

RESEARCH REPORT

The composition of American economic growth

American growth must be reconciled across expenditure, industry, and input accounts. Dated official evidence and reproducible examples explain why household demand, investment, and productivity describe different aspects of the same production process.

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<https://aesenate.org/research/the-composition-of-american-economic-growth/>

Abstract

American output growth can be read from the purchases that absorb production, the industries that produce it, and the inputs used in production. These are complementary accounting views. Household demand, capital formation, and productivity should not be added as though they were independent contributions to the same total. Investment is both current expenditure and a source of future productive services; productivity describes output relative to inputs rather than another purchaser of output.

A dated comparison of BEA's second-quarter 2026 national accounts and BLS productivity estimates illustrates the distinction. The evidence shows why a stronger private-demand measure can coexist with a lower headline GDP rate, why industrial gross output differs from value added, and why a productivity release cannot be reconciled mechanically with a GDP release of another scope and vintage. A transparent numerical example then traces the same hypothetical production through expenditure, industry, and hours accounts. The resulting framework supports business assessment without treating an accounting identity as a causal explanation or a forecast.

Three views of a single production process

The expenditure account asks who purchases final goods and services. The production account asks which domestic industries create value added. The income account records the compensation, operating income, and other income generated in that process. Productivity adds a relationship between output and the inputs required to produce it. Each perspective answers a different question about the same economy.

This is consequential for interpreting growth. A household purchase can support domestic manufacturers, imported products, transport, and retail services. A manufacturer's investment can purchase imported

equipment and domestic installation while creating capacity used in later years. Improved organization can raise output from existing inputs, but the additional output must still be sold, added to inventory, or otherwise recorded within the accounts. The different views should reconcile conceptually without being conflated.

A business seeking to understand the durability of an expansion therefore needs a chain of evidence. It should identify the purchaser, the domestic production supported by that purchase, and the resources needed to supply it. A national growth rate establishes the aggregate change. It cannot identify which company benefits, how profits are distributed, or whether a current increase in spending can continue.

The counterfactual is equally important. An accounting decomposition records where a measured change appears. It does not establish what output would have been without a policy, a technology, or an investment. A statement that investment contributed to growth is narrower than a statement that a tax incentive caused the investment. Preserving that distinction allows the official accounts to inform a causal assessment without supplying evidence they were not designed to provide.

The second-quarter evidence and its vintages

BEA’s [September 30, 2026 third estimate](#) reports real GDP growth of 2.2% at an annual rate in the second quarter, following 2.5% in the first. Real final sales to private domestic purchasers increased by 4.6% in the second quarter. Private services-producing value added increased by 2.5% and private goods-producing value added by 2.3%. These measures belong to the release that incorporated the annual national accounts update.

BLS’s [September 3 productivity release](#) reports second-quarter nonfarm business productivity growth of 1.4%, output growth of 1.7%, and hours growth of 0.3%, all at seasonally adjusted annual rates. That release preceded BEA’s September 30 update. Its output measure also covers a narrower sector than GDP. The difference between 1.7% nonfarm business output growth and 2.2% GDP growth cannot therefore be assigned entirely to a sector effect or entirely to a statistical revision from these two observations alone.

Official observation	Rate	Coverage and release
Real GDP	2.2%	Whole domestic economy; BEA September 30
Real final sales to private domestic purchasers	4.6%	Consumer spending plus gross private fixed investment; same BEA release
Private services-producing real value added	2.5%	Industry group; same BEA release
Private goods-producing real value added	2.3%	Industry group; same BEA release
Nonfarm business real output	1.7%	BLS September 3 productivity framework
Nonfarm business hours	0.3%	Corresponding BLS labor input

Official observation	Rate	Coverage and release
Nonfarm business output per hour	1.4%	Ratio within the BLS framework

All entries are quarterly annualized rates. The table is a comparison of measurements, not a sum of growth contributions. It identifies the perimeter of the evidence before interpreting it. A complete numerical reconciliation would require aligned vintages, sector definitions, and underlying series. The rounded BLS rates also need not satisfy an exact ratio at the displayed decimal place.

