



# Cash is King: Flows, Balances, and Buffer Days

Evidence from 600,000  
Small Businesses



# About the Institute

The global economy has never been more complex, more interconnected, or faster moving. Yet economists, businesses, nonprofit leaders, and policymakers have lacked access to real-time data and the analytic tools to provide a comprehensive perspective. The results—made painfully clear by the Global Financial Crisis and its aftermath—have been unrealized potential, inequitable growth, and preventable market failures.

The JPMorgan Chase Institute is harnessing the scale and scope of one of the world's leading firms to explain the global economy as it truly exists. Its mission is to help decision-makers—policymakers, businesses, and nonprofit leaders—appreciate the scale, granularity, diversity, and interconnectedness of the global economic system and use better facts, timely data, and thoughtful analysis to make smarter decisions to advance global prosperity. Drawing on JPMorgan Chase's unique proprietary data, expertise, and market access, the Institute develops analyses and insights on the inner workings of the global economy, frames critical problems, and convenes stakeholders and leading thinkers.

The JPMorgan Chase Institute is a global think tank dedicated to delivering data-rich analyses and expert insights for the public good.

## Acknowledgments

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Diana Farrell  
Chris Wheat

## Contents

2	Executive Summary
9	Introduction
10	Findings
22	Implications and Conclusion
24	Data Asset and Methodological Appendix
30	Glossary
31	Endnotes
32	References
33	Small Business Data Dashboard

# Executive Summary

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For most small business, cash reserves are a critical tool for meeting liquidity needs. Cash reserves provide a readily available means to pay employees and suppliers in normal times and are an important buffer to draw upon during adverse times. This is particularly true for small businesses with limited access to credit and other sources of liquidity. In other words, cash reserves are a key measure of the vitality and security of a small business.

In this inaugural report on the small business sector, the JPMorgan Chase Institute explores the financial lives of small business through the lens of cash inflows, outflows and account balances. We find that, despite the importance of cash reserves, most small businesses hold a level of cash reserves that would provide an insufficient cushion in the face of a significant economic downturn or other disruption. Using a new data asset constructed from over 470 million transactions conducted by 597,000 small businesses from February to October 2015, our analysis shows that half of all small businesses hold a cash buffer large enough to support 27 days of their typical outflows.

This report also explores key industry characteristics that help explain the drivers of cash buffers. Additionally, it offers a new synthesis of publicly available data to begin to draw together a comprehensive view of the small business sector.




These findings are relevant to policy makers who seek to assist small businesses; to nonprofit organizations that coach small business owners; to financial services firms that help small businesses manage their liquidity; and to owners of small businesses who seek benchmarks for guidance in managing their own liquidity.

We hope this report draws attention to cash balances as an important issue, helps people better understand differences among small businesses, and helps in the development of smarter programs, products, and policies that enable small businesses to flourish.

Data



We constructed a sample of 597,000 businesses who hold Chase Business Banking deposit accounts and meet our criteria for small, core metropolitan operating businesses. We then used 470 million anonymized transactions from these businesses to produce a daily view of cash inflows, cash outflows, and end-of-day balances over the nine non-holiday months from February 2015 to October 2015.

### 597,000 SMALL BUSINESSES

-  Hold Chase Business Banking accounts
-  End-of-day combined balances do not exceed \$20 million each day
-  Do not identify with more than a single address and/or a single industry




### CORE METROPOLITAN OPERATING BUSINESSES

We study businesses that have financial activity that indicates they are not seasonal.

-  For at least five of nine months, at least \$500 in outflows and 10 combined inflows and outflows
- 1+** At least one inflow and outflow in each month
-  Are located in one of 367 Metropolitan Areas where Chase has a representative footprint

