Overview of JCT Methodology for Analyzing the Macroeconomic Effects of Proposed Changes in Tax Law

Prepared by the Staff of the Joint Committee on Taxation

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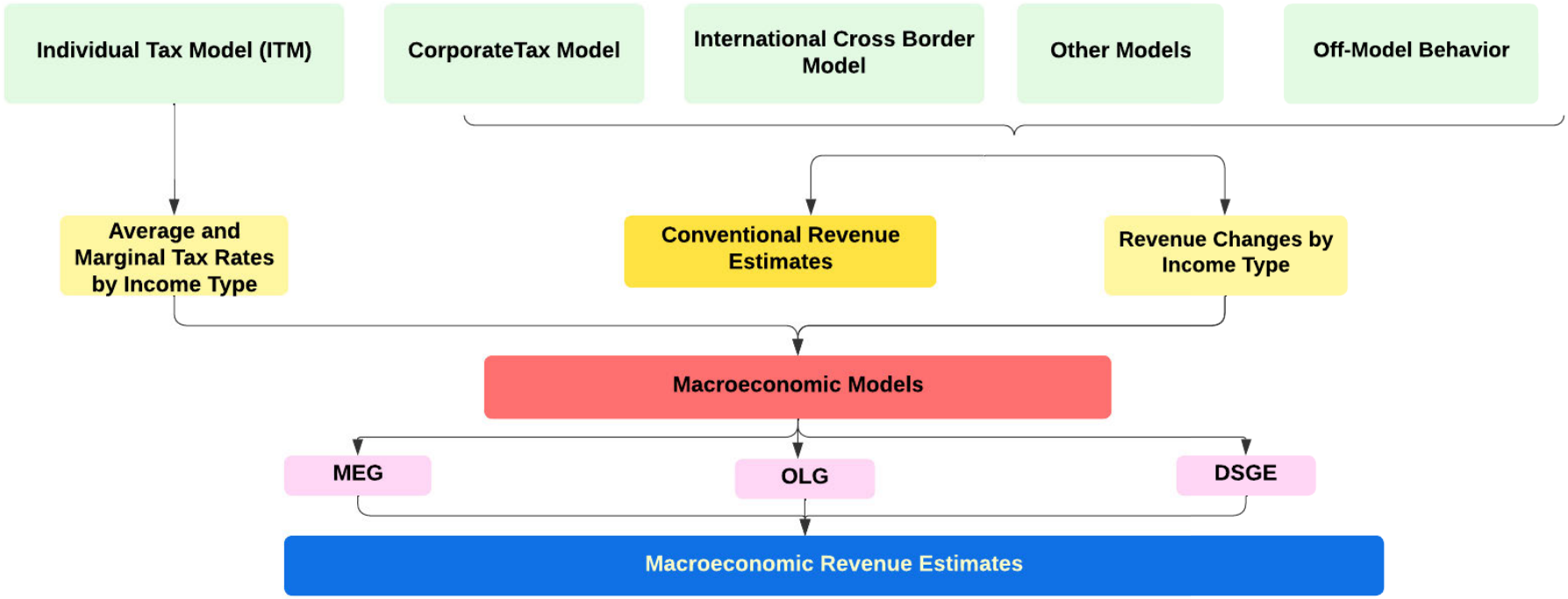
Overview of JCT's Macro Analysis Process

Macro Analysis at JCT

- **Tax Legislation Analysis for the Budget Score Card**
  - JCT provides conventional revenue estimates and macroeconomic analyses as legislation progresses through Congress.
  - Estimates are expressed ***relative*** *to* CBO's economic and revenue baseline.
- **Mandatory Macroeconomic Scoring Rules**
  - **House Rule XIII(8)(b) of the 118th Congress:**

    Estimates of Major Legislation must incorporate a macroeconomic analysis when…in any fiscal year over the years of the most recently agreed-to concurrent resolution on the budget equal to or greater than 0.25 percent of the current projected gross domestic product of the United States for that fiscal year…
  - Rules for mandatory macroeconomic estimates change, but macro analyses can always be requested by members of Congress.

Macro Estimating Process



JCT Macro Models: OLG

Overlapping Generations Model (OLG)

- **Microfoundations**: Household consumption, labor, savings, and residential decisions based on principle of utility maximization. Firm investment, hiring, and financing decision rules based on principle of profit maximization.
- **Heterogeneous Households:** Accounts for lifecycle variation in household demographics, skill profiles, idiosyncratic labor-income risk, and mortality risk.
- **Tax Calculator:** Includes an internal tax calculator for computing household tax liabilities that explicitly models individual tax provisions as specified in the Internal Revenue Code.
- **Multi-sector Production Block:** Corporate and noncorporate firms differ in terms of income tax treatment and modes of external finance.
- **Perfect Policy Foresight:** Assumes agents perfectly anticipate future economic conditions and fiscal policy, which requires that long-run fiscal balance must be maintained within the model.