The observation that private final sales grew faster than GDP is economically meaningful, but it does not identify the full reason without the detailed expenditure contributions. Inventories, net exports, and government activity separate the two measures. Their movements should be read from the official contribution tables, rather than estimated by subtracting the two growth rates, because the aggregates have different weights and levels.

Household demand and the resources supporting it

Household consumption is closely connected to income, saving, wealth, and access to credit. Its aggregate change can nevertheless conceal substantial differences among purchasers. A household dependent on wages faces different conditions from one receiving substantial interest or dividend income. Changes in the distribution of income can therefore affect the composition and durability of spending even when total disposable income follows the same path.

The flow of income and the stock of wealth should remain separate. A household can support expenditure by drawing down liquid assets, but that option is limited by its balance sheet and expectations. A gain in the market value of an illiquid asset does not provide the same immediate spending capacity as cash income. Borrowing can bridge the gap, subject to debt service and lending standards. An assessment of consumption should specify which mechanism is supporting the observed increase.

The saving rate is an aggregate residual between income and spending under the relevant accounts. A lower rate can support faster consumption for a period without establishing a permanent source of growth. Conversely, a high rate need not imply that every household has excess liquid savings. It can reflect the behavior of households with substantial income while others remain constrained. Distributional data and debt payments help interpret the aggregate.

Product composition creates another distinction. Services and durable goods have different adjustment schedules and financing exposure. A durable purchase can be postponed and later recovered; some services are consumed continuously and cannot be stored. A surge in one category can therefore reflect timing rather than a comparable increase in recurring demand. For producers, orders should be evaluated against the stock of goods already held by consumers and the service commitments in household budgets.

Government-financed services further complicate a simple association between household payments and consumption. National accounts can record services consumed by households even where another entity pays

for them. The relevant purchase, service volume, and financing arrangement need to be identified. A change in the payer does not automatically establish a change in the underlying quantity of services.

The practical question is whether the income and financing supporting expenditure can persist at a pace consistent with production. That judgment cannot be obtained by extrapolating one quarter. It needs employment, compensation, taxes, transfers, asset income, and credit evidence, with prices separated from volumes. The household contribution is a central part of growth, but its interpretation requires this broader resource account.

Capital formation is both a purchase and a capacity decision

BEA's private fixed investment methodology distinguishes structures, equipment, and intellectual property products and includes additions, improvements, and replacement of assets. Residential investment is also part of private fixed investment. Purchases of financial claims are not the same activity as acquiring produced fixed assets. These definitions establish the boundary of the expenditure measure.

The immediate demand effect occurs as assets are produced and installed. The later capacity effect depends on what those assets can do. A warehouse, a production line, and software provide different services and have different useful lives. Their value depends on utilization, complementary inputs, and the demand for the resulting output. Adding their purchase prices does not establish a uniform productive return.

Replacement is especially important. Gross investment can be substantial while the net capital stock grows slowly if existing assets depreciate or become obsolete. Conversely, a relatively small improvement can have a large operational value if it removes a binding bottleneck. The relationship between expenditure and productive services therefore depends on the existing asset base, rather than the new spending total alone.

Imported equipment illustrates the connection between demand and supply. Its purchase enters investment and imports, so the gross purchase is not all domestic GDP. Domestic installation and services can still contribute to current income. Once operating, the equipment can raise future domestic output. An immediate import subtraction should not be interpreted as a judgment that the equipment reduces national productive capacity.

The business decision also depends on the cost of waiting. A firm uncertain about demand can postpone an irreversible facility while continuing smaller investments. Another firm may accelerate installation to avoid a foreseeable shortage. These choices can move expenditure across quarters without changing the long-run project scale. A growth assessment should separate timing from a sustained change in capital accumulation.