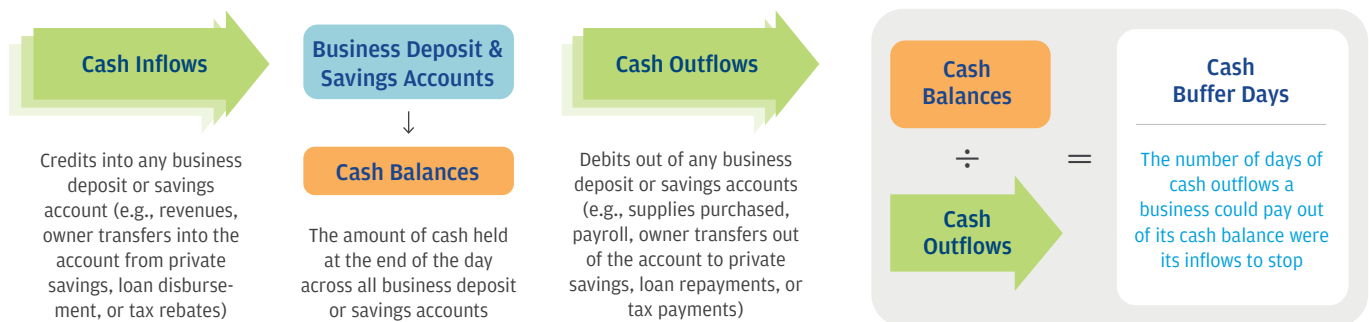
### SELECTED KEY INDUSTRIES

We focus on small businesses in 12 representative industries that capture most small business employees

- |   |  |
|---|--|
|  Construction                  |  Personal Services    |
|  Health Care Services          |  Real Estate          |
|  High-Tech Manufacturing       |  Repair & Maintenance |
|  High-Tech Services            |  Restaurants          |
|  Metal & Machinery           |  Retail             |
|  Other Professional Services |  Wholesalers        |

Together, these 12 industries capture 73 percent of for-profit employer small firms and 65 percent of for-profit small business employment

### Measuring cash inflows, outflows, balances, and buffer days

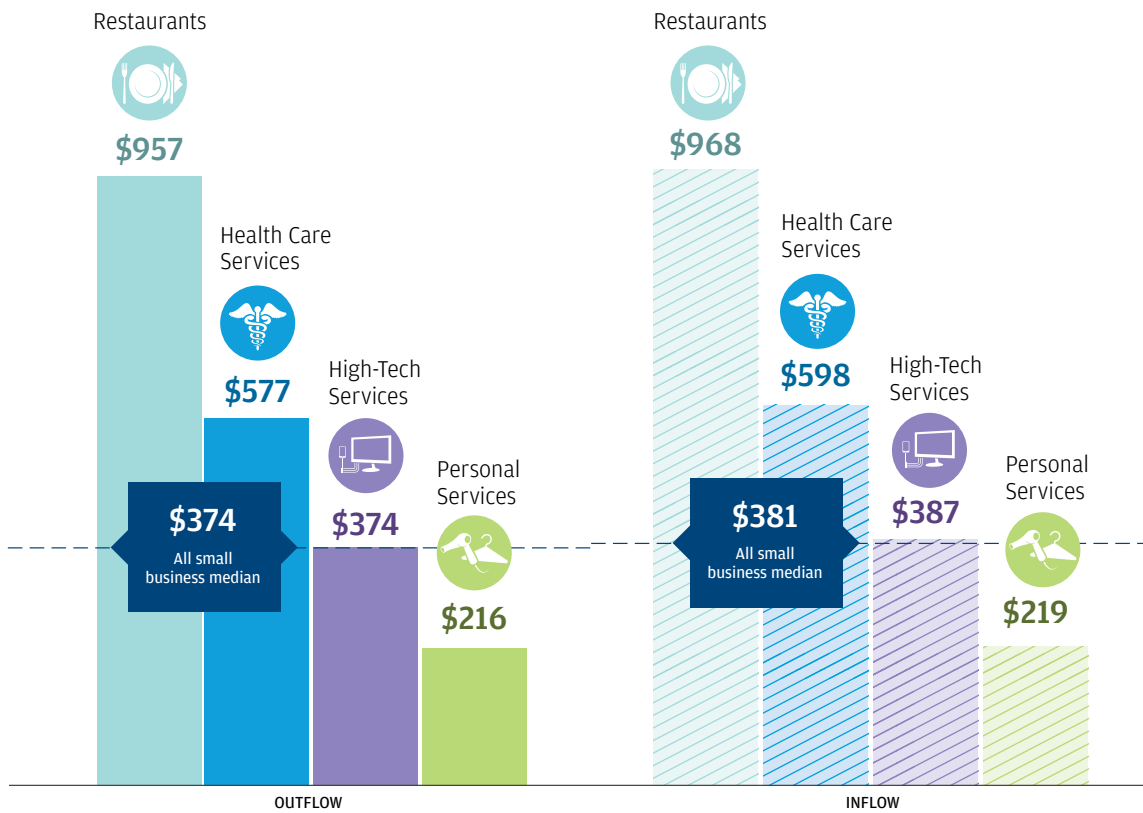


**Finding One**

The median small business has average daily cash outflows of \$374 and average daily cash inflows of \$381, with wide variation across and within industries.

