THE IMPACT OF NWSL STADIUM WITH SURROUNDING DEVELOPMENT ON CITY AND COUNTY OF DENVER ECONOMY

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ABSTRACT. Denver National Women's Soccer League Franchise is proposing a project to construct a new dedicated stadium within the City and County of Denver with additional surrounding development to include a new hotel and mixed-use retail/restaurant space as well as 2,500 residential units on the southern end of the site. The Economic and Data Team with the Department of Finance was asked to perform an economic and fiscal impact analysis of the facility at the local level over a 30-year time horizon. Local governments routinely subsidize sports stadiums and arenas using the justification that hosting professional franchises produces economic development and social benefits in the community. There have been numerous studies and subsequent research on tangible economic impacts in metropolitan areas which we reviewed prior to embarking on our own analysis utilizing a Denver-specific regional PI+ model from REMI. We found that provided all modeling assumptions held, including various scenarios of capital spending by the City and County of Denver, it would provide $2.2 billion in economic output and create up to 1100 jobs throughout construction and operations of the facilities. We also highlight this development could potentially represent a transfer from other local consumer spending, not net-new spending. Our analysis aims to inform policymakers and promote sound policy decisions guided by relevant research findings.

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1. INTRODUCTION

The Denver NWSL ownership group has proposed to build and operate a new stadium located in the Broadway/I-25 area of the former Gates Site in District 7 of the City and County of Denver. The group would build out construction over the next three years from 2025 – 2027 while investing between $150 million and $200 million for capital expenditures (construction and infrastructure). Prior and concurrent to stadium construction, there would be infrastructure (city funded capital improvements) investments of $27.5 million. Operations of the facility would persist from 2028– 2055 for a total life cycle for the project of thirty years.

In addition, surrounding development of the site was assumed to take place resulting in $650 million to 700 million of capital expenditures (hotel, mixed use residential/retail/restaurant) during the same 2025 – 2027 period and operations from 2027– 2055 for a similar thirty-year project life cycle.

An economic and fiscal analysis of the proposed capital improvements and operations over period of 2025 – 2055 was performed utilizing a Denver-specific Regional Economic Models, Inc. (REMI) PI+ model and applying Denver's sales and property tax rates to the resulting output. Specifically, the modeling considered how the capital expenditures, facility operations and contractors would affect employment, economic output, Gross Domestic Product (GDP), disposable personal income and local government revenue for the City and County of Denver.

2. METHODOLOGY

To assess the economic and fiscal impacts of building a new stadium with surrounding development in the Broadway/I-25 section of the City and County of Denver, the Department of Finance CCD's currently licensed 70-industry PI+ v.3.1.0 model of Denver County. PI+ is a sophisticated dynamic regional macroeconomic and demographic policy model that simulates the year-by-year effects of public policy initiatives, and is widely used by state and local agencies, legislatures, universities, and other organizations and experts across the U.S. More detailed information about the model and the fiscal calibration used for calculation of fiscal impacts in Appendix II.

The economic and fiscal impact of the NWSL Stadium and Surrounding Development on the local economy comes from two sources. The first source is the development and construction of its stadium (including city capital spending site improvements) and surrounding development, which is expected to last 3 years from 2025 - 2027.

The second source of economic impact is the ongoing operations of the stadium and surrounding development, which includes the direct employment and compensation, of both in-state resident and out-of-state visiting spectators. This is expected to commence in 2027 and analysis continues through 2055.

The direct, indirect, and induced impacts in spending and job creation are estimated through the REMI PI+ model. In addition, local tax revenue is estimated based off economic output and current 2025 Denver sales tax rates calculated on resulting goods and services where applicable. The analysis covers the 30-year period from 2025-2055. Unless otherwise noted, averages are calculated over the 2025-2055 period.

2.1. Capital Expenditures, Infrastructure, and Others. Capital Expenditures are categorized as (1) Stadium Construction and (2) Surrounding Development Construction. Infrastructure expenditures are categorized as (3) On-site Infrastructure Improvements, and (4) Off-site Improvements.

