Contribution of the Payments Industry to the US Economy in 2024

Prepared for the Electronic Transactions Association

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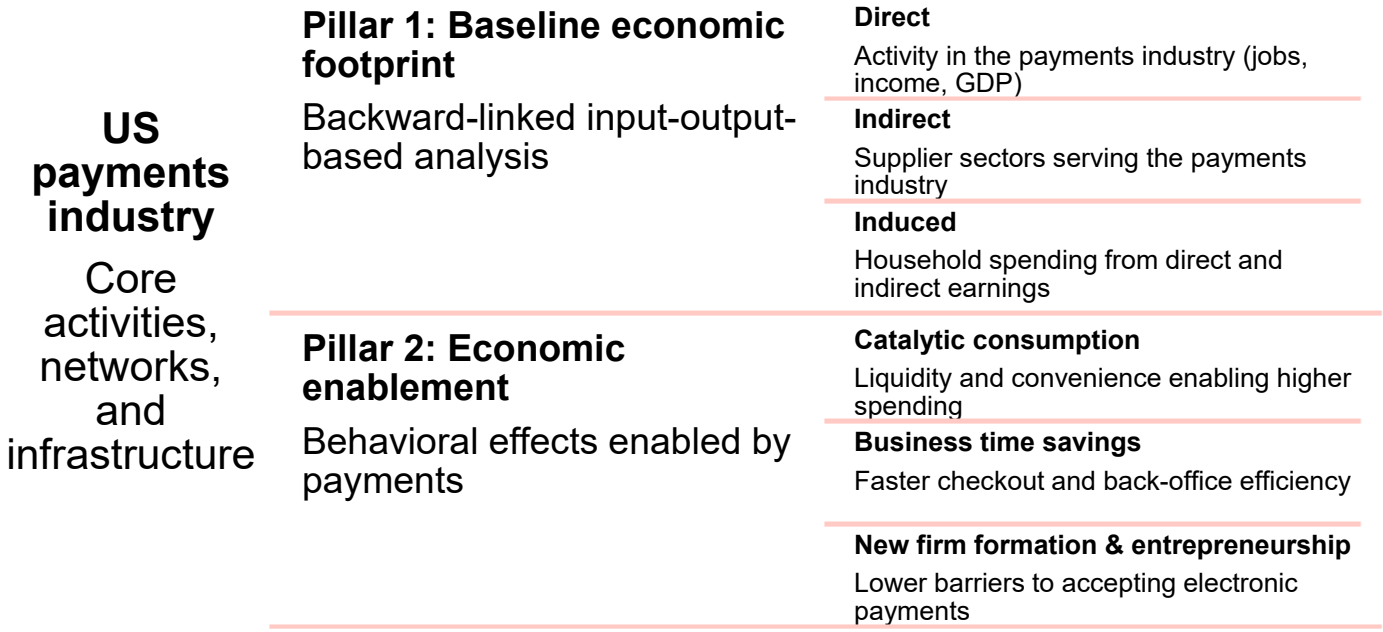
Executive summary

The **Electronic Transactions Association ("ETA")** engaged **PwC US Tax LLP ("PwC")** to quantify the economic contribution of the US payments industry in 2024 and to assess a set of catalytic effects enabled by modern electronic payments. The resulting analysis provides a comprehensive picture of the industry's role in supporting jobs, income, and gross domestic product ("GDP") across the United States, as well as the additional economic activity facilitated by digital payment tools (see **Figure ES-1**, below).

Figure ES-1. Analytical structure of the study: two conceptually distinct pillars



Economic footprint

The modern payments ecosystem spans across card networks, merchant acquiring, digital wallets, transaction processing, payment-enabling technologies, and supporting financial-services functions. In 2024, the US payments industry supported 2.0 million full- and part-time jobs, including direct employment within the industry and the indirect and induced effects that arise through supplier activity and household spending. This represents 0.9 percent of total US employment. The industry's total contribution to labor income was $210 billion, and its total contribution to GDP was $354 billion, accounting for 1.2 percent of national GDP. For every direct job in the payments industry, an additional 2.6 jobs were supported elsewhere in the economy (see **Table ES-1**).

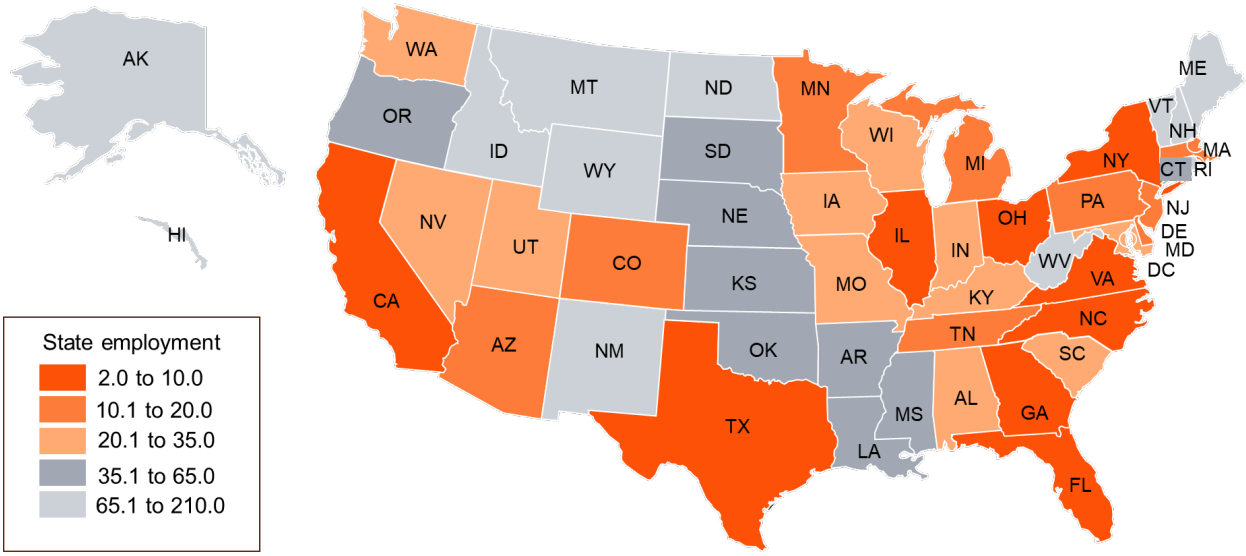
Table ES-1. The contribution of the payments industry to the US economy, 2024
[Dollar amounts in billions]

Item	Direct contribution	Indirect contribution	Induced contribution	Total contribution	Total / direct ("multiplier")
Employment (jobs)[1]	556,600	624,020	821,560	2,002,180	3.6
Labor income[2]	$92	$57	$61	$210	2.3
GDP	$148	$95	$111	$354	2.4

Source: PwC calculations using the IMPLAN modeling system. Details may not add up to totals due to rounding.
(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.
(2) Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The payments industry's footprint spans all 50 states and the District of Columbia. The largest direct employment effects occur in Texas, California, New York, Florida, Ohio, Illinois, Virginia, and North Carolina, each with more than 20,000 direct jobs. The importance of the payments industry is also evident on a relative basis: states such as Delaware, South Dakota, Arizona, Virginia, and Utah show particularly high shares of statewide employment, labor income, and GDP attributable to the payments industry once supply-chain and consumer-spending effects are included.

Figure ES-2. Employment directly and indirectly supported by the payments industry, 2024 [Employment figures in thousands of jobs]



Source: PwC calculations.

Economic enablement

Separately from its measured economic footprint, the payments industry enables a broad set of catalytic effects by reducing transaction friction, increasing liquidity for consumers, lowering operating costs for businesses, and expanding opportunities for small-business formation and growth. These enablement effects operate through a different set of mechanisms than the industry's direct, indirect, and induced economic contributions and are therefore reported separately.

The catalytic effects enabled by digital payments reflect three principal channels:

- **Increased household spending ("catalytic consumption")**: Expanded liquidity and lower transaction friction enabled an estimated $72–$287 billion in incremental personal consumption in 2024, supporting 1.7 million jobs and $199 billion in GDP at the midpoint.[1]
- **Business cost savings and labor redeployment**: Faster digital checkout and back-office automation saved an estimated 806 million labor hours in 2024, equivalent to roughly 365,000 full-time employee equivalents. Under a redeployment scenario, these efficiencies supported 997,000 jobs, $67.6 billion in labor income, and $142.4 billion in GDP.
- **New firm formation and entrepreneurial growth**: Expanded access to electronic payment acceptance generated an estimated $33.9 billion in incremental sales for new merchants in retail, accommodation & food services, and other services. These additional sales supported 301,200 jobs, $16.4 billion in labor income, and $28.2 billion in GDP.

How to interpret footprint vs. enablement effects

Economic footprint captures production-based effects. It shows the GDP, jobs, and labor income produced by the payments industry and its US supply chain.

Economic enablement refers to behavioral or efficiency effects representing activity that occurs *above what would exist in a higher-friction environment*. These effects represent economic activity that occurs in other industries enabled by the payments industry.

The two measures are **reported separately** because one reflects a direct production measure, while the other captures an incremental uplift. Together, these two pillars illustrate the payments industry's overall **economic significance**, both as a direct generator of economic activity and as a catalyst that enables additional output across the broader economy.

These results highlight the payments industry's role not only as an operational hub of US commerce but also as an economic enabler that expands consumption, strengthens business productivity, and lowers barriers to entrepreneurship.

[1] For catalytic consumption, which relies on a broader set of behavioral parameters in the household-finance literature, we present a range along with a midpoint estimate for interpretability.

I. Introduction

The payments industry is a component of the US economy, facilitating trillions of dollars in transactions annually across consumer, business, and government activities. Through cards, Automated Clearing House ("ACH") transfers, wires, and emerging real-time payment systems, the industry enables funds to move securely and efficiently. These networks and supporting technologies, collectively referred to as the nation's payment rails, form the infrastructure and systems that underpin everyday commerce, financial operations, and interactions across a wide range of economic sectors.

The **Electronic Transactions Association ("ETA")** engaged **PwC US Tax LLP ("PwC")** to quantify the industry's economic footprint in 2024. This report presents PwC's assessment of the industry's economic contribution, focusing on its effects across multiple dimensions—including employment, labor income, and value added—at the national and state level.[2] The analysis relies on standard backward-linked channels used in economic contribution studies.

Separately from its measurable economic footprint, the payments industry enables broader economic activity by reducing transaction friction, expanding liquidity for consumers, improving business productivity, and lowering barriers to entrepreneurship. These economic enablement effects are conceptually distinct from the backward-linked economic contribution measured through the input–output model and are analyzed and presented separately in Section IV.

The remainder of this report is structured as follows:

- **Section II** defines the scope of the payments industry used in the analysis.
- **Section III** details PwC's economic contribution estimates for 2024 at the national and state level.
- **Section IV** presents quantitative analysis regarding the effects of greater economic activity enabled by the payments industry through catalytic consumption, cost savings, and business formation and entrepreneurship.
- The **Appendices** contain direct contribution by subsector, detailed results by sector and state, an overview of the data sources and methodology, and a complete listing of the NAPCS product codes, NAICS sectors, and payment-relevant shares used to define the payments industry.

[2] Value added refers to the additional value created at a particular stage of production. It is a measure of the overall importance of an industry and represents the industry's share of GDP. Value added consists of employee compensation, proprietors' income, income to capital owners from property, and indirect business taxes (including excise taxes, property taxes, fees, licenses, and sales taxes paid by businesses).

II. Industry definition

The payments industry encompasses the network of establishments whose primary or partial activities enable the transfer of money between individuals, businesses, and governments across the United States. This includes establishments that support electronic payments—such as card transactions, Automated Clearing House ("ACH") transfers, and real-time payments—as well as those that facilitate more traditional payment mechanisms, including check processing, document payment services, and the manufacturing of payment devices used in cash and paper-based transactions. Together, these establishments form the infrastructure that supports electronic and traditional payment instruments.

One challenge in defining the payments industry is that there is no single federal statistical definition of the industry. Many companies that operate in the payments industry are involved in tangential industries, making it challenging to determine the direct economic footprint. To measure this industry in a way that is grounded in federal statistical systems and consistent across data sources, PwC uses a dual-classification approach based on:

- **The North American Industry Classification System ("NAICS")**, which identifies the establishments engaged in activities related to payment processing, issuing and acquiring, money transmission, point-of-sale financing, transaction data processing, and payment hardware manufacturing; and

- **The North American Product Classification System ("NAPCS")**, which isolates the products and services within those industries by product code, allowing us to define products that correspond specifically to payments activity.

This integrated NAICS–NAPCS methodology ensures that the definition captures core payments activity, while also including only the payment-relevant share of adjacent industries. This approach enables a more precise and nuanced estimation of the payments industry's direct economic contribution by aligning industry-level sectors with the product-level activities that reflect actual payments functions.

A. Setting the conceptual scope

The first step to establishing the industry definition was defining the conceptual scope for the payments industry. After research and collaboration with ETA industry experts, the US payments industry is broadly defined to include establishments engaged in:

- Transaction processing and clearing, including ACH operators, Electronic Funds Transfer ("EFT") processors, and check/document payment services,

- Card network operations and switching,
- Merchant acquiring and settlement services,
- Payment card issuing, limited to the activities related to enabling and authorizing transactions,
- Digital wallets, mobile payment services, and fintech payment platforms,
- Money transmission and remittance services,
- Manufacturing of payment-enabling devices, including ATMs and point-of-sale terminals, and
- Payment-enabling software, data processing, hosting, and security services.