**Outflows** refer to debit transactions paid out of any business deposit or savings accounts, such as the purchase of material and payroll, owner transfers out of the account to private savings, loan repayments, or tax payments

**Inflows** refer to credit transactions into any business deposit or savings account, such as revenues, owner transfers into the account from private savings, loan funding, or tax rebates



Individual small business average daily inflows and outflows are highly correlated.

Average daily cash inflows and outflows vary widely by industry:

- In the Personal Services industry, daily cash outflows and inflows were the lowest at \$216 and \$219, respectively.
- In the Restaurant industry, daily cash outflows and inflows were the highest at \$957 and \$968, respectively.

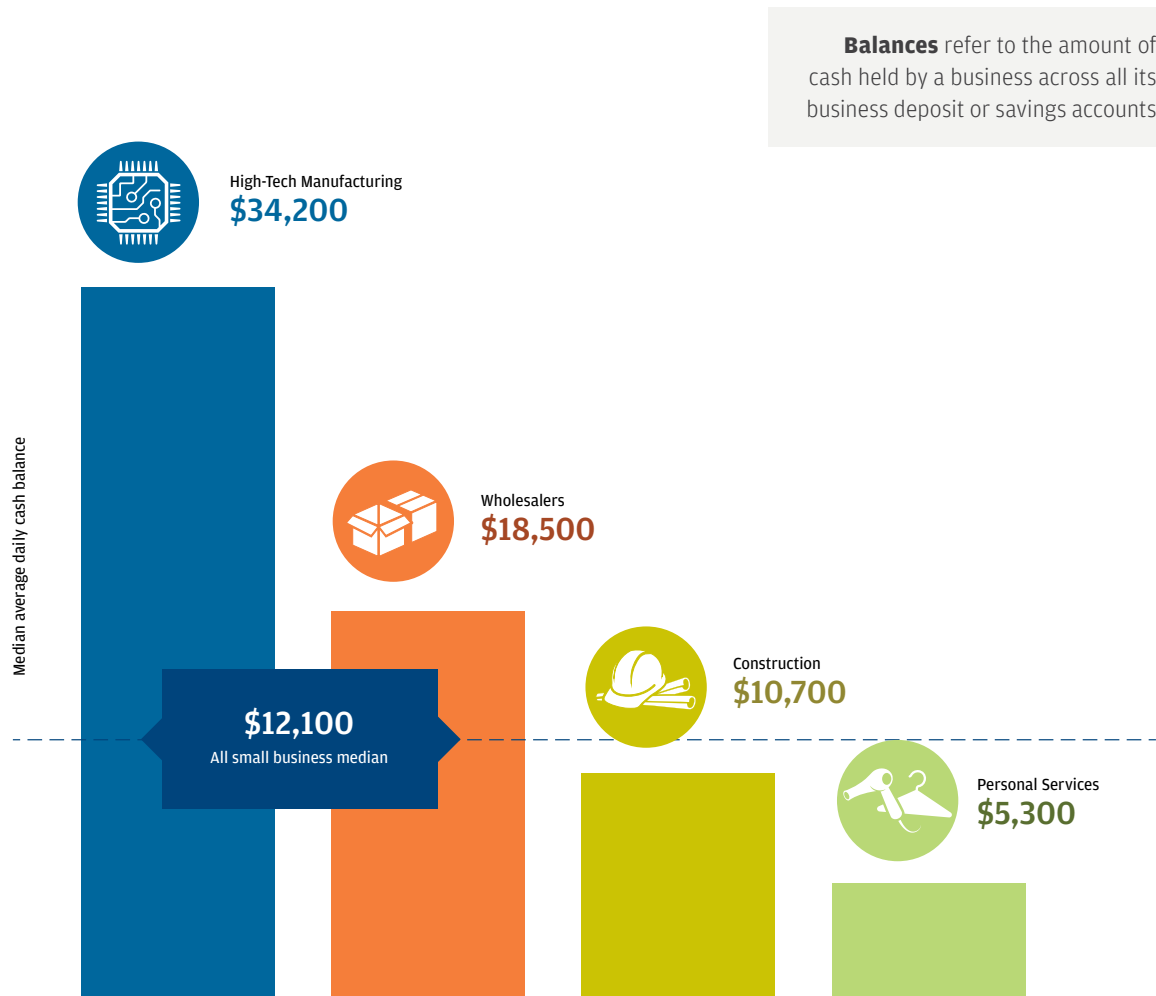
Average daily cash outflows vary substantially within industries as well:

- Outflows varied the most among small businesses within the Wholesale, Metal & Machinery Manufacturing, and High-Tech Manufacturing industries—in these industries small business at the 75th percentile had outflows four times higher than the median.

Cash inflows and outflows were computed by first computing the average daily cash inflow/outflow for individual small businesses, and then computing a median average daily cash inflow/outflow for an industry or our whole sample.

## Finding Two

The median small business holds an average daily cash balance of **\$12,100**, with wide variation across and within industries.



Cash balances vary widely by industry:

- In the Personal Services industry, the median small business held a cash balance of \$5,300.
- In the High-Tech Manufacturing industry, the median small business held a cash balance of \$34,200.

Cash balances vary substantially within industries as well:

- In most industries, small businesses at the 75th percentile carried balances 3 to 4 times the median level.

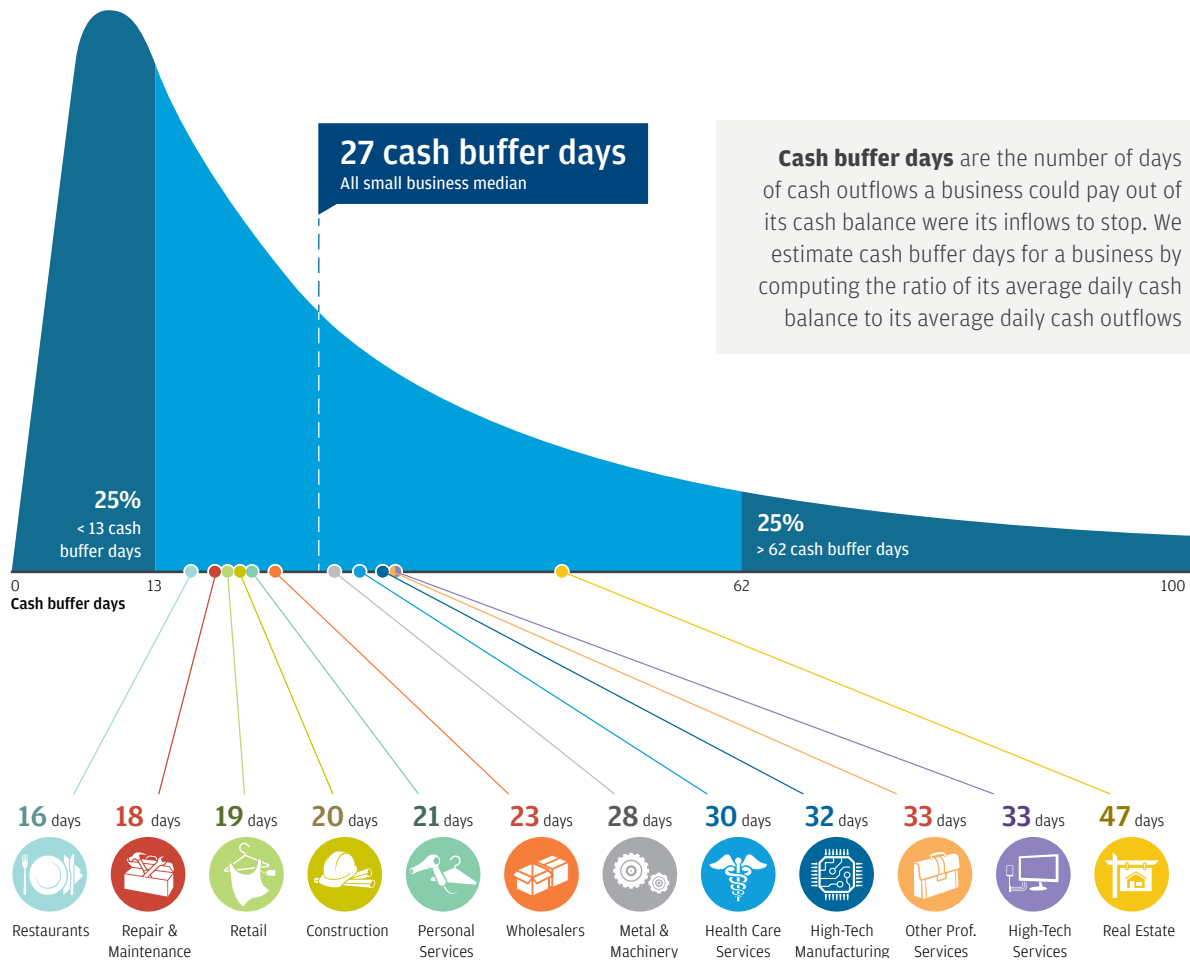
Cash balances were computed by first computing the average daily end-of-day cash balances for individual small businesses, and then computing a median average daily cash balance for an industry or our whole sample.

