City of Las Cruces Economic Leakage Study

Executive Summary

Economic leakages are expenditures that are diverted from the local economy by local firms and consumers purchasing goods and services outside of the Community. Information regarding which industries are experiencing large economic leakages is essential in improving local economic development policy. This study identifies the main industries in which there are substantial economic leakages for the City of Las Cruces and Doña Ana County.

Agriculture

- Agriculture is the County’s largest export sector, with an estimated $925 Million dollars of exports in 2018. However, agricultural activities are mostly concentrated outside the City limits.
- Despite the concentration in Farm and Support Activities for Agriculture, neither the County nor the City have an advantage in Food Manufacturing compared to other areas in the Country.

Health Care

- The County has a high employment concentration in health-related industries such as Social Assistance and Ambulatory Health Care Services. However, in other health related industries, the City has less employment than expected. These include the Private; Hospital and Nursing and Residential Care Facilities health care industries.
- The County exports a significant amount of health care services to surrounding counties. This means that non-residents of the County travel here for treatment.
- The County also imports a significant amount of health care services from surrounding counties. This means that residents travel outside the county for certain specialized treatments.

Government

- Government employment continues to the largest sector for the County, with State and Local Government, Federal Civilian, and Federal Military combined accounting for about 20% of the total employment.
Economic Leakage Study

An economic leakage occurs when spending is diverted away from the local economy, for example, when local firms or consumers choose to purchase from entities located outside of the community. Information regarding which industries are experiencing substantial economic leakages is essential to economic development policy, in that it provides the foundational knowledge needed to design initiatives aimed at reducing said leakages. This study identifies the main industries in which there is evidence of substantial economic leakages for the City of Las Cruces (City) and Doña Ana County (County).

City of Las Cruces and Doña Ana County Gross Receipts Comparison

As a means of assessing the potential leakages that may be occurring between the City and the County, the study provides a comparison of industry specific growth in Gross Receipts between the two geographic areas. Comparing trends in the growth in gross receipts between the City and the County can provide useful economic insights regarding the general trends in new business activity is taking place (See Table A). Each industry is placed into one of four categories 1) industries with growth in gross receipts both inside and outside the City; 2) industries with declines in gross receipts both inside and outside the City; 3) industries with growth outside the City yet a decline in the City; and 4) industries with a decline outside of the City yet growth in the City. The growth rate displayed in the table below represents the total percentage change in gross receipts between January 2016 and January 2020, prior to the COVID-19 shutdown.

Of the 18 sectors analyzed, the City saw growth in 11 during this period. Most industries that saw growth in gross receipts inside the City also saw growth outside of the City. However, Wholesale Trade, Real Estate and Rental and Leasing, Transportation and Warehousing, and Unclassified Establishments grew in the City yet declined outside the City. Conversely, Agriculture, Forestry, Fishing and Hunting, Finance and Insurance, and Professional, Scientific, and Technical Services saw a decline in the City yet an increase outside of the City. One possible explanation for why we have seen Agricultural gross receipts grow outside of the City yet decrease within the City, is that agricultural producers may be relocating their operations outside of the City limits. For example, as the City expands and demand for peripheral land increases, it could be that farmers are selling their land to real estate developers in the City, then relocating there operations outside of the City. If this is the case, then there may be a tradeoff between the growth in the size of the City and the size of the Las Cruces agricultural sector.

Table A
## Gross Receipts by Industry

**City of Las Cruces and Dona Ana County January 2020**

<table>
<thead>
<tr>
<th>Inside Las Cruces Growth and Outside Las Cruces Growth</th>
<th>Gross Receipts</th>
<th>Percent Change Jan 2016 - Jan 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>City of Las Cruces</td>
<td>Dona Ana County</td>
</tr>
<tr>
<td>Health Care and Social Assistance</td>
<td>$192,309,235</td>
<td>$201,189,541</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>$122,364,434</td>
<td>$138,939,746</td>
</tr>
<tr>
<td>Construction</td>
<td>$69,918,130</td>
<td>$98,940,229</td>
</tr>
<tr>
<td>Accommodation and Food Services</td>
<td>$28,402,068</td>
<td>$32,134,773</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>$17,566,705</td>
<td>$37,970,652</td>
</tr>
<tr>
<td>Administrative and Support and Waste Management and Remediation Services</td>
<td>$5,281,668</td>
<td>$13,105,046</td>
</tr>
<tr>
<td>Educational Services</td>
<td>$1,349,490</td>
<td>$3,122,838</td>
</tr>
</tbody>
</table>