2.2 Operations. Direct Employment for the Spectator Sports industry would ramp up starting in 2028, then taper as operations wind down towards end of time frame. Table 1.1 displays this direct employment from 2028 – 2030 and 2037 – 2040, and in 2055, the final analysis year.

Category	2028	2029	2030	2037	2038	2039	2040	2055
Spectator Sports Employment	271	264	258	223	219	216	212	168

TABLE 1.1: DIRECT EMPLOYMENT SPECTATOR SPORTS

Direct Employment for Food Services and Drinking Places would ramp up starting in 2027, then taper as operations wind down towards end of analysis time horizon. Table 1.2 displays this direct employment from 2027 – 2030 and 2037 – 2040, and in 2055, the final analysis year.

Category	2027	2028	2029	2030	2037	2038	2039	2040	2055
Food Services and Drinking Places Employment	49	152	151	150	146	146	145	144	126

TABLE 1.2: DIRECT EMPLOYMENT FOOD SERVICES AND DRINKING PLACES

Direct Employment in the Retail Trade industry would ramp up starting in 2027, then taper as the time horizon winds down. Table 1.3 displays this direct employment from 2027 – 2030 and 2037 – 2040, and in 2055, the final analysis year.

Category	2027	2028	2029	2030	2037	2038	2039	2040	2055
Retail Trade	129	138	133	129	107	105	102	100	68

TABLE 1.3: DIRECT EMPLOYMENT IN RETAIL TRADE

2.3. Spectators. The proposed Denver NWSL stadium has a capacity of 14,500 and is assumed to host a total of at least 24 soccer matches or comparable events annually. It is expected that an average of 78 percent of stadium attendees will purchase food and beverages from in-stadium concession stands or off-site restaurants and will spend approximately $32 total per event. Additional annual spending on stadium merchandise is assumed to comprise 10 percent of total franchise revenue.

Most consumer spending in and around pro sports venues derives from local residents. As such, only 10 percent of total stadium attendance is expected to come from beyond the Denver metro area, with each tourist spending an average of $307 daily on lodging, food, and incidentals. It should be noted that due to the large amount of local consumer spending, it could merely be representing a transfer from other local consumer spending, not net-new spending. Stitzel and Rogers (2019) found that in nearby eating establishments, there was a positive complementary impact. However, there were decreased sales on nearby entertainment businesses [e.g. theatre, bowling, arts venues, etc], which is indicative of a substitution effect.

3. RESULTS

This section reports the economic and fiscal impacts of the NWSL Stadium, city capital spending and surrounding development over the period of 2025 – 2055, specifically on employment, economic output, GDP, personal income, disposable personal income, and local government revenue.

3.1. Employment. Table 2.1 displays the employment impacts for the City and County of Denver, including both the totals and breakdowns into direct, indirect, and induced impacts, from 2025 – 2027, from 2035 – 2040, and in 2055. Construction-related spending will create an average of 370 new jobs during the first three years of the study period. Additional jobs created and supported by stadium and surrounding development operations will create and support an average of 670 new jobs from 2028 to 2055. In total, throughout the study period, the project will create approximately 1,100 new jobs. From 2025 – 2055, the average number of new direct jobs is 237, implying an employment multiplier of approximately 2.8.

Category	2025	2026	2027	2035	2036	2037	2038	2039	2040	2055
Total Employment	375	366	599	722	714	711	706	703	698	615
Direct Employment	45	45	46	283	278	274	269	265	260	205
Indirect Employment	6	6	6	39	38	38	37	37	37	33
Induced Employment	324	315	547	400	398	399	400	401	401	377

TABLE 2.1: TOTAL EMPLOYMENT IMPACTS

It is important to highlight recent local research from Propheter (2019) on the relocation of the city's MLS team (Colorado Rapids) from downtown to their new stadium in Commerce City that found no evidence the construction of the new stadium was associated with any increased number of jobs within the vicinity. There also wasn't evidence of job losses at establishments located within vicinity of prior stadium (Empower Field at Mile High). However, it is worth noting the study utilized publicly available employment microdata for

establishments and may not have captured all effects. Also, given the close proximity of the relocation and that team and stadium operations were likely already occurring, the establishments providing those services may have not relocated their home business location and therefore no change was captured in governmental data.