# Finding Three

## The median small business holds 27 cash buffer days in reserve.

Half of all small businesses hold a cash buffer of less than one month.

- Moreover, 25 percent of small businesses hold fewer than 13 cash buffer days in reserve.
- In contrast, 25 percent of small businesses hold over 62 cash buffer days in reserve.



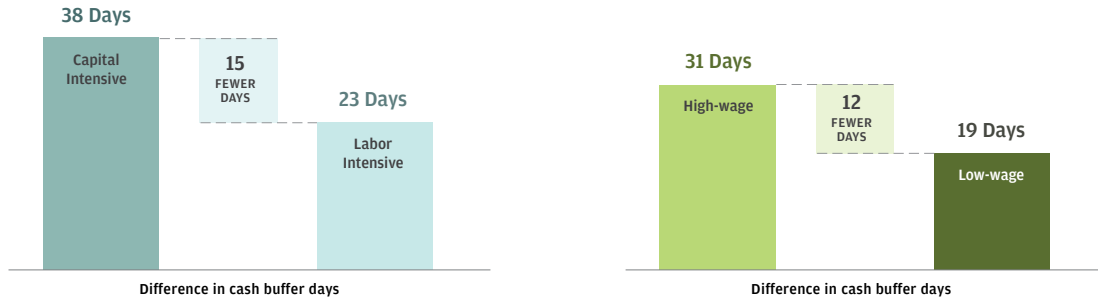
Median cash buffer days vary substantially across industries.

- The median small restaurant holds 16 cash buffer days in reserve.
- The median small business in the real estate industry holds 47 cash buffer days in reserve.



**Finding Four**

Small businesses in labor-intensive or low-wage industries hold fewer cash buffer days than those in capital-intensive or high-wage industries.



Share of Total US Small Business Employment within Each Segment



Small businesses in industries with a high amount of information technology or intellectual property (IT/IP) do not hold cash buffer days that are very different from low IT/IP industry businesses.

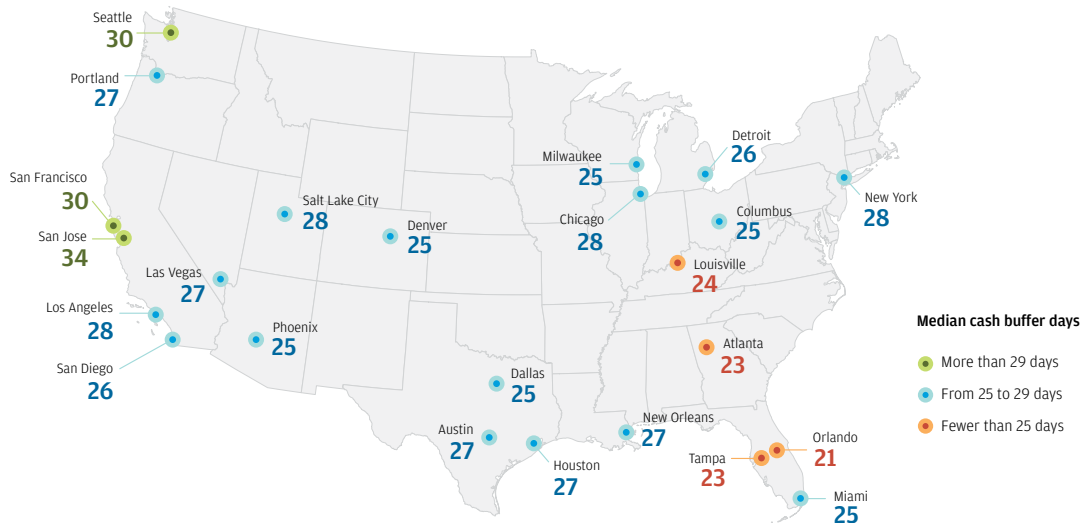
Similarly, small businesses in business-to-business (B2B) industries do not hold cash buffer days that are very different from business-to-consumer (B2C) industry businesses.