### Inside Las Cruces Decline and Outside Las Cruces Decline

| Other Services (except Public Administration)           | $22,577,796        | $28,477,504     | 79.3%                  | -6.6% ▼    | -31.7% ▼    |
| Information                                            | $12,690,788        | $19,957,275     | 63.6%                  | -14.2% ▼   | -8.4% ▼     |
| Utilities                                              | $6,453,949         | $15,836,087     | 40.8%                  | -13.9% ▼   | -22.1% ▼    |
| Arts, Entertainment, and Recreation                    | $1,073,637         | $1,816,108      | 59.1%                  | -4.3% ▼    | -18.0% ▼    |

### Inside Las Cruces Decline and Outside Las Cruces Growth

| Professional, Scientific, and Technical Services       | $21,336,060        | $34,908,566     | 61.1%                  | -2.6% ▼    | 61.3% ▲     |
| Finance and Insurance                                  | $3,131,098         | $3,925,811      | 79.8%                  | -12.7% ▼   | 86.7% ▲     |
| Agriculture, Forestry, Fishing and Hunting             | $2,286,281         | $10,538,756     | 21.7%                  | -65.3% ▼   | 83.8% ▲     |

### Inside Las Cruces Growth and Outside Las Cruces Decline

| Wholesale trade                                        | $16,715,007        | $33,169,690     | 50.4%                  | 4.3% ▲     | -21.1% ▼    |
| Real Estate and Rental Leasing                         | $13,926,145        | $16,183,994     | 86.0%                  | 236.4% ▲   | -29.5% ▼    |
| Transportation and Warehousing                         | $6,833,249         | $14,453,436     | 47.3%                  | 40.0% ▲    | -67.5% ▼    |
| Unclassified Establishments                            | $3,735,481         | $5,030,160      | 74.3%                  | 186.2% ▲   | -0.1% ▼     |

| All Industries                                         | $550,643,274       | $713,643,458    | 77.2%                  | 35.3% ▲    | 5.9% ▲      |

Source: Tax and Revenue New Mexico RP-500
Industry Categories

Each industry is put into one of four categories based on their employment concentration relative to the Nation (as measured by the Employment LQ) and their status as a net exporter or importer. This will help us identify the sectors that compose the County’s export base, the sectors where have deficiencies, and the sectors where there is ambiguity regarding the nature of our economic advantage or disadvantage. In the sections that follow, all data is for the County for the year 2018, the most recent year that this data is available. The four industry categories are as follows:

1) **High Concentration, Net Exporting Industries** – These are industries that have an employment LQ greater than one and an export to import ratio greater than one. Thus, these are industries that can be considered our export base. It is the export base that brings money into the County. Thus, much of the economic activity in the County is either directly or indirectly derived from our export base.

2) **High Concentration, Net Importing Industries** – These are industries where the LQ is greater than one, yet the import to export ratio is less than one. For these industries, it is more ambiguous to whether the County has a comparative advantage in production. This is because although we have more employment than is typical across the Country, we are still dependent on imports from firms located outside the region.

3) **Low Concentration, Net Exporting Industries** – These are industries that have an employment LQ less than one yet an export to import ratio greater than one. Thus, these industries employ fewer workers than what is typical across the nation, yet the County is still exporting more than it imports. As with the previous category, it is more ambiguous to whether we have a comparative advantage in production in these sectors.

4) **Low Concentration, Net Importing Industries** - These are industries with an LQ less than one and an export to import ratio less than one. Thus, there is evidence that the county is import dependent for the goods and services these industries produce.

1. **High Concentration, Net Exporting Industries**

This category contains industries where there is strong evidence that the County has a comparative advantage in production compared to other regions of the Country (See Table B). Of the 69 industries analyzed, 11 met this criterion. Table B below provides 10 economic indicators for these 11 industries. See Appendix B for a detailed description of each economic indicator used in the following tables.

**Ambulatory Health Care Services**

The largest industry in terms of employment among this group is *Ambulatory Health Care Services*, with 8,536 jobs which accounts for 8.4% of total County employment in 2018. It sold over $285 million dollars in exports during this period. This industry provides health care services directly or indirectly to ambulatory patients and does not usually provide inpatient services. Some of the subindustries under this sector are *Ambulance Services, Offices Health Maintenance Organization, Medical and Diagnostic Laboratories, Physicians’ Offices*, and *Walk-In Centers*. 
The higher employment LQ of 1.84 indicates that the County has more employment in this sector compared to other areas of the country. Exports are substantial given that an estimated 34.2% of Ambulatory Health Care Services are provided to people living outside the County. At the same time, 10.1% of local demand for these services is being satisfied by firms residing outside the County. The main take away the County both exports and imports a significant amount of Ambulatory Health Care Services.