The Colorado Rapids study also differs from the current NWSL proposal given this project is for a new women's soccer team franchise as opposed to a location transfer for an existing team and the new Rapids' stadium was built as a stand-alone facility without accompanying surrounding development. Internal CCD analysis has demonstrated utilizing foot traffic the positive impact of Colorado Rockies games at Coors Field to surrounding Union Station development with pre/post restaurant/retail visitation that corresponds to game days.

3.2. Economic Output and Gross Domestic Product. Table 2.2 displays the real economic output and real GDP impacts for the City and County of Denver from 2025 – 2027, from 2035 – 2040, and in 2055. During 2025 – 2055, the average economic output and GDP impacts are increases of $141.2 M and $81.1 M respectively.

Category	2025	2026	2027	2035	2036	2037	2038	2039	2040	2055
Real Economic Output $ (2025)	$84.4 M	$83 M	$125.2 M	$133 M	$134.3 M	$136.7 M	$138.9 M	$141.3 M	$143.5 M	$171.8 M
Real GDP $ (2025)	$45.3 M	$44.4 M	$69.4 M	$78.5 M	$79.2 M	$80.4 M	$81.5 M	$82.6 M	$83.7 M	$94.5 M

TABLE 2.2: ECONOMIC OUTPUT AND GDP

Limitations of this analysis on future construction does not allow for the ability to discern if this project would merely be substitution for other construction projects that might already have occurred in the city rather than generating new construction work. Research from Miller (2002) found no impact on construction jobs or wages from two sports venues constructed in St. Louis which would indicate evidence for a substitution effect; but this again is an area of research that could be closely scrutinized in greater detail utilizing recent granular data sets now available to CCD.

3.3. Personal Income and Disposable Personal Income. Table 2.3 displays the real personal income and real disposable personal income impacts for the City and County of Denver from 2025 – 2027, from 2035 – 2040, and in 2055. During 2025 – 2055, the average personal income impact is $68 M; the average disposable personal income impact is $58.2 M. This is primarily driven by the spectator sports industry as well as additional labor income earned in the many spillover jobs generated other industries.

Category	2025	2026	2027	2035	2036	2037	2038	2039	2040	2055
Real Personal Income $ (2025)	$18.5 M	$15 M	$24.8 M	$54.7 M	$57.4 M	$61.3 M	$65 M	$68.6 M	$72.5 M	$110.5 M
Real Disposable Personal Income $ (2025)	$15.9 M	$12.8 M	$21 M	$46.8 M	$49.2 M	$52.5 M	$55.6 M	$58.7 M	$61.6 M	$94.5 M

TABLE 2.3: PERSONAL INCOME AND DISPOSABLE PERSONAL INCOME

3.4. Local Government Revenue. Table 2.4 displays the real local government revenue impacts for the City and County of Denver from 2025 – 2027, from 2041 – 2046, and in 2055. During 2025 – 2055, real local government tax revenue increases by $9.4 M on average. [1]

Category	2025	2026	2027	2041	2042	2043	2044	2045	2046	2055
Real Local Government Tax Revenue $ (2025)	$0	$0	$0	$0	$0	$18.5 M	$19 M	$19.6 M	$20.2 M	$26.8 M

TABLE 2.4: LOCAL GOVERNMENT REVENUE

While Humphreys (2019) clearly demonstrates cases where sports-related spending largely reflects a redistribution of existing spending by residents rather than increased local spending; it should be noted that the redistribution of existing spending will be a mix of reallocation of spending both from within the City and County of Denver as well as the

[1] Pursuant to terms of the I-25 and Broadway Urban Redevelopment Area Cooperation Agreement between the Denver Urban Renewal Authority and the City (TIF for Sales and Property Tax Increment)

surrounding metropolitan area. Spending reallocated from other local municipalities would nonetheless represent a gain in sales tax revenues for the City and County of Denver.

