Buying Local in Union County and Creston, Iowa: An Economic Impact Assessment

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Introduction

One of the ways to increase the amount of economic activity in a region is to increase the purchases that are made from local suppliers of goods and services. Generally speaking, the more businesses and people in an area purchase from local suppliers, the better it is for the economy, provided, of course, that both quality and value are not compromised by making a local selection. This short report highlights the economic development potential of increasing purchases of goods and services from local providers rather than providers outside of the county of analysis in this instance – Union County, Iowa. County-wide values will be apportioned to the City of Creston.

The analysis relies on an input-output model (I-O) of the Union County economy. I-O models are detailed, county-level accountings of the transactions that occur within a county among its industries, institutions, and households. By tracking these transactions, we can discern the effects of growth, decline, or a reconfiguration of critical variables in the local economy. In this case we are analyzing all of the commodities that are imported into the region. We are asking a very straightforward question: What potentially happens to the local economy when we substitute 5 percent of our goods and commodity imports with goods and services produced locally.

Basic Data and Adjustments

Table 1 demonstrates the dependence of the Union County economy on imported production inputs. This table lists the industrial output in Union County in 2001. Industrial output is analogous to sales, or more precisely, it is the market value of all goods and service produced in the region. In making those sales, the industries and governments in the county made $286.3 million in payments for production inputs and $277.7 million in payments to value added, $167 million of which were payments to workers.

Of its $286.3 million in production inputs, however, $205.11 million, or 72 percent, are estimated to have been purchased from suppliers from outside of Union County. Those imports could have come from a neighboring county, the remainder the state, the remainder of the nation, or from other countries. If they didn't come from Union County, they are imports.

Table 1. Private Sector Industrial Accounts

Total Industrial Output	564.05
Cost of Goods Sold: Imports	205.11
Cost of Goods Sold: Locally Produced	81.21
Payments to Value Added	277.73
Employees Wages	166.95
Proprietor Incomes	17.72
Returns to Investors	73.57
Indirect Government Taxes and Charges	19.50

Amounts in $ millions

These are, however, not all of the imports that are purchased by in the county. To the surprise of many, the Union County economy is larger than its industries. It also is home to spending by households and institutions that receive income from sources outside and within the county economy. Those values are contained in Table 2. According to our model of the Union County economy, households and institutions purchased an additional $169.7 million in goods and services from outside of the county. Were the county to realize an import substitution amount of 5 percent of that value, it would stimulate, potentially, $18.7 million in additional local sales.

There is, however, a catch. County industries and households cannot make import substituting local purchases for goods and services if the industry does not exist in the county. Moreover, there are a host of specialized commodity imports that simply cannot, will not, or are otherwise highly unlikely to ever be produced in the region. As examples, the region purchases $9.1 million in refined petroleum outputs, $6.1 million in manufactured pharmaceuticals and medicines, $4.1 million in air-transportation services, and $3 million in primary aluminum. Oil refineries, commercial airports, drugs and other pharmaceuticals manufacturers, and aluminum manufacturers are not likely to locate in the region.

Table 2. Total Import Purchases

Type of Import	Total Commodity Imports
Intermediate (Industry)	205.11
Household and Institutional	169.73
Total	374.85

Amounts in $ millions

Accordingly, in order to make this estimation plausible, we need to determine which imported commodities could realistically be substituted for by a local supplier. You can't import substitute if there is no local producer. That means that we had to match up the commodity imports with the list of industries that actually exist in the region. Table 3 lists those values. Of the $374.9 million in total regional imports, $153.4 million, or just 41 percent, are commodities for which a producing industry was in

evidence in the Union County economy. Taking 5 percent of that amount we get $7.67 million in potential import substitutes in the region.

