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The Roosevelt Project

Industrial Heartland Electric Vehicle Case Study Working Paper Series

Roosevelt Project Industrial Heartland: Tax Policy

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The Roosevelt Project

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Case Study Working Paper Series

Roosevelt Project
Industrial Heartland: Tax Policy

by Christina Hajj

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The Roosevelt Project
A New Deal for Employment, Energy and Environment

About the Roosevelt Project

The Roosevelt Project takes an interdisciplinary approach to the transitional challenges associated with progress toward a deeply decarbonized economy. The project aims to chart a path forward through the transition that minimizes worker and community dislocations and enables at-risk communities to sustain employment levels by taking advantage of the economic opportunities present for regional economic development. The first phase of the project involved an analytical assessment of cross-cutting topics related to the transition. The second phase of the project assesses the transition through the lens of four regional Case, working with local partners on the ground in the Industrial Heartland, Southwest Pennsylvania, the Gulf Coast, and New Mexico. The project was initiated by former Secretary of Energy, Ernest J. Moniz, and engages a breadth of MIT and Harvard faculty and researchers across academic domains including Economics, Engineering, Sociology, Urban Studies and Planning, and Political Science.

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White Paper #6
Roosevelt Project: Tax Policy

Tax policy is a powerful lever for influencing the pace and distributional effects of economic shifts. For example, federal, state, and local tax policies will play a role in shaping the pace of consumer adoption of electric vehicles as well as the timing, magnitude, and location of industry investments in new supply chains. These decisions, in turn, may differentially impact tax revenues at various levels of government, with important implications for local communities.

While each tax jurisdiction will be unique, when evaluating potential tax impacts of economic shifts, identifying who is being impacted is critical to identifying potential challenges and subsequent policy mechanisms to address those challenges. Impacts may include losing or gaining within a jurisdiction revenue due to economic changes, with a focus on understand then who is subsequently gaining or losing the associated tax benefit via government funded programming, services, or infrastructure by that change.

Each state funds their state and local governments differently and can have different policy priorities. This section introduces the current tax policy structure in Michigan and potential areas of impact that may occur as the Industrial Heartland transitions to an EV economy if left unaddressed.

Policy Recommendations:

As policymakers navigate the Heartland's transition to a low carbon transportation sector, it will be important consider several factors, including:

- Whether a particular policy will encourage or create barriers to consumer and industry adoption of electric vehicles and other zero or low carbon technologies;
- Whether a policy will encourage or create barriers to repurposing of existing infrastructure (such as manufacturing) and workforce;
- Potential impacts on state and local tax revenue and subsequent effect on government funds, programs, or services;

Due to the complex interplay across jurisdictions of tax policy and the various communities, programs and services that may be impacted by changes, the following areas are recommended for further in-depth studies and evaluation:

- State-level studies analyzing potential impacts of economic transition on state and local tax revenue and subsequent effect on government funds, programs, or services as a result of the transition. Based on findings, state and local policymakers and stakeholders may identify and evaluate alternative tax mechanisms consistent with good tax policy principles
- Federal and state gas tax impact studies to analyze the potential impacts of changing gas tax revenues based on expected EV adoption rates to understand potential changes to and impacts of transition. Based on findings, federal and state policymakers may identify alternative tax mechanisms consistent with good tax policy principles to pilot

Current State of Michigan Tax Policy:

The State of Michigan levies several types of taxes that can generally be grouped into the below categories. While the interplay between state and local finance is extremely complex, these taxes may be earmarked for specific funds (e.g., School Aid Fund) or allocated to the State's "General Fund/General Purpose" fund.

State of Michigan's Revenue State Source and Distribution[1]