3.5. City and County of Denver Public Infrastructure and Land Investment Analysis: Current Dollar $70 million, 4.5 Percent Discount Rate. Table 3.1 displays the real GDP, real disposable personal income, real local government revenue impacts for the City and County of Denver, the real Economic Benefit, and the real CCD Public Infrastructure and Land Investment from 2025 – 2029, 2046 – 2047, 2051 – 2052, and in 2055. The table also displays the Present Value (PV) of each under a four and a half percent discount rate. The Economic Benefit measure is defined as the sum of the real disposable personal income and real local government revenue impacts.

During 2025 – 2055 the PV of real Economic Output, real GDP, real disposable personal income and real local government revenue impacts for both the Denver NWSL stadium and surrounding mixed-use development are $2.2 B, $1.3 B, $838.9 M and $100.6 M respectively, yielding a real Economic Benefit PV of $939.5 M. The PV of the CCD Public Infrastructure and Land Investment for 2025 – 2055 is $66.9 M.

During 2025 – 2055 the Denver NWSL stadium only portion of the PV of real Economic Output, real GDP, real disposable personal income and real local government revenue impacts are $1.4 B (64%), $830.1 M (64%), $576.4 M (69%) and $35.1 M (35%) respectively.[2]

Fiscal Analysis results for the entire project (calculations include both stadium and surrounding development combined) are shown in Table 2.5. The fiscal benefit-cost ratio, which is calculated as the ratio of the PV of the real local government revenue impact to the PV of the CCD Public Infrastructure and Land Investment, comes out to 1.5. The Economic Benefit ratio, which is calculated as the ratio of the PV of the real Economic Benefit to the PV of the CCD Public Infrastructure and Land Investment, comes out to 14. The ROI real GDP ratio, which is calculated as the ratio of the PV of the real GDP impact to the PV of the CCD Public Infrastructure and Land Investment, comes out to 19.4. All the provided ratio values are greater than 1.0 which demonstrates the proposed project as being financially viable.

[2] Percentages refer to the portion of total economic output attributed to the Denver NWSL stadium alone

Ratio	PV (4.5%)
Fiscal Benefit-Cost Ratio	1.5
Economic Benefit Ratio	14
ROI Real GDP Ratio	19.4

TABLE 2.5: FISCAL ANALYSIS

In Table 2.6, below, the highlighted cells indicate the years when the project will exceed its breakeven point where Real Local Government Tax Revenue, Real Economic Benefit, or their associated PV, exceeds the CCD Public Infrastructure and Land Investment of $70 M, which is comprised of $42.5 M land acquisition, $7.5 M on-site infrastructure improvements, and $20 M off-site infrastructure improvements. Real Local Government Tax Revenue will exceed $70 M in 2046, and its PV will exceed $66.9 M in 2052. Real Economic Benefit will exceed $70 M in 2028, and its PV will exceed $66.9 M in 2029.