**Agriculture**
Agriculture is one of the largest sectors within the County with an estimated $925 million dollars of agricultural exports in 2018. There is also evidence of a comparative advantage in Support Activities for Agriculture. Both industries combined account for 4.7% of total County employment, about 4,763 jobs. Support Activities for Agriculture includes subindustries such as Soil Preparation, Planting, and Cultivating, Crop Harvesting, Postharvest Crop Activities, Farm Labor Contractors and Crew Leaders, and Farm Management Services. A relatively high percent of local demand for Support Activities for Agriculture is being satisfied by local firms. However, despite the county's strong agricultural sector, this has not translated into a strong Food Manufacturing sector.

**Social Assistance**
The Social Assistance Industry employs 4,424 workers or 4.4% of total county employment. Social Assistance includes sub-industries such as Community Food and Housing, and Emergency and Other Relief Services, Vocational Rehabilitation Services, Child Day Care Services, Services for the Elderly and Persons with Disabilities and Child and Youth Services. This industry is not what is traditionally thought of as export industry, however, 52% of these services are provided to those living outside of the County. Despite the County's high employment concentration, 23.4% of local social assistance demand is satisfied by outsiders. Like Ambulatory Health Care Services, the County both exports and imports a significant volume of Social Assistance Services. In 2018 there were $106 million dollars of exports and $12 million dollars of imports in this industry.

**Table B**
2. High Concentration, Net Importing Industries

This category contains industries with an employment LQ greater than one and an export to import ratio of less than one (see Table C). There are four industries in the County that meet this criterion.

**Construction**

The *Construction* industry employs 5,886 workers or 5.8% of total county employment. Although, the *Construction* industry has a low export to import ratio of .02, this does not necessarily signal a deficiency given the nature of the industry’s dependence on local economic activity. As of 2018 the County imports 21% of its *Construction* services from outside the region. Construction subindustries include *Residential Building Construction, Utility System Construction, Highway, Street, and Bridge Construction*, and *Foundation, Structure, and Building Exterior Contractors*. Some construction trades are more specialized than others, therefore it is possible that the County may not have the local capacity to meet all forms of *Construction* demand.

**Banking**

The banking sector has a strong employment LQ of 1.44, yet a low export to import ratio of .57. Still the 2,093 individuals it employs makes up a relatively small percent of total County employment (2.1% percent). The high leakage is largely due to the nature of the financial sector. For example, when a local resident makes a payment into their mutual fund located in New York, it is counted as an import on account that they are purchasing a financial service from
another region. With that said, the County still exports approximately $215 million dollars of banking services.

### Table C

<table>
<thead>
<tr>
<th>High Concentration Net Importing Industries</th>
<th>Dona Ana County 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment</td>
<td>Concentration</td>
</tr>
<tr>
<td>Employment % of Total</td>
<td>% Change</td>
</tr>
<tr>
<td>----------------</td>
<td>----------------</td>
</tr>
<tr>
<td>State and Local Government^2</td>
<td>16,488</td>
</tr>
<tr>
<td>Construction</td>
<td>5,886</td>
</tr>
<tr>
<td>Monetary authorities - central bank; Credit intermediation and related activities</td>
<td>2,093</td>
</tr>
<tr>
<td>Transit and ground passenger transportation</td>
<td>1,475</td>
</tr>
</tbody>
</table>

In Millions of US Dollar
^2 % of Total Local Industry Output that is Exported
^3 % Imports, Leakage, Exports/Imports and % Exported not defined for the Public Sector

Source: Regional Economic Modeling Inc

### 3. Low Concentration, Net Exporting

This category is for industries that have an LQ less than one, yet an export to import ratio greater than one (See Table D). There are 9 industries that meet this criterion. These industries collectively make up a relatively smaller portion of total County employment, with the largest industry being **Real Estate Services**.

**Real Estate Services**

The **Real Estate Services** industry employs 3,893 workers or 3.8% of total county employment. This sector includes **Lessors of Real Estate**, **Offices of Real Estate Agents and Brokers**, and **Residential Property Managers**. About 7% or 139 million dollars of this industries sales are to non-county residence. In addition to this, around 93% of the local demand for Real Estate Services are being satisfied by local firms. It is interesting then that the employment LQ is less than one despite strong metrics in other areas.