We define an industry as labor-intensive if labor costs comprise over 71 percent of its combined labor and capital payments, and capital-intensive otherwise. We define an industry as high-wage if its average labor costs are greater than \$30 per hour, and low-wage otherwise. We define an industry as having a high IT/IP capital allocation if intellectual property and information technology make up more than 12 percent of all capital inputs, and as having a low IT/IP capital allocation otherwise. We define an industry as B2B if over 65 percent of its domestic output was purchased by businesses, as B2C if over 65 percent of its domestic output was purchased by households, and as Mixed otherwise. We performed all calculations at the industry level—these classifications reflect the characteristics of all employer businesses within the industry, not just small businesses within the industry.

## Finding Five

Small business cash buffer days vary across metropolitan areas, but no clear pattern emerges from this variance.

Median cash buffer days in our 24 selected cities vary from 21 days in Orlando to 34 days in San Jose, a spread of 60 percent. Differences in industry mix and population between metropolitan areas do not explain this variation.



Cash buffer days are the number of days of cash outflows a business could pay out of its cash balance were its inflows to stop. We estimate cash buffer days for a business by computing the ratio of its average daily cash balance to its average daily cash outflows.

## Conclusion

This study leverages a new JPMorgan Chase Institute small business data asset to highlight cash buffer days as a key financial vitality indicator for small businesses. Our research shows substantial variation in cash buffer days for small businesses across and within industries and by region. Many small businesses may not have enough cash to continue operations in the face of a month-long loss of cash inflows due to an economic downturn or other negative shock.

Interventions that help small business owners better understand and manage cash could support the financial health of a sector that provides the economic base for a large portion of the US population. Specifically, our new industry segmentation draws attention to an opportunity to develop new policies that target large numbers of especially financially fragile small businesses in labor-intensive or low-wage industries, in contrast to policies that target small businesses in high-technology, capital intensive, high-wage, or business-serving industries.

Finally, cash buffer days can focus the attention of policymakers, advocates, and private-sector partners on liquidity as an important feature of the credit landscape. New educational programs and diversified credit offerings can help small business owners better understand and manage their liquidity, and substantially improve the financial resilience of the small business sector.

# Introduction

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The small business sector is a critical driver of production, employment, and economic growth. Small businesses (usually defined by the Small Business Administration as those with fewer than 500 employees) account for 99 percent of all business establishments in the United States, employ 48 percent of all US workers, are responsible for over 41 percent of net job creation, account for 45 percent of GDP, and produce 34 percent of all US exports. As such, this sector is a key focus for many policymakers, economists, and government officials. Concern among these stakeholders has increased recently as the shares of GDP and employment in this sector have fallen in recent years. Yet, despite its importance to our economy, publicly available data offer at best an incomplete view of the small business sector.

Public statistics indicate that there are 28.7 million small businesses and that most—23 million—have no paid employees. Of the remaining 5.7 million, 2.3 million businesses have fewer than 20 employees. Small businesses are young on average and many have a short lifespan: the median small business is between six and 10 years old. Nearly half of small businesses exit within their first five years, and over 30 percent exit within their first two years. We highlight these statistics and more in our new JPMorgan Chase Institute Small Business Data Dashboard, a compendium to this report (see p. 33).

While the Small Business Data Dashboard provides useful metrics about the small business sector, it is based on data that often have long lags or are reported infrequently. Moreover, aggregation in these data often masks important differences across the sector. The small business sector is highly fragmented, heterogeneous, and constantly evolving, which understandably raises the difficulty and cost of information gathering and renders the sector hard to monitor and understand.

To help fill this information gap, the JPMorgan Chase Institute has launched a broad-based research agenda to shed light on the economic and financial attributes of small businesses and their contribution to the economy. To conduct our analyses, we constructed a new data asset incorporating over 470 million anonymized transactions and account balances from 597,000 small businesses across 367 metropolitan areas, as described in our Data Asset section.