These establishments collectively support both the digital rails of modern payments and the infrastructure that enables traditional cash or paper-based payment instruments to function.

Customer-facing transaction roles (e.g., cashiers, waitstaff) are not included because they are users of the payment infrastructure rather than producers of payment services.

B. Operationalizing the definition

Next, we aimed to translate this conceptual scope into a consistent, data-driven boundary utilizing publicly available data.

1. **NAPCS product codes**: We reviewed product codes and identified ten payment-relevant codes which were finalized in collaboration with ETA industry experts to pinpoint the specific payment services and device categories produced by establishments.
2. **NAICS sectors:** We used NAICS codes to identify the industries where payment-related activities occur across the US and state economy.

Payment-relevant shares were estimated for adjacent NAICS sectors, calculated as the sum of identified NAPCS product code sales as a share of total sales by NAICS industry. Our goal was to ensure that only the portion of activity directly related to payments was included, leveraging adjustments and recalibrations where needed.

A complete listing of the NAICS sectors, NAPCS product codes, and associated payment-relevant shares applied in this study is provided in **Appendix D** to ensure methodological transparency.

C. Establishing the final industry boundary

The establishment-based, activity-grounded definition ensures that the payments industry boundary is empirically supported, consistent with federal data frameworks, and reflective of both electronic and traditional payments infrastructure (see **Figure II-1**).

Figure II-1. Defining the US payments industry

The US payments industry

Core payments sectors

- Payment processors (ACH, EFT, RTP)
- Card networks (credit, debit)
- Merchant acquirers & processors
- Payment gateways & switching
- Digital wallet payment services
- ATM & PIN-debit networks
- Traveler's checks
- Document payment services
- ATM & funds-transfer device manufacturing

Payments-adjacent financial services (partial share)

- Nonbank money transmitters (domestic + cross-border)
- Installment & point-of-sale financing (BNPL, card-linked credit)
- Consumer lending & sales financing (payment-relevant share)
- Credit unions & savings institutions (payment-relevant share)
- Commercial banking (payment-relevant functions)
- Trust, fiduciary & custody services (payment-relevant functions)
- Other credit-intermediation services supporting payments

Technology and data enablers (partial share)

- POS terminal & reader hardware
- POS components, peripherals & accessories
- Payments-related software publishing
- Data processing & cloud hosting for payment rails
- Token vault hosting & encryption services
- Systems integration & IT consulting for payments
- Fraud scoring, cybersecurity & identity verification
- Security, compliance & certification functions

III. Contribution of the payments industry to the US economy

This section outlines the estimated economic contribution of the US payments industry at both the national and state levels. The contribution encompasses three components: the **direct effect**, which includes jobs, labor income, and value added within the payments industry itself; the **indirect effect**, representing the economic activity generated across the industry's supply chain; and the **induced effect**, reflecting the economic effect resulting from household spending of labor and proprietor income earned directly or indirectly through the payments industry's activities.

For this analysis, we have quantified the indirect and induced effects stemming from the payments industry's operational and capital expenditures. **Operating expenditures** refer to the day-to-day costs of noncapital input such as wages and salaries, materials, rent, and utilities. In contrast, **capital expenditures** are investments in long-lived physical assets or services that support production over multiple years.

A. National results

The economic activity of the payments industry is measured using three separate metrics: employment, labor income, and value added, as defined below.

- **Employment**: The number of payroll and self-employed jobs (including part-time jobs), averaged over the year.[3]
- **Labor income**: The wages and salaries and benefits paid to employees and proprietors' income for the self-employed.
- **Value added**: The total output of each sector less the associated value of intermediate inputs. The sum of the value added across all sectors in the economy is GDP.[4] An industry's value added represents its contribution to GDP.

Table III-1, below, shows the direct, indirect, and induced contributions of the payments industry to the US economy in terms of employment, labor income, and GDP in 2024.

[3] Self-employed jobs were only estimated for NAICS industries in which payments-related self-employment was deemed reasonable.
[4] Value added differs from gross output (or sales) because it excludes the value of intermediate goods that are embedded in the final sales of each industry.

Table III-1. – The contribution of the payments industry to the US economy, 2024
[Dollar amounts in billions]

Item	Direct contribution	Indirect contribution	Induced contribution	Total contribution	Total / direct ("multiplier")
Employment (jobs)[1]	556,600	624,020	821,560	2,002,180	3.6
Labor income[2]	$92	$57	$61	$210	2.3
GDP	$148	$95	$111	$354	2.4

Source: PwC calculations using the IMPLAN modeling system. Details may not add up to totals due to rounding.
(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.
(2) Labor income is defined as wages and salaries and benefits as well as proprietors' income.

- **Employment**: The US payments industry directly provided 556,600 full- and part-time jobs in 2024. Including the direct, indirect, and induced effects from the industry's operational spending and capital investment, the industry's total contributions in 2024 were over 2.0 million jobs. Each direct job in the payments industry supports another 2.6 jobs elsewhere in the US economy, for a multiplier of 3.6.

- **Labor income**: The average direct labor income per job in the payments industry was $165,000 in 2024, more than double the US average of $78,100. Including the direct, indirect, and induced effects, the payments industry supported $210 billion in labor income.

- **Value added**: The US payments industry directly contributed $148 billion to US GDP in 2024. Combining both operational and capital investment effects, the industry's total GDP contribution at the national level was $354 billion, representing 1.2 percent of the national total in 2024.

The indirect and induced economic activity is distributed across a wide set of US industries, reflecting both the industry's supply-chain composition and the broader structure of the national economy. Nearly half of the *indirect* employment effects (48.0 percent) occur in the services sector, as shown in **Table III-2a**, reflecting the payments industry's use of service sector inputs such as software development, cloud hosting, cybersecurity, and professional and technical services. Another 23.1 percent of indirect employment arises in finance, insurance, real estate, rental, and leasing, highlighting the industry's close integration with the wider financial and business-services ecosystem. Induced effects, which stem from household spending, are even more services-oriented: 55.9 percent of *induced* employment occurs in services, and wholesale and retail trade also plays a significant role, accounting for 14.9 percent of induced jobs.

This pattern is consistent with the United States' identity as a service-heavy economy, where both labor intensity and household spending are concentrated in service-producing industries. The distribution of labor

income shown in **Table III-2b** is consistent with this pattern. Services receive the largest share of indirect labor income (43.9 percent) and induced labor income (53.4 percent), while the remainder is spread across information, finance, wholesale and retail trade, and other sectors.

In contrast, the GDP (value added) effects displayed in **Table III-2c** are more evenly distributed. Services remain the largest single sector, but account for only one-third to two-fifths of indirect and induced value added (33.8 percent and 37.6 percent, respectively), rather than a majority as seen in employment and labor income. Significant GDP contributions also arise in finance, insurance, real estate, rental, and leasing (27.0 percent indirect; 26.0 percent induced), as well as in wholesale and retail trade, manufacturing, information, and transportation and warehousing. This distribution reflects the structure of GDP, which includes return to capital, productivity differences, and industry-specific production technologies, not just labor earnings.

Taken together, these results show that the payments industry's economic footprint is broad. Its supply-chain spending stimulates demand in technologically intensive service industries and finance-related activities, while its labor-driven induced effects support everyday consumer-facing sectors. At the same time, the distribution of value added across the full set of indirect and induced channels shows that the payments ecosystem contributes to value added in sectors with varying productivity levels throughout the US economy.

Table III-2a. – Distribution of indirect and induced activity generated by the US payments industry, 2024: Employment

Industry supported	Indirect	Induced
Total (jobs)	**624,020**	**821,560**
Agriculture, forestry, and fishing	0.2%	1.7%
Mining	0.2%	0.2%
Utilities	0.2%	0.3%
Construction	2.8%	0.8%
Manufacturing	3.6%	3.8%
Wholesale and retail trade	5.3%	14.9%
Transportation and warehousing	7.1%	5.3%
Information	8.9%	2.1%
Finance, insurance, real estate, rental, and leasing	23.1%	14.0%
Services	48.0%	55.9%
Other	0.7%	1.0%
Total	**100.0%**	**100.0%**

Source: PwC calculations using the IMPLAN modeling system and data from US Bureau of Economic Analysis, US Bureau of Labor Statistics, and US Census Bureau.

Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

Table III-2b. – Distribution of indirect and induced activity generated by the US payments industry, 2024: Labor income

Industry supported	Indirect	Induced
Total ($ billions)	**$57**	**$61**
Agriculture, forestry, and fishing	0.1%	1.2%
Mining	0.4%	0.6%
Utilities	0.5%	1.1%
Construction	2.4%	0.9%
Manufacturing	4.2%	5.3%
Wholesale and retail trade	6.5%	13.2%
Transportation and warehousing	3.7%	4.8%
Information	16.9%	5.0%
Finance, insurance, real estate, rental, and leasing	20.5%	12.9%
Services	43.9%	53.4%
Other	0.8%	1.7%
Total	**100.0%**	**100.0%**

Source: PwC calculations using the IMPLAN modeling system and data from US Bureau of Economic Analysis, US Bureau of Labor Statistics, and US Census Bureau.

Labor income is defined as wages and salaries and benefits as well as proprietors' income.

Table III-2c. – Distribution of indirect and induced activity generated by the US payments industry, 2024: GDP

Industry supported	Indirect	Induced
Total ($ billions)	**$95**	**$111**
Agriculture, forestry, and fishing	0.1%	1.1%
Mining	0.6%	0.7%
Utilities	1.0%	1.9%
Construction	2.0%	0.7%
Manufacturing	4.8%	6.3%
Wholesale and retail trade	7.2%	14.8%
Transportation and warehousing	3.3%	3.7%
Information	19.7%	6.1%
Finance, insurance, real estate, rental, and leasing	27.0%	26.0%
Services	33.8%	37.6%
Other	0.6%	1.1%
Total	**100.0%**	**100.0%**

Source: PwC calculations using the IMPLAN modeling system and data from US Bureau of Economic Analysis, US Bureau of Labor Statistics, and US Census Bureau.

B. State results

The economic contribution of the payments industry at the state level reflects not only the scale of direct payments activity occurring within each state, but also the ways in which payments-related operations connect to broader regional economies. These state-level differences are shaped by a variety of factors, including each state's population, industry mix, occupational composition, financial-services presence, technology base, wage structure, degree of integration with other state and national supply chains, and the presence of payments-intensive firms, data centers, and transaction-processing hubs. As a result, the payments industry's footprint varies across regions, with some states hosting large employment bases and others specializing in high-value-added financial and technology functions.

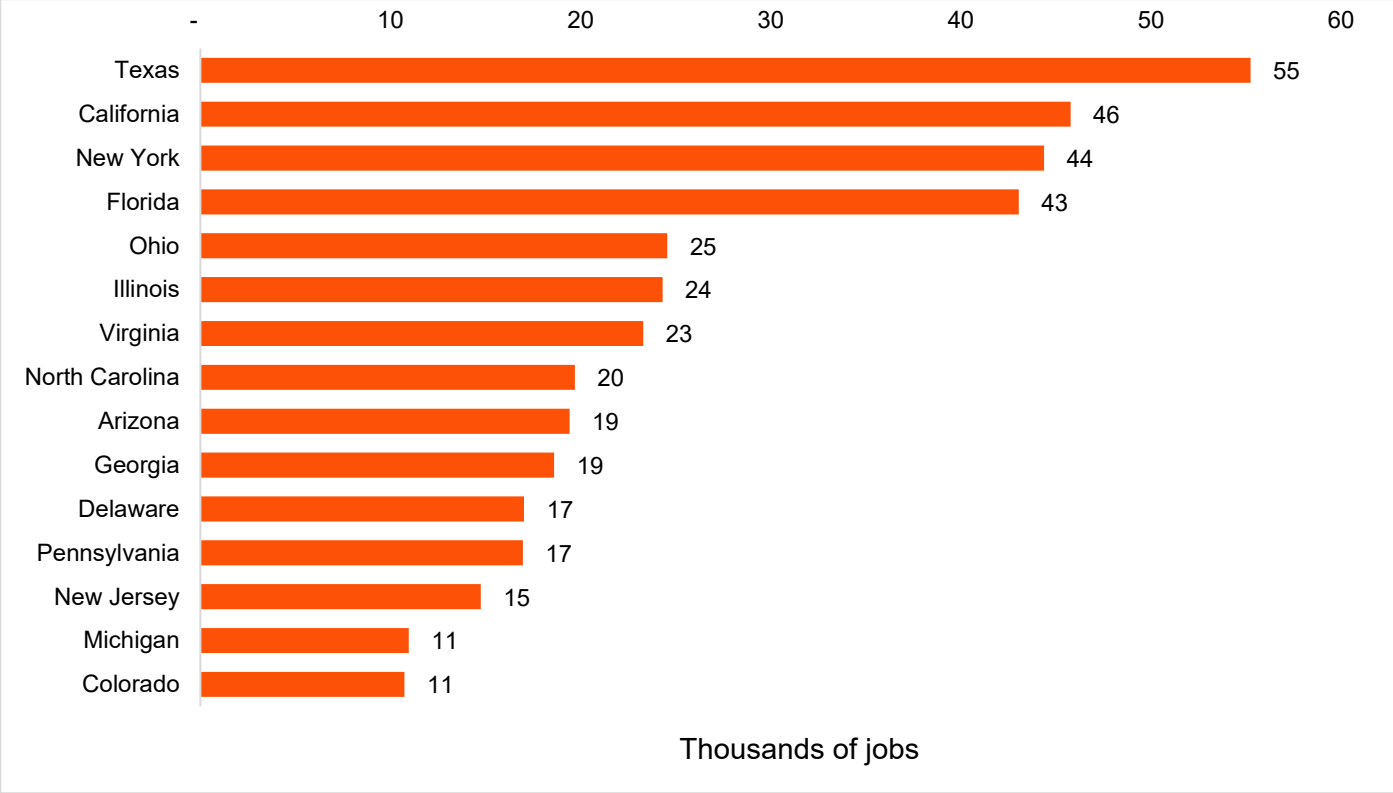
Figures III-1 through **III-3** illustrate these patterns by ranking states by their direct contributions in employment, labor income, and GDP. As shown in **Figure III-1**, Texas leads the nation in direct employment, with more than 55,000 jobs attributable to the payments industry. Texas's position is associated with its large and diverse economy, extensive financial-services presence, and concentration of payments processors and technology hubs. Other large states, including California, New York, Florida, Ohio, Illinois, Virginia, and North Carolina—also have sizable direct employment, consistent with their established financial centers, high-tech ecosystems, and broad commercial activity. Smaller states such as Delaware also rank among the top 15 in direct jobs, indicating the presence of niche financial services clusters and specialized payments-related activity.