Variable	2025	2026	2027	2028	2029	2046	2047	2051	2052	2055	Total
Real Economic Output $ (2025)	$84.5 M	$83 M	$125.2 M	$119.2 M	$120.3 M	$156.2 M	$158 M	$164.6 M	$166.5 M	$171.8 M	$4.4 B
Economic Output PV (4.5%)	$84.5 M	$79.4 M	$114.7 M	$104.5 M	$100.1 M	$62 M	$60 M	$52.4 M	$50.7 M	$45.9 M	$2.2 B
Real GDP $ (2025)	$45.3 M	$44.4 M	$69.4 M	$71.6 M	$88.3 M	$89.1 M	$89.7 M	$92.1 M	$92.8 M	$94.5 M	$2.5 B
GDP PV (4.5%)	$45.3 M	$42.5 M	$63.5 M	$62.7 M	$36.6 M	$35.3 M	$34.1 M	$29.3 M	$28.3 M	$25.2 M	$1.3 B
Real Disposable Personal Income $ (2025)	$15.9 M	$12.8 M	$21 M	$22.1 M	$24.4 M	$77 M	$79.1 M	$87 M	$88.9 M	$94.5 M	$1.8 B
Disposable Personal Income PV (4.5%)	$15.9 M	$12.3 M	$19.3 M	$19.3 M	$20.4 M	$30.5 M	$30.1 M	$27.7 M	$27.1 M	$25.2 M	$838.9 M
Real Local Government Tax Revenue $ (2025)	$0	$0	$0	$0	$0 M	***$20.2 M***	$20.9 M	$23.6 M	$24.4 M	$26.8 M	$290.9 M
Local Govt Tax Revenue PV (4.5%)	$0	$0	$0	$0	$0 M	$8 M	$7.9 M	$7.5 M	***$7.4 M***	$7.2 M	$100.6 M
Real Economic Benefit $ (2025)	$15.9 M	$12.8 M	$21 M	***$22.1 M***	$24.4 M	$97.2 M	$100 M	$110.6 M	$113.3 M	$121.3 M	$2.1 B
Economic Benefit PV (4.5%)	$15.9 M	$12.3 M	$19.3 M	$19.3 M	***$20.4 M***	$38.5 M	$38 M	$35.2 M	$34.5 M	$32.7 M	$939.5 M
Real CCD Public Infrastructure and Land Investment $ (2025)	$23.3 M	$23.3 M	$23.3 M	$0	$0	$0	$0	$0	$0	$0	$70 M
CCD Public Infrastructure and Land Investment PV (4.5%)	$23.3 M	$22.3 M	$21.3 M	$0	$0	$0	$0	$0	$0	$0	$66.9 M

Table 2.6: $70 million CCD Public Infrastructure and Land Investment, 4.5 Percent Discount Rate[3]

[3] methodology regarding property/land valuation by a) estimating annual replacement cost less depreciation, b) calculating annual land value, c) determining total property value, d) calculating taxable assessed value, e) computing annual property tax liability, f) calculating net PV (4.5 %)

Bradbury (2022) found that while "most studies find that sports stadiums are not strong drivers of economic activity in metropolitan areas, localized development effects may be sufficient to justify public subsidies for a host municipality if circumstances are favorable."

The City and County of Denver is well positioned to perform future additional research on this project given access to unique granular establishment-level data regarding sales, property and employment taxes. There also exist additional, newer data sets available to the city that include foot-traffic and credit/debit card spend with in-house ability to combine with above tax data for GIS spatial analysis. Ideally the above research will continue and provide definitive underlying data regarding economic impact of this project.

4. Conclusion

While the above results present a sound, fiscally viable opportunity to the City and County of Denver providing $2.2 B in economic output and up to 1100 jobs; it is limited in the ability to fully represent all benefits to the City and County of Denver. For instance, if the existence of a vibrant stadium-anchored development represents a desirable feature to the City, then such projects may be useful and valuable developments. Nelson (2001), Austrian and Rosentraub (2002) speculate that "the direct impact of sports on economic activity may be irrelevant if the goal of subsidizing a new stadium is revitalization or enhancement of a city's downtown core". While some spending may shift rather than grow, strategic development near this site means the ability to capture and maximize dollars that might otherwise flow outside of Denver.

The presence of professional women's sports team may also generate intangible non-monetary benefits to local residents' welfare, even if they don't experience direct financial gains such as spillover amenities like pedestrian-friendly areas and entertainment districts that benefit the quality of life for nearby residents which cannot be measured in monetary economic transactions. The long-term community benefits such as community pride, local identity, opportunity for women in sports, and youth engagement have the potential to make this project not just about dollars—but civic identity, opportunity and inspiring the next generation.

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APPENDIX I: GLOSSARY

Direct Jobs: Jobs created by the NWSL team and other businesses on-site, like an employee in concessions.

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

Economic Benefit: The sum of the real disposable personal income and real local government revenue impacts.

Economic Benefit Ratio: The ratio of the PV of the real economic benefit to the PV of the CCD Public Infrastructure and Land Investment.

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.

Fiscal Benefit-Cost Ratio: Calculated as the ratio of the PV of the real local government revenue impact to the PV of the CCD Public Infrastructure and Land Investment.

GDP: Gross Domestic Product. The market value of goods and services produced by labor and property. It is also the sum of value-added across all industries.

