REGIONAL ECONOMIC IMPACT ANALYSIS

OF THE READI-FUNDED AFFORDABLE HOUSING PROJECTS IN WABASH RIVER RDA, INDIANA

PURDUE UNIVERSITY | Center for Regional Development

Technical Report

Regional Economic Impact Analysis of the READI-funded Affordable Housing Projects in Wabash River RDA, Indiana

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Abstract

Housing is a vital component of the regional economy. A policy enhancing affordable and market rate housing opportunities in the region can stimulate the household and regional economies positively. This report presents economic and demographic impacts of housing projects funded by the READI 1.0 initiative in the Wabash River RDA region in Indiana. The estimated economic impacts from construction and simulation of O&M and occupancies reveal that the region can benefit from growth in jobs, population, and labor force. The households benefit from increased disposable personal income enhancing consumption, which further stimulates the regional economies. A housing initiative has diverse socioeconomic linkages not only in the regional economy but also in the remainder of the state.

1.0 Introduction

This report presents economic impact analysis of 11 housing projects funded and supported by the Regional Economic Acceleration and Development Initiative (READI) 1.0 at Wabash River Regional Development Authority (RDA) region in Indiana. The Wabash River RDA region includes Clay, Parke, Sullivan, Vermillion, and Vigo counties. The housing projects are in all counties except Parke County in the region. The READI 1.0 has funded affordable housing projects, which include multifamily apartment units, townhomes, and the low-cost single-family homes of lower carpet area. These projects are supported by state funds, local government matching funds, federal programs such as the Low-Income Housing Tax Credit (LIHTC), and private investments. The projects include infill development in the communities to improve the blighted properties. More importantly, the new housing units address the gap in affordable ownership and rental housing units in the region. Affordable housing is a major challenge in the American urban and rural communities. A 2024 national survey by the Center for American Progress[1] found that 76 percent of Americans view housing affordability as a growing problem in their communities, regardless of political beliefs and geographic areas. In addition to the burden of higher costs to the individual households, this crisis reflects a deeper structural imbalance between supply and demand, with affordable housing

[1] Source: Center for American Progress, Americans Recognize Housing Affordability Crisis, Support New Policies To Fix the Market and Build More Homes, October 2024, https://www.americanprogress.org/article/americans-recognize-housing-affordability-crisis-support-new-policies-to-fix-the-market-and-build-more-homes/.

deficit for the U.S., estimated as 4.7 million ownership units and 7.1 million rental units specifically for the low-income households.[2] [3] [4]

Recent studies find various reasons for the affordable housing crisis. The supply shortfall for housing happened during and after the Great Recession (2008-2009) because of less construction and consumers seeking smaller and more affordable housing units instead of larger homes. In addition, increased joblessness during the Great Recession wiped off eligible customers from the market. The regulatory barriers such as lengthy permitting processes hindered the construction of both, affordable and market rate housing, and high mortgage rates caused financial impediments for the buyers. The cost of construction and building materials increased significantly after the supply chain disruptions caused by COVID-19 closures. Natural disasters such as wildfires, hurricanes, severe storm events, and flooding incidents have destroyed housing stock increasing the insurance rates, and hence making it unaffordable for an average income household. Joint Center for Housing Study (JCHS) at Harvard University found that the median price of a single-family housing unit in the U.S. is five times larger than the median income of the household, far exceeding the acceptable price-to-income ratio of three (JCHS, 2025).

As per the census nearly half of the renters, 21 million out of 42.5 million renters, were cost burdened based on the 2023 American Community Survey (ACS) 1-year data release.[5] The 2020-2024 ACS 5-year data for median gross rent as a percentage of household income for the U.S. shows a value of 30.6 percent.[6] This indicates that 50 percent or half of the renters in the U.S. are cost burdened spending 30 percent or more for their income on housing. Similarly, 28 percent of owners with a mortgage were cost burdened in the U.S., spending 30 percent or more of their income on housing costs during 2024.[7] Out of 28 percent of owners, less than half or 11.4 percent of owners were severely burdened spending 50 percent or more of their income on housing costs.[8] In the case of Indiana, one in five (20.1percent) owners with mortgage were cost burdened spending 30 percent or more of their income on housing costs in 2024.[9] Out of 20.1 percent cost-burdened owners in Indiana, 7.5 percent of owners are severely cost-

[2] Source: U.S. Chamber of Commerce, February 2026, The State of Housing in America, https://www.uschamber.com/economy/the-state-of-housing-in-america.
[3] Source: Zillow Analysis, US housing deficit grew to 4.7 million despite construction surge, July 2025, https://investors.zillowgroup.com/investors/news-and-events/news/news-details/2025/US-housing-deficit-grew-to-4-7-million-despite-construction-surge/default.aspx.
[4] Source: National Low Income Housing Coalition, A Shortage of Affordable Homes**,** March 2025, https://nlihc.org/news/nlihc-releases-gap-2025-shortage-affordable-homes.
[5] https://www.census.gov/newsroom/press-releases/2024/renter-households-cost-burdened-race.html
[6] Table B25071, Median Gross Rent as a Percentage of Household Income in the Past 12 Months, ACS 2020-2024.
[7] Table B25091, Selected Monthly Owner Costs as a Percentage of Household Income in the Past 12 Months, ACS 2020-2024.
[8] Id.
[9] Id.

burdened spending 50 percent or more of their income on housing costs.[10] For Indiana, the median gross rent as a percentage of household income in the past 12 months in 2024 stood at 29.1 percent close to the 30 percent threshold for unaffordability.[11] Nearly 44 percent of renters in Indiana were cost burdened in 2024, paying 30 percent or more of their income for rent.[12] Almost one in four (22.2 percent) renters in Indiana were severely cost burdened in 2024, paying 50 percent or more of their income on rent.[13] In this context, the support of the READI Program for affordable housing initiatives is invaluable, and it can help mitigate affordable housing challenges for both, owners and renters.

The constraints in housing supply would raise the cost of housing, reducing disposable income for households. The housing demand is generally inelastic as it is a necessity. Expensive housing discourages the labor force to move into the area, affecting the growth in population. The overall effect on the regional economy is negative. A recent U.S. Chamber of Commerce study estimated state level economic loss of less housing construction post Great Recession in the United States. The study applied the Regional Economic Modeling Inc. (REMI) Model and found that Indiana lost $8 billion in GDP, $4.6 billion in personal income, and almost 64,000 jobs from 2008 to 2025 by not keeping pace with the housing construction (U.S. Chamber of Commerce, 2026). These are the economic effects that could have been realized if Indiana had maintained the pace of pre-Great Recession housing construction trend. Hence, housing affects economies of the households, regions, states, and the nation cumulatively. This report is organized as an introduction, a brief literature review of housing supply and demand, housing and transportation affordability in the counties of the Wabash River RDA region, details about the READI housing projects, input data preparation, methodology, results, conclusions, and references.