JCT Macro Models: MEG

- **Macroeconomic Equilibrium Growth Model (MEG):**
  - **Behavioral Response Functions:** Relies on reduced-form equations to represent how households, firms, and the government respond to changes in taxes, spending, and other economic factors.
  - **Delayed Quantity Adjustments:** Incorporates gradual changes in output, employment, and investment, reflecting real-world frictions in economic adjustment processes.
  - **Monetary Policy Integration:** Models Federal Reserve behavior using a Taylor Rule, linking interest rates to inflation and output deviations.
  - **Myopic Expectations:** Assumes agents expect that current economic and policy conditions will persist permanently.
  - **No Fiscal Balance Requirement:** Myopic expectations allow for the possibility of indefinite growth in fiscal deficits, negating the requirement to maintain long-run fiscal balance within the model.

JCT Macro Models: DSGE

- **Dynamic Stochastic General Equilibrium Model (DSGE):**
  - **"Saver-Nonsaver" Framework:** Ricardian "saver" households have access to financial markets while non-Ricardian "nonsaver" households do not, which captures heterogeneity in consumption and savings behavior.
  - **Sticky Goods-Prices:** Incorporates Calvo pricing, where firms can only periodically adjust their prices. Along with partial price indexing, this framework generates realistic inflation persistence.
  - **Monetary Policy Integration:** Models Federal Reserve behavior by using a Taylor Rule for monetary policy that links nominal interest rates to deviations in inflation and output; which thereby influences inflation and output.
  - **Imperfect Policy Foresight:** Allows for flexible specification of policy foresight for households, ranging from myopic to perfect.
  - **Weakened Fiscal Balance Requirement:** Imperfect policy foresight allows for persistent but slowing growth in long-run deficits, smoothing fiscal balance.

Arriving at a Point Estimate: Model-Weighting

Legislative Directive for Point Estimates

House Rule XIII(8)(b) requires JCT to produce ***a point estimate*** of the budgetary effects of major legislation, inclusive of macroeconomic effects.

- **Model-Weighting in Estimation**
  - Macroeconomic models vary in their estimates of budgetary and economic effects.
  - JCT applies a model-weighting scheme to generate a comprehensive point estimate.
  - The weight assigned to each of the three models depends on the specific strengths and weaknesses of each model concerning the proposal being analyzed.

Example: Evaluating the Extension of TCJA Provisions

TCJA Expiration and Possible Extensions

TCJA Expiration in 2025

- Key individual provisions of **Pub. L. 115-97**, also known as **The Tax Cuts and Jobs Act (TCJA)**, are schedule to **expire at the end of 2025.**
- This presentation provides a **macroeconomic analysis** of a hypothetical, **permanent extension** of all expiring individual provisions **relative to CBO's 2024 economic and revenue baseline.**
- For **illustrative purposes,** the following pages examine the **potential macroeconomic impacts** of this extension using **three distinct models.**