Table 3. Imports Produced Regionally by Type of Importing Entity

Imports	Intermediate	Household and Institutional	Total
Commodities Produced Regionally	73.36	80.06	153.42
Commodities not Produced Regionally	131.75	89.68	221.43
Total Commodity Imports	205.11	169.73	374.85

Amounts in $ millions

The Impacts

Two separate input-output analyses were conducted: one for the intermediate imports – those that are demanded by businesses and governments in the region, and one for the household and institutional import demands. In each analysis we identified the top 30 commodity imports and use those 30 commodities to represent the potential economic impacts of all commodity substitutes. We proportionately adjusted each commodity's value so that the sum of the 30 chosen representative commodities for both sets of analysis represented our 5 percent total value, or $7.67 million in import-substituted local sales.

Tables 4 through 6 detail the impacts. The format of the tables is identical: impacts are compiled first for Union County, and then an apportionment is made for the City of Creston. We first identify intermediate import substitutes (Table 4), household and institutional import substitutes (Table 5), and total values (Table 6). In Table 4, the intermediate import substitutes, the apportioning factor was average of the number of firms in Creston as a fraction of the total number of firms in the county and the amount of estimated retail and service sales in Creston as a fraction of the county total. The apportioning value for Table 5 was the average of the population of Creston divided by the population of Union County and the fraction of retail and service sales in Creston compared to the county. Table 4 is weighted by business firms and total sales; Table 5 is weighted by population and total sales. Table 6 is simply the sum 4 and 5.

Some explanation of the values is also in order. The first value is *output* (*or total industrial output*). Output, as has already been mentioned, is analogous to gross sales. *Labor income* is made up of the wages and salaries paid to workers and the normal returns to sole proprietors (farmers, shopkeepers, etc.). *Jobs* represent the number of positions in an economy, not necessarily the number of workers as workers can have more than one job.

The tables also list four dimensions of economic impact. The *direct effects* refer to the import-substituting purchases (the 5 percent) that are made of the 30 representative industries in the model. When we make purchases from these firms, they require increments of inputs on their own. Those locally supplied inputs are called the *indirect effects*. When workers in the direct and the indirect industries receive their paychecks,

they convert their labor incomes into household spending. This spending creates the *induced effects*. The sum of the direct, indirect, and induced effects are the total economic effects or economic impacts.

The table also lists *multipliers*. A multiplier is merely the ratio of the total economic effect or impact to the direct value – the total value divided by the direct value. An output multiplier of 1.29 in Table 4 means that for every dollar's worth of import substituted direct purchases in the region, and additional $.29 in output is generated. A labor income multiplier of 1.28 means that for every dollar's worth of labor income paid in the direct sector, an additional $.28 in labor income is supported in the indirect and induced sectors of the Union County economy. Finally, the jobs multiplier of 1.26 means that for every job in the direct sectors, 26/100^{ths} of a job is sustained in the remainder of the economy.

In Table 4 we look at intermediate import substitutes. Five percent of the county total amounted to $3.67 million in direct import-substituting local transactions. That would support $1.32 million in direct incomes to 69 jobs. To produce those sales requires an additional $480,150 in locally-supplied inputs, paying 7.4 jobs $169,039. As workers convert their earnings into household spending, they will cause $592,707 in induced sales, yielding 10.5 more jobs and $195,459 in additional labor income. In total, import substitutes of intermediate goods and services will yield $4.75 million in output in the county, $1.682 million in labor incomes, and 87 jobs. Those values apportioned to the City of Creston give $4.07 million in output, $1.44 million in labor income, and 75 jobs.

Table 4. Economic Impact of Intermediate Import Substitutes

Union County	Direct	Indirect	Induced	Total	Multiplier
Output	3,674,242	480,150	592,707	4,747,099	1.292
Labor Income	1,317,551	169,039	195,459	1,682,050	1.277
Jobs	69.1	7.4	10.5	87.0	1.259

City of Creston	Direct	Indirect	Induced	Total	Multiplier
Output	3,153,737	412,130	508,742	4,074,610	1.292
Labor Income	1,130,903	145,092	167,770	1,443,765	1.277
Jobs	59.3	6.4	9.0	74.7	1.259

Table 5 gives the household and institutional import substitute values. Those entities would make $4.002 million in direct, import-substituting purchases in the county to achieve the 5 percent goal. In so doing, they would support 75 direct sector jobs paying $1.538 million in labor income. This change would require $379,735 in inputs, supporting another 7.6 jobs and $179,603 in labor income in the supplying sectors. When workers spent their wages, they would add $684,047 in induced transactions into the economy, adding another dozen jobs and $225,585 in labor incomes. In total, this would generate an additional $5.17 million in county-wide output, $1.943 million in labor income, and 94 jobs. Those values apportioned to the City of Creston give $4.033 in total economic impact output, $1.514 million in labor income, and 74 jobs.