2.0 Literature Review of Housing Supply and Demand Elasticity

This section is a succinct literature review on housing elasticities. Housing as a commodity and a service is generally considered inelastic or an increase in price would not affect the demand because a shelter is a necessary need. However, there are variations between supply and demand, and short versus long run price and income elasticities. Saiz (2010) uncovered that elasticity[14] for housing supply were mainly

[10] Id.
[11] Table B25071, Median Gross Rent as a Percentage of Household Income in the Past 12 Months, ACS 2020-2024.
[12] Table B25070, Gross Rent as a Percentage of Household Income in the Past 12 Months, ACS 2020-2024.
[13] Id.
[14] Elasticity is a ratio of percent change in quantity to the percent change in price. A value of one (1) is unitary, above one (1) is elastic, below one (1) is inelastic, and zero (0) is perfectly inelastic. If elasticity value is negative, it means an increase in price would decrease the quantity demanded, however, practitioners use the absolute value.

characterized by physical constraints or the availability of developable land and regulatory constraints, such as zoning regulations and building bylaws in the U.S. metropolitan areas. The research revealed that large urban areas including coastal cities had major constraints of developable lands, which caused elasticity of housing supply to move below one (1) to the inelastic range. One of the reasons was that metropolitan areas were major job markets and despite constraints in developable lands and housing supply, the demand grew, driving the prices higher. Mayo (1981) compiled and studied housing demand elasticities for income and price for both renter and owner. The studies were divided into categories such as individual versus aggregate data sources (Mayo 1981). Goodman and Kawai (1984) stated based on Mayo (1981) that price elasticities for rental and ownership housing were inelastic within the range of -0.6 to -0.7. Since the absolute values were less than one (1), price elasticities were inelastic. At the same time, income elasticities varied from 0.3 to 0.5 for renters and 0.5 to 0.7 for owners (Goodman and Kawai 1984).

Despite the prevalence of home ownership in the U.S., economists at Bureau of Labor Statistics (BLS) and Bureau of Economic Analysis (BEA) use the rental price of housing services to determine consumer price expenditures and indices (Nakamura 2007). Researchers have uncovered that the price of housing as determined by the Consumer Price Index (CPI) understates and undercounts the rental price of housing (Albouy, Ehrlich and Liu 2016). In contrast to what the CPI shows, the relative price of housing has increased by manifold, and the low rise of rental household income and increased income inequality exacerbates the situation for both rental and ownership households (Albouy, Ehrlich and Liu 2016; Crone, Nakamura and Voith 2010). This shows in part how important affordable housing is for household and regional economies.

3.0 Housing and Transportation Affordability in the Wabash River RDA Region

The Housing + Transportation (H+T) Index is developed by the Center for Neighborhood Technology. The index provides information on affordability from housing, accessibility and transportation aspects. Where people reside determine their access to facilities, services, and opportunities. The data are modeled from various publicly available sources, representing the year 2022. The county level data provides average values for the index; however, census tracts and block-groups data show the spatial variations in affordability within the county boundaries. The general threshold of affordability is 30 percent of income should be spent on housing and 20 percent of income on transportation. If the combined value exceeds 50 percent of income, then households are spending more on housing and transportation. For Wabash River RDA region, a county level snapshot of the H+T index is provided below:

3.1 Clay County

The H+T data for Clay County show that most households fall between 36 percent and 54 percent of income spent on housing and transportation, with the largest share in the 36-35 percent range and a nearly identical share in the 45-54 percent bracket. About a quarter of households fall between 24-36 percent, and only a small portion exceed 54 percent. At the block-group level, cost burdens range from the low-30s to the mid-60s. Several areas sit below the 50 percent affordability line, but many others cross that threshold, including block-groups in the low-50s and several more reaching into the upper-50s and low-60s. Taken together, the household and block-group data show that a meaningful share of the county is operating above the level typically considered affordable for combined housing and transportation costs.

3.2 Parke County

The H+T data for Parke County show that most households fall between 36-54 percent of income spent on housing and transportation, with the overwhelming majority—more than four-fifths—landing in the 45-54 percent range. A smaller share falls in the 36-45 percent bracket, and only a limited number of households exceed 54 percent. No households are reported below 36 percent, indicating that nearly all residents face at least a moderate combined cost burden. At the block-group level, cost burdens range from the mid-40s to the upper-60s. Several areas sit just below the 50 percent affordability threshold, but many others cross it, including block-groups in the low-50s, mid-50s, and even the high-50s. A few extend into the upper 60 percent range. Taken together, the household and block-group data show that a large share of the county is operating above the level typically considered affordable for combined housing and transportation costs.

3.3 Sullivan County

The H+T data for Sullivan County show that most households fall between 36-54 percent of income spent on housing and transportation, with the majority within the 45-54 percent range. A smaller share falls in the 36-45 percent bracket, and about one-fifth of households exceed 54 percent. Only a small portion fall between 24-36 percent, and none are reported below 24 percent, indicating that nearly all households face at least a moderate combined cost burden. At the block-group level, cost burdens range from the low-30s to the mid-60s. Several areas sit below the 50 percent affordability threshold, including block groups in the 30s and low-40s, but many others cross that line. Multiple block groups fall in the low-50s, with additional areas reaching into the mid-50s and even the low-60s. Taken together, the household and block-group data show that a

substantial share of the county is operating above the level typically considered affordable for combined housing and transportation costs.

3.4 Vermillion County

The H+T data for Vermillion County show that most households fall between 36-54 percent of income spent on housing and transportation, with the majority within the 45-54 percent range. A smaller share falls in the 36-45 percent bracket, and a similar share exceeds 54 percent. No households are reported below 24 percent or between 24-36 percent, indicating that nearly all residents face at least a moderate level of combined housing and transportation cost burden. At the block-group level, cost burdens range from the high-30s to the upper-50s. Several areas sit below the 50 percent affordability threshold, including block-groups in the 30s and 40s, but many others cross that line. Multiple block-groups fall in the low-50s, with additional areas reaching the mid-50s and a few approaching the upper-50 percent range. Taken together, the household and block-group data show that a substantial share of the county is operating above the level typically considered affordable for combined housing and transportation costs.

3.5 Vigo County

The H+T data for Vigo County show that most households fall between 36-54 percent of income spent on housing and transportation, with the largest share within the 36-45 percent range. About one in five households spend more than 54 percent, and only a small portion fall below 36 percent. At the block-group level, cost burdens range from around 30 percent to the mid-60s. Several areas sit below the 50 percent affordability line, but many others cross that threshold, including multiple block-groups in the low-50s and a few climbing into the 60 percent range. Taken together, the household and block-group data show that a sizable part of the county is operating above the level typically considered affordable for combined housing and transportation costs.

It is evident from the block-group level data that variations and inequality in affordability exist within the counties of the Wabash River RDA region. Hence, the proposed addition of affordable housing projects by READI will boost housing options for the households, especially lower-income and working-class households.