Inventories and trade separate spending from domestic output

Inventories absorb production that has not yet reached a final purchaser. An intended stock buildup can prepare for higher sales; an unintended buildup can signal demand below expectations. The same positive inventory contribution can therefore carry different implications for subsequent production. Inventory investment is a change in stocks, and its contribution to growth depends on how that change itself evolves.

A firm can reduce its stock level while contributing more to GDP growth than in an earlier period if destocking becomes less pronounced. Conversely, stocks can rise while inventory investment contributes negatively if accumulation slows. This is a frequent source of confusion because a stock, its change, and the change in that flow describe three different quantities. The underlying units should be stated before the movement is interpreted.

Trade introduces another reconciliation. Exports represent purchases by nonresidents of domestic production, while imports remove foreign production included in domestic spending categories. The subtraction is an accounting adjustment to territorial production, not an assertion that imports are economically harmful. Imports can supply consumption, intermediate production, and investment; each relationship has different implications for current and future output.

A domestic expenditure expansion can consequently outpace GDP when part of the additional demand is supplied abroad. A strong export performance can support domestic suppliers even when household spending is modest. Changes in exchange rates, inventories, trade timing, and imported input use can alter these relationships. The headline GDP rate should be connected to those transactions rather than read as a direct measure of domestic purchasing strength.

For a business, the useful exposure is its position in this chain. An importer of equipment, an exporter of services, and a supplier to domestic consumers can face different conditions within the same quarter. The aggregate trade contribution does not rank their prospects. Product and customer evidence is needed to translate national accounting into commercial exposure.

A reproducible expenditure illustration

The following numbers are hypothetical. They describe a fixed-price economy over one unannualized period, with no chain-weighting complications. They are not estimates for the United States. The purpose is to reconcile purchases with domestic output and show why the growth of a subaggregate cannot be subtracted directly from GDP growth to recover another contribution.

Final expenditure, fixed-price units	Initial period	Following period	Change	Contribution to GDP growth
Household consumption	600	612	12	1.2 percentage points
Private fixed investment	200	210	10	1.0 percentage point
Government final purchases	200	202	2	0.2 percentage point
Exports	100	104	4	0.4 percentage point
Imports, subtracted	100	108	8	–0.8 percentage point
GDP	1,000	1,020	20	2.0% growth

The initial identity is $600 + 200 + 200 + 100 - 100 = 1,000$. The following identity is $612 + 210 + 202 + 104 - 108 = 1,020$. Each contribution is its signed change divided by initial GDP. The contributions sum to 2.0 percentage points. Private final domestic purchases rise from 800 to 822, or 2.75%, which differs from the 2.2 percentage-point combined contribution of consumption and investment to GDP growth.

That difference is entirely a denominator issue in this simple example. The subaggregate grows relative to its own initial value, while a contribution is expressed relative to initial GDP. Actual U.S. chain-type accounts require the published contribution methodology rather than this fixed-price shortcut. The illustration establishes the logic without claiming to reproduce the official calculation.

The example also shows why rising imports and rising output can coexist. Imports increase by eight units, yet domestic output increases by twenty because the other expenditure changes more than offset the subtraction. A policy judgment about trade cannot be inferred from the negative sign in this accounting contribution. The welfare and capacity effects require a different analysis.

Reconcile industries before adding productivity

The same hypothetical GDP increase can be produced by two industry groups. Suppose group A's real value added rises from 600 to 612 and group B's from 400 to 408. Total value added rises from 1,000 to 1,020. The two groups each grow by 2%, but their contributions to total growth differ because of their initial sizes. They are 1.2 and 0.8 percentage points, respectively, in this fixed-price example.

Now suppose hours rise from 60 to 60.6 in group A and from 40 to 40.8 in group B. Total hours increase from 100 to 101.4. Aggregate output per hour rises from 10 to approximately 10.0592, a gain of about 0.5917%. The exact identity is output growth factor $1.02 =$ hours growth factor 1.014 multiplied by productivity growth factor approximately 1.005917 .