Figure III-2, which ranks states by direct labor income, reveals an important nuance: although Texas has the largest number of direct jobs, New York and California surpass Texas in total payments-related labor income. This pattern corresponds to differences in occupational mix and wage levels across states. California and New York host substantial concentrations of roles associated with higher wages and specialized functions, including financial analytics, cybersecurity, network operations, risk management, and advanced technology development—leading to higher total labor income even with smaller direct job counts. Other states such as Illinois, Virginia, North Carolina, and Georgia also rank highly in labor income, demonstrating the presence of well-compensated payments-related positions in major metropolitan and financial hubs.

Figure III-3, which presents states by direct GDP, shows a similar pattern. Here again, New York and California outpace Texas despite having fewer direct jobs, due to the higher value added generated per worker in those states. This includes specialized activities such as card-network operations, transaction security, data processing, digital payments innovation, and other capital- and knowledge-intensive functions. States such as Delaware, Massachusetts, Utah, and New Jersey also appear among the leaders in direct value added, reflecting their concentrations of specialized payments activities. Taken together,

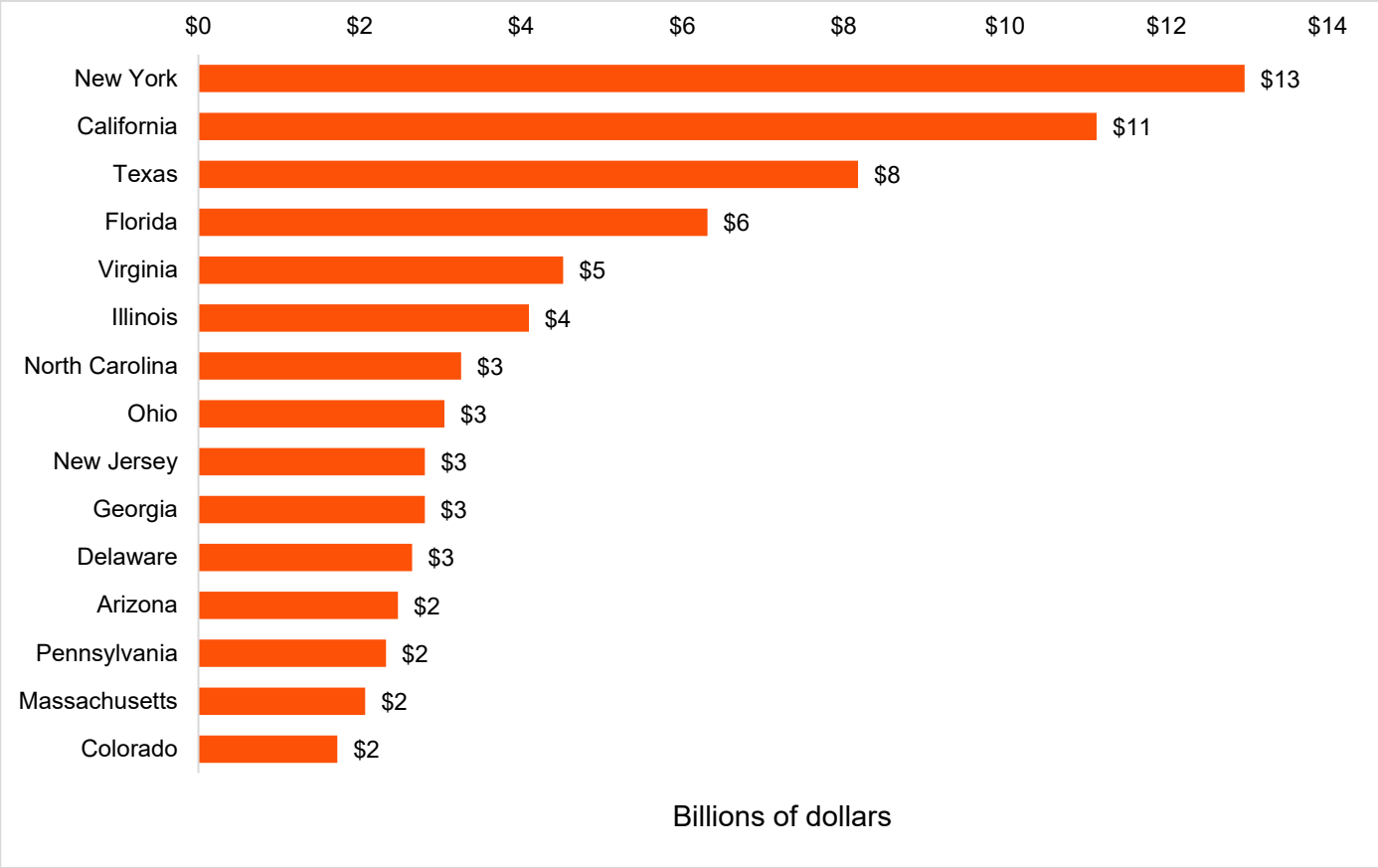
Figures III-1 through **III-3** show that the payments industry's direct footprint combines both large employment centers like Texas and high-productivity financial and technology hubs such as New York and California, each playing distinct but complementary roles in supporting the industry's national economic contribution.

Figure III-1. The payments industry's direct contribution: top 15 states by direct employment, 2024



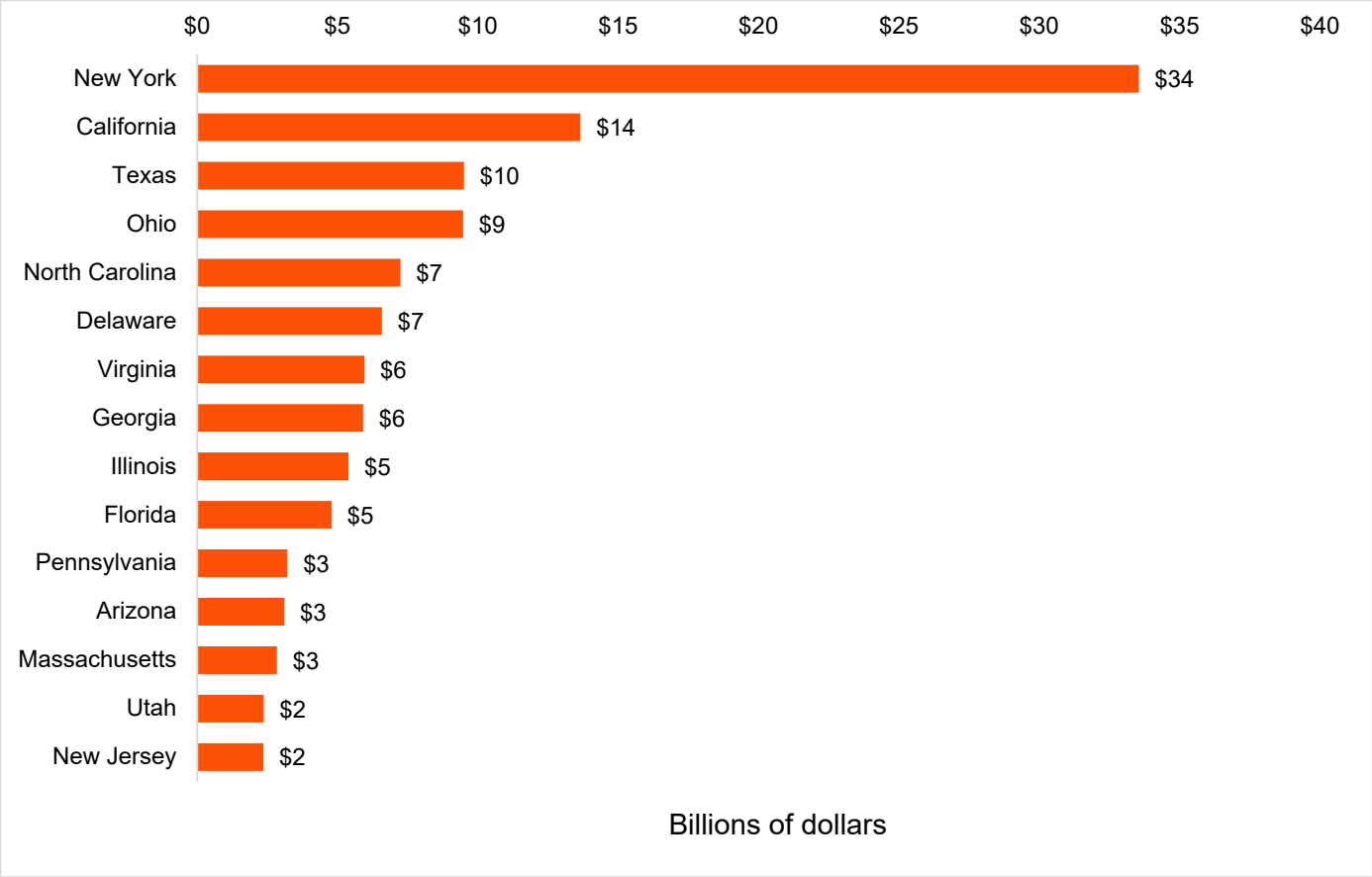
Source: PwC calculations based on the IMPLAN model. See **Appendix B** for underlying figures.

Figure III-2. The payments industry's direct contribution: top 15 states by direct labor income, 2024



Source: PwC calculations based on the IMPLAN model. See **Appendix B** for underlying figures.

Figure III-3. The payments industry's direct contribution: top 15 states by direct GDP, 2024



Source: PwC calculations based on the IMPLAN model. See **Appendix B** for underlying figures.

While the direct results highlight where payments-industry activity is physically located, they represent only part of the industry's overall footprint. Payments firms rely on extensive supplier networks and support significant household spending, which means the economic contribution extends beyond the locations of direct jobs and output. To capture these modeled linkages, **Figures III-4** through **III-6** present the total contributions—including direct, indirect, and induced effects—showing how the payments industry's influence spreads through each state's economy once supply-chain purchases and wage-driven spending are taken into account.