TCJA Extension: Summary of Conventional Revenue Effects

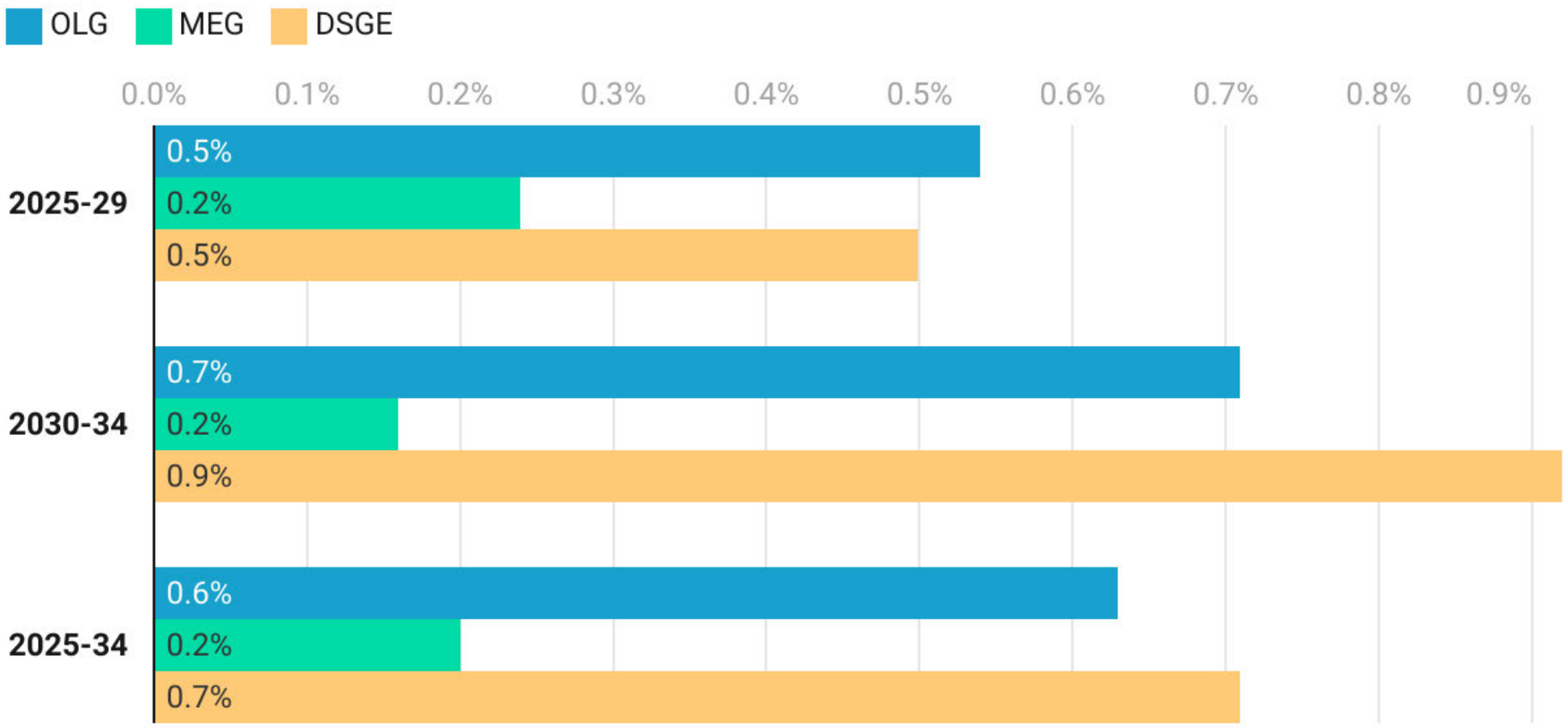
Provision	FY 2025-34 ($ bn)
Ordinary Income Tax Schedule	-2,159
Alternative Minimum Tax	-1,357
Standard Deduction	-1,251
Personal and Dependent Exemptions	1,717
Passthrough Deduction	-662
Child Tax Credit	-736
Itemized Deductions	1,244
Subtotal	-3,204
Other	-164
TCJA Extension Total	-3,368

TCJA Extension: Effective Marginal & Average Tax Rates

- The **Individual Tax Calculator Model (ITM)** is used to simulate the tax reform, generating estimates for effective marginal and average tax rates on different income sources.
- The table below presents the **absolute changes** in Effective Marginal Tax Rates (EMTR) and Average Tax Rates, expressed **in percentage points.**