Table 5. Economic Impact of Household and Institutional Import Substitutes

Union County	Direct	Indirect	Induced	Total	Multiplier
Output	4,002,858	487,175	684,047	5,174,080	1.293
Labor Income	1,538,241	179,603	225,585	1,943,428	1.263
Jobs	74.7	7.6	12.1	94.4	1.264

City of Creston	Direct	Indirect	Induced	Total	Multiplier
Output	3,120,084	379,735	533,190	4,033,010	1.293
Labor Income	1,199,004	139,994	175,835	1,514,832	1.263
Jobs	58.2	5.9	9.4	73.6	1.264

Table 6 combines the previous two tables. Were the county to fully realize a 5 percent import substitution goal, it would generate $7.677 million in additional local industrial output, support a total of nearly 144 jobs making $2.85 million in labor incomes. That enhanced local spending would spur another $967,325 in supplying sector industrial output, supporting 15 workers and $348,642 in incomes. Induced spending would increase by $1.28 million in the county, and require another 22.6 jobs paying $421,044. Total county-wide economic impacts would be $9.92 million in output, $3.63 million in labor incomes, and 181 jobs. Apportioned to the City of Creston, we would see total output impacts of $8.1 million, 148 jobs, and $2.96 million in labor incomes.

Table 6. Total Import Substitutes Economic Impacts

Union County	Direct	Indirect	Induced	Total	Multiplier
Output	7,677,100	967,325	1,276,754	9,921,179	1.292
Labor Income	2,855,792	348,642	421,044	3,625,478	1.270
Jobs	143.8	15.0	22.6	181.4	1.261

City of Creston	Direct	Indirect	Induced	Total	Multiplier
Output	6,273,821	791,866	1,041,932	8,107,620	1.292
Labor Income	2,329,906	285,086	343,605	2,958,598	1.270
Jobs	117.5	12.3	18.4	148.3	1.261

Discussion

These values represent the maximum amount of economic activity that could be expected to accrue to the region and the City of Creston were the area to achieve the 5 percent import substitution goal. Whether the 5 percent goal is realistic or not, however, is another matter. Businesses, institutions, and households increasingly make purchases for spatially diverse sources. These purchases may or may not be efficient and cost effective. Changing behaviors to focus on local purchasing opportunities will necessarily require extensive public education of both the opportunity for the purchases and the localized beneficial economic outcomes that might accrue.

This model is a simulation of how the regional economy is expected to react were the 5 percent goal achieved. If there is slack in the regional economy, as in excess production capacity or significant under employment, then, while income gains regionally might be realized, job gains might not. Similarly, realistically, local purchases only make sense to individuals and businesses if they perceive that they are no worse off for the decision. If local goods and services are more costly or are offered in only limited selections, then the propensity to buy locally will diminish. This model cannot adjust for these important considerations. The model is an accounting framework, not a behavioral model.

Finally, and notably, all categories of multipliers are very low in this analysis. The reason is that linkages in the region are comparatively lean – there is a limited number of industrial types in evidence in the region. Enhanced local spending in this area does not yield the kind of local economic impact payoffs as would be the case in a larger economy with a more diverse and rich set of industries.

This is indicative of many rural area economies. A buy local campaign may assist in boosting those linkages, but it will take time. That effort would also be working against the urbanization and specialization forces that are already prominent in Midwestern economies that are yielding in places like Union County and Creston, Iowa, incrementally lower and lower regional economic multipliers annually.