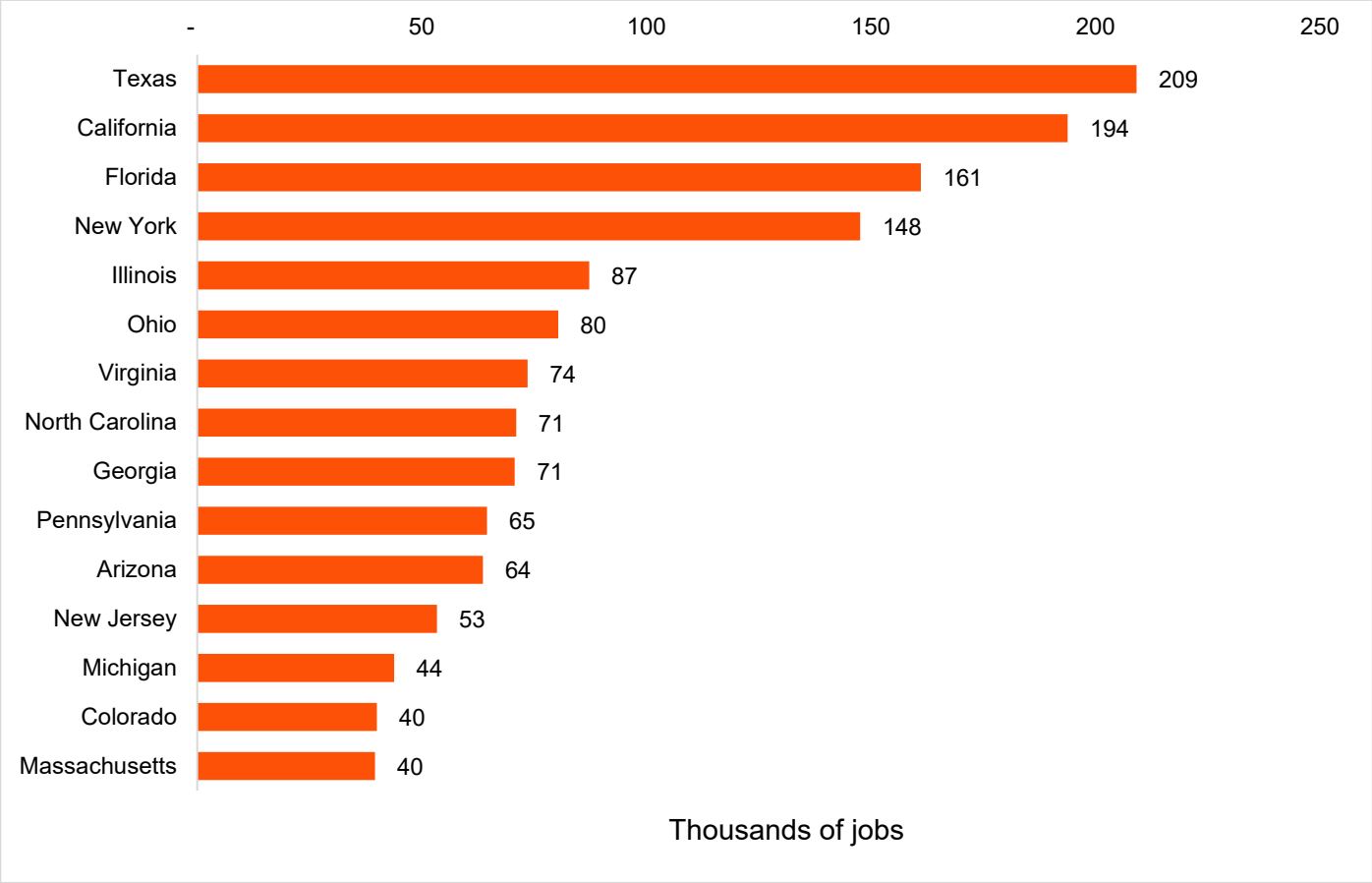
As shown in **Figure III-4**, California and Texas remain the two largest contributors in terms of total employment, but the rankings shift somewhat relative to the direct-only results. States such as Florida, New York, Illinois, Virginia, North Carolina, and Georgia move up prominently once spillover effects are included, indicating that payments-related activity in these states generates supply-chain purchases and household spending that support jobs locally. In some states—such as Colorado, Michigan, and Massachusetts, the payments industry's total employment contribution is two to three times larger than its

direct footprint, reflecting both regional supplier networks and the concentration of higher-income payments jobs that drive additional induced demand.

Figure III-5 highlights similar patterns for total labor income, with California, New York, and Texas leading by a considerable margin. These states combine sizeable payments-industry employment with higher average wages, causing the induced labor-income effects to scale strongly. Other states such as Illinois, Virginia, Georgia, and Pennsylvania also rank high in total labor income contribution, reflecting their mix of high-productivity financial and technology occupations linked to the payments ecosystem. In several states, including New Jersey, Colorado, and Massachusetts, the total labor income contribution notably outpaces their direct footprint, underscoring the role of higher-wage payments jobs in contributing to broader income-driven spending throughout the state economy.

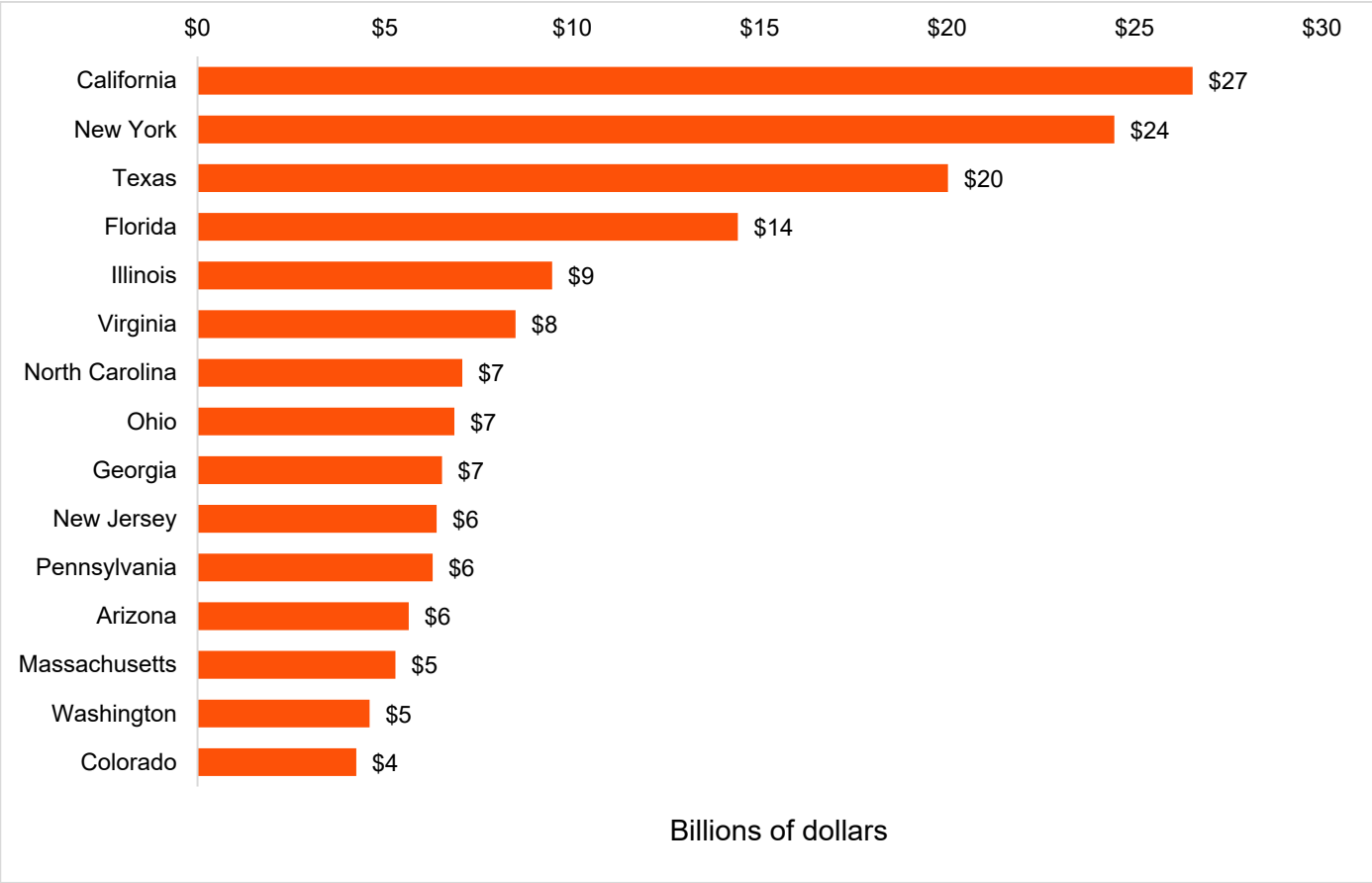
A similar dynamic is visible in **Figure III-6**, which presents total GDP contribution. California, Texas, New York, and Florida continue to anchor the top of the rankings, but other states—such as Illinois, Virginia, Georgia, and Pennsylvania—also generate very large GDP contributions once indirect and induced effects are included. In states with specialized financial-services activity or technology-intensive payments operations, the value-added multipliers tend to be larger, resulting in a broader diffusion of GDP contributions into sectors such as finance, information services, real estate, and business services. The significant total value-added contributions in states such as Delaware, New Jersey, and Massachusetts illustrate how smaller employment bases can still yield high total GDP contributions when payments activities are concentrated in advanced, high-output segments.

Figure III-4. The payments industry's total contribution: top 15 states by total employment contribution, 2024



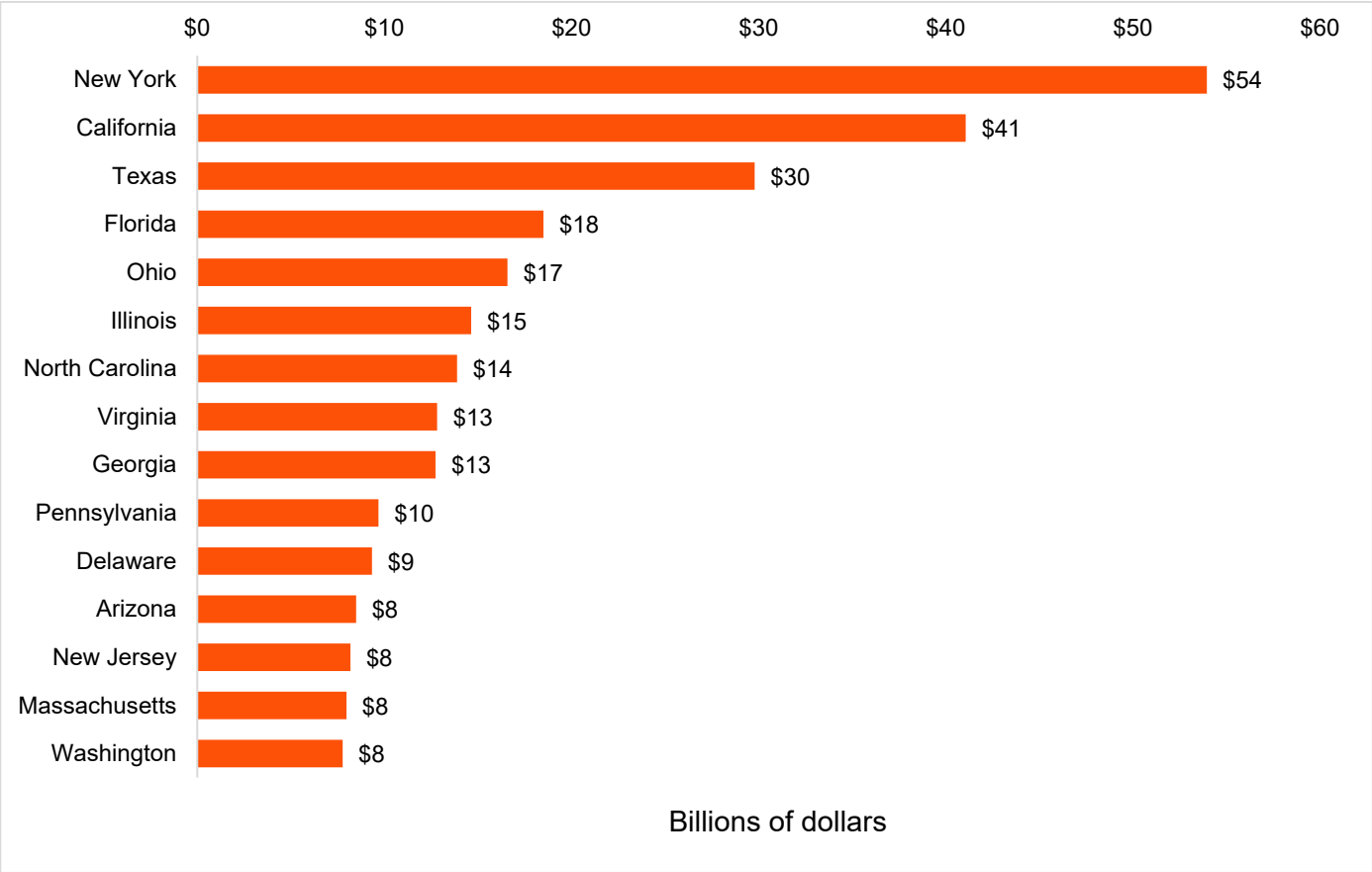
Source: PwC calculations based on the IMPLAN model. See **Appendix B** for underlying figures.

Figure III-5. The payments industry's total contribution: top 15 states by total labor income contribution, 2024



Source: PwC calculations based on the IMPLAN model. See **Appendix B** for underlying figures.

Figure III-6. The payments industry's total contribution: top 15 states by total value added contribution, 2024



Source: PwC calculations based on the IMPLAN model. See **Appendix B** for underlying figures.

Although total employment, labor income, and value added demonstrate the broad scale of payments-industry activity across states, absolute contributions can mask differences in states' overall economic size. To understand where the industry is most economically significant relative to the scale of each state's workforce, earnings, and GDP, **Figures III-7** through **III-9** show the payments industry's contributions as shares of state totals. These shares identify states where payments activity plays a particularly central role in the local economy, regardless of population or total economic output.