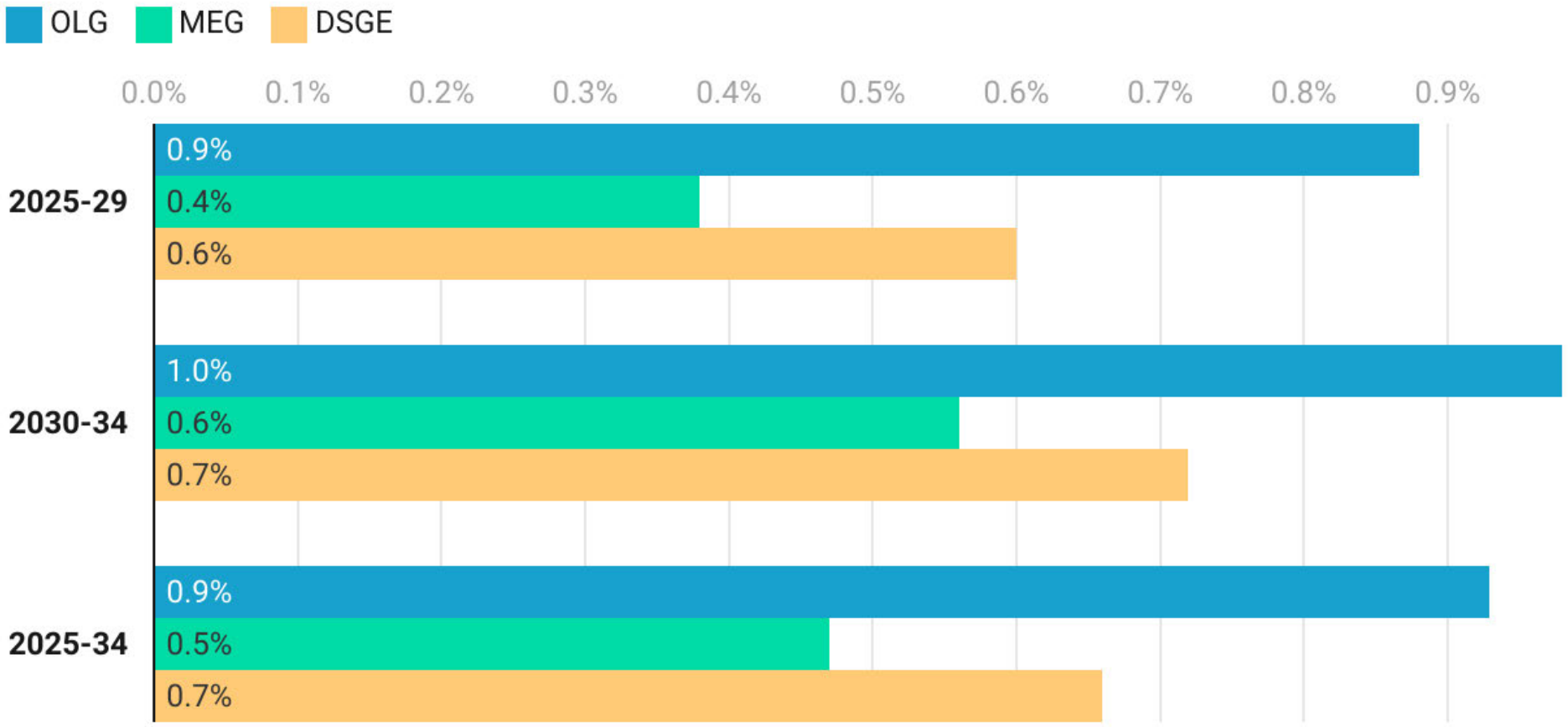
	Wages	Passthrough	Interest	Dividends	Gains
ΔEMTR	-2.6	-4.1	-2.2	-1.4	-0.8
ΔATR	-1.5	-4.0	-1.9	0.1	-0.1

TCJA Extension: Effects on GDP Under Different Models



Note: Aggregate percent changes are calculated relative to the macro model's baseline calibration.

TCJA Extension: Effective Labor Supply Effects Across Models



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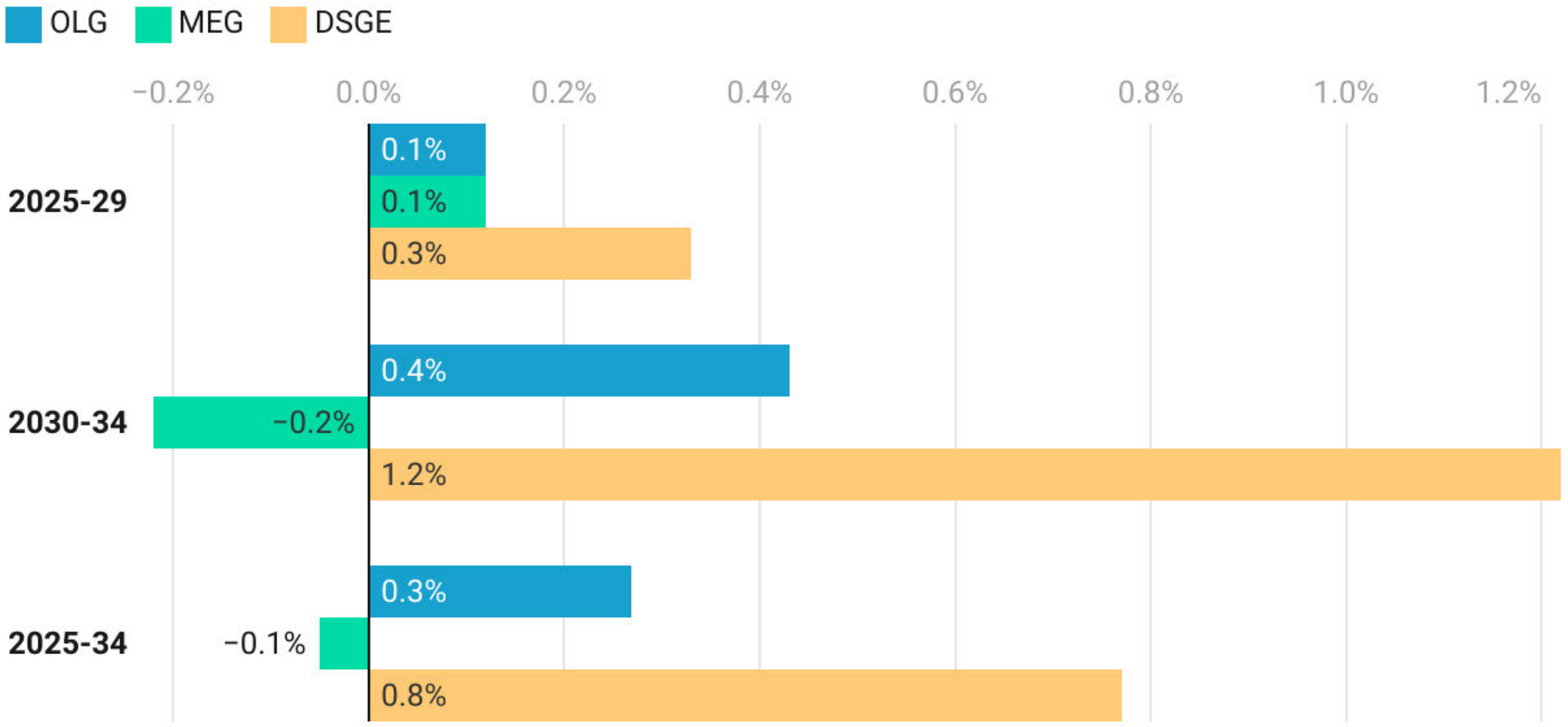
TCJA Extension: Effects on Capital Under Different Models