Productivity is not another contribution to add to the expenditure total of 2%. It is a decomposition of that output increase into hours and output per hour. The industry and expenditure accounts describe where production occurs and where it goes; productivity describes the relationship between production and inputs. Adding the three perspectives would count the same growth more than once.

This example has no between-industry productivity-level difference initially. In a more general economy, shifts in the share of hours among industries can change aggregate productivity even if each industry's productivity is unchanged. An observed aggregate increase can therefore combine improvements within industries with composition effects. A sectoral decomposition should distinguish them before attributing all change to technology.

Capital services, labor composition, and the residual

BLS's [productivity concepts](#) distinguish output per hour from total factor productivity, which relates output to combined measured inputs. Capital services and labor composition enter the broader input framework. The [calculation methodology](#) makes clear that input contributions use an aggregation method and weights rather than a simple count of machines and workers.

The economic interpretation follows from this distinction. A worker can produce more per hour because more effective equipment is available, because skills or organization improve, because utilization changes, or because the production process becomes more efficient. Output per hour summarizes the result. It does not identify the contribution of each mechanism by itself.

Labor composition is particularly relevant when employment expands unevenly across occupations or worker groups. A change in measured skill composition can alter effective labor input even if total hours are unchanged. Compensation-based weights are a statistical convention, not a complete measurement of every worker's ability. The method should be considered when comparing an aggregate with a firm's own experience.

The total factor productivity residual also has limits. It can reflect innovation and management, but it can contain utilization effects, omitted inputs, and measurement error. Treating it as a direct technology series would place more interpretation on the estimate than the accounting supports. A claim about the effect of a particular innovation requires evidence connecting adoption and outcomes, not merely an increase in the residual.

Productivity connects output to costs and income

Output per hour matters for the resources available to pay labor and capital, but it does not determine their distribution automatically. Compensation, profits, taxes, and relative prices can adjust at different speeds. A productivity gain can support higher real income over time while its immediate benefits accrue unevenly across businesses and households. The income account is needed to identify that distribution.

Unit labor cost makes one relationship explicit. It compares compensation per hour with output per hour within a consistent sector definition. If hourly compensation rises by 3% and productivity by 2% in a hypothetical

period, unit labor cost rises by approximately 0.9804%, calculated as 1.03 divided by 1.02 minus one. Subtracting the two growth rates gives a useful approximation, but the ratio supplies the exact arithmetic under these assumptions.

The result is not an inflation forecast. Labor is only one input, firms can adjust margins, and prices reflect market structure and demand as well as costs. A decline in unit labor cost can coexist with rising output prices if other costs increase or margins widen. A rise can be absorbed for a period if competitive conditions prevent pass-through. The cost measure should therefore be connected to the industry's full operating account.

Real compensation introduces another price distinction. The prices consumers pay can move differently from the output prices received by employers. A productivity improvement in one industry does not guarantee an equal immediate increase in workers' consumption purchasing power. Energy, housing, imports, and other prices can change the relationship. A rigorous assessment specifies the deflator rather than treating every real-income measure as interchangeable.

For enterprises, this connection helps distinguish an expansion sustained by efficiency from one relying on unusually favorable prices or margins. Strong revenue can finance investment, but revenue growth caused mainly by prices provides different capacity evidence from higher quantities produced per hour. The distinction becomes especially important when a business is deciding whether current margins justify a long-lived asset.

Revisions change the information set

A statistical revision changes the description of an earlier period, not the decisions firms could have made with information available at that time. Evaluating a business or policy forecast therefore requires the contemporaneous vintage as well as the latest estimate. Otherwise, a later measurement improvement can be mistaken for an error that should have been obvious to decision-makers.