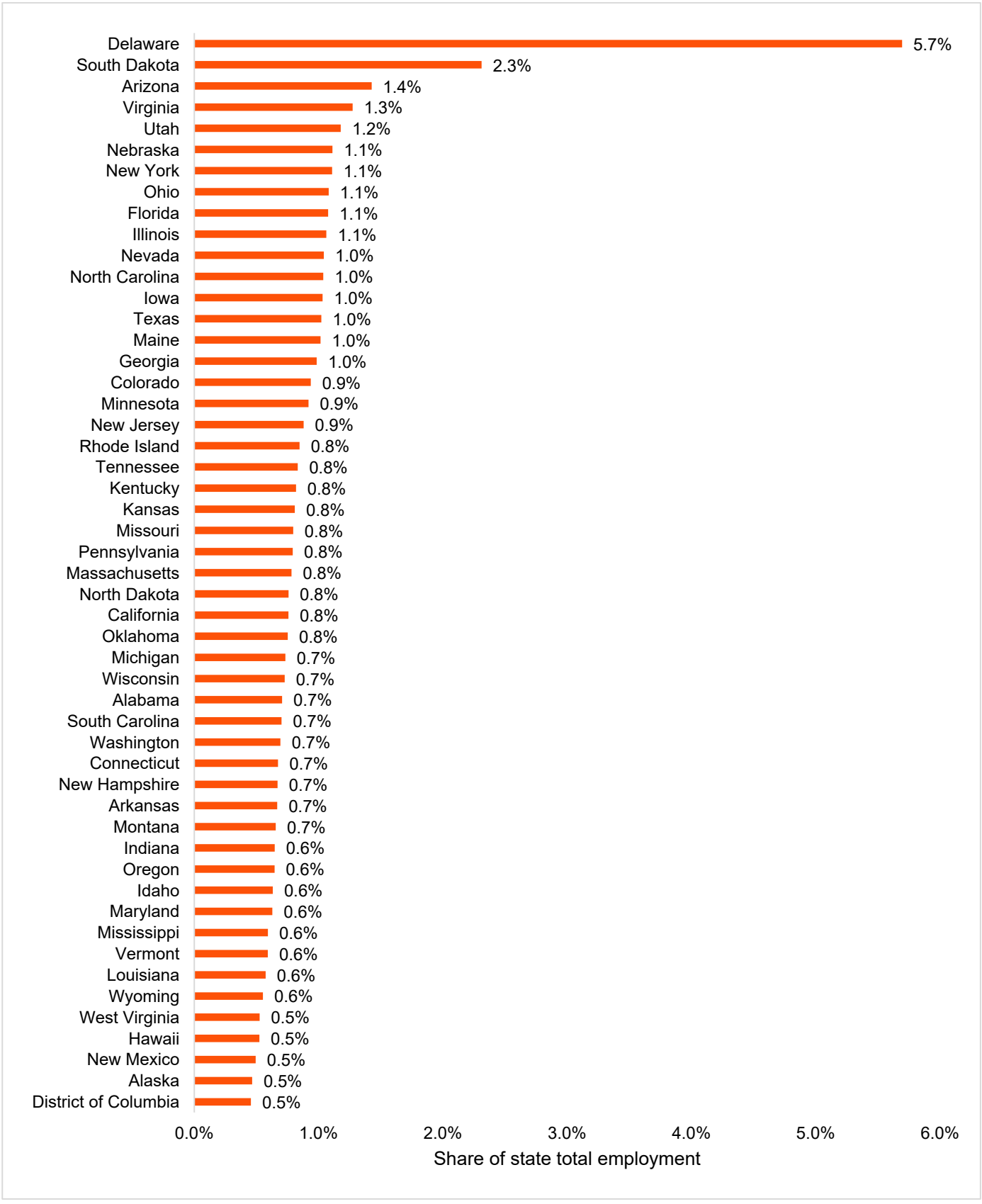
Figure III-7 illustrates that Delaware stands out with the highest share of state employment—5.7 percent—supported by the payments industry. This reflects Delaware's outsized role in credit card issuing, financial services, and specialized payments-related functions relative to its small population and workforce. States such as South Dakota, Arizona, Virginia, Utah, Nebraska, New York, Ohio, Florida, and Illinois also show employment shares above 1 percent, indicating meaningful concentrations of payments and related supply-chain activity. Many of these states host major financial hubs, technology clusters, or large operational centers that play core roles in card networks, acquiring and processing services, and payment-enabling technology.

Figure III-8, which reports the industry's contribution to state labor income, shows a similar pattern, with Delaware again leading at 8.2 percent. The states with the highest labor-income shares tend to be those with either (1) high concentrations of high-skill, high-wage payments-related occupations or (2) smaller economic bases where payments-related jobs represent a larger share of total earnings. States such as New York, Arizona, Illinois, Maine, Georgia, and Ohio also have labor-income shares well above the national average, reflecting the presence of highly compensated roles in transaction security, fraud management, digital payments engineering, risk and compliance, and financial technology services.

Figure III-9 presents the payments industry's share of state GDP and again shows a distinctive concentration in states with specialized financial-services ecosystems. Delaware's share rises to 8.4 percent, driven by its nationally significant credit card-issuing sector and related payments infrastructure. States such as South Dakota, New York, North Carolina, Virginia, Illinois, Utah, and Georgia also exhibit high shares of GDP directly or indirectly attributable to the payments industry, highlighting their roles as regional hubs for payments processing, card operations, financial technology development, and payments-enabled business services. These states benefit from strong complementarities between payments firms and broader finance, information services, and technology industries.

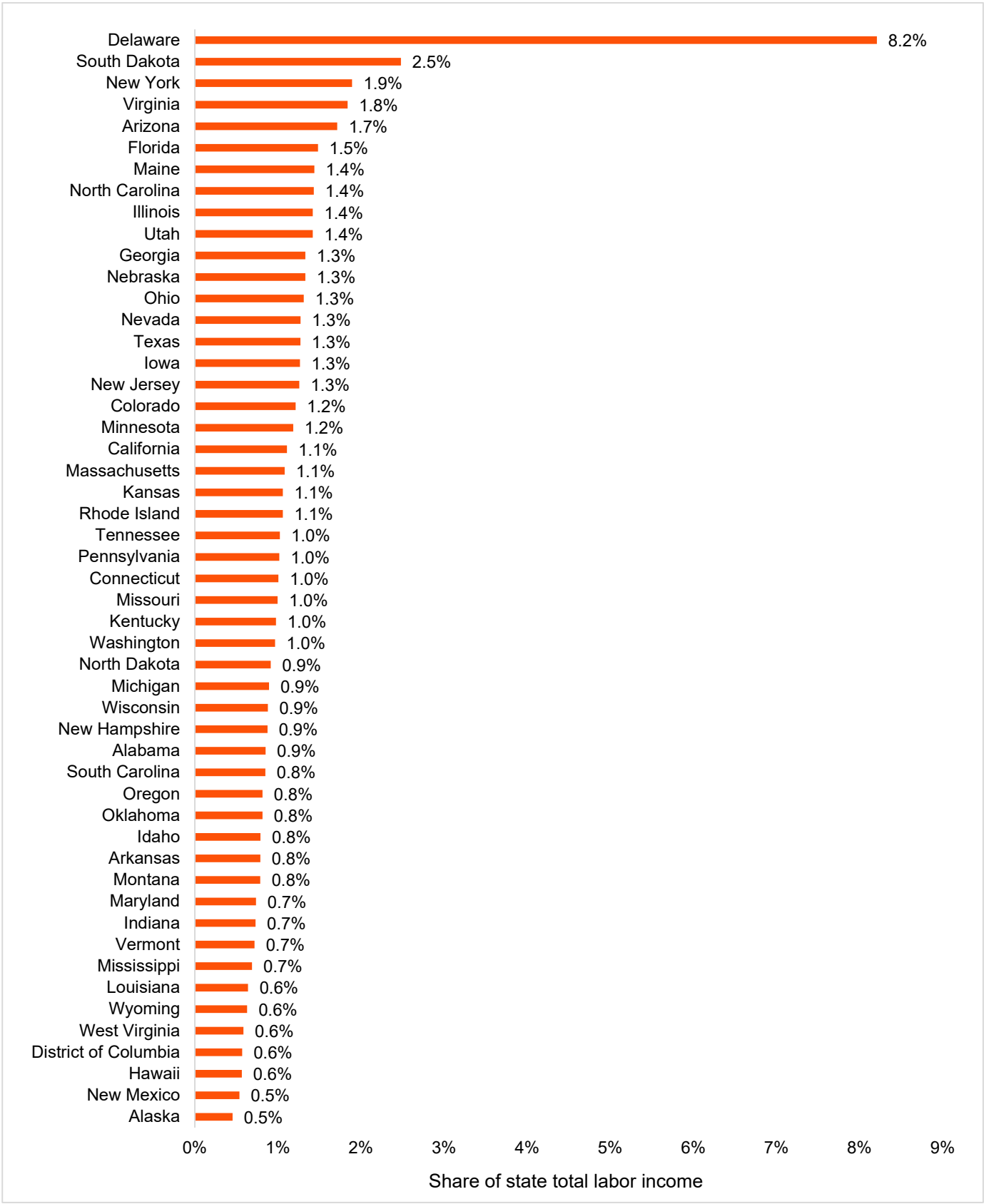
Taken together, the direct, total, and shares-based results illustrate both the breadth and depth of the payments industry across the United States. Large states such as California, Texas, Florida, and New York contribute substantial absolute economic activity, while states with highly specialized financial-services ecosystems—like Delaware, South Dakota, Virginia, and Utah—show elevated economic dependence on payments-related activity. These complementary perspectives provide a comprehensive view of how the payments industry supports jobs, income, and GDP across diverse regional economies.

Figure III-7. The payments industry's total employment contribution as a share of state employment, 2024



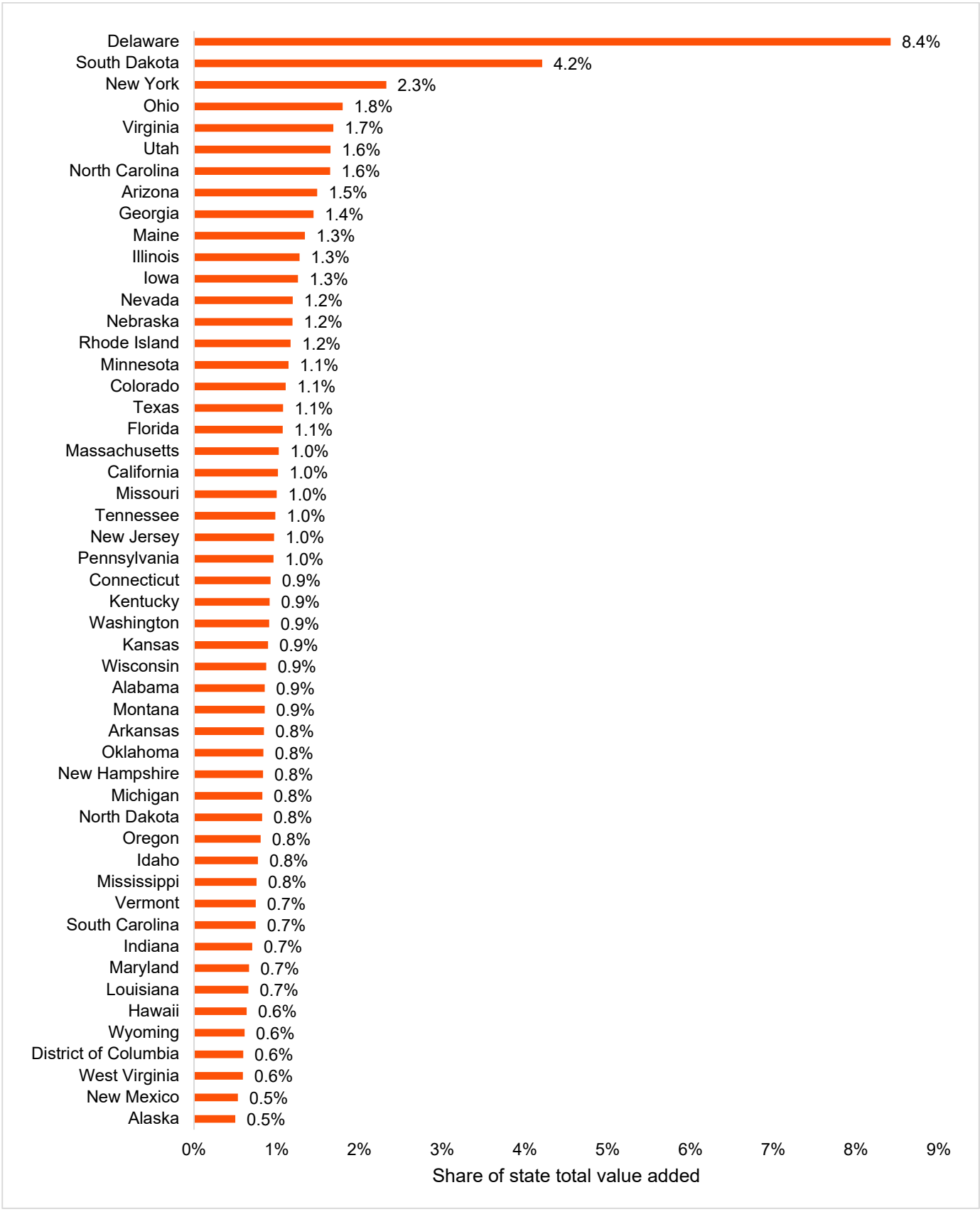
Source: PwC calculations based on the IMPLAN model. See **Appendix B** for underlying figures.