4.0 Wabash River RDA Housing Projects Funded by READI 1.0

4.1 Clinton Housing (rental)

Clinton Housing is a newly constructed apartment development located in Vermillion County, Indiana. Completed in 2023, the project consists of 12 multi-family apartment units designed as one- and two-bedroom residences. The development primarily targets small households and working families, offering efficient unit layouts suited for one-and two-bedroom occupancy. The development contributes to expanding the affordable rental housing capacity within the county, and it is an improvement of the poor conditions of the lots through READI, local funds, and private sector involvement. All the housing units have been occupied.

4.2 Sullivan Housing (ownership)

Sullivan Housing project is in Sullivan County, and it is a mixed housing development constructed between 2023 and 2024. The project includes townhomes, duplexes, single-family homes, and high-rise apartment units. The unit mix ranges from one-bedroom apartments to two-, three-, and four-bedroom family housing units. In total, the development is comprised of 40 housing units. The project applies a unique lease-to-own option providing home ownership option for low-income working families. This development utilized READI, local government, and private funds including the Low-Income Housing Tax Credits (LIHTC). The project increases the variety of affordable housing stock in Sullivan County by combining multifamily and single-family structures within a unified development strategy.

4.3 Homes for the Future – Bricks & Gables, Inc.

Homes for the Future – Bricks & Gables, Inc. project is in Sullivan County, and it is a single-family detached housing development constructed between 2024 and 2025. The project includes nine new housing units, each with two- and three-bedroom layouts with approximately 1,400 square feet of living space. The project serves moderate-income households with durable construction and functional design. Like other READI funded housing projects, it uses funds from READI, local government support, and private funding sources.

4.4 Homes for the Future – A & J Developers (ownership)

Homes for the Future – A & J Developers is a single-family detached home development located in Clay County, Indiana. The project has been constructed between 2024 and 2025 and includes 10 newly built homes. Each residence features three bedrooms, two bathrooms, and an attached two-car garage, with floor areas ranging from approximately 1,300 to 1,500 square feet. The homes are designed to expand the owner-occupied affordable housing opportunities within the county.

4.5 Homes for the Future – New Directions (rental)

Homes for the Future – New Directions project is in Vigo County, Indiana. It is a multifamily apartment development completed in the year 2024. The project consists of 40 apartment units, designed as a two-bedroom and two-bath layout. The development expands the mid-sized rental housing supply within the county and is intended to accommodate senior populations, working families and small households. Like the other housing projects, it is funded in part by READI and other funds including private investments.

4.6 Homes for the Future - Emmert Group Reserve (ownership)

Homes for the Future – Emmert Group Reserve is a single-family detached patio home community located in Clay County, Indiana. The project will be developed between 2024 and 2025 and includes 13 homes with two- to three-bedroom layouts and attached garages. The design emphasizes lower-maintenance living, catering to younger generations and households looking for options of downsizing.

4.7 Homes for the Future - Emmert Group Windbreaker (rental)

Homes for the Future – Emmert Group Windbreaker project is a multifamily housing development located in Clay County, Indiana. It is comprised of age-friendly apartment units completed in 2024. The project consists of 40 units offering one- and two-bedroom layouts. It is designed to address the local rental housing demand and adds to the multifamily housing stock within the county.

4.8 Homes for the Future - Southard Homes In-Fill (ownership)

Homes for the Future – Southard Homes In-Fill is a single-family detached age-friendly housing project located in Vigo County, Indiana. The project was constructed between 2023 and 2025, and includes 15 newly built housing units, featuring three bedrooms and two bathrooms. As an in-fill development, the project integrates new housing within the existing neighborhoods to strengthen residential density, quality of place, and infrastructure utilization.

4.9 Homes for the Future - Southard Homes Terre Vista (ownership)

Homes for the Future – Southard Homes Terre Vista is a single-family detached housing units located in Vigo County, Indiana. The project was constructed between 2023 and 2024. It is comprised of 10 housing units, offering three- to four-bedroom layouts, two to three full bathrooms, and attached two-car garages. The development targets family households seeking larger floor plans within the county.

4.10 Homes for the Future - Southard Homes Acres West (ownership)

Homes for the Future – Southard Homes Acres West is a single-family detached housing development located in Vigo County, Indiana. The project was developed between 2024 and 2025, and included 17 housing units featuring three-bedroom, two-bath layouts with detached garages and floor areas ranging from approximately 1,200 to 1,400 square feet. The project is intended to expand the affordable owner-occupied housing supply within the region.

4.11 Homes for the Future Pilot Program

The pilot program is established to complement the regional goal to halt the population decline and attract new talent into the Wabash River RDA Region. The program administration has created a Request for Proposal (RFP) process to facilitate private developers to develop age-friendly and low-cost housing in the region. Up to 10 percent of the infrastructure costs needed for housing projects can be supported by the READI funds.

5.0 Input Data Preparation

The input data section provides details on estimates of the construction costs, potential utility costs by occupied housing units, estimates for maintenance costs, and assumptions on consumer price changes for housing-related expenditures. Indiana Economic Development Corporation (IEDC) has provided detailed budgets of the projects. This was complemented with the details of each project shared by the Thrive West Central, representing the Wabash River RDA region. The detailed expenditures are aggregated into relevant industry sectors for the REMI Model.

5.1 Construction

The total estimated cost of construction for all READI 1.0 funded housing projects in Wabash River RDA region was approximately $63 million, which included READI funds, local government matching funds, and funding from non-governmental and private sources. The total cost is distributed into more than 35 North American Industry

Classification System (NAICS) 6-digit codes, which are the most detailed classification of industry sectors. This showed that construction of different types of housing projects entailed diverse activities in industries varying from utilities, construction and site preparation, different types of contractors, wholesale and retail of building materials, financial institutions including banking, law, design and engineering services, and the waste collection and disposal activities. This shows the variety of industry sectors engaged in residential construction activities. Each line item of six-digit NAICS code was mapped to the corresponding REMI policy variable to ensure consistency with the REMI industry classification framework. This disaggregation enables us to capture both direct construction activities and the associated supporting activities, allowing for a more accurate estimation of economic impacts with spill overs.

5.2 Utility Costs

The total annual utility cost of more than $800,000 was estimated by deriving the regional household mean monthly expenditures on utilities based on the latest American Community Survey (ACS) 5-Year data. The total number of new housing units constructed under READI 1.0 funds were multiplied with the regional household means to get the monthly utility costs. The monthly estimate is annualized over 12 months to derive the annual utility expenditures. The household utility estimates are based on the 2024 American Community Survey (ACS) 5-year estimates from Tables B25132[15], B25133[16], and B25134[17]. The utility expenditures were estimated using the midpoint interpolation within the ACS expenditure brackets, which provided a useful estimate of the conditional mean by assuming a uniform distribution within each bracket.