**Warehousing and Storage**

The **Warehousing and Storage** Industry employs 606 workers which is less than one percent of total county employment. Total exports in 2018 where $21 million, while total imports were $2.2 million. Despite the low employment LQ, the industry has seen solid employment growth of 156%, a large export to import ratio 9.27, and a strong productivity LQ of 1.35. This may be mostly driven by the economic activity occurring in the Santa Teresa area of the County, which houses the International Port of Entry, as well as the Intermodal Facility of Union Pacific. This industry’s subindustries include **General Warehousing and Storage**, **Refrigerated Warehousing**, and **Storage Farm Product Warehousing and Storage**.
4. Low Concentration, Net Importing

This category consists of industries that have an LQ less than one, as well as an export to import ratio less than one. These are industries where there is good evidence that the County has deficiencies, given that we are both import dependent and have less employment than what is typical across the country. There are 45 industries that meet these criteria. See Table E for the top 10 industries in this category.

Retail trade\(^1\)

*Retail* is the largest in this category, which employs 9,257 workers or 9% of total County employment. Approximately 23% of local *Retail* demand is satisfied by out of region firms, which is an estimated leakage of $229 million in 2018. This translates into an estimated 23% of local *Retail* demand being satisfied by firms located outside the County. The percent of local retail demand that is being satisfied by local firms has fallen over time as well (See Appendix A).

\(^1\) Although the rise in online shopping has adversely affected traditional brick and mortar retail establishment, it has been nationwide. This impact will not show up in the LQ metrics.
Health Care

Two health care related industries in this category are Hospital; Private and Nursing and Residential Care Facilities which together employ 3,619 workers or 3.5 percent of total County Employment. Hospital; Private includes both hospitals and private health care practices. Private and Nursing and Residential Care Facilities include skilled nursing facilities, Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities, and Continuing Care Retirement Communities and Assisted Living Facilities for the Elderly. For these two health care related industries, the county imports $328.5 million dollars from firms residing outside the region. At the same time, it exports $200.9 million dollars in sales. The fact that County imports and exports a tremendous amount of health care services suggests that it is the relative availability of specific health care services that are explaining these trade patterns.

Table E

<table>
<thead>
<tr>
<th>Industry Description</th>
<th>Employment</th>
<th>% of Total</th>
<th>10yr % Change</th>
<th>Concentration</th>
<th>Leakage</th>
<th>Trade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail trade</td>
<td>9,257</td>
<td>9.1%</td>
<td>5.0% ▲</td>
<td>0.94</td>
<td>1.07</td>
<td>23.2%</td>
</tr>
<tr>
<td>Professional, scientific, and technical services</td>
<td>5,701</td>
<td>5.6%</td>
<td>6.5% ▲</td>
<td>0.78</td>
<td>0.93</td>
<td>46.5%</td>
</tr>
<tr>
<td>Hospitals; private</td>
<td>2,470</td>
<td>2.4%</td>
<td>24.9% ▲</td>
<td>0.94</td>
<td>1.19</td>
<td>43.5%</td>
</tr>
<tr>
<td>Wholesale trade</td>
<td>1,694</td>
<td>1.7%</td>
<td>5.9% ▲</td>
<td>0.52</td>
<td>0.73</td>
<td>73.7%</td>
</tr>
<tr>
<td>Educational services; private</td>
<td>1,579</td>
<td>1.6%</td>
<td>42.3% ▲</td>
<td>0.65</td>
<td>0.79</td>
<td>90.2%</td>
</tr>
<tr>
<td>Religious, grantmaking, civic, professional, and similar organizations</td>
<td>1,214</td>
<td>1.2%</td>
<td>9.3% ▲</td>
<td>0.71</td>
<td>1.38</td>
<td>34.1%</td>
</tr>
<tr>
<td>Nursing and residential care facilities</td>
<td>1,149</td>
<td>1.1%</td>
<td>31.2% ▲</td>
<td>0.64</td>
<td>1.16</td>
<td>75.0%</td>
</tr>
<tr>
<td>Insurance carriers and related activities</td>
<td>698</td>
<td>0.7%</td>
<td>-5.3% ▼</td>
<td>0.40</td>
<td>0.99</td>
<td>93.8%</td>
</tr>
<tr>
<td>Food manufacturing</td>
<td>651</td>
<td>0.6%</td>
<td>-27.9% ▼</td>
<td>0.74</td>
<td>0.99</td>
<td>62.0%</td>
</tr>
<tr>
<td>Repair and maintenance</td>
<td>651</td>
<td>0.6%</td>
<td>-48.5% ▼</td>
<td>0.54</td>
<td>1.76</td>
<td>9.9%</td>
</tr>
</tbody>
</table>

1 In Millions of US Dollar

2% of Total Local Industry Output that is Exported

Source: Regional Economic Modeling Inc.