Indirect Jobs: Jobs in the supply chain, created due to spending on materials and services, like tradespersons hired by construction contractors.

Induced Jobs: Additional jobs created as direct and indirect workers spend their earnings in the community, like a restauranteur along S. Broadway

Opportunity Cost: The value of the next-best alternative; i.e. what is given up

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.

PV: Present Value. Converts future cash flows into what it is worth today by applying a discount rate (utilized 4.5 percent in provided fiscal analysis per Federal Reserve guidance)

ROI Real GDP Ratio: Calculated as the ratio of the PV of the real GDP impact to the PV or the CCD Public Infrastructure and Land Investment.

REMI Model Framework

PI+ is a structural economic, demographic, and forecasting and policy analysis model. 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 1 and 2.

Figure A1.1: REMI Model Linkages

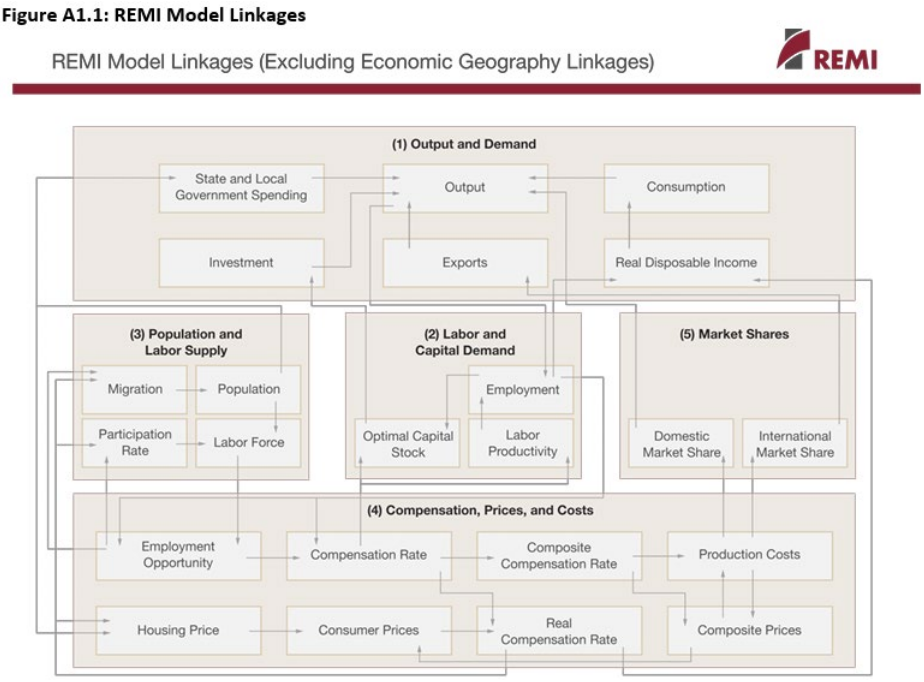
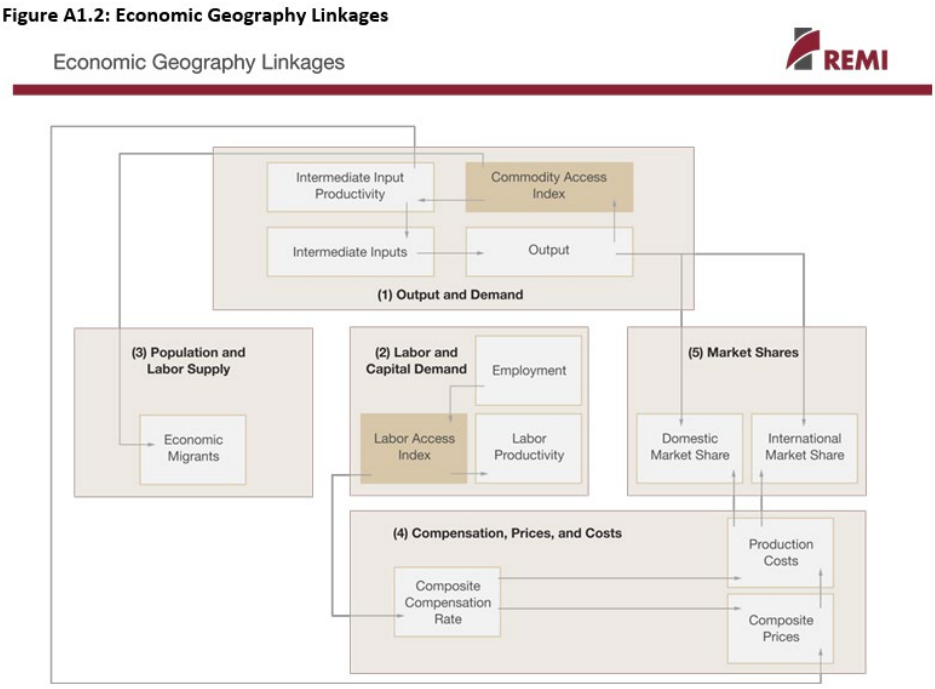