Tax	Description
Individual Income Tax	"The sum of wage and salary withholding, quarterly payments, and annual payments, less refunds. The current tax rate is 4.25%"
Sales and Use Taxes	"Use tax is a specific excise tax on the use, storage, or consumption of tangible personal property not subject to the sales tax. Maximum allowable tax rate for both sales and use tax: 6%"
Other Revenue	"Includes revenue from local agencies, state-provided services, licenses, permits, not related to transportation, and other restricted state revenue."
Transportation Taxes	"Includes vehicle registration fees as well as tax collections from gasoline, diesel, liquified petroleum, and aviation fuel. Federal aid and sales tax transportation revenue is excluded."
State Education Tax	"6-mill levy on all real and personal property except exempt manufacturing personal property and property subject to the small parcel exemption. All revenue is dedicated to the School Aid Fund."
Lottery	"Net lottery revenue is approximately 26% of lottery sales."
Tabaco Taxes	"Cigarette tax is $2.00 per pack and the tax on other tobacco products is 32% of the wholesale price."
Other General Fund/General Purpose and School Aid Fund Taxes	"Includes liquor, beer, wine, gas and oil severance, utility property, real estate transfer, industrial facilities and commercial forest taxes, and the state essential services assessment, enhanced enforcement, and penalties and interest."
Net Business taxes	"Includes revenue from the Single Business Tax, Michigan Business Tax, Corporate Income Tax, and Insurance Company Premiums Taxes. Effective January 1, 2021, the Michigan Business Tax was replaced with a 6% corporate income tax."

[1] State of Michigan "Revenue State Source and Distribution" (September 2020)

State of Michigan Total Restricted Revenue by Source for Fiscal Year 2018/2019 through 2020/21 (in millions of dollars):[2]

	Final FY 2018-19	% of Total	CREC[3] FY 2019-20	% of Total	CREC FY 2020-21	% of Total
Individual Income Tax	$10,430.6	30.7%	$10,417.3	30.8%	$9,771.5	29.5%
Sales and Use Taxes	$9,609.4	28.3%	$9,509.3	28.2%	$9,389.5	28.4%
Other Revenue	$5,223.5	15.4%	$5,582.1	16.5%	$5,686.4	17.2%
Transportation Taxes	$2,819.0	8.3%	$2,626	7.8%	$2,755.9	8.3%
State Education Tax	$2,113.2	6.2%	$2,155.9	6.4%	$2,163.0	6.5%
Lottery	$1,070.6	3.1%	$1,130.0	3.3%	$1,026.8	3.1%
Tobacco Taxes	$886.1	2.6%	$880.4	2.6%	$847.1	2.6%
Other General Fund/General Purpose and School Aid Fund Taxes	$845.1	2.5%	$716.1	2.1%	$806.7	2.4%
Net Business Taxes	$1,013.8	3.0%	$755.9	2.2%	$649.3	2.0%

"Note: Totals may not add due to rounding"

Property Taxes

In Michigan, local units of government are generally funded by property taxes and the State's revenue sharing structure, with few municipalities supplementing with a local income tax. Property taxes are calculated through the mill levy (i.e., the tax rate) and property taxable value. Each tax year, the local assessor's office determines the assessed value of each parcel of real property and personal property based on the condition of the property as of December 31 of the previous year. The Michigan Constitution requires that property be uniformly assessed and not exceed 50% of the usual selling price. Taxable value cannot exceed assessed value. The mill varies by local units of government with certain statewide constitutional and statutory restrictions in place. Once a local government is allocated its share of the property tax revenue it is generally permitted to determine the allocation of revenue.

Industrial property has special property tax rules in Michigan. In 2014, Michigan voters approved a ballot initiative that eliminated or reduced personal property taxes for small businesses and manufacturers. The elimination included reductions for eligible manufacturing personal property (EMPP). As part of this change, municipalities received revenue sharing from the state to make up for lost property tax revenue. EMPP is personal property located on occupied real property and predominantly used in industrial processing or direct integrated support. Electric utility property does not qualify as EMPP. EMPP property is subject to the essential services assessment (ESA) which is a tax on personal property that has received an EMPP exemption.

[2] Id.

[3] Estimates in the State of Michigan "Revenue State Source and Distribution" September 2020 report are based on revenue amounts agreed to at the August 2020 Consensus Revenue Estimating Conference (CREC)

Transportation Taxes - Gasoline and Diesel Fuel Tax

There are many separate taxes on gasoline and diesel motor fuels purchased or consumed in Michigan. Below is a more detailed breakdown of Transportation Taxes for FY 2018-2021:[4]

	Final FY 2018-19	% of Total	CREC[5] FY 2019-20	% of Total	CREC FY 2020-21	% of Total
Motor Vehicle Registrations	$1,354.2	48.0%	$1,340.0	51.0%	$1,373.0	49.8%
Gasoline Tax	$1,214.7	43.1%	$1,058.0	40.3%	$1,150.0	41.7%
Diesel Fuel and Motor Carrier Fuel Taxes	$243.2	8.6%	$222.0	8.5%	$227.0	8.2%
Aviation Fuel Taxes	$4.7	0.2%	$4.0	0.2%	$3.8	0.1%
Liquefied Petroleum/Alternative Fuels Taxes	$2.1	0.1%	$2.0	0.1%	$2.1	0.1%

