions to recognize the distinctiveness of the NSJV from the rest of the Central Valley.
APPENDIX: ASSESSMENT RESOURCES AND NSJV MONITORING AND EVALUATION

The Assessment undertook wide-ranging analyses of key resources across the NSJV. This resulted in six technical reports spanning various dimensions of the region’s human capital, its production system, and its other productive assets. These technical reports are available at the project website: go.pacific.edu/nsjv

The first part of the Human Capital Stocks analysis begins with a demographic review of the NSJV’s population and its households. It also reviews the geographic distribution of the population, its language skills, the number of individuals with disabilities, and the foreign born population. Income, inequality, and skills are then examined across the region and several of its component geographies.

The second part of the analysis then focuses upon the region’s resident labor force. Labor force participation, demographics, and educational attainment are reviewed as well as industrial and occupational composition. An overview of employed residents to the jobs (workforce) where these residents reside concludes this part of the analysis.

The last part of the analysis examines human capital in the region’s workforce, i.e. those employed with the region’s boarders including in-commuters. Changes in the overall size and geography of employment are reviewed first, then demographics, and educational attainment as well as industrial and occupational composition are reviewed.

The Migration analysis begins with a high-level review of migration into and out of the region over the past two decades. It then examines the inter-regional structure of migration over the most recent five-year period that data is available: 2008-2012. Inflows and outflows of skills are then reviewed in respective sections on the educational attainment and income of these migrant populations. The last section presents a demographic profile of migration within the NSJV.

The first part of the Commuting Patterns analysis examines inter-regional commuting by the NSJV’s employed residents. These out-commuters are described in terms of their demographics, industry, and occupation as well as their region of employment. The second part of the analysis then examines the inter-regional commuting pattern of the NSJV workforce. In-commuters’ region of residence, industry, occupation, and demographics are detailed in this part of the analysis. Intra-regional commuting is focused on in the third part of the analysis. County-to-county and city-to-city workforce flows are reviewed in the initial section. Subsequent sections then review the day-time population change and the jobs-housing balance. The last part of the analysis provides a discussion of data and key concepts associated with measures of commuting.

Analysis in the report on Industrial Structure and Clusters begins with an examination of the structure and base of the NSJV economy. The first section examines changes in the region’s economic base by comparing changes...
in employment and earnings between 2001 and 2012. A shift-share analysis is then used to describe the nature of change in the NSJV’s employment by sector between 1990 and 2012. Greater focus on the NSJV’s industrial clusters is given in the second section through application of a clustering framework developed by the Unlocking Rural Competitiveness (URC) project as a resource for enhancing regional competitiveness in rural areas of the United States. Further analysis of the region’s clusters are then provided in the third section with an application of the U.S. Cluster Mapping Project framework.

Completing analysis of the region’s production system is our report on **Occupational Structure and Clusters**. The first part of its analysis reviews the occupational structure of the NSJV’s workforce and its employed residents. It includes review of occupational concentrations across the region and its component geographies. The second part of the analysis then examines knowledge based occupational clusters through the application of the framework developed by the Crossing the Regional Frontier project.

A range of other regional assets are briefly reviewed in the **Other Regional Asset Components** analysis. The first part of the report surveys the NSJV’s educational system. This part of the report includes reviews of the primary and secondary education system, higher education institutions (HEI), and the continuing education system as well as the workforce development system. The second part covers the financial system with a selective review of the commercial banking system, venture capital, and government financial programs. Part three examines the regional system of innovation and includes analyses of available indicators on the region’s high-skilled human capital, its patenting, its R&D expenditures, and its entrepreneurship. The fourth part examines business and social capital through a selective review of business, professional, labor, and other regional organizations. The fifth part reviews the NSJV’s physical infrastructure with discussion of road, rail, shipping, air, transit, water, and energy infrastructure. The last part of the report provides an overview of regional amenities as well as health and environment indicators.

Complementing these reports is a briefing paper on the November 19, 2014 NSJV Assessment Conference. That report provides a summary of this event where the project’s draft Technical Reports were discussed as well as summaries of conference discussions on the region. It concludes with a summary of the post-conference participant survey on regional challenges and opportunities.

**REFERENCES**