Additionally, the estimated regional utility expenditures are compared with the published 2025 state-level average utility costs from move.org.[18] This shows that for Indiana, the average electricity cost is $140; water & sewer cost is $106; and the gas cost is $89.63, giving a total of $335.63 per month. There is a close alignment between the Wabash River RDA regional estimate of $328.38 per month per housing unit and the statewide benchmark of $335.63 per month per housing unit. Also, compared to the mid-point estimate, alternative lower-bound interpolation methods (e.g., 25th percentile) produced systematically lower estimates and were inconsistent with the statewide benchmark values. Therefore, midpoint interpolation was used for estimating the utility costs for the region.

[15] Monthly electricity cost for occupied housing units by counties
[16] Monthly gas cost for occupied housing units by counties
[17] Annual water and sewer cost for occupied housing units by counties
[18] Source: https://www.move.org/utility-bills-101/#Methodology

5.3 Maintenance

The annual maintenance expenditures of more than $37,000 ($175 per unit for more than 200 housing units) is obtained from the operating budget of repairs and maintenance line item available for one of the projects. This value reflects routine building upkeep rather than major capital improvements and is therefore treated as a conservative proxy for ongoing maintenance-related activity of the housing units. Only a few projects provided details about the potential post-occupancy maintenance costs.

5.4 Consumer Price

The literature generally shows that dependent on the geographical constraints such as lack of developable lands, the rental housing is more elastic compared to the owner-occupied housing. Rental housing being more elastic could be attributed to the lower costs such as the cost of moving, short-term contracts, and different rental options available in the market. The literature conveys that the owner-occupied housing is generally inelastic. The reasons include speculation and investments, higher transactions cost, access to good school districts, quality of the neighborhood, etc. Note that the discussion above pertains to the price elasticity of housing demand.

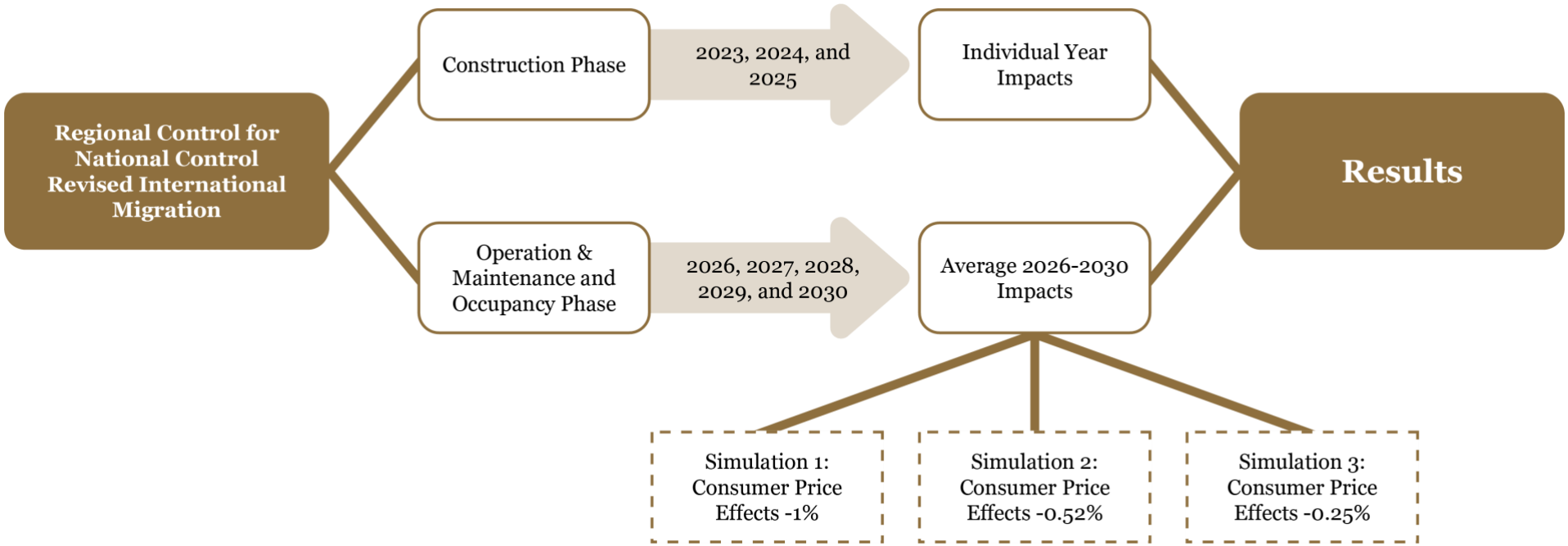
The REMI Policy Insight Model provides options to simulate consumer prices in different kinds of rental housing markets. It is to be noted that the consumer price elasticity of rental of tenant-occupied non-farm housing, group housing, and imputed rental of owner-occupied non-farm housing is negative 0.52. A 10 percent increase in rental price could cause 5 percent decline in the demand for rental housing. Alternatively, if the supply of rental housing is increased because of the READI funded projects, rental prices would fall causing more disposable income for rental households in the region.

6.0 Methodology

A revised national and regional control baseline forecast is developed, which incorporates reduced international migration in the demographic block starting from 2025. This allows that the labor supply variable in the REMI model is adjusted for changes affecting the domestic and international migration effects. The data are entered for the construction phase, operations and maintenance (O&M), and occupancy phase separately. For the construction phase, the construction dollars spent in 2023, 2024, and 2025 are accounted separately. For the O&M and occupancy phase, the model is run for a five-year period from 2026 to 2030. Three different simulations are run with assumptions of consumer price effects of -1 percent, -0.52 percent (same as the elasticity), and -0.25 percent. The results for construction phase are shown for 2023,

2024, and 2025, respectively. For the O&M and occupancy phase, the average of 2026 to 2030 are included for three simulations to show the range of feasible economic impacts to the Wabash River RDA region.

Figure 1 Wabash River Housing Projects



7.0 Results

The economic impact analysis results are presented for the construction phase followed by the operations and maintenance and occupancy phase.

7.1 Construction Phase

Table 1 presents the economic impact summary of construction of housing projects spanning 2023, 2024, and 2025 for Wabash River RDA region and the remainder of Indiana. The region observed an increase of 56 jobs in 2023, 295 jobs in 2024, and 265 jobs in 2025, respectively, because of new construction activities. At the same time, the remainder of Indiana also observed an increase of eight jobs in 2023, 43 jobs in 2024, and 44 jobs in 2025. A significant proportion of the jobs are in private non-farm industries. Similarly, residence adjusted employment reveals that major proportion of jobs are held by the residents of Wabash River RDA Region. The REMI Model results show an increase in population and labor force in the region and the remainder of Indiana.

The construction of housing projects stimulated the regional economy. The results show that the GDP ($2023) increased by $5 million in 2023, $26.5 million in 2024, and $23.7 million in 2025 in the region. There is also a notable increase in GDP ($2023) by approximately $1 million in 2023, and $5 million in 2024 and 2025, respectively in the remainder of Indiana. Whereas, GDP and value added are considered the same in the REMI Model, the results reveal that economic outputs increased by one and three-quarters times of GDP both in the region and the remainder of Indiana. For example, in 2024 approximately $46 million of the economic output was created in Wabash River RDA Region because of housing construction supported by the READI.