Figure A1.2: Economic Geography Linkages



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.

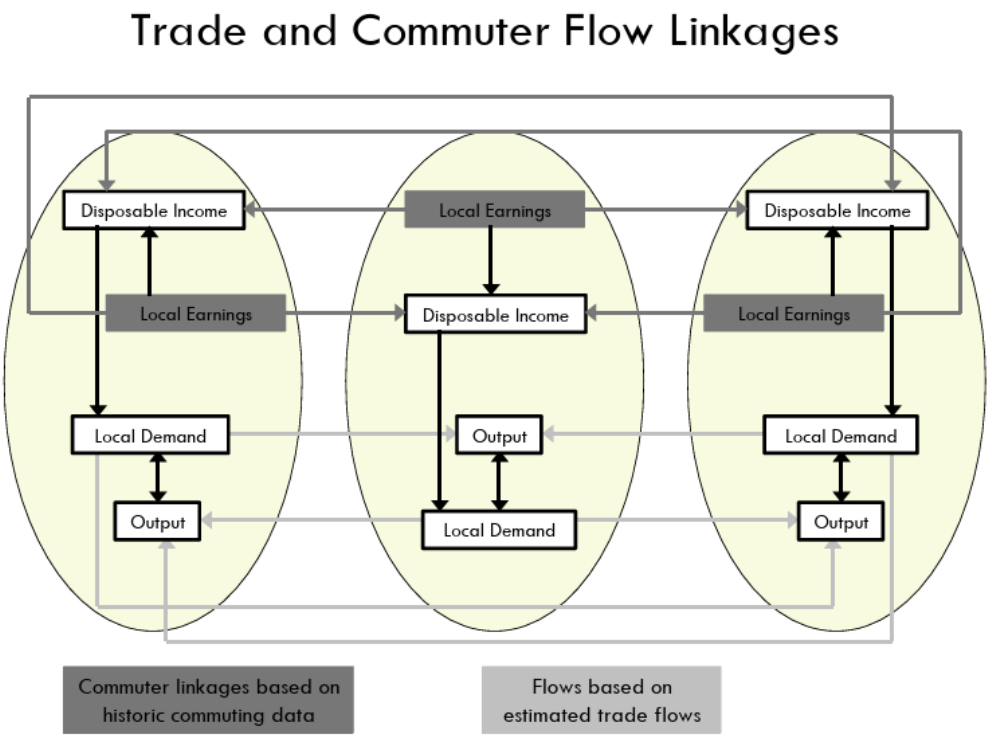
Models can be built as single region, multi-region, or multi-region national models. A region is defined broadly as a sub-national area, and could consist of a state, province, county, or city, or any combination of sub-national areas.

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 3.

Figure A1.3: Trade and Commuter Flow Linkages



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 aftertax 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 migrants, 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.

Fiscal Calibration

DOF Economic staff looked at each "Economic Indicator" that allows it to respond to changes in a specific economic variable. In doing so, the economic outlook is integrated into fiscal projections using current City and County of Denver tax rates on applicable goods and services. This analysis captures the interaction between economic activity and the level of tax revenue.