In our inaugural report on the small business sector, we focus on cash inflows, outflows and account balances. We find that median levels of flows and balances are relatively low, with wide variation across and within industries. Furthermore, despite the importance of having of cash buffer to weather adverse shocks, half of all small businesses hold only a cash buffer large enough to finance 27 days of their typical outflows.

We focus on small businesses in 12 representative industries that capture most small businesses employees, as described in the Methodology section. Moreover, we identify four key industry characteristics that provide a framework we use to assess the drivers of small business cash flows. When combined with our proprietary data asset, this framework helps us begin to draw together a comprehensive view of the small business sector.

# Findings

In our initial JPMorgan Chase Institute small business report, we focus on cash. As the popular saying “cash is king” suggests, managing cash and liquidity is critical to the survival and growth of small businesses. While small businesses manage liquidity by using credit cards, borrowing from lenders, selling equity to investors, or managing terms with suppliers and customers, cash is the least expensive and most readily available source of liquidity for the majority of small businesses. Moreover, existing empirical evidence suggests that a lack of access to external capital limits the growth of small firms, and that many firms rely on cash produced by net positive operating cash flows for financing.<sup>1</sup> However, despite its importance, very little data is available to directly inform how small businesses use cash—particularly the very small firms that comprise the bulk of the small business sector.

We offer an unprecedented view of the financial inflows, outflows, and liquidity profile of small businesses to answer a set of critical questions about small businesses: What size are the typical cash flows in and out of a small business? What level of cash balances do small businesses hold? How many cash buffer days do small businesses hold in reserve? Do the answers to these questions vary across industries and cities?

## Finding One

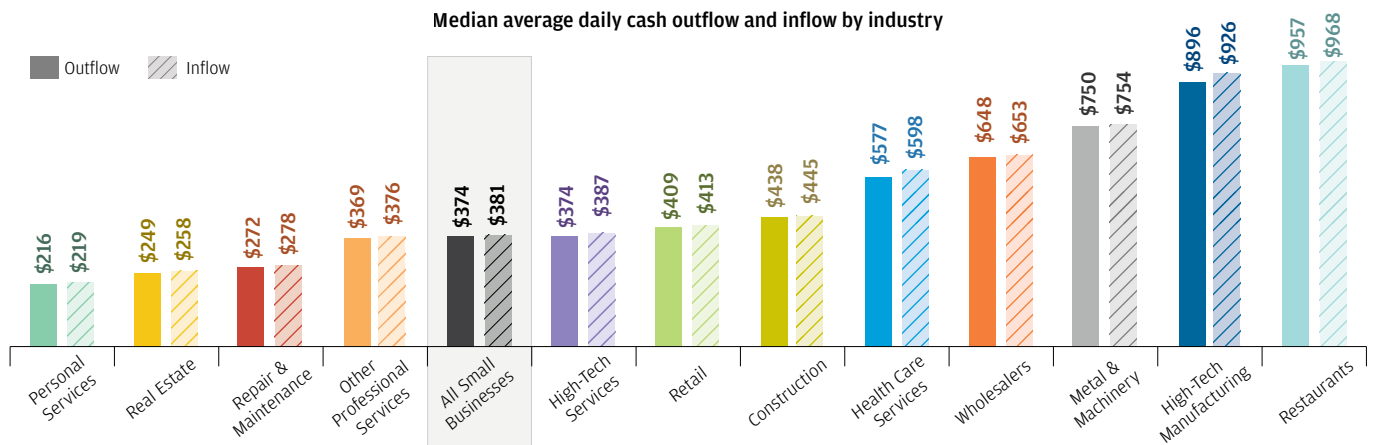
**The median small business has average daily cash outflows of \$374 and average daily cash inflows of \$381, with wide variation across and within industries.**

Average daily cash outflows and inflows vary substantially across small businesses. Small businesses spend cash to pay employees, purchase supplies, acquire assets, make payments to lenders and owners, or meet other payment obligations. Small businesses receive cash from the sale of goods and services, when owners and lenders provide funds, or if the business sells off assets. In general, a small business with larger payments (or outflows) must generate greater revenues or other inflows to sustain a positive cash balance. Conversely, larger inflows help small businesses meet payment obligations and sustain a positive cash balance, particularly to the extent that these inflows are regular and predictable.