Implications of Leakage Study

The aim of this study is to identify the industries where large economic leakages occur. This study does not explain WHY these leakages occur. It also does not make an empirical claim
regarding the impact a particular policy will have at reducing the economic leakage in a particular sector. With that said, this leakage study can focus our gaze on certain economics development opportunities. However, it should be used in conjunction with other information to inform economic development policy. Below are four sector that may require some attention.

Given that the County has a high concentration in Farm and Support Activities in Agriculture why doesn’t it also have a concentration in Food Manufacturing? There may be opportunities for growth in Food Manufacturing given that we produce many of the needed inputs required by that sector. Initiatives aimed at fostering vertical integration among agricultural producers may be considered, as well as financing mechanisms to help spur this Food Manufacturing industry cluster.

Given that the County exports $485 million and imports $390 million dollars in medical services, it warrants considering how improvements in the availability of health care services, particularly specialized health care services, might affect health care trade patterns between the County and neighboring regions. Thus, if there are no local health care providers for certain health care services residence may be forced to seek treatment outside the County.

The County’s Retail sector has a slight deficiency in terms of employment. In addition to this, the rise in online shopping is likely responsible for the fall in the percent of local Retail demand that is being satisfied within the County. Current efforts to revitalize downtown Las Cruces as a shopping, dining, and theater district may help reduce the leakages in this sector.

We find that although the County has an employment concentration in the Construction industry, we still import 21 percent of our Construction services. This likely is due to demand for specialized Construction services that we do not have the capacity to supply ourselves. Filling this supply gap will require further research on which specific Construction subindustries we are import dependent, as well a diagnosis for why we do not provide these services ourselves.

Sources

REMI (2020) Reginal Economic Modeling Incorporated REMI PI+ Version 2.4

Monthly Local Government Distribution Reports RP-500 (2020)


Appendix A
Appendix B

Leakage analysis is a technical subject that requires some knowledge of some basic economic terminology. This study utilizes four broad classes of indicators 1) Employment Indicators 2) Industry Concentration Indicators 3) Economic Leakage Indicators 4) Trade Indicators. In the section below, we provide a brief description of the ten economic indicators used throughout the study.

Employment Indicators

1) **Employment**: is the number of full time or part time workers employed in each industry
2) **% of Total**: is the percent of total employment that a particular industry represents
3) **10yr % Change**: if the total percentage change in employment between the years 2009 and 2018. Note, 2018 is the most recent data available.

Industry Concentration Indicators

1) **Employment LQ** (Employment Location Quotient LQ) is the ratio between the percent of the counties employment in an industry and the percent of the nation’s employment in that industry. For example, if 10% of a county’s employment is in the textile industry yet only 5% of the nation’s employment is employed in that industry, then the employment LQ for the textile industry in that county is 2. If the employment location quotient is greater than one, it indicates that we have more employment in that industry than what is typical across the nation. Likewise, if an industry has an LQ of less than one, it signals that we have relatively less employment in that sector than what is typical.
2) **Productivity LQ** (Productivity Location Quotient LQ) is the ratio between a county’s labor market productivity for an industry and the nation’s labor market productivity for that industry. Labor market productivity is measured by taking the dollar value of the output produced in an industry and divided by the number of workers employed in that industry. A Productivity LQ greater than one is evidence that a sector is more efficient than the rest of the nation.

**Leakage Indicators**

1) **% Imported** Is the percent of local demand for a good and service that is satisfied from firms residing outside of the county.
2) **Leakage** The total dollar values of the goods and services we import.

**Trade Indicators**

1) **Exports/Imports** Is the ratio of total exports to total imports. An export to import ratio greater than one indicates that we are net exporters in that sector. An export to import ratio less than one signals that we are net importers in an industry.
2) **% Exported** Is the percent of the total supply produced locally that is exported.
3) **Exports** Is the total dollar value of the goods and services an industry exports.