Potential Impacts:

Property Taxes

Typically, when a new business locates within a community, that community recognizes new subsequent tax revenue. Depending on the level of revenue increase from the economic activity, local governments may choose to begin funding projects, programs, or infrastructure with that new tax revenue. The local government will often include this tax revenue in budgetary forecasts with the presumption that the business presence and subsequent tax revenue will continue. While local governments can allocate money for reserves, in practice, this does not always occur.. Under the presumption that the manufacturing and business environment will shift in the move from internal combustion engine (ICE) manufacturing and supply chain economy to an electric vehicle economy, host communities may experience subsequent shifts in property tax revenue.

Under the presumption that manufacturing facilities remain in operation in their current locations, communities should consider that associated tax revenue will may not continue at the same or increasing level. The General Property Tax Act requires property to be valued at true cash value – which can and has declined in the past. In addition, most personal property depreciates as property ages.

For communities that currently host businesses that support ICE manufacturing and supply chain, if those businesses are not replaced, the potential loss of business presence may cause a loss of revenue and subsequent budget constraints if left unaddressed. The impact may mean an inability sustain funding for services (e.g., schools, community programs, police, fire, etc.) or infrastructure (e.g., roads, public spaces, etc.) at the same level. The budget risks created may then result in both budget reductions and the remaining fixed costs of maintaining government services, programs, and infrastructure is then reallocated to the remaining residents and businesses, likely creating tax increases. This may also be

[4] Motor Fuel Taxes, Sales Tax on Motor Fuels, and Tax Collection (mi.gov)

[5] Estimates in the State of Michigan "Revenue State Source and Distribution "September 2020 report are based on revenue amounts agreed to at the August 2020 Consensus Revenue Estimating Conference (CREC)

compounded by the fact that tax burdens are being paid by a smaller population of taxpayers due to past tax incentives/exemptions to small business and manufacturers.

However, the impact of the EMPP and ESA is complex and relevant to this discussion. It is possible that a municipality is already being adequately compensated through the revenue sharing of EMPP and the ESA. Thus, the loss of an ICE manufacturing facility may have a smaller immediate and direct community impact than commercial property. There will be secondary property tax impacts such as loss of commercial property and suppliers who provide local goods and services to those ICE manufacturers.