We calculated the average daily outflow and inflow for each business in our sample. Figure 1 shows the median of these average daily outflows and inflows for small businesses in each of the 12 industries and for our sample as a whole. The median small business has average daily outflows of \$374 and average daily inflows of \$381. In our sample, average daily outflows are highly correlated with average daily inflows—the correlation coefficient for individual small businesses was 0.99.

Most small businesses have nearly equal daily inflows and outflows.

Figure 1: Average Daily Cash Flow Levels Vary Widely by Industry



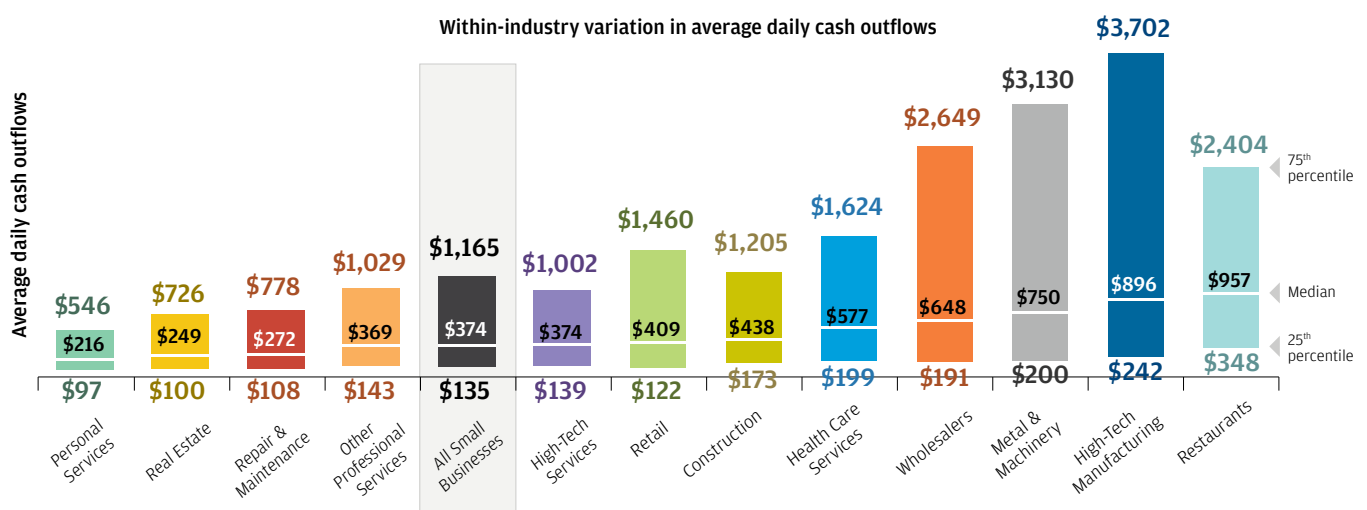
Note: Outflows refer to debit transactions paid out of any business deposit or savings accounts, such as the purchase of material and payroll, owner transfers out of the account to private savings, loan repayments, or tax payments. Inflows refer to credit transactions into any business deposit or savings account, such as revenues, owner transfers into the account from private savings, loan funding, or tax rebates.

Source: JPMorgan Chase Institute

Median average daily outflows and inflows varied substantially across industries. For example, the median small business in the Personal Services industry had average daily outflows of \$216, while the median small business in the Restaurant<sup>2</sup> industry had average daily outflows of \$957. At the industry level, inflows also tracked outflows closely. Median average daily inflows exceeded median average daily outflows by a very small amount, ranging from \$3 for Personal Services to \$30 for High-Tech Manufacturing.

Finally, we explored variation in average daily outflows within industries. For each industry, Figure 2 displays the average daily outflow for the small business at the median, 25th, and 75th percentiles of the distribution. The range of average daily outflows within industries is substantial. Notably, while small businesses in the Restaurant industry had the highest median daily average outflows, three other industries—Wholesale, Metal and Machinery Manufacturing, and High-Tech Manufacturing, had higher average daily outflows at the 75th percentile. In each of these three industries, over 25 percent of small businesses had average daily outflows of \$2,500 or more.

Figure 2: Average Daily Cash Outflows Vary Substantially Within Industries



Note: Outflows refer to debit transactions paid out of any business deposit or savings accounts, such as the purchase of material and payroll, owner transfers out of the account to private savings, loan repayments, or tax payments.