Figure III-8. The payments industry's total labor income contribution as a share of state labor income, 2024



Source: PwC calculations based on the IMPLAN model. See **Appendix B** for underlying figures.

Figure III-9. The payments industry's total value-added contribution as a share of state GDP, 2024



Source: PwC calculations based on the IMPLAN model. See **Appendix B** for underlying figures.

IV. The payments industry's catalytic effects

This section explores the broader economic effects enabled by the payments industry beyond its direct operational footprint. Specifically, it examines how electronic payments catalyze increased consumer spending, drive cost efficiencies for businesses, and support the formation and growth of new enterprises and entrepreneurial ventures. Together, these factors underscore the payments industry's vital role as a catalyst of economic activity and a facilitator of innovation and inclusive growth. As noted in the Executive Summary, these catalytic estimates represent economic enablement effects and are conceptually distinct from the economic contribution totals in Section III.

Figure IV-1. Catalytic effects enabled by the payments industry: highlights

Catalytic consumption	Business cost savings	Business formation and entrepreneurship
• Increased household spending due to lower friction, rewards, liquidity access • $72-$287 billion of personal consumption expenditures enabled • Supports 0.7-2.7 million jobs	• Faster checkout & reduced back-office time • Labor capacity released and redeployed • 806 million hours saved (365,000 FTEs) • Supports 1 million jobs	• New small firms enabled by accepting modern payment methods • Higher sales for new entrepreneurs • $33.9 billion in incremental sales • Supports 300,000 jobs

A. Catalytic consumption

The once cash-driven economy has adjusted to an increasingly digital world in the form of electronic payments: credit and debit cards, digital wallets, and point-of-sale ("POS") credit like Buy Now Pay Later ("BNPL"). These options reduce the need to carry cash and allow for faster checkouts in purchase, which in turn reduces transaction friction associated with cash-based payments. By reducing transaction friction and expanding short-term liquidity through revolving credit, electronic payments can increase household spending among users exposed to liquidity or rewards channels. This net increase in spending is referred to as catalytic consumption in this report.

Two channels matter most:

1. **Liquidity/credit access**: When the supply of credit expands, liquidity-constrained households increase spending as a direct, causal effect. Increases in credit limits cause immediate increases in borrowing/spending, which is referred to as the marginal propensity to consume out of liquidity. Modest credit-limit increases (on the order of 10-25 percent of typical spending) can generate user-level spending increases of roughly 1-3 percent. This causal estimate is based on marginal propensities to consume out of liquidity in the 10-14 percent range, sourced from panel data from multiple US issuers.[5]

2. **Convenience and psychology**: Reducing checkout frictions and adding rewards nudges up card spending. A Chicago Fed natural experiment shows that a 1 percent cash-back program raised card spending by about $68 per month per account in the first quarter (effects persist several quarters), though some of this is offset by substitution from other cards.[6] While modest in its percentage terms, this user-level spending response is economically meaningful and provides empirical grounding for the subsequent scaling of catalytic consumption effects.

These effects apply to households that use credit cards and other electronic payment instruments and are therefore measured at the user level rather than across all US households. These micro effects, when applied to a large volume of transactions, can add up materially. The Federal Reserve Payments Study reports general-purpose card payments reached 153.3 billion transactions and $9.76 trillion in value in 2022, the most recent year for which data are currently available, underscoring how small behavioral elasticities may add up in the aggregate.[7]

BNPL has become an increasingly common payment option in retail and online commerce and can ease short-term liquidity constraints for some consumers. However, BNPL spending remains small relative to overall personal consumption. Recent analyses from the Consumer Financial Protection Bureau ("CFPB"), including its 2025 overview and the 2024 interpretive rule extending Regulation Z to BNPL products, document the segment's growth but do not identify evidence of large, economy-wide increases in net-new consumption. For this reason, we treat BNPL as contributing only a small, basis-point-level share of the broader catalytic spending effects associated with card and digital-wallet payments.[8]

In the absence of a single macro study pinning down a point estimate, we present a triangulated range for catalytic consumption of 0.5-2.0 percent of personal consumption expenditures ("PCE") for households that

[5] Gross, D., & Souleles, N. S. (2002). "Do Liquidity Constraints and Interest Rates Matter for Consumer Behavior? Evidence from Credit-Card Data." National Bureau of Economic Research, Working Paper 8314.
[6] Agarwal, S., Chakravorti, S., & Lunn, A. "Why Do Banks Reward Their Customers to Use Their Credit Cards?" Federal Reserve Bank of Chicago Working Paper 2010-19.
[7] Federal Reserve Payments Study, National Payment Volumes, Detailed Data, NPIPS (CY 2021 and 2022). Available at: https://www.federalreserve.gov/paymentsystems/2024-November-The-Federal-Reserve-Payments-Study.htm.
[8] Consumer Financial Protection Bureau, January 2025. Consumer Use of Buy Now, Pay Later and Other Unsecured Debt. Available at https://files.consumerfinance.gov/f/documents/cfpb_BNPL_Report_2025_01.pdf.

use electronic payment instruments.[9] The underlying empirical studies estimate spending increases only among households that use electronic payment instruments (e.g., credit-card users experiencing liquidity shocks or reward incentives), so the uplift reflects a user-level behavioral response, not a macro-level elasticity applying to all households. The high end of this range reflects well-identified micro-causal evidence showing that households facing liquidity constraints exhibit meaningful increases in spending when credit access expands, combined with the broad prevalence of exposure among revolving cardholders. The low end is intentionally conservative at the macro level, recognizing that a substantial share of observed card spending reflects payment-instrument substitution (e.g., cash/debit/credit) rather than net-new consumption, and that only a subset of households is truly liquidity-constrained.

According to the US Bureau of Economic Analysis, total US PCE in 2024 totaled $19.9 trillion.[10] The portion of PCE classified as catalytic consumption can be estimated by multiplying total PCE by the corresponding consumption uplift and the 72 percent of US households reported to have at least one credit card.[11] This "adoption-rate" adjustment is required because the aforementioned 0.5-2.0 percent uplift reflects increased spending only among households with access to and use of electronic payments. Households relying exclusively on cash/check do not experience the liquidity or behavioral mechanisms identified in the cited studies. This suggests that between $72 billion and $287 billion of actual US personal consumption in 2024 could be characterized as "catalytic consumption" directly enabled by the adoption and use of electronic payment systems. Including the direct, indirect, and induced effects, the catalytic consumption in 2024 was on average responsible for 1.7 million jobs, $109 billion of labor income, and $199 billion of GDP (see **Table IV-1**, below).

[9] The 0.5–2.0 percent range reflects the aggregation of well-identified, user-level consumption responses from the household finance literature to the macroeconomic level. The empirical studies cited above measure spending increases only among households that use credit cards or other electronic payments. When these user-level elasticities are scaled by the prevalence of cardholding, the share of spending exposed to electronic-payment mechanisms, and the fact that not all consumption categories are friction- or liquidity-sensitive, the resulting macro-level uplift implied by the literature falls within the 0.5–2.0 percent range applied here.
[10] US Bureau of Economic Analysis, *National Income and Product Accounts*, Table 1.1.5. Accessed on September 30, 2025.
[11] Board of Governors of the Federal Reserve System. (2023). *Survey of Consumer Finances*, 2022. Available at: https://www.federalreserve.gov/econres/scfindex.htm. This methodology takes credit card penetration as a proxy for electronic payments penetration. It is a conservative estimate to the extent that credit cards represent only one form of electronic payment and that a household without a credit card may have another form of electronic payment.

Table IV-1. – Estimated economic effects of catalytic consumption in the United States, 2024
[Dollar amounts in billions]

Item	Economic effects of catalytic consumption		
	Lower bound	Upper bound	Mid-point
Personal consumption expenditures	**$72**	**$287**	**$180**
Employment (jobs)(1)	665,235	2,651,700	1,658,468
Labor Income(2)	$44	$174	$109
GDP	$81	$318	$199

Source: PwC calculations based on the IMPLAN model.
(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.
(2) Labor income is defined as wages and salaries and benefits as well as proprietors' income.

Sensitivity analysis: As a point of comparison, we also assessed a transaction-based benchmark using the value of general-purpose card transactions reported by the Federal Reserve Payments Study ($9.76 trillion in 2022, equivalent to approximately 49 percent of 2022 PCE). Scaling this share to 2024 PCE and applying the 0.5–2.0 percent catalytic uplift yields an estimated range of $49–$195 billion. This provides a conservative lower bound grounded in actual transaction volumes. By contrast, our primary adoption-based approach captures the broader consumption enabled by access to electronic payments, including liquidity and behavioral effects that extend beyond current transaction volumes. Presenting both perspectives highlights the sensitivity of results to alternative exposure assumptions and supports the robustness of the overall catalytic consumption range.

B. Business cost savings

Electronic payments raise operating productivity by replacing cash and paper workflows, trimming seconds at checkout, and automating reconciliation and exception handling. At scale, even small per-transaction time savings cumulatively release hundreds of millions of labor hours each year—capacity that, in today's economy, has already been redeployed toward productive activity relative to a cash-based counterfactual.

There are two main components driving business cost savings:

- **Point of interaction**: Modern digital methods, such as contactless tap and tokenized in-app transactions, shorten cardholder–terminal interaction compared with cash, paper, or older chip flows. Industry guidance often documents a difference of single-digit to low-teens seconds per transaction, depending on the device and lane design.[12]

[12] U.S. Payments Forum, "Optimizing Transaction Speed at the Point of Sale," white paper, October 2017.

- **Back office reconciliation**: Digitization reduces cash handling, deposit trips, and manual reconciliations. "Cost of cash" research documents sizable burdens borne by businesses, part of which is retired as activity shifts electronic.[13] Consumers' mix has shifted decisively to cards/digital, with cash's share by number falling in recent years.

Studies suggest that, on average, electronic payment methods reduce overall transaction and processing time by roughly 10 to 20 seconds per transaction compared to cash or paper-based methods, when considering the full lifecycle from point of interaction to back office reconciliation. The 10–20 second time-saving estimate applies across both cashiered and self-checkout environments. In staffed lanes, savings come mostly from reduced cash-handling time. In self-checkout, savings come from faster card/wallet acceptance and reduced machine-handling delays, plus reduced back-office labor for cash reconciliation. For the purposes of this report, the midpoint estimate (15 seconds per transaction) is used as the assumed time savings from electronic payments.

As shown in **Table IV-2**, based on the number of payment transactions reported by the Federal Reserve[14] and Nacha,[15] we estimate the cost savings from electronic payments to be 806 million hours in 2024.[16]

[13] Bhaskar Chakravorti and Benjamin D. Mazzotta, "The Cost of Cash in the United States," Institute for Business in the Global Context (Tufts University), September 2013.
[14] Board of Governors of the Federal Reserve System. *Federal Reserve Payments Study—National Payment Volumes, Detailed Data, NPIPS (CY 2021 & 2022)*. November 2024.
[15] Nacha. "Nacha Releases Top 50 Financial Institution ACH Originators and Receivers for 2024; Total ACH Payment Volume in 2024 Exceeded 40 Billion." Press release, March 27, 2025.
[16] Another possible component of cost savings relates to the need for less physical cash, which can reduce the risk of losses due to theft (for both customers and businesses). This means a labor-hours based model produces a conservative estimate of the true cost savings.

Table IV-2. – Estimated time savings and FTEs from electronic payments in the United States, 2024

Item	Amount (Hours unless otherwise noted)	FTE (Hours/2080)
Number of payment transactions (billion)	193.5	NA
Cards (billion)	153.3	NA
ACH (billion)	40.2	NA
Seconds saved per transaction (blended assumption)	15	NA
Aggregate time saving	806,250,000	365,138
Point of interaction		
Grocery stores, convenience stores, pharmacies	153,187,500	73,648
Gas stations	65,306,250	31,397
Sit-down restaurants and bars	47,568,750	22,870
Fast food, coffee shops, cafeterias, food trucks	116,906,250	56,205
Stores, including online shopping	124,162,500	59,694
Services (hair, auto repair, parking, laundry, etc.)	24,187,500	11,629
Arts, entertainment, recreation	21,768,750	10,466
Back office reconciliation		
Utilities (electricity, gas, water/sewer, trash, heating oil)	28,218,750	13,567
Communications (telephone, internet, cable/satellite, streaming)	38,700,000	18,606
Rent	8,062,500	3,876
Financial (mortgage, credit card bills, loans, insurance, etc.)	68,531,250	32,948
Medical (hospital, doctor, dentist, nursing homes)	13,706,250	6,590
Education (schools, colleges, childcare)	5,643,750	2,713
Charitable or religious donations	13,706,250	6,590
A person (gift or payment to an individual)	29,831,250	14,342

Source: PwC calculations based on the Federal Reserve Payments Study report (2024) and Atlanta Fed's 2024 Survey and Diary of Consumer Payment Choice.

Interpretation: Electronic-payment-related time savings may be absorbed by businesses in several ways. The labor-redeployment scenario—modeled in this report—assumes firms reallocate saved labor time to productive activity. A second channel, the final-demand scenario, reflects partial pass-through of savings to consumers via lower prices. A third possibility, profit retention, occurs when firms retain savings as higher margins, producing no incremental indirect or induced effects.

