

Policy Brief

Investing in Recycling is Economic Development

Introduction

A vibrant and sustainable economy is inextricably dependent upon a healthy environment. The resources and services provided by our ecosystem are indispensable to economic activity. Consequently, economic activity that serves to extend the productive life of natural resources and minimizes the waste byproducts of the economy's productive activity must be a cardinal element of any lasting economic system. Recycling is one of those elements.

Investing in recycling should be considered an essential component of economic development and included in strategies to nurture Michigan's challenged economy. Not only does recycling provide services critical to a sustainable economy, recycling is a substantial sector of the U.S. economy, representing more than 1.1 million jobs and billions of dollars in sales and payroll.

Moreover, due to its ability to cultivate value-added economic activity from resources that would otherwise remain unproductive, recycling has the capacity to create jobs and foster further economic progress and prosperity. Studies show, for example, that recycling waste creates four jobs in the recycling industry for every one job that is created in the waste disposal industry if the material is not recycled. Further, for every job collecting recyclables, there are 26 jobs in processing the materials, manufacturing them into new products, and getting those new products to the marketplace and consumers.

Recycling represents one of those unique opportunities in which both public and private investment can cooperatively promote robust and sustainable economic activity while concurrently supporting environmental protection. As such, government economic development efforts, public/private partnerships, intergovernmental cooperation, and policies to encourage recycling should be supported.

The Macro

It is commonly held that a healthy natural environment is a fundamental component of mankind's health and quality of life. Because recycling is an activity that is known to conserve natural resources and using recycled material creates fewer pollutants than using virgin resources, it is generally accepted that recycling is essential to protecting our natural environment, human health, and our quality of life.

However, another important aspect of recycling is often overlooked in the popular mindset. Recycling is a crucial feature of a healthy and sustainable economy.

Natural resources represent one of the three foundations of all modern economies. Those factors of production are land, labor, and capital. While each is important to man's various productive activities in varying degrees, each is an essential component of all economic activity. As such, economic activity cannot take place without natural resources in one form or another.

To appreciate the importance of recycling to economic activity, it is important to acknowledge the finite nature of Earth's natural resources. While those resources are immense and nature's capacity to regenerate is amazing and wonderful, it is not infinite. The logic, reason and intuition of mankind's greatest philosophers and theologians have taught that the Earth is not infinite and, therefore, is finite. Moreover, modern science, as well as our common sense, confirms that finitude. Indeed, the laws of thermodynamics clearly show that despite mankind's

ability to innovate, invent, and create, and our desire to overcome the natural world through technology, we are bound and constrained by the maxims of physics. The laws of thermodynamics obligate us to a certain physical reality.

The first law is that energy can be neither created nor destroyed. We can use our resources in different ways but we cannot create more. Man cannot make something come from nothing.

The second law is that all physical processes, natural and technological, proceed in such a way that the availability of energy involved decreases. Utilizing the available energy stores of low entropy resources naturally yields high entropy, resulting in energy being lost in terms of its availability to man.

Despite technological improvements that have improved man's ability to gain yield from energy sources, mankind's natural dowry is finite. The second law of thermodynamics dictates that the earth's energy resources are ultimately limited and that each action we take holds ramifications for those generations that follow us.

Some natural resources are non-renewable while others may be renewable but in danger of being depleted faster than the natural environment can renew them. A sustainable economy depends on making efficient use of the ultimately scarce resources and utilizing available resources instead of wasting them. As such, recycling is an activity that is critical to the long-term health of a modern economy.

Also, all economic activity creates waste products. Since the Earth is finite, it cannot serve as an infinite sink. In other words, it has a limited capacity to absorb waste products. Exceeding that capacity, or the rate at which waste can be absorbed, has dramatic ecological and economic consequences. Utilizing waste products through recycling moderates mankind's tendency to use the ecosystem as an unlimited disposal system for the waste byproducts of economic activity.