Similarly, an increase is observed in total personal income ($2023) by roughly $3 million in 2023, $16 million in 2024, and $14 million in 2025 in the region, and almost $1 million in 2023 and $4 million in 2024 and 2025 respectively in the remainder of Indiana. The disposable personal income ($2023) and real disposable personal income ($2017) also observed an increase in the region and the remainder of Indiana. It is evident that the construction of housing projects impacts the regional economy in various ways through new jobs, labor force, population, GDP, economic output, and personal income. It is also evident that positive spillovers have happened in the remainder of Indiana.

Table 2 shows the major industry sectors where new jobs have been created because of construction of housing projects. Construction, retail trade, state and local government, professional scientific and technical services, food services and drinking places, and real

estate are some of the industry sectors that observed an increase in jobs due to construction of housing projects in the Wabash River RDA region.

The analysis reveals distinct socioeconomic benefits from construction of housing projects in the region. In addition to an increase in population and labor force, mentioned previously, other kinds of socioeconomic benefits accrued in the region. The increment in population happened in equal proportions to the male and female gender. **Table 3** shows that a larger proportion of the increase in the labor force happened in white non-Hispanic race. The results reveal that the compensation rate inequality coefficient[19] decreased in 2023, 2024, and 2025 by -0.03 percent, -0.14 percent, and -0.14 percent, respectively in the region. It shows a positive increase in economic diversity and resilience. Similarly, the construction of housing projects also reduced unemployment rates in the region by -0.1 percent in 2023, -0.6 percent in 2024, and -0.4 percent in 2025. The results for employment by educational attainment show that roughly one quarter of new jobs required a bachelor's degree and above whereas three quarters of new jobs required less than a bachelor's degree.

Table 4 shows the Type II multipliers for the region. For 2025, employment multiplier of 1.53 means every two jobs created in housing construction projects add another one job in the regional economy. Similarly, output multiplier for 1.61 in 2025 indicates that every two dollars of economic output from construction projects add an additional dollar of economic output in the regional economy. The additional multiplier effects are created in the industries and businesses providing supplies and services.

Table 1 Wabash River RDA Housing Projects Construction: Economic Summary (Differences)

Economic Variables	Regional Impacts			Regional Spillover Effects		
	Wabash River RDA 2023	Wabash River RDA 2024	Wabash River RDA 2025	Remainder of Indiana 2023	Remainder of Indiana 2024	Remainder of Indiana 2025
Total Employment	56	295	265	8	43	44
Private Non-Farm Employment	54	282	248	8	41	41
Residence Adjusted Employment	52	274	245	11	61	62

[19] A value of one (1) in Compensation Rate Inequality Coefficient means all compensation is concentrated in one industry sector. A value of zero (0) means compensations is distributed equally in all industry sectors. It shows economic diversity.

Population	18	106	157	3	20	31
Labor Force	17	101	136	3	18	26
Gross Domestic Product ($M 2023)	5.0	26.5	23.7	0.9	5.1	5.3
Output ($M 2023)	8.6	45.6	40.8	1.7	9.1	9.5
Value-Added ($M 2023)	5.0	26.5	23.7	0.9	5.1	5.3
Personal Income ($M 2023)	2.9	15.6	13.9	0.8	4.2	4.1
Disposable Personal Income ($M 2023)	2.5	13.3	11.8	0.7	3.7	3.6
Real Disposable Personal Income ($M 2017)	2.1	11.1	9.8	0.6	3.0	3.0

Table 2 Wabash River RDA Housing Projects Construction: Employment by Industry (Differences)

Industry Sector	**2023**	**2024**	**2025**
All Industries	56	295	265
Construction - 23	31	166	148
Retail trade - 44-45	11	58	51
State and Local Government - NA	2	13	17
Professional, scientific, and technical services - 54	2	13	11
Food services and drinking places - 722	1	7	6
Real estate - 531	1	5	5
Other industries	7	34	27

Table 3 Wabash River RDA Housing Projects Construction: Socioeconomic Indicators (Differences)

Socioeconomic Variables	**2023**	**2024**	**2025**
Population (Male)	50%	50%	50%
Population (Female)	50%	50%	50%
Total Labor Force (#)	17	101	136
White Non-Hispanic Labor Force (#)	16	94	127
Compensation Rate Inequality Coefficient (percent change)	-0.03%	-0.14%	-0.14%
Unemployment Rate (percent change)	-0.1%	-0.6%	-0.4%

Bachelor's degree and above (Employment by Edu. Att.)	23.8%	23.9%	24.3%
No bachelor's degree (Employment by Edu. Att.)	76.2%	76.1%	75.7%

Table 4 Wabash River RDA Housing Projects Construction: Multipliers[20] (Differences)

Multipliers	**2023**	**2024**	**2025**
Type II Employment Multiplier	+1.48	+1.48	+1.53
Type II Output Multiplier	+1.58	+1.58	+1.61

7.2 Operations and Maintenance and Occupancy Phase

The occupancy of the housing units by tenants including rental and owners initiate annual recurring expenses such as utilities and maintenance of dwelling units. The estimates for utilities, especially electricity, natural gas, and water and sewage are provided in Section 5.2. Similarly, annual maintenance costs are estimated in Section 5.3. In addition to the recurring annual expenditures, the lower costs of rental and ownership of housing increase the disposable income for households. This is simulated based on the elasticity of -0.52 for the "rental on tenant occupied non-farm housing" consumer price policy variable. It is assumed that the consumer prices for rental non-farm housing will decrease by 1 percent, 0.52 percent, and 0.25 percent, respectively. Note that the simulation is both higher and lower than the elasticity value. The increment in disposable income of households is spent back into the regional economy due to a feedback loop, and hence further creating and supporting jobs and economic output in the region. The annual simulation spans from 2026 to 2030.

Table 5 provides an economic summary of average values from 2026 to 2030 when housing consumer price effects are -1 percent, -0.52 percent, and -0.25 percent, respectively. The simulations show that reducing consumer prices and increasing the disposable income will cause an increase in jobs varying from six jobs per year to 14 jobs per year (Table 5). The majority of the new jobs will be created in the private non-farm industry sectors. The results reveal that both an increment in population and labor force in the region is possible because of occupancy of affordable and new housing projects.

The possible explanations are as follows. The availability of affordable housing can decrease the cost of living by attracting new residents and labor force in the region. The

[20] Type II multiplier is a ratio of total divided by direct or (direct + indirect + induced)/(direct)

decrease in the cost of living increases the disposable income of households, which is spent, in part, on consumption adding to the economic output of the region. Hence, there is a notable increase in the annual GDP, varying from $1.2 million to $2.3 million including an increase in the economic output as shown in Table 5. The results also reveal an increase in personal income, disposable personal income, and the real disposable personal income, respectively. Overall, the policy of providing affordable housing in a region could benefit various segments of the regional economy, which includes disposable income for households, GDP, population, labor force, etc.