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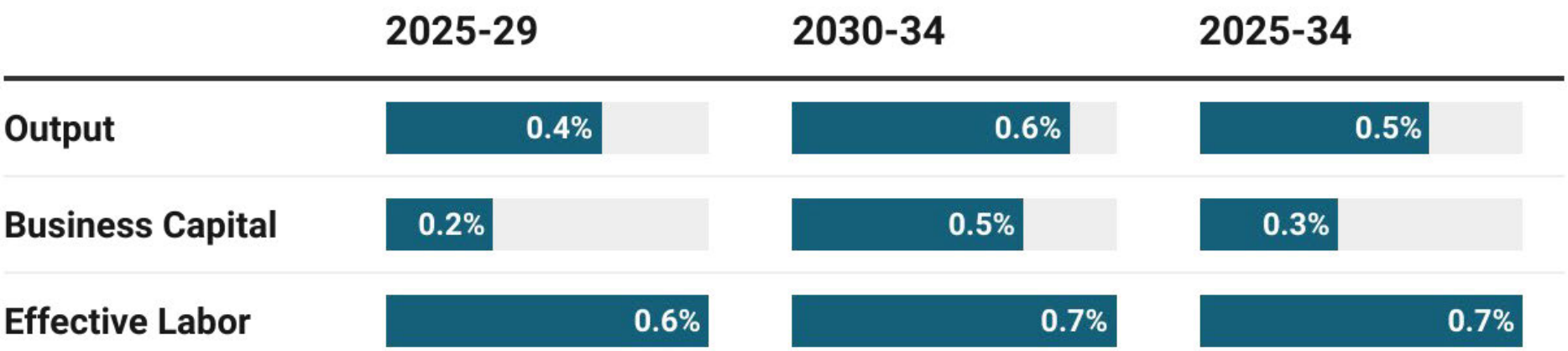
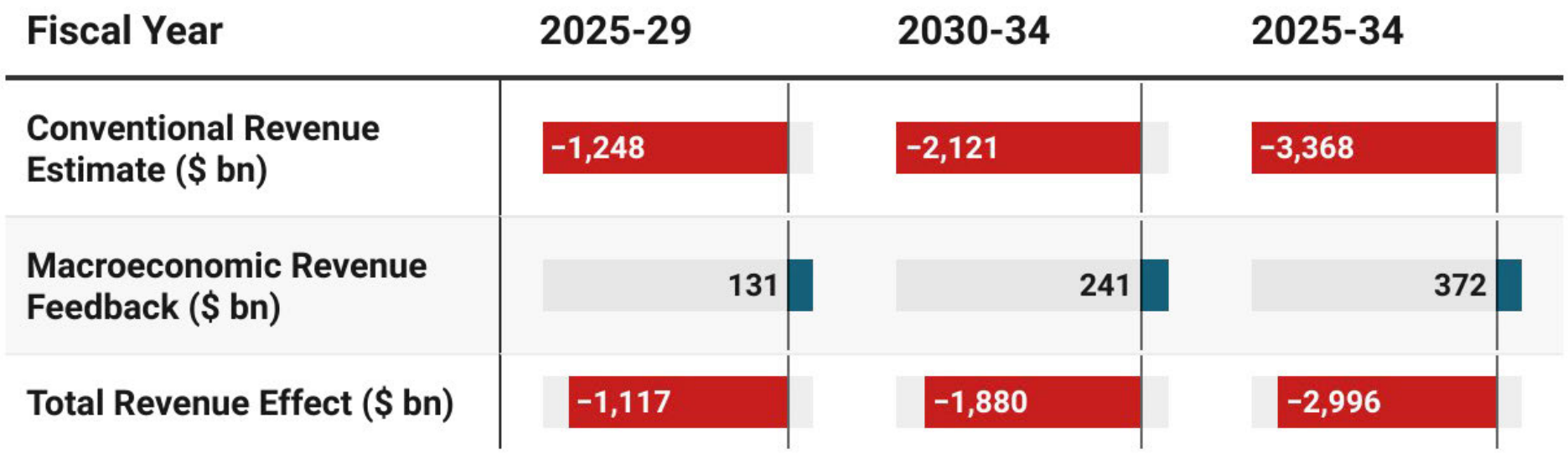
Model-Weighted Macroeconomic Impact of TCJA Extension