Recycling is action toward the goal of converting our waste-minded culture to a resource-efficient ethic. Recycling means efficiency in materials use, which ultimately leads to an increase in man's material standard of living, as measured by commonly accepted economic indicators, while extending the duration of Earth's capacity to support life. Recycling also means that we have a more sustainable and ecologically compatible economy, which leads to a qualitatively improved standard of living, as measured by the condition of the environment in which we live.

The Micro

Recycling IS Economic Activity

Recycling is currently an important economic activity in its own right. According the *National Recycling Economic Information Project*, which is an economic evaluation sponsored by the National Recycling Coalition and the U.S. Environmental Protection Agency and based on data from 1997 – 1999, recycling creates economic benefits at the local, state, and national level. The REI project documented that recycling is responsible for:

- 1.1 million U.S. jobs.
- \$236 billion in gross annual sales.
- \$37 billion in annual payrolls.

The study also found that economic activity related to recycling is comparable to the auto and truck manufacturing industry; significantly larger than mining and waste management and disposal industries; and wages for workers in the recycling are notably higher than the national average for all industries.

Further, according to an analysis by the Michigan Recycling Coalition, Michigan's recycling industry has a positive impact on Michigan's economy. That study found that revenue from the sale of processed recycled materials alone generates nearly \$2 billion annually. The processing of recyclable material in Michigan employs more than 5,000 people, with an annual payroll of more than \$137 million.

Recycling Creates Jobs

Recycling also creates jobs by stimulating productive, value-added use of waste materials that would otherwise go unused. For example, the *REI Project* found;

- Public sector investment in local recycling programs pays dividends by creating private sector jobs. For every job collecting recyclables, there are 26 jobs in processing the materials and manufacturing them into new products.
- Recycling creates four jobs for every one job created in the waste management and disposal industries.

Moreover as recycling increases and as industry strives to become more efficient, investment, research, and development will likely include:

- New investment in material collection and processing equipment leading to manufacturing opportunities for such equipment.
- New R & D and innovation in recycling and materials processing equipment.
- New R & D and innovation in industrial materials use and manufacturing.

Finally, as recycling increases, the stock of materials available for use as raw feedstock for other industrial and manufacturing operations become more plentiful and less expensive, improving the competitiveness of industries using such materials.

Role for Government

As a general rule, the free market economy tends to work well. However, commonly acknowledged market failure such as imperfect information, uncaptured economies of scale, externalities (costs and benefits) can interfere with the market's efficiency. Also, various government policies can create market distortions.

It can be legitimately argued that comprehensive solid waste management and recycling systems constitute public goods due to the nonrivalness in consumption and the nonexcludability from consumption of the positive environmental benefits of such systems. Moreover, municipalities certainly have a legitimate police power role of protecting the public's health and safety by ensuring that waste products are legally and safely managed.

Those arguments aside, within the framework of a free market economy, there is a role for government to foster market efficiency and to facilitate the accuracy of the market's pricing system.

Potential Action Items

A variety of potential “first steps” exist to encourage recycling and “level the playing field”. Such action items include, but are not limited to, the following:

- Update statewide solid waste policy and goals to be consistent with current trends and preferred management options.
- Identify and correct institutional impediments to recycling, including Michigan’s municipal finance structure.
- Incorporate investment in recycling as an essential component of economic development and include recycling in strategies to nurture Michigan’s economy.
- Develop a statewide measurement system to provide better data with which to make policy and investment decisions.
- Assess and quantify the existence of external costs associated with landfilling and incineration, and develop policies to accurately account for such costs since a failure to internalize all costs would cause those activities to be under-priced and overproduced.
- Assess and quantify the existence of external benefits associated with recycling and develop policies to accurately account for such costs since a failure to internalize all benefits would cause those activities to be over-priced and underproduced.
- Implement the use of full cost accounting measures in public and private solid waste management budgeting.
- Implement the use of cost-benefit analysis for all solid waste management policies and legislation.
- Encourage the use of transparent solid waste pricing systems.
- Assess existing government subsidies/support for the use of natural resources to determine validity and the impact on recycling.
- Provide increased education on all aspects of recycling.