The estimated time savings represent economic capacity that is already realized in the US economy through the adoption of electronic payments. The labor-redeployment scenario modeled here should therefore be interpreted as illustrating the incremental contributions that arise when the saved labor time is productively reallocated relative to a cash-based counterfactual. In practice, the economy likely reflects a mix of channels: some portion of saved labor time is redeployed to support output; some portion may be passed through to consumers in the form of lower prices in a final-demand scenario; and some portion may be retained by firms as higher operating margins in a profit-retention scenario, which would not create additional indirect

or induced effects. The modeled redeployment case thus provides an upper-bound illustration of the productivity channel's effect on jobs, labor income, and GDP, while the profit-retention path represents a lower-bound case. In the labor-redeployment scenario modeled here, including the direct, indirect, and induced effects, the efficiencies enabled by electronic payments support approximately 1 million jobs, $67.6 billion in labor income, and $142.4 billion in GDP in 2024—economic activity that would otherwise not exist in a cash-only system (see **Table IV-3**, below).

Table IV-3. – Estimated economic effects of time savings from electronic payments in the United States: redeployment labor scenario, 2024
[Dollar amounts in billions]

Item	Amount
Labor redeployment (FTE)	**365,140**
Employment (jobs)(1)	997,390
Labor Income(2)	$67.6
GDP	$142.4

Source: PwC calculations based on the IMPLAN model.
(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.
(2) Labor income is defined as wages and salaries and benefits as well as proprietors' income.

C. Business formation and entrepreneurship

Digital payments have materially changed how businesses accept payments. Lower costs and improved access to payment acceptance facilitate entrepreneurship and business scaling, especially in retail, food services, and personal services sectors. These lower barriers to entry can affect entry dynamics for micro and small businesses. This analysis aims to quantify the economic effect of digital payment technology on micro-entrepreneurs and small businesses in the United States in 2024. The central questions are: By how much does digital payment adoption increase business formation and sales, and what are the resulting ripple effects across the economy?

Peer-reviewed research shows that when small merchants add modern card acceptance (e.g., contactless payment), their sales increase on the order of 8–10 percent, with particularly strong effects among new entrepreneurs.[17] Because card acceptance is now ubiquitous and economically salient in retail, leisure, and hospitality,[18] we attribute the mid-point of the measured sales uplift (9 percent) in business formations in 2024 to electronic-payment access. We have estimated the incremental sales in the related industries of

[17] Camara, Y., O. de Jonghe, H. Degryse, & J. Simons (2020). "Card-sales response to merchant contactless payment acceptance," *Journal of Banking & Finance*. Available at: https://www.sciencedirect.com/science/article/abs/pii/S0378426620302004.
[18] Federal Reserve Banks (2024). *2024 Report on Payments: Findings from the 2023 Small Business Credit Survey*. Federal Reserve Banks. https://doi.org/10.55350/sbcs-20241205.

retail trade, accommodation and food services, and other services based on observed formation rates from the Census Bureau's *Business Formation Statistics* (see **Table IV-4**, below). This uplift reflects increased sales among both employer and nonemployer businesses, consistent with academic findings on the role of electronic payments in reducing barriers to entry.

Table IV-4. – Estimated business formations attributable to electronic-payment access in the United States, 2024

Item	Modeled Sectors			
	Retail trade	Accommodation & food services	Other services	Total
Business application	933,042	283,257	456,115	1,672,414
Projected business formations within 8 quarters[1] (A)	49,640	56,097	37,740	143,477
Payments-attributable fraction of employer formations (B)	9%	9%	9%	
Incremental employer businesses (C = A x B)	4,468	5,049	3,397	12,913
Nonemployer-to-employer multiplier[2] (D)	4.7	4.7	4.7	
Incremental nonemployer businesses (E = C x D)	20,816	23,524	15,826	60,167
Average annual sales per small employer[3] (F)	$4,189,030	$1,346,094	$1,129,875	
Average annual sales per nonemployer (G)	$92,885	$63,002	$74,126	
Incremental sales ($billion)	**$20.6**	**$8.3**	**$5.0**	**$33.9**
Employer businesses (C x F) ($billion)	$18.7	$6.8	$3.8	$29.3
Nonemployer businesses (E x G) ($billion)	$1.9	$1.5	$1.2	$4.6

Source: PwC calculations based on data from the US Census Bureau, Federal Reserve Banks, and peer-reviewed research.
(1) The number of employer businesses expected to begin payroll within two years of the month a business application was filed.
(2) Based on the ratio of nonemployer to employer businesses as reported by the Census Bureau.
(3) Defined as businesses with less than 500 employees, following the Small Business Administration's convention.

Input-output modeling is employed to estimate the broader economic consequences of the incremental business activity made possible by these payment innovations. Including the direct, indirect, and induced effects, the incremental sales are estimated to have supported 301,200 jobs, $16.4 billion of labor income, and $28.2 billion of GDP in 2024 (see **Table IV-5**, below).

Table IV-5. – Estimated economic effects of incremental sales attributable to electronic payments in the United States, 2024

[Dollar amounts in billions]

Item	Amount
Incremental sales	**$33.9**
Employment (jobs)(1)	301,200
Labor Income(2)	$16.4
GDP	$28.2

Source: PwC calculations based on the IMPLAN model.
(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.
(2) Labor income is defined as wages and salaries and benefits as well as proprietors' income.

V. Conclusion

The US payments industry is a widely used component of the nation's transaction infrastructure. It enables the efficient and secure movement of trillions of dollars annually and supports a complex web of commercial, consumer, and government transactions. This report demonstrates that the industry's economic significance is both substantial and multifaceted.

In 2024, the payments industry directly employed more than half a million workers and supported a total of 2.0 million jobs across the country when accounting for indirect and induced effects. The industry's total contribution to GDP was $354 billion, spanning activity across multiple sectors of the economy.

Beyond its economic footprint, the payments ecosystem interacts with broader economic activity through several channels. Electronic payments support higher levels of consumer spending, generate meaningful cost savings for businesses through faster and more efficient transactions, and help new firms start and scale by reducing acceptance barriers and improving cash flow. While these catalytic effects are distinct from the industry's measured GDP footprint, they illustrate the wider economic value unlocked by modern payments infrastructure and demonstrate the payments industry's broader economic significance.

Looking ahead, continued adoption of digital and real-time payments, expanded access to electronic payment tools, and ongoing innovation across financial technology platforms is expected to further integrate payments into the fabric of US economic activity. Ensuring the resilience, efficiency, and inclusiveness of this infrastructure will support growth, competitiveness, and financial participation nationwide.

Appendix A: Direct contribution by detailed sector

Table A-1. Direct contribution of the payments industry to the US economy by subsector, 2024

Item	Employment (Jobs)	Labor Income ($billions)	GDP ($billions)
US payments industry	**556,600**	**$91.7**	**$148.4**
Monetary authorities and depository credit intermediation	249,780	$32.3	$87.2
Nondepository credit intermediation and related activities	237,900	$41.5	$51.0
Securities and other financial services	39,850	$11.7	$2.9
Data processing, hosting, and related services	21,790	$4.9	$5.2
Computer terminals and other computer peripheral equipment manufacturing	3,470	$0.6	$0.9
Software publishers	3,060	$0.6	$1.2
Computer systems design services	750	$0.1	$0.1

Source: Estimates based on data from the US Bureau of Economic Analysis and supplemented by data from the US Bureau of Labor Statistics and US Census Bureau and input-output relationships from the IMPLAN modeling system.
Note: Details may not add up to totals due to rounding.
(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.
(2) Labor income is defined as wages and salaries and benefits as well as proprietors' income.

Appendix B: State-level results

Table B-1. The payments industry's economic contribution by state, 2024
(Thousands of jobs; Billions of dollars)

State	Employment		Labor Income		GDP	
	Direct	Total	Direct	Total	Direct	Total
US Total	**556.6**	**2,002.2**	**$91.7**	**$210.1**	**$148.4**	**$354.5**
Alabama	6.0	21.0	$0.7	$1.6	$1.1	$2.8
Alaska	0.6	2.2	$0.1	$0.2	$0.1	$0.4
Arizona	19.4	63.6	$2.5	$5.6	$3.1	$8.5
Arkansas	3.4	12.0	$0.4	$0.9	$0.6	$1.6
California	45.8	193.8	$11.1	$26.6	$13.6	$41.1
Colorado	10.7	40.0	$1.7	$4.2	$2.1	$6.2
Connecticut	4.0	16.4	$0.9	$2.1	$1.2	$3.3
Delaware	17.0	38.4	$2.7	$4.0	$6.6	$9.3
District of Columbia	1.0	4.2	$0.3	$0.8	$0.4	$1.1
Florida	43.0	161.1	$6.3	$14.5	$4.8	$18.5
Georgia	18.6	70.7	$2.8	$6.6	$5.9	$12.7
Hawaii	1.1	4.9	$0.1	$0.4	$0.3	$0.7
Idaho	2.0	7.8	$0.2	$0.6	$0.3	$1.0
Illinois	24.3	87.3	$4.1	$9.6	$5.4	$14.6
Indiana	7.1	27.3	$0.7	$2.2	$1.0	$3.7
Iowa	7.3	22.0	$0.9	$1.8	$1.6	$3.3
Kansas	4.9	16.3	$0.6	$1.4	$0.7	$2.1
Kentucky	6.8	22.3	$0.7	$1.7	$0.9	$2.7
Louisiana	4.0	16.4	$0.4	$1.2	$0.7	$2.2
Maine	2.9	9.2	$0.4	$0.9	$0.6	$1.3
Maryland	6.5	25.5	$0.9	$2.4	$1.0	$3.6
Massachusetts	10.2	39.6	$2.1	$5.3	$2.8	$8.0
Michigan	11.0	43.9	$1.3	$3.8	$1.6	$5.8
Minnesota	9.7	36.0	$1.4	$3.6	$2.2	$5.8
Mississippi	2.8	10.1	$0.3	$0.6	$0.5	$1.2
Missouri	8.8	31.9	$1.1	$2.7	$1.6	$4.5
Montana	1.4	5.0	$0.1	$0.4	$0.3	$0.7
Nebraska	5.2	15.6	$0.7	$1.4	$0.9	$2.2
Nevada	7.0	22.4	$0.9	$1.9	$1.3	$3.2
New Hampshire	1.7	6.4	$0.3	$0.7	$0.3	$1.0
New Jersey	14.8	53.4	$2.8	$6.4	$2.4	$8.2
New Mexico	1.6	5.9	$0.2	$0.4	$0.3	$0.8
New York	44.4	147.6	$13.0	$24.4	$33.5	$54.0
North Carolina	19.7	71.0	$3.3	$7.1	$7.2	$13.9
North Dakota	1.6	4.6	$0.2	$0.4	$0.3	$0.7
Ohio	24.6	80.4	$3.1	$6.9	$9.5	$16.6
Oklahoma	5.5	18.6	$0.6	$1.4	$0.7	$2.2
Oregon	4.1	17.5	$0.6	$1.7	$0.8	$2.7
Pennsylvania	17.0	64.5	$2.3	$6.3	$3.2	$9.7
Rhode Island	1.8	5.8	$0.2	$0.5	$0.4	$0.9
South Carolina	5.8	22.5	$0.7	$1.7	$0.8	$2.7
South Dakota	5.5	15.3	$0.6	$1.1	$2.2	$3.2
Tennessee	10.6	38.8	$1.3	$3.5	$1.9	$5.5
Texas	55.2	209.1	$8.2	$20.0	$9.5	$29.8
Utah	8.5	28.7	$1.1	$2.4	$2.4	$4.9
Vermont	0.6	2.6	$0.1	$0.2	$0.1	$0.3
Virginia	23.3	73.6	$4.5	$8.5	$6.0	$12.8
Washington	8.7	34.0	$1.6	$4.6	$2.2	$7.8
West Virginia	1.3	4.8	$0.1	$0.3	$0.2	$0.6
Wisconsin	7.6	28.1	$0.9	$2.4	$1.3	$4.0
Wyoming	0.7	2.5	$0.1	$0.2	$0.1	$0.3

Source: PwC calculations based on the IMPLAN modeling system. Details may not add up to totals due to rounding.