Illustrative Example: With ***equal weighting across models***, the following impacts on macroeconomic aggregates are estimated.



Disclaimer: This is not an official estimate from JCT and is for illustrative purposes only.

Model-Weighted Macroeconomic Impact of TCJA Extension



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Conclusion: Advancing Tax Policy Analysis

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Continuous Model Expansion and Evaluation: Joint Committee staff continuously improves and expands models.

- **Examples of OLG Improvements since 2017:**
  - *Enhanced household heterogeneity (single and dual earners, childless vs. child-rearing households).*
  - *Expanded household decision-margins (durable vs. non-durable consumption, renting vs. owning homes).*
  - *Integrated firm financing choices (corporate equity/debt vs. non-corporate debt financing).*
  - *Introduced internal tax calculator and idiosyncratic labor income risk*

Conclusion: Advancing Tax Policy Analysis

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- **Examples of MEG Improvements since 2017:**
  - *Integrated tangible and intangible capital stocks to align with updated NIPA standards.*
  - *Updated Federal Reserve reaction function with advanced Taylor Rule options.*
  - *Expanded Types of Consumers (three income groups)*
  - *Enabled flexible starting points, allowing realistic policy analysis from any economic baseline.*

Conclusion: Advancing Tax Policy Analysis

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- **Examples of DSGE Improvements since 2017:**
  - *Differentiated wage rates between savers (high-income) and non-savers (low-income), adding a degree of realism to income distribution*
  - *Allowing for a unit root in the nature of policy uncertainty*
  - *Partially-open economy (foreign investors purchase a portion of new federal debt issuances)*
  - *Expanded distinction between types of taxable capital income received by households*

Conclusion: Advancing Tax Policy Analysis

Continuous Model Expansion and Evaluation: Joint Committee staff continuously improves and expands models.

- **Enhanced Heterogeneity and Calibration:** Models now reflect greater heterogeneity and a high degree of detail and are calibrated using high-quality data sources, delivering a more realistic representation of the U.S. economy.

- **Commitment to Rigor:** Joint Committee staff publishes and presents findings to receive feedback and ensure work remains at the forefront of the field.

A.1

Appendix: Sensitivity Analysis of Business Tax Incentives

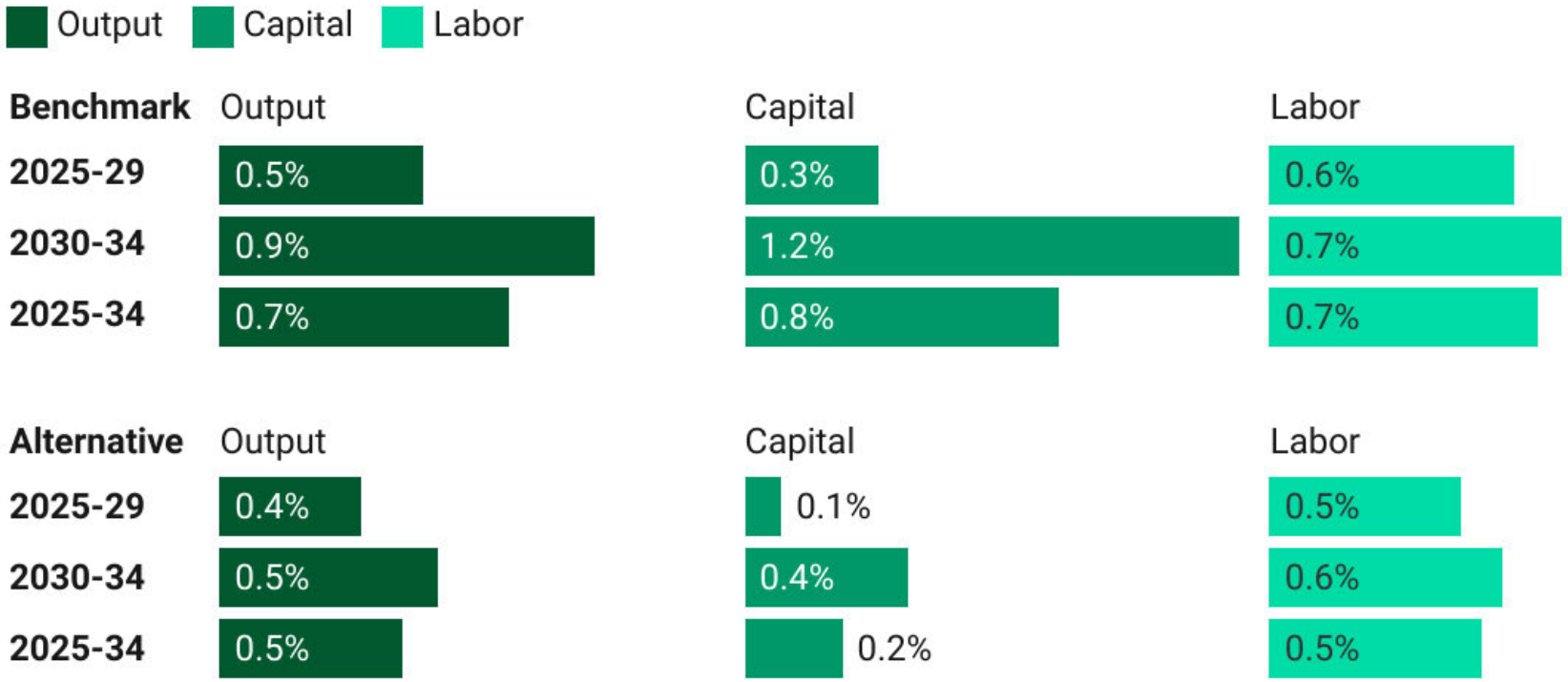
TCJA: The Overall Picture from a Modeling Perspective