It is evident from **Figure 2**, REMI Model Linkages in Appendix 2 that a shock to the housing prices such as a decrease in the cost of ownership or rent can affect the consumer price enhancing the real compensation rate. The compensation rate has a feedback loop to the "Population and Labor Supply" block affecting migration and participation rate, which in turn affect population and labor supply. Since the external shock is a relative decrease in housing costs in the region, it makes the region attractive for migration positively affecting both, population and labor force in the region.

Figure 2 also reveals that the real compensation rate is connected to the real disposable income, which further connects to the consumption, which connects to the output in the "Output and Demand" block in the REMI Model. Hence any increase in relative real compensation rate can further increase the real disposable income causing an increase in household consumption, which adds to the economic output of the region.

This provides an indication of how regional economies can benefit from expanding the housing market through affordable and market rate housing opportunities.

Table 5 Wabash River RDA Housing Projects O&M and Occupancy: Economic Summary of Consumer Price Simulation

Wabash River Regional Dev Authority	**Units**	Average 2026-2030 **Consumer price effects -1%**	Average 2026-2030 **Consumer price effects -0.52%**	Average 2026-2030 **Consumer price effects -0.25%**
Total Employment	Individuals (Jobs)	14	9	6
Private Non-Farm Employment	Individuals (Jobs)	13	8	5
Population	Individuals	24	13	7
Labor Force	Individuals	17	10	5
Gross Domestic Product	Millions of Fixed (2023) Dollars	2.3	1.6	1.2

Output	Millions of Fixed (2023) Dollars	3.9	2.7	2.1
Value-Added	Millions of Fixed (2023) Dollars	2.3	1.6	1.2
Personal Income	Millions of Fixed (2023) Dollars	4.3	2.3	1.2
Disposable Personal Income	Millions of Fixed (2023) Dollars	3.8	2.0	1.1
Real Disposable Personal Income	Millions of Fixed (2017) Dollars	3.1	1.7	0.9

8.0 Conclusion

The development of new affordable and other housing projects by READI 1.0, addresses an important issue of the lack of housing in Indiana and the U.S. The construction of housing engages suppliers and labor force not only from the host region, but also from the remainder of Indiana. It is one of the reasons that notable spillovers of the increase in jobs, labor force, population, and other economic metrics are observed for the remainder of Indiana due to the construction of housing projects in the Wabash River RDA region. Hence, total economic impacts include a sum of impacts in the Wabash River RDA region and the remainder of Indiana. It is likely that other kinds of READI 1.0 projects are also causing spillovers of economic impacts in the remainder of Indiana.

The simulations for O&M and occupancy of housing projects uncover important benefits of affordable housing policies. Housing is an example of essential goods and services, and affordability of housing expands the disposable income of households, which in turn stimulates the regional economy because of the spending of that income in the economy. This becomes evident from the impacts as O&M and occupancy of affordable housing create and sustain jobs, labor force, and population in the regional economy. This is also caused by expenditures on utilities and maintenance. Hence, policies and projects supporting and creating affordable housing options for regions can benefit regions and communities through diverse ways.

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10.0 Appendices

Appendix 1 Glossary of Economic and Demographic Variables

Disposable Personal Income: Total after-tax income received by persons; it is the income available to persons for spending or saving.

Economic Output: The amount of production, including all intermediate goods purchased as well as value-added (compensation and profit). This can also be thought of as sales or supply.

Employment: Employment comprises estimates of the number of jobs, full-time plus part-time, by place of work for all industries.

GDP: Gross Domestic Product (same as Gross Regional Product or GRP). The market value of goods and services produced by labor and property. It is also the sum of value-added across all industries.

Personal Income: Income received by persons from all sources. It is the sum of wages and salaries, supplements to wages and salaries, proprietors' income, rental income, asset income, and personal current transfer receipts, net of contributions for government social insurance.

Source: REMI documentation

Appendix 2 Glossary of Economic and Demographic Variables

The following core framework applies to all REMI model builds. The model integrates input-output, computable general equilibrium, econometric and economic geography methodologies. The model is dynamic, with forecasts and simulations generated on an annual basis and behavioral responses to compensation, price, and other economic factors.

The model consists of thousands of simultaneous equations with a structure that is relatively straightforward. The exact number of equations used varies depending on the extent of industry, demographic, demand, and other detail in the specific model being used. The overall structure of the model can be summarized in five major blocks: (1) Output and Demand, (2) Labor and Capital Demand, (3) Population and Labor Supply, (4) Compensation, Prices, and Costs, and (5) Market Shares. The blocks and their key interactions are shown in Figures 2 and 3.