Table B-2. The payments industry's total economic contribution as a share of state total, 2024 (percentage of state total)

State	Industry supported total employment / state total	Industry supported total labor income / state total	Industry supported total GDP / state total
Alabama	0.7%	0.9%	0.9%
Alaska	0.5%	0.5%	0.5%
Arizona	1.4%	1.7%	1.5%
Arkansas	0.7%	0.8%	0.8%
California	0.8%	1.1%	1.0%
Colorado	0.9%	1.2%	1.1%
Connecticut	0.7%	1.0%	0.9%
Delaware	5.7%	8.2%	8.4%
District of Columbia	0.5%	0.6%	0.6%
Florida	1.1%	1.5%	1.1%
Georgia	1.0%	1.3%	1.4%
Hawaii	0.5%	0.6%	0.6%
Idaho	0.6%	0.8%	0.8%
Illinois	1.1%	1.4%	1.3%
Indiana	0.6%	0.7%	0.7%
Iowa	1.0%	1.3%	1.3%
Kansas	0.8%	1.1%	0.9%
Kentucky	0.8%	1.0%	0.9%
Louisiana	0.6%	0.6%	0.7%
Maine	1.0%	1.4%	1.3%
Maryland	0.6%	0.7%	0.7%
Massachusetts	0.8%	1.1%	1.0%
Michigan	0.7%	0.9%	0.8%
Minnesota	0.9%	1.2%	1.1%
Mississippi	0.6%	0.7%	0.8%
Missouri	0.8%	1.0%	1.0%
Montana	0.7%	0.8%	0.9%
Nebraska	1.1%	1.3%	1.2%
Nevada	1.0%	1.3%	1.2%
New Hampshire	0.7%	0.9%	0.8%
New Jersey	0.9%	1.3%	1.0%
New Mexico	0.5%	0.5%	0.5%
New York	1.1%	1.9%	2.3%
North Carolina	1.0%	1.4%	1.6%
North Dakota	0.8%	0.9%	0.8%
Ohio	1.1%	1.3%	1.8%
Oklahoma	0.8%	0.8%	0.8%
Oregon	0.6%	0.8%	0.8%
Pennsylvania	0.8%	1.0%	1.0%
Rhode Island	0.8%	1.1%	1.2%
South Carolina	0.7%	0.8%	0.7%
South Dakota	2.3%	2.5%	4.2%
Tennessee	0.8%	1.0%	1.0%
Texas	1.0%	1.3%	1.1%
Utah	1.2%	1.4%	1.6%
Vermont	0.6%	0.7%	0.7%
Virginia	1.3%	1.8%	1.7%
Washington	0.7%	1.0%	0.9%
West Virginia	0.5%	0.6%	0.6%
Wisconsin	0.7%	0.9%	0.9%
Wyoming	0.6%	0.6%	0.6%

Source: PwC calculations based on the IMPLAN modeling system.

Appendix C: Data sources and methodology

This Appendix describes the methodology used to derive the results for the study. It first discusses the data sources PwC utilized to develop estimates of the US payments industry's direct employment, labor income, and value-added contributions and its capital investment effects. It then describes the development of the indirect and induced contribution estimates.

A. Estimating direct employment, labor income, and value added

Employment

Throughout this report, consistent with the convention used by the US Bureau of Economic Analysis ("BEA"), the employment figures reported include (1) wage and salary jobs (also known as "paid employment")[19] and (2) sole proprietorships and general partners (collectively referred to as "self-employment").[20] The *Quarterly Census of Employment and Wages* ("QCEW") by the US Bureau of Labor Statistics ("BLS") provides the most comprehensive data on paid employment. For self-employment, we rely on the BEA's estimates in its *State Annual Personal Income and Employment* database.[21] It is important to note that employment estimates in this report represent a count of jobs, not a count of workers. Thus, all jobs held by a worker are counted.

Both the BEA and the BLS sources have data disclosure issues, as certain data points are suppressed or withheld to maintain the confidentiality of individual survey respondents. This typically occurs when the data for a geographic area, industry, or category are based on a small number of reporting units, making it possible to infer the identity or sensitive information of those entities. To address disclosure-suppressed data in BEA and BLS series, PwC applied a standard "raking" procedure to ensure internal consistency across industries and states. The raking process uses information from known sectors within a state and across states to impute information for the sectors with suppressed data.[22]

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[19] Wage and salary employment is a measure of the average annual number of full-time and part-time jobs. All jobs for which wages and salaries are paid are counted.

[20] The BEA notes that the self-employment estimates resemble the wage and salary employment estimates in that both measure jobs—as opposed to workers—on a full-time and part-time basis. However, because of limitations in source data, two important measurement differences exist between the two sets of estimates. First, the self-employment estimates are largely on a place-of-residence basis rather than on the preferred place-of-work basis. Second, the self-employment estimates reflect the total number of sole proprietorships or partners active at any time during the year—as opposed to the annual average measure used for wage and salary employment.

[21] For a discussion on how the BEA develops its estimate of self-employment, see: https://www.bea.gov/sites/default/files/methodologies/SPI-Methodology.pdf

[22] Oh, H.L. and Scheuren, F. (1987). Modified Raking Ratio Estimation. Survey Methodology, vol. 13, no. 2, pp. 209-219.

Historically, the BEA published time-series data on state-level paid employment and self-employment by industry annually. However, in September 2024, the BEA discontinued this data series, along with several other tables. PwC utilized the BLS 2024 paid employment data and assumed the same industry-specific relationship by state between paid employment and self-employment found in the last historical year available (2022) from the BEA in estimating self-employment in the payments industry in 2024.

Labor income

Following the BEA convention, labor income reported in this study includes (1) employee compensation and (2) proprietors' income. Employee compensation is the sum of wages and salaries plus supplements to wages and salaries (also known as "fringe benefits").[23] Proprietors' income is the current-production income of sole proprietorships, partnerships, and of tax-exempt cooperatives.

In cases where there is a one-to-one correspondence between the BEA sectors and the subsectors of the payments industry, we used the 2024 BEA data on labor income without any further adjustment.

The remaining subsectors for the payments industry are more disaggregated than reported in the BEA data. PwC first scaled the BLS annual wage (without fringe benefits) to match employee compensation (including fringe benefits) totals reported by the BEA at the more aggregated industry level. PwC also allocated proprietors' income (calculated as labor income less employee compensation) at the more disaggregated industry level according to the relationship between labor income and employee compensation from the BEA. Effectively, PwC allocated the more aggregated industry data for proprietors' income from the BEA across the subsectors of the payments industry according to each subsector's share of labor income.

Value added

Value added refers to the additional value created at a particular stage of production. It is a measure of the overall importance of an industry and represents the industry's portion of US GDP. Value added consists of employee compensation, proprietors' income, income to capital owners from property, and indirect business

[23] **Wages and salaries** are broadly defined to include commissions, tips, and bonuses; voluntary employee contributions to deferred compensation plans, such as 401(k) plans; employee gains from exercising stock options; and receipts-in-kind that represent income. They are measured before deductions, such as social security contributions, union dues, and voluntary employee contributions to defined contribution pension plans. The BEA's estimates of wages and salaries are based primarily on the QCEW. **Supplements to wages and salaries** consist of employer contributions for employee pension and insurance funds and employer contributions for government social insurance. The data are not available from the QCEW. The BEA has developed its estimates for employer contributions to defined benefit plans and to defined contribution plans based on sources such as the IRS Form 5500 (Annual Return/Report of Employee Benefit Plan). Separate estimates for group health insurance plans, group life insurance plans, supplemental unemployment benefit plans, and privately administered workers compensation plans have also been estimated by the BEA.

taxes (including excise taxes, property taxes, fees, licenses, and sales taxes paid by businesses). For this study, the payments industry's direct value added is estimated using an input-output model.

B. Estimating capital investment effect

For the current study, PwC estimated the payments industry's capital expenditures for 2024 based on the industry-level fixed asset data published by the BEA. The industry's capital spending was then translated into purchases of capital assets by type using the so-called "capital flow matrix" from the BEA.

C. Estimating the indirect and induced economic contributions

Direct employment, labor income, and value added of the payments industry were separately estimated for each of the 50 states and the District of Columbia. The totals from all states and the District of Columbia are treated as the national level direct estimates.

The initial round of output, income, and employment generated by the operations of the payments industry leads to successive rounds of re-spending in the chain of production and through the personal consumption spending of industry and supplier employees. Such indirect and induced economic contributions can be measured using various approaches. The most common is multiplier analysis. In broad terms, a multiplier is an index that indicates the overall change in the level of economic activity that results from a given initial change. It effectively adds up all the successive rounds of re-spending, based on assumptions that are embedded in the method of estimation.

There are different methods available for calculating multipliers. The method used in this report is *input-output* analysis. It is the most used approach in regional economic footprint studies. The input-output model used in this study is built around an "input-output" table that relates the purchases that each industry has made from other industries to the value of the output of each industry. To meet the demand for goods and services from an industry, purchases are made in other industries according to the patterns recorded in the input-output table. These purchases in turn spark still more purchases by the industry's suppliers, and so on. Additionally, employees and business owners make personal purchases out of the additional income that is generated by this process, sending new demands rippling through the economy. Multipliers describe these iterations. The Type I multiplier measures the direct and indirect effects of a change in economic activity. It captures the inter-industry effects only, i.e., industries buying from local industries. The Type II (Social Accounting Matrix or SAM) multiplier captures the direct and indirect effects, and, in addition, it also reflects induced effects (i.e., changes in spending from households as income increases or decreases due to the changes in production). The indirect and induced effects by the payments industry on other sectors of

the economy in terms of employment, labor income (including wages and salaries and benefits as well as proprietors' income), and value added were calculated through the multiplier process built into the model.

Limitations

A study using input-output ("I-O") models with fixed coefficients has certain limitations.

Firstly, the assumption of fixed coefficients implies that the technology and production processes remain constant over time. However, this may not reflect real-world dynamics, such as technological advancements or changes in production methods in the study period.

Secondly, I-O models assume linear relationships between inputs and outputs, whereas in reality, these relationships are often nonlinear and can vary depending on specific circumstances. This can result in less precise model outputs. Additionally, these models do not account for changes in relative prices, substitution effects, or shifts in consumer demand, all of which can significantly influence economic outcomes.

Thirdly, I-O models assume rational behaviors of economic agents. However, the behavior of consumers and firms is influenced by various social, psychological, and cultural factors that may not be fully accounted in these models. As a result, the accuracy of estimates may be affected.

Considering these limitations, it is important to interpret the estimates from I-O models with caution. While they can provide valuable insights, actual effects may diverge from the model's estimates due to the complexity and variability of real-world economies.

Appendix D: Industry classification and payment-relevant shares

This appendix documents the complete set of NAICS sectors, NAPCS product codes, and payment-relevant shares used to define the US payments industry for this study. The classification is based on PwC's NAICS–NAPCS triangulation approach, as described in Section II.

By presenting the detailed classification here, we ensure transparency into how establishments were identified and how adjacent sectors were scaled to reflect only payment-relevant activity.

Payment-relevant NAPCS codes

PwC and ETA have jointly determined the following 10 NAPCS codes that correspond to payments-related products and services fully or partially (see **Table D-1**, below).

Table D-1. Payments-related product codes from the 2022 Economic Census

2022 NAPCS collection code	Meaning of NAPCS collection code	Payment content
7003915000	Traveler's check services	Full
7005526000	Credit card services	Full
7005543000	Document payment services	Full
7005546000	Automated clearing house (ACH) services	Full
2018455000	Manufacturing of funds-transfer devices (ATMs)	Full
2045060000	Manufacturing of parts and attachments for fund-transfer devices	Full
7005530000	Installment credit services	Partial
7005547000	Other products supporting financial services, including electronic payment services and loan administration services	Partial
2011570000	Manufacturing of computer terminals, including point-of-sale terminals	Partial
2041855000	Manufacturing of parts, attachments, and accessories for computer terminals, computer peripheral equipment, and point-of-sale terminals	Partial

Source: US Census Bureau, *2022 Economic Census*.
These codes anchor the product-level definition of the payments industry.

NAICS sector and payment shares

Table D-2, below, provides a detailed overview of the NAICS codes incorporated into our definition of the payments industry. For each code, we have also identified the payment-relevant share, illustrating the proportion of activities within that sector that are directly related to payments. This breakdown enables a

more precise estimation of the industry's economic contribution by isolating the segments most pertinent to payment-related operations.

Table D-2. Payments industry definition with product code share

Item	NAICS code	Description	Payment share
1	522320	Financial Transactions Processing, Reserve, and Clearinghouse Activities	100.00%
2	522210	Credit Card Issuing	100.00%
3	522220	Sales Financing	26.61%
4	522390	Other Activities Related to Credit Intermediation	24.62%
5	522130	Credit unions	15.56%
6	522180	Savings Institutions and Other Depository Credit Intermediation	14.78%
7	522110	Commercial Banking	13.54%
8	334118	Computer Terminal and Other Computer Peripheral Equipment Manufacturing	11.48%
9	521110	Monetary Authorities-Central Bank	7.64%
10	523991	Trust, Fiduciary, and Custody Activities	6.88%
11	523150	Investment Banking and Securities Intermediation	5.15%
12	518210	Computing Infrastructure Providers, Data Processing, Web Hosting, and Related Services	4.50%
13	522291	Consumer Lending	3.52%
14	523910	Miscellaneous Intermediation	2.08%
15	523940	Portfolio Management and Investment Advice	1.74%
16	523999	Miscellaneous Financial Investment Activities	1.11%
17	522310	Mortgage and Nonmortgage Loan Brokers	1.09%
18	522299	International, Secondary Market, and All Other Nondepository Credit Intermediation	1.02%
19	513210	Software Publishers	0.38%
20	541512	Computer Systems Design Services	0.04%

Source: PwC calculations based on 2022 Economic Census.

Shares were uniformly applied to 2024 employment, labor income, and value added as described below before modeling indirect and induced effects.

- Core sectors (e.g., transaction processing, card issuing) were included at 100 percent, reflecting exclusive payment-related activity.
- Adjacent financial sectors were included at partial shares based on their payment-producing NAPCS product lines.
- Technology and hardware sectors were also included at partial shares to reflect only the portion of output related to payment-enabling devices or software.

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