A.2.

- Modeling the **tax treatment** of **wage income** and the effects on **labor supply** have historically been a major focus.
- But the way in which changes to the **tax treatment** of **business income** are modeled also have **non-trivial effects** on **investment incentives.**
- Each of JCT's three models specifies a **different framework** for modeling business activity.
- This underscores the importance of conducting **sensitivity analyses** and emphasizes the role of **weighting each model** appropriately.

DSGE: Capital Income Marginal Tax Rates Held at Baseline Levels

A.3.



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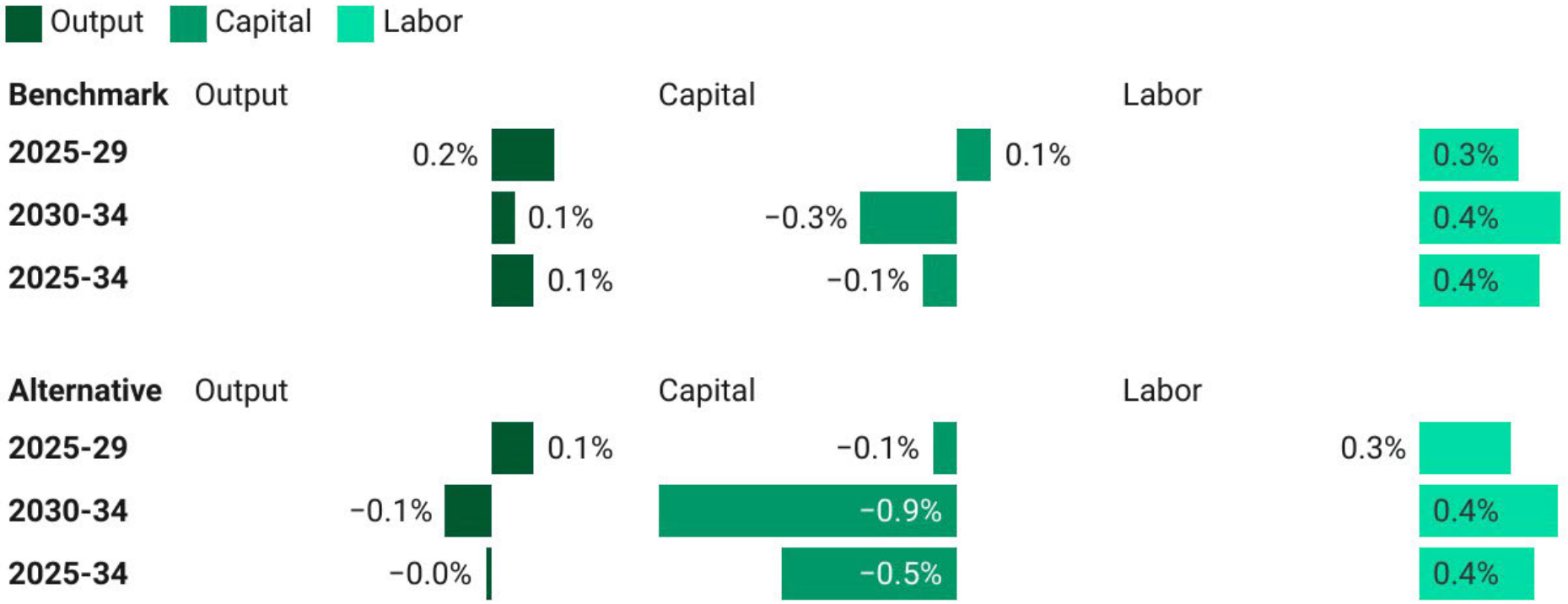
MEG: Business Income Marginal Tax Rate Held at Baseline Levels