The September releases used here illustrate that problem directly. Their different dates are part of the evidence, not a footnote to remove for convenience. For a new assessment, aligned updated series would improve comparability. For an assessment of what was knowable in early September, replacing the BLS information set with later national-account revisions would answer another question.

What would support a durable expansion?

A durable expansion would connect demand to income and productive capacity. Household purchases supported by sustainable income differ from a temporary drawdown of resources. Investment that adds usable capital differs from expenditure that leaves an idle or poorly connected asset. Productivity improvements that persist across demand conditions differ from a temporary rise caused by reduced hours or a shift in industry composition.

These distinctions favor a monitoring framework rather than a single signal. Consumption should be read with income and financing. Investment should be read with asset composition, replacement, and utilization. Industry

value added should be read with orders and intermediate inputs. Productivity should be read with hours, capital services, and the statistical perimeter. The indicators need not move together in the short run.

The framework also changes the interpretation of weaker headline growth. A temporary negative inventory or trade contribution can coexist with expanding private demand. Conversely, a favorable headline can accompany weak final demand if inventories or import timing dominate. Neither case establishes the future path. The appropriate conclusion identifies the component responsible and the conditions under which it might reverse or persist.

For policy, the central distinction is between stabilizing current expenditure and raising productive capacity. A measure can affect both, but through different mechanisms and schedules. Public support that advances investment may increase current demand before the asset operates. A skills or organizational improvement may raise capacity without appearing as a large fixed-investment purchase. Evaluation should follow the intended channel and its evidence.

Imported capital and the domestic income connection

An investment increase can support future American productive capacity even when much of the equipment is imported. In the current expenditure account, the purchase enters investment and the imported content is offset through imports. Domestic installation, distribution, and associated services can still contribute to current production. In later periods, the asset can provide services within the United States. The immediate expenditure contribution and the subsequent productive service answer different questions, and neither should be omitted because the other is analytically more convenient.

A similar distinction applies to inventories. An imported item placed in inventory can raise inventory investment while its import value is deducted; subsequent domestic distribution can create additional value. When the item is later sold, the withdrawal from inventory prevents the same production from being counted again. This sequence helps explain why stronger final purchases and weaker current production can coexist. It also shows why the sign of an inventory contribution should not automatically be interpreted as evidence of stronger or weaker final demand.

For an assessment of durable growth, the capital asset's service should eventually be connected to output or resilience. Useful evidence would identify utilization, production constraints removed, and the complementary labor or organizational changes required. A larger nominal expenditure total can result partly from higher prices, while a real expenditure increase can still precede productive use. Following the asset from purchase to operation therefore adds information that the expenditure release alone cannot supply.

Conclusion and evidence boundary

Household demand, business capital formation, and productivity explain different aspects of American growth. The expenditure account identifies final uses, the industry account identifies domestic value creation, and productivity relates output to inputs. Their combined interpretation is stronger when the same activity is followed through the accounts and the limits of each measure are preserved.

The official second-quarter 2026 observations in this report retain their publication dates and definitions. They are not forced into a common numerical decomposition because their vintages and sector coverage differ. The fixed-price example is fully hypothetical and reproducible. It supplies accounting clarity rather than an independent estimate of U.S. contributions, a policy multiplier, or a forecast.

For a narrower reading of household and investment demand, see [Reading the structure of US domestic demand](#). The distinction between chained-dollar amounts and additive components is examined in [When chained-dollar components do not add to GDP](#).

Source addresses

The links below retain the source addresses cited in the analysis. References should be read within their stated periods and scope.

<https://www.bea.gov/news/2026/gdp-third-estimate-industries-corporate-profits-state-gdp-and-state-personal-income-2nd>

https://www.bls.gov/news.release/archives/prod2_09032026.htm

<https://www.bea.gov/resources/methodologies/nipa-handbook/pdf/chapter-06.pdf>

<https://www.bls.gov/opub/hom/opt/concepts.htm>

<https://www.bls.gov/opub/hom/opt/calculation.htm>