Figure 2 REMI Model Linkages

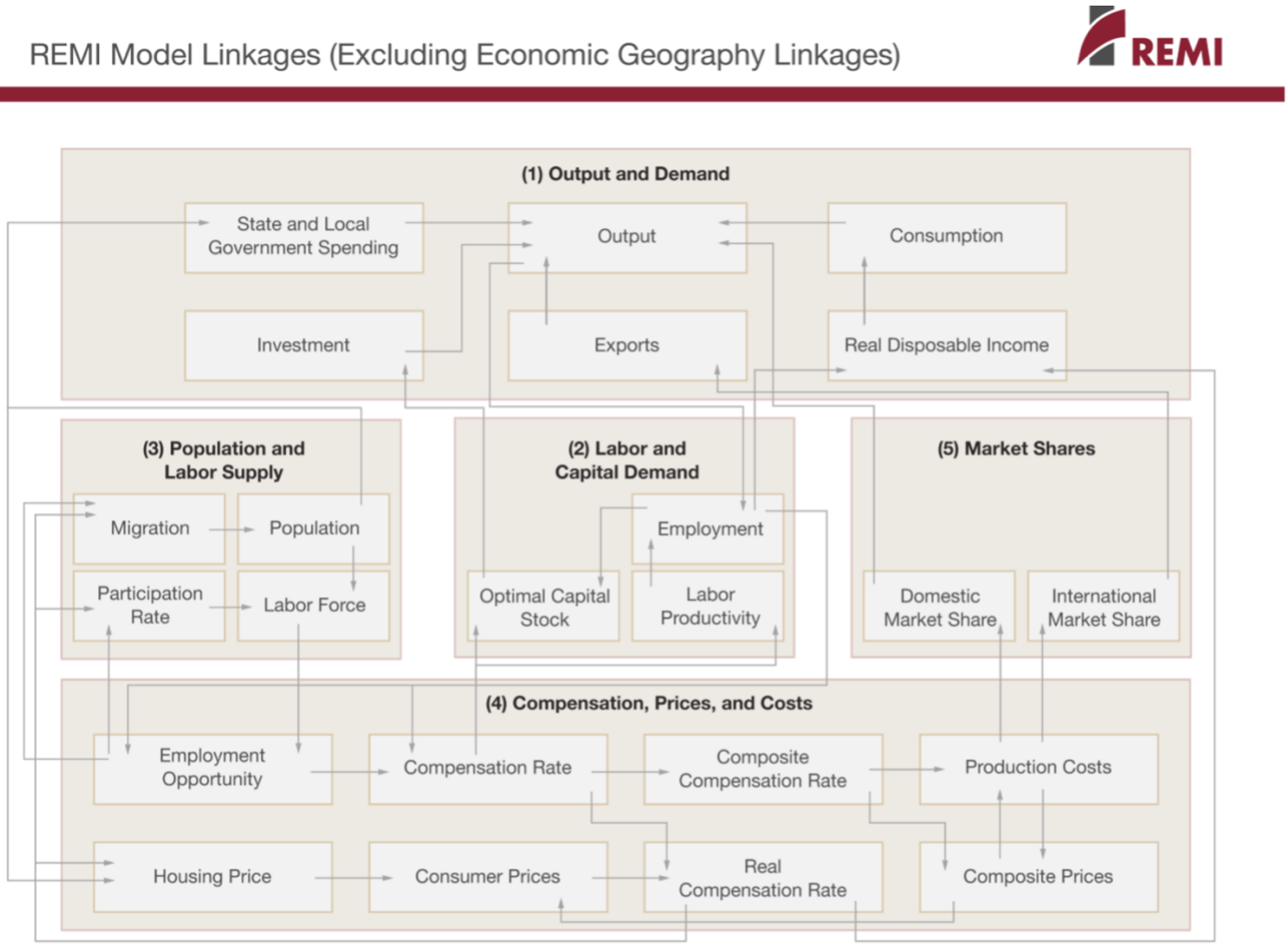
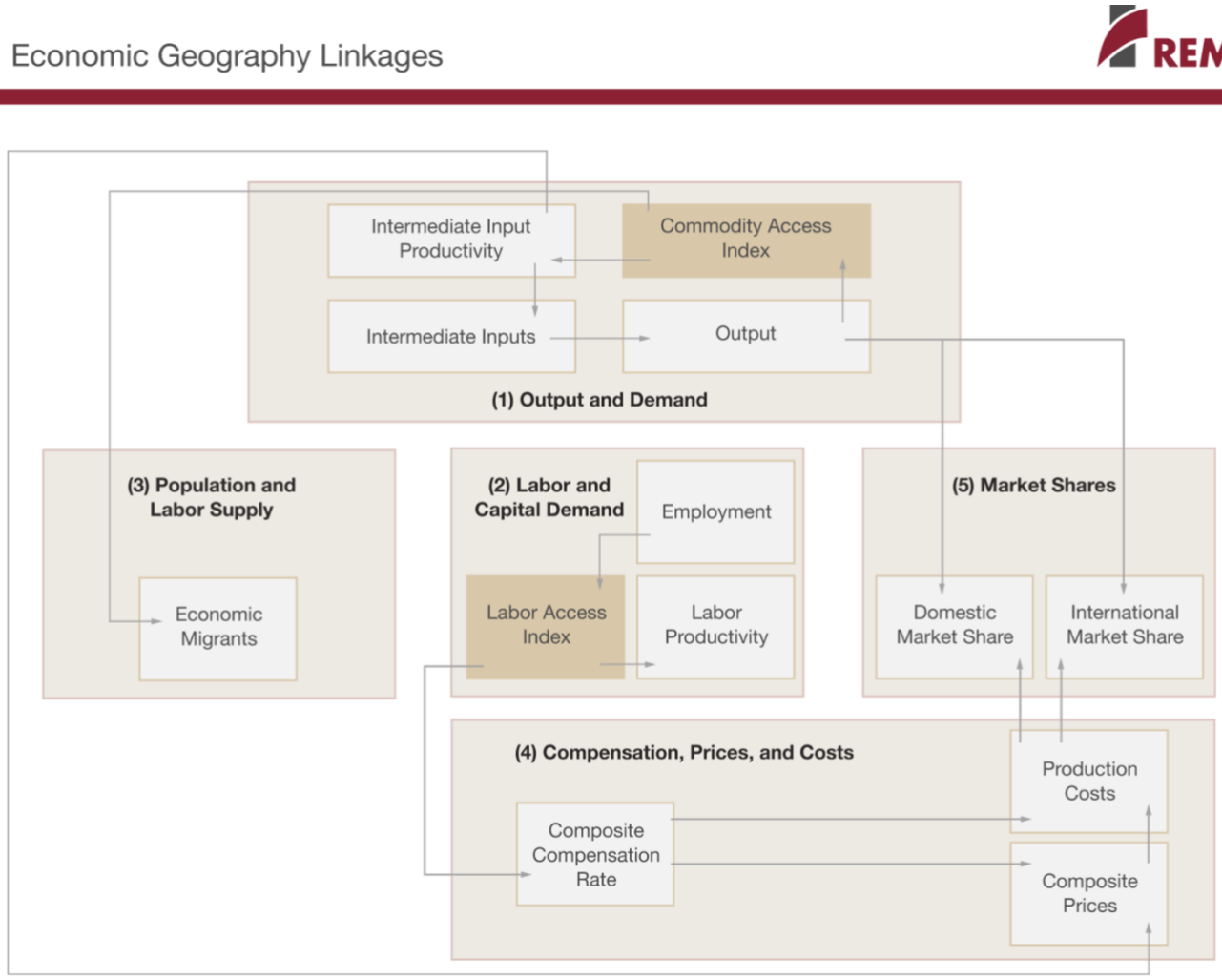


