

Measuring the circular economy in México

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Topics: The Role of Circularity in a Resource-Constrained World or Methods & Metrics.

Abstract

In a Circular Economy (CE), waste recovery and valorization allow materials to be reused in the supply chain, thus ensuring that environmental losses are not a side effect of economic growth. In response to the research questions, "How circular is the Mexican economy?" and "How can improvement strategies be established?", this research proposal aims to estimate Mexico's circularity rate using the Circular Transition Indicators framework proposed by The World Business Council for Sustainable Development. This framework is based on an assessment of material flows within corporate boundaries, combined with additional indicators on resource efficiency, effectiveness, and the added value generated by circular business practices. According to estimates by the National Association of Plastic Industries, the national recycling market exceeds a value of USD 3 billion. Additionally, in 2019, it was estimated that 14.9 million tons of solid waste could be reused, of which 39% consisted of paper, cardboard, and similar materials, 30.7% plastics, and 16.6% glass. In the same year, the recycling rate was around 56% of total discarded paper and cardboard, 50% of plastics, but only 12% of glass. Due to the complexity of different materials, products, production plants, business units, and companies located across the country, this study proposes calculating the circularity percentage at a national level by focusing on manufacturing products with significant energy demands for their production, as energy savings are a primary benefit of the circular economy, along with positive externalities that result from it. The estimated circularity value for México is in the range of 15.9-16.7%, which is 6 to 7 percentage points above the current urban solid waste recycling rate of 9.6%. Various domestic production sectors have shown it is possible to achieve circularity levels above the international average, suggesting their acquired experience could be replicated by adapting it to the specific needs of sectors with lower implementation levels. It is essential to promote and enforce the recently enacted General Law on Circular Economy in Mexico City at national level to achieve more ambitious goals, such as becoming a nation with 100% circularity in the medium term, where all waste can be transformed into raw materials through the 6Rs, thereby increasing its value and avoiding disposal in landfills and incinerators. Further information gathering and the incorporation of qualitative techniques are necessary to develop a more robust calculation exercise.