

# The Economic Impact of Recycling & Reuse in the Kansas City Metro Area

---

Dr. Joseph Martinich

8-10-2017



University of Missouri–St. Louis

## History/Background

- Beginning in the mid-1990's, several state/regional studies were performed
  - Estimated the economic impact/role of recycling on state or regional economies
  - Northeast Recycling Council (1994, 2000)
    - 10-state region plus six individual state studies
  - Iowa (1996, 2001); Arizona (1996)
  - California, Florida, Indiana, Nebraska, Ohio, Illinois, Minnesota, Wisconsin, and Missouri (2000-01)

## History/Background

- U.S. Recycling Economic Information Study (2001)
  - Performed by R.W. Beck for the NRC
  - Defined 26 RRR industries
    - Recyclables collection and processing
      - Curbside collection, MRFs, composters, brokers/wholesalers
    - Manufacturing (users of recycled materials)
      - Metals, Paper, Glass, Plastics, Rubber, Asphalt
    - Re-Use and Re-Manufacturing
      - Electronics, Vehicle Parts, Tire Retreading, Wood Reuse, Used Merchandise Retailers

- **Key Contributions and Results**

- Standardized methodology
- Created National Publicity
- Provided Tangible, Credible Economic Information

- **Results Were Striking**

- 1.12 million **direct jobs** in RRR with \$36.7 billion annual payroll
- 3.99 million **total jobs** (direct, indirect, induced) with \$135.6 billion payroll

- **Update of USREIS in late 2016**
  - Big Changes in:
    - Scope/industries included
    - Methodology
  - Makes economic impact of total RRR activities not comparable with 2001 study

## SLMSA and Missouri

- St. Louis-Jefferson SWMD commissioned several REI studies
  - St. Louis Metro Area (2002 and 2006)
  - Missouri (2006, 2011, 2014)
  - Needed to modify methodology
    - Proprietary nature of MSA and State data
    - Used new data sources
    - Used multiple methods (triangulation) for each industry

## This Project



- REI study for the KCMSA
  - Utilize experience from previous studies
    - Data sources and methodology



## This Project

- Additional challenges
  - KCMSA smaller than SLMSA so more “natural” data suppression by government sources
  - Government has become less “data-transparent”; i.e., suppressing more data
  - Few or no businesses in some industries

## This Project

- Differences/improvements
  - More extensive use of direct contact/survey data
  - More/better data sources
    - Government databases (especially BLS)
    - Government reports
    - Websites
  - Additional/new estimation approaches

- **Methodology**

- **Geographic Scope:**

- **KCMSA**

- Government data available at MSA level
- Not much available at smaller geographical levels

## ➤ Industry Scope

- The USREIS 26 RRR industries
  - Recyclables collection and processing
    - » Curb collection, MRFs, composters, brokers/wholesalers
  - Manufacturing (users of recycled materials)
    - » Metals, Paper, Glass, Plastics, Rubber, Asphalt
  - Re-Use and Re-Manufacturing
    - » Electronics, Vehicle Parts, Tire Retreading, Wood Reuse, Used Merchandise Retailers
- Some industries combined

## ➤ Data Sources

- Government
  - 2015 Quarterly Census of Employment and Wages
  - 2014 County Business Patterns
  - 2014 Non-employer Statistics
  - 2012 Economic Census
  - 2011 Green Goods Report

- Other sources/reports
  - State and US REI studies
  - *Sorkins Directory of Business & Government* (KC ed)
  - IMPLAN data base
  - Various business websites
  - Private database
  - Articles and other publications

- Direct Contacts
  - Phone, email, letters
  - Surveys
  - Organizations and “third-parties”

## ➤ Estimation Methods

- Most industries: multiple methods/data sources
  - In contrast with USREIS and most state REI studies
  - Typically provides better accuracy and certainty
- Direct use or extrapolation from government data
  - Possibly multiple data sources used
- Sum the data from direct contact responses
- Combined government and direct contact data
- Extrapolations from state & national REI studies
  - Mainly for “reasonableness” verification



## ➤ Multipliers

- Used IMPLAN
- Standard for REI studies
- Drawbacks
  - Some double-counting of activities in supply chain
  - Not “granular” for wholesale, retail, service industries
    - » Only one “wholesale trade” industry
    - » Hundreds of retail industries collapsed into a dozen
- Multipliers for KCMSA only

## ➤ RRR Activities/Jobs Not Included

- Organizations that make primarily new products, but may also refurbish or re-manufacture
  - Some captured; most not
- Retailers and wholesalers that primarily sell new products but also sell used/refurbished products
  - Some captured; most not
- Refurbishment and resale of vehicles, RVs, boats, etc.
- On-line and mail-order sales (if primary business)
- Artists
- Building demolition

- “Internal RRR”
  - People doing RRR work outside the 26 RRR industries
    - » Repairing pallets, containers
    - » Recycling scrap internally
    - » Recycling coordinators
- Self-employed/non-employers in some industries

## ■ Results

### ➤ Direct

- Employment 6250
- Annual Payroll \$214 million
- Annual Receipts \$1.39 billion

### ➤ Total

- Employment 12,547
- Annual Payroll \$419 million
- Annual Receipts \$2.65 billion

## ➤ Comparisons/Perspective

- Direct Jobs in KCMSA

– RRR	6250
– Public Utilities	4621
– Printing & Related Support Act.	5284
– Chemical Manufacturing	5403
– Machinery Manufacturing	5634
– Highway, Street, Bridge Const.	2277

## ➤ Annual Government Revenue

- Direct

– Federal	\$ 44 million
– State & Local	\$ 30 million
– Combined	\$ 74 million

- Total

– Federal	\$85.5 million
– State & Local	\$58.5 million
– Combined	\$144 million

## ■ Industry-Level Results/Observations

### ➤ Job Concentration

- Three industries account for 2/3 of direct jobs and half of direct payroll

– Retail Used Merchandise	2624 jobs	\$46 mill. pay
– Recyclables Mat'l Whole.	811 jobs	\$38 mill. pay
– Recyclables Collection	563 jobs	\$22 mill. pay

- Low concentration of “downstream” RRR mfg
  - Less than 20% of all direct jobs (vs. > 30% for MO.)
  - Bad news:
    - » Smaller number of jobs than “expected”
    - » Typically high-paying jobs and large multipliers
  - Good news:
    - » Did not suffer the large job losses that occurred in these industries in past 15-20 years



## ➤ Any “Positive” News?

- Longitudinal data not part of study scope: BUT
- Some direct employment increase:
  - Recyclables material wholesalers
    - » From < 500 in 2002 to 773 now
  - Retail used merchandise more than doubled since 2002
    - » But: This industry has small multipliers and low wages

## ■ Suggestions/Recommendations

- Still some opportunities to **expand collection and processing**
  - Some room to increase recycling rate
- Some **selective downstream processing and manufacturing opportunities**
  - Pratt Industries (Valparaiso, IN), Brodrene Hartmann A/S (Rolla), RePoly (St. Louis)
  - “Home-grown” businesses: most are

- Encourage and Support: **Reuse, Refurbish, Re-Manufacture and REPAIR**
  - Less/Counter cyclical
    - During 2008-09 recession reuse and re-mfg activities and employment went up
  - Labor-intensive
    - And moderate to high skill jobs (and pay)
  - High local value-added (vs. retail sales of new items)
    - “Recovers” foreign manufacturing; keeps money local
  - Low barriers to entry; can be done on small scale



Serious education. Serious value.

Thank You!