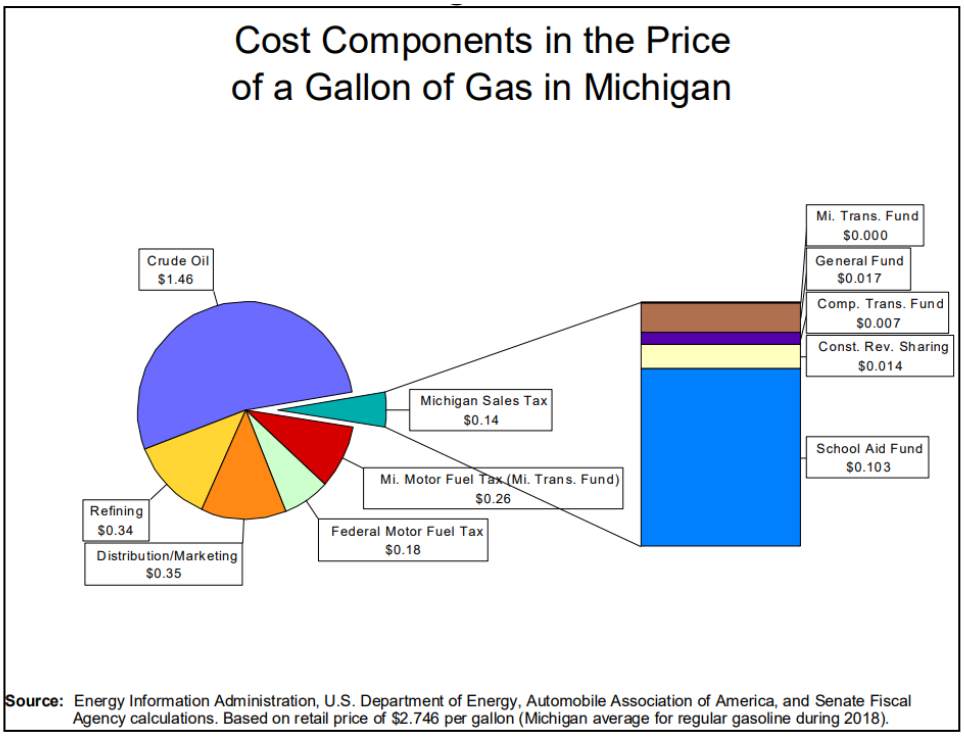
Transportation Tax – Gas Tax

In 2021, the average of taxes and fees on gasoline levied by the States and the District of Columbia was 30 cents per gallon (¢/gal). These taxes and fees range from a low of 8.95¢/gal in Alaska to a high of 58.7¢/gal in Pennsylvania. Gasoline buyers in the United States pay these taxes in addition to the federal tax of 18.4¢/gal (EIA, 2021).

Michigan gas prices include three types of taxes:

- Federal gasoline tax: 18.4 cents per gallon
- Michigan sales tax: Levied at a rate of 6.0% on a base that includes the Federal tax
- Michigan gasoline tax: 26.3 cents per gallon

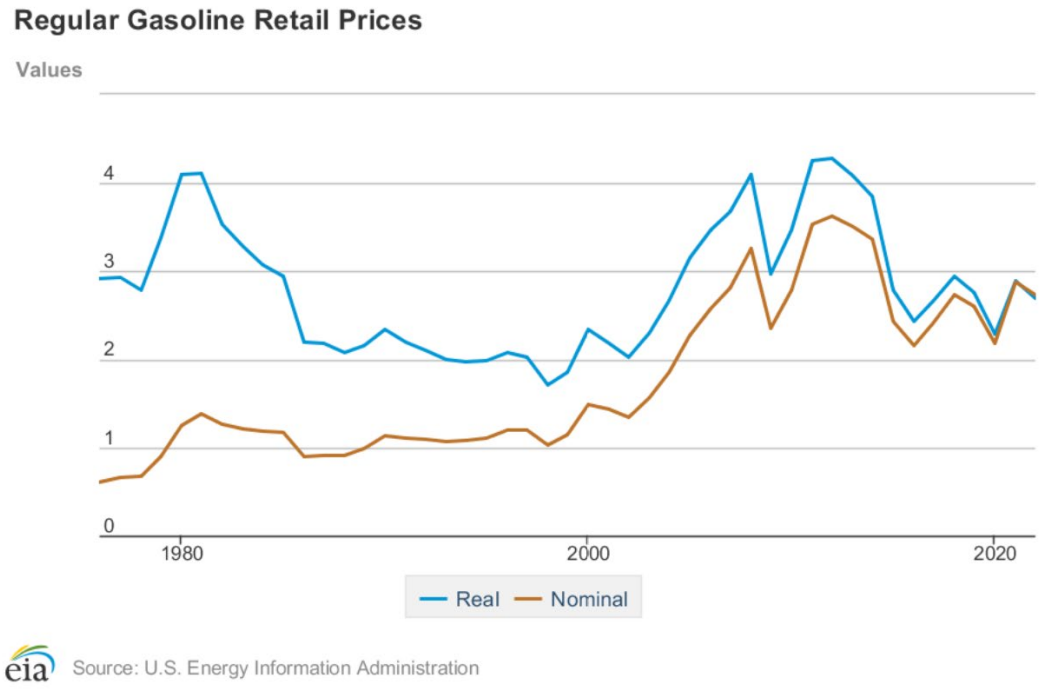
During 2018, the price for gasoline in Michigan averaged $2.746 per gallon, and the figure below breaks down the cost components per gallon of gas (SFA, 2019)



In the future over the long term, with the transition to electric vehicles, states will see decreasing revenues from gas taxes as fewer people rely on gasoline as a fuel source. However, revenue to fund programs, including roads and the School Aid Fund, supported by the gas tax will still be required. Left

unaddressed, programs supported by this tax revenue will become increasingly underfunded and what is already considered a regressive tax will grow in burden. In other words, growing the gas tax to make up for lost sales will require those who may not be able to yet afford the up-front cost to transition to an electric vehicle to subsidize those who can afford an EV via an increasing gas tax. However, while these issues will present over the long term, we are also facing current gaps in highway funding. These gaps are driven by the gas tax not keeping pace with increases in fuel efficiency; not EVs.