A.4.



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OLG: Inframarginal Tax Changes on Non-Corporate Business Income

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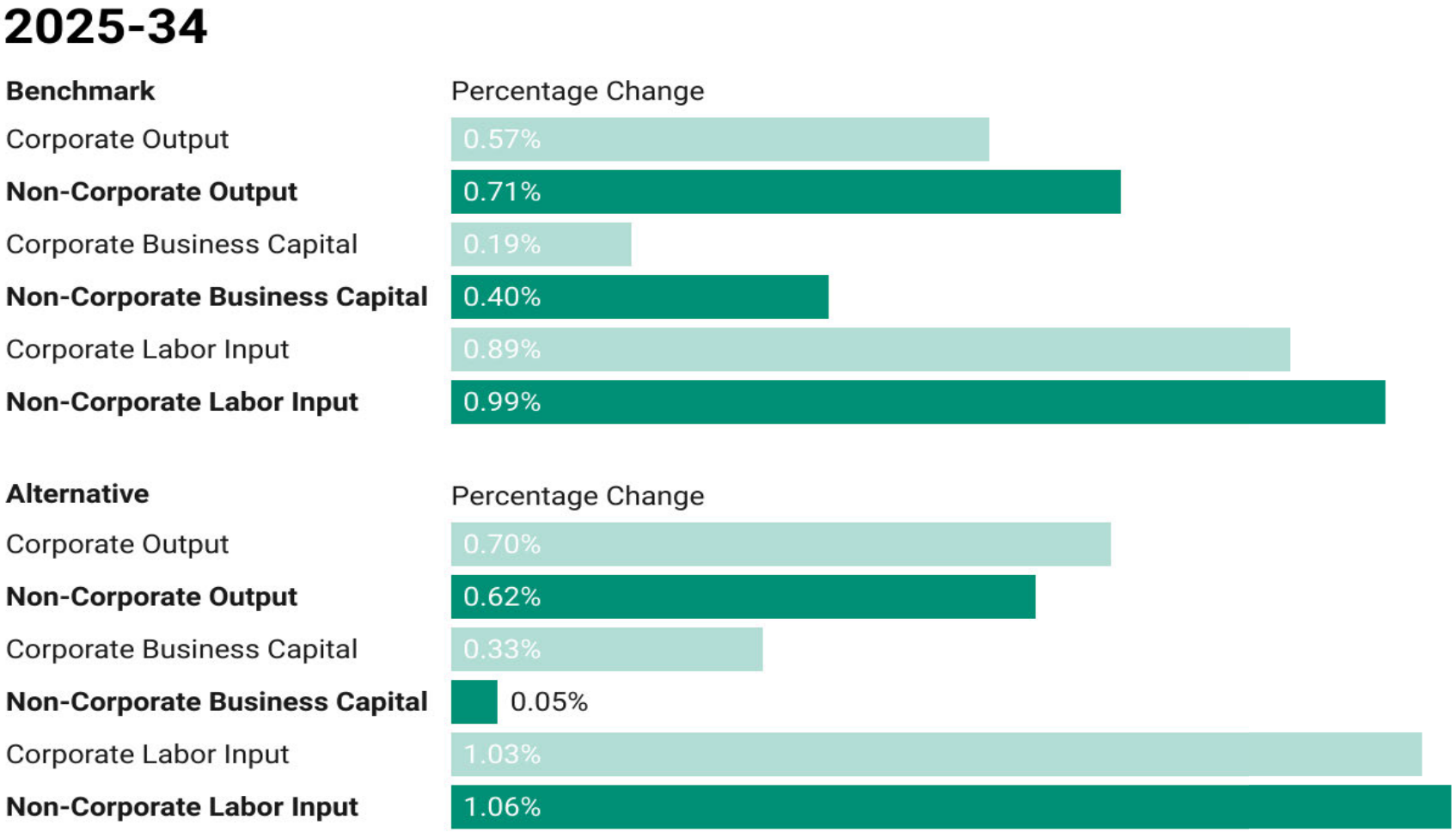

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