Figure 3 Economic Geography Linkages



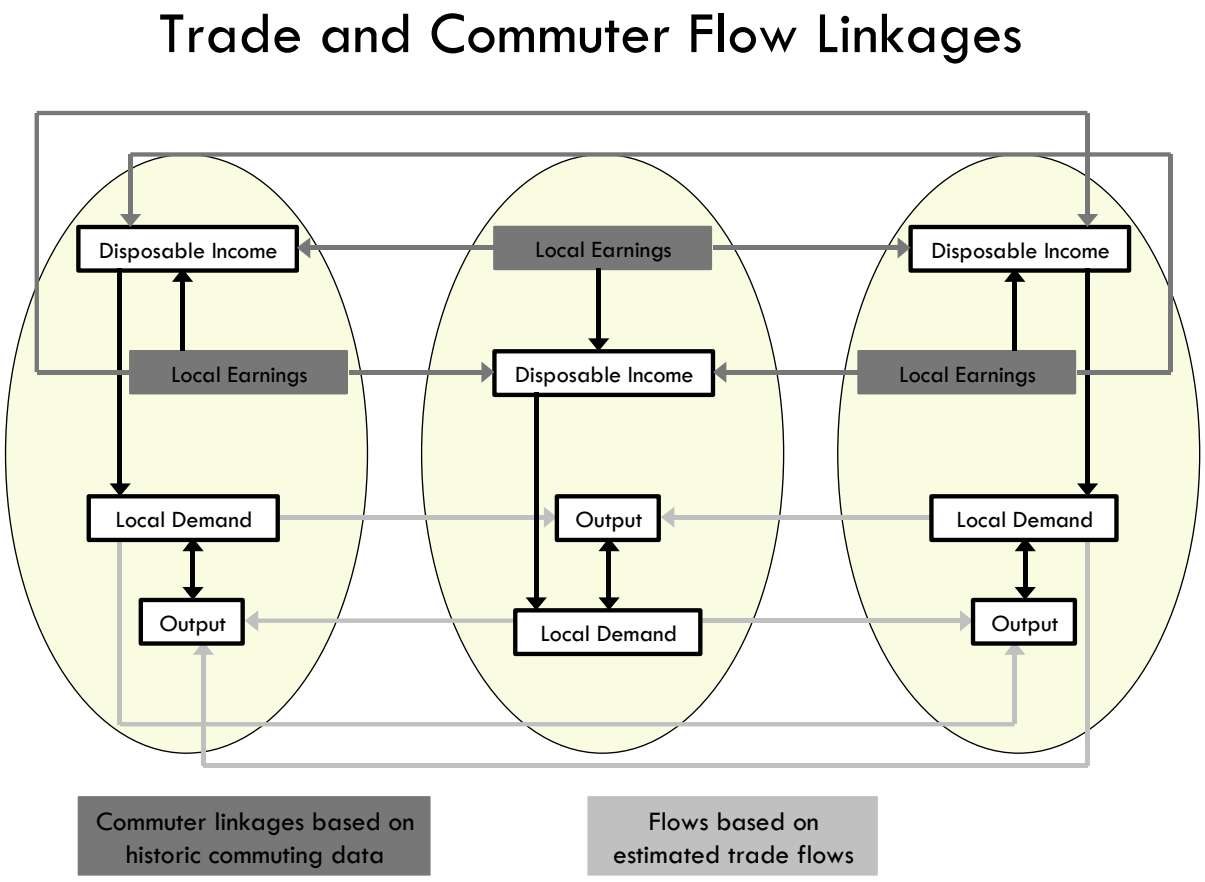
The Output and Demand block consists of output, demand, consumption, investment, government spending, exports, and imports, as well as feedback from output change due to the change in the productivity of intermediate inputs. The Labor and Capital Demand block includes labor intensity and productivity as well as demand for labor and capital. Labor force participation rate and migration equations are in the Population and Labor Supply block. The Compensation, Prices, and Costs block includes composite prices, determinants of production costs, the consumption price deflator, housing prices, and the compensation equations. The proportion of local, inter-regional, and export markets captured by each region is included in the Market Shares block.

Models can be built as single region, multi-region, or multi-region national models. A region is defined broadly as a sub-national area, and could consist of a state, province, county, or city, or any combination of sub-national areas.

Single-region models consist of an individual region, called the home region. The rest of the nation is also represented in the model. However, since the home region is only a small part of the total nation, the changes in the region do not have an endogenous effect on the variables in the rest of the nation.

Multi-regional models have interactions among regions, such as trade and commuting flows. These interactions include trade flows from each region to each of the other regions. These flows are illustrated for a three-region model in Figure 4.

Figure 4 Trade and Commuter Flow Linkages



Multiregional national models also include a central bank monetary response that constrains labor markets. Models that only encompass a relatively small portion of a nation are not endogenously constrained by changes in exchange rates or monetary responses.

Block 1. Output and Demand

This block includes output, demand, consumption, investment, government spending, import, commodity access, and export concepts. Output for each industry in the home region is determined by industry demand in all regions in the nation, the home region's share of each market, and international exports from the region. For each industry, demand is determined by the amount of output, consumption, investment, and capital demand on that industry. Consumption depends on real disposable income per capita, relative prices, differential income elasticities, and population. Input productivity depends on access to inputs because a larger choice set of inputs means it is more likely that the input with the specific characteristics required for the job will be found. In the capital stock adjustment process, investment occurs to fill the difference between optimal and actual capital stock for residential, non-residential, and equipment investment. Government spending changes are determined by changes in the population.

Block 2. Labor and Capital Demand

The Labor and Capital Demand block includes the determination of labor productivity, labor intensity, and the optimal capital stocks. Industry-specific labor productivity depends on the availability of workers with differentiated skills for the occupations used in each industry. The occupational labor supply and commuting costs determine firms' access to a specialized labor force. Labor intensity is determined by the cost of labor relative to the other factor inputs, capital, and fuel. Demand for capital is driven by the optimal capital stock equation for both non-residential capital and equipment. Optimal capital stock for each industry depends on the relative cost of labor and capital, and the employment weighted by capital use for each industry. Employment in private industries is determined by the value-added and employment per unit of value-added in each industry.

Block 3. Population and Labor Supply

The Population and Labor Supply block includes detailed demographic information about the region. Population data is given for age, gender, and race, with birth and survival rates for each group. The size and labor force participation rate of each group determines the labor supply. These participation rates respond to changes in employment relative to the potential labor force and to changes in the real after-tax compensation rate. Migration includes retirement, military, international, and economic migration. Economic migration is determined by the relative real after-tax compensation rate, relative employment opportunity, and consumer access to variety.

Block 4. Compensation, Prices and Costs

This block includes delivered prices, production costs, equipment cost, the consumption deflator, consumer prices, the price of housing, and the compensation equation. Economic geography concepts account for the productivity and price effects of access to specialized labor, goods, and services. These prices measure the price of the industry output, taking into account the access to production locations. This access is important due to the specialization of production that takes place within each industry, and because transportation and transaction costs of distance are significant. Composite prices for each industry are then calculated based on the production costs of supplying regions, the effective distance to these regions, and the index of access to the variety of outputs in the industry relative to the access by other uses of the product. The cost of production for each industry is determined by the cost of labor, capital, fuel, and intermediate inputs. Labor costs reflect a productivity adjustment to account for access to specialized labor, as well as underlying compensation rates. Capital costs include costs of non-residential structures and equipment, while fuel costs incorporate electricity, natural gas, and residual fuels. The consumption deflator converts industry prices to prices for consumption commodities. For potential incomers, the consumer price is additionally calculated to include housing prices. Housing prices change from their initial level depending on changes in income and population density. Compensation changes are due to changes in labor demand and supply conditions and changes in the national compensation rate. Changes in employment opportunities relative to the labor force and occupational demand change determine compensation rates by industry.

Block 5. Market Shares

The market shares equations measure the proportion of local and export markets that are captured by each industry. These depend on relative production costs, the estimated price elasticity of demand, and the effective distance between the home region and each of the other regions. The change in share of a specific area in any region depends on changes in its delivered price and the quantity it produces compared with the same factors for competitors in that market. The share of local and external markets then drives the exports from and imports to the home economy.

Source: REMI Documentation