Additionally, taking inflation into account, the flat to declining cost of gasoline could also be a contributing factor to lower sales tax revenues.[6]



Some states are looking at alternative policy mechanisms to gas taxes within the context of increased electric vehicle adoption:

- **Road Charge**: In 2014, the State of California passed Senate Bill 1077 initiating a process to study an alternative policy mechanism to a gas tax, a road charge, which was supported by the launch of a road charge pilot in 2016 (CalSTA, 2017).
- **Mileage Charge**: In July 2015, Oregon developed a pilot program, OreGo, to test the feasibility of a mileage charge program. As an alternative to the 36-cent fuel tax, EV drivers who opt in to the program report mileage and pay 1.8 cents per mile they drive on Oregon roads to support state highway infrastructure (OreGo). Additionally, Utah has a similar pilot program called Utah's Road Usage Charge.

[6] Source: US EIA. Regular Gasoline Retail Prices, 1970-2022. September 1, 2022. https://www.eia.gov/outlooks/steo/realprices/

Tax Policy Principles

Left unaddressed, states and communities may experience budget shortages or constraints that may impact their operations and services. As policymakers evaluate policy changes to address impending shifts, the following guiding principles are commonly cited and used as indicators of good tax policy and are the maxims of taxation laid out by economist Adam Smith.[7]
Again, I would suggest contextualizing this around the short vs long term and the glidepath to get to a decarbonized economy. In the near term, overreacting and shifting costs to EV drivers through disproportionate fees, etc. can counterproductively disincentivize consumer adoption.

- Equality - taxpayers ought to contribute, as nearly as possible, in proportion to their respective abilities.
- Certainty - a tax should be certain and not arbitrary or ambiguous. The tax rules should clearly specify how the amount of payment is determined, when payment of the tax should occur, and how payment is made.
- Convenient – it should be easy and convenient to pay taxes.
- Fairness - the tax should be fair or have economy of collection. A tax should be structured to take as little as possible from the taxpayers to fund the public treasury or project at issue.

There is a growing concern among stakeholders regarding the application of tax policy mechanisms within the context of diversity, equity and inclusion (e.g., income levels, gender, race and ethnicity, potential benefits or disadvantages from tax policy structures). State agencies are being asked to evaluate tax policy implications on various groups as part of the policy evaluation and decision-making process (Source). Additionally, utilities are would have concern about any attempt to make the utility bill the point of taxation.

Progressive vs. Regressive tax:

Relative to the principle of equity and fairness, the concept of progressive and regressive tax policies is critical when evaluating alternatives to solve for potential future gas or property tax shortfalls.

Taxes are generally classified as a progressive tax or regressive tax. A **progressive tax** refers to the tax which rises with the rise in income of the taxpayer, whereas, a **regressive tax** is one wherein the effect of the tax decreases with the increase in the taxable amount (Source). For example, sales taxes are generally regressive because they have a larger economic effect on lower income taxpayers. This is also true of gas taxes as a low-income individual presumably has a more constrained budget for fuel and is likely more price sensitive to increases in per-gallon taxes for fuel. Conversely, Federal income taxes are generally progressive because they have a graduated tax rate system that increases as income increases. During the electrification transition, it is important for policy makers to consider a progressive system in order to better protect lower income communities.

[7] Adam Smith, The Wealth of Nations, at p 888-890 (1994 Modern Library ed).
https://www.michigan.gov/taxes/0,1607,7-238-43535_53197---,00.html

Recommendations for Further Research:

Due to the complex interplay across jurisdictions of tax policy and the various communities, programs and services that may be impacted by changes, the following areas are recommended for further in-depth studies and evaluation:

- State-level studies analyzing potential impacts of economic transition on state and local tax revenue and subsequent effect on government funds, programs, or services as a result of the transition. Based on findings, state and local policymakers and stakeholders may identify and evaluate alternative tax mechanisms consistent with good tax policy principles
    - At Governor Gretchen Whitmer's direction, Michigan has a process in place to measure the impact of Michigan's clean energy transition.[8] A similar approach could be considered and adopted for the broader economic impacts associated with the ICE/EV transition.
- Federal and state gas tax impact studies to analyze the potential impacts of changing gas tax revenues based on expected EV adoption rates to understand potential changes to and impacts of transition. Based on findings, federal and state policymakers may identify alternative tax mechanisms consistent with good tax policy principles to pilot

[8] https://www.michigan.gov/treasury/0,4679,7-121-1751_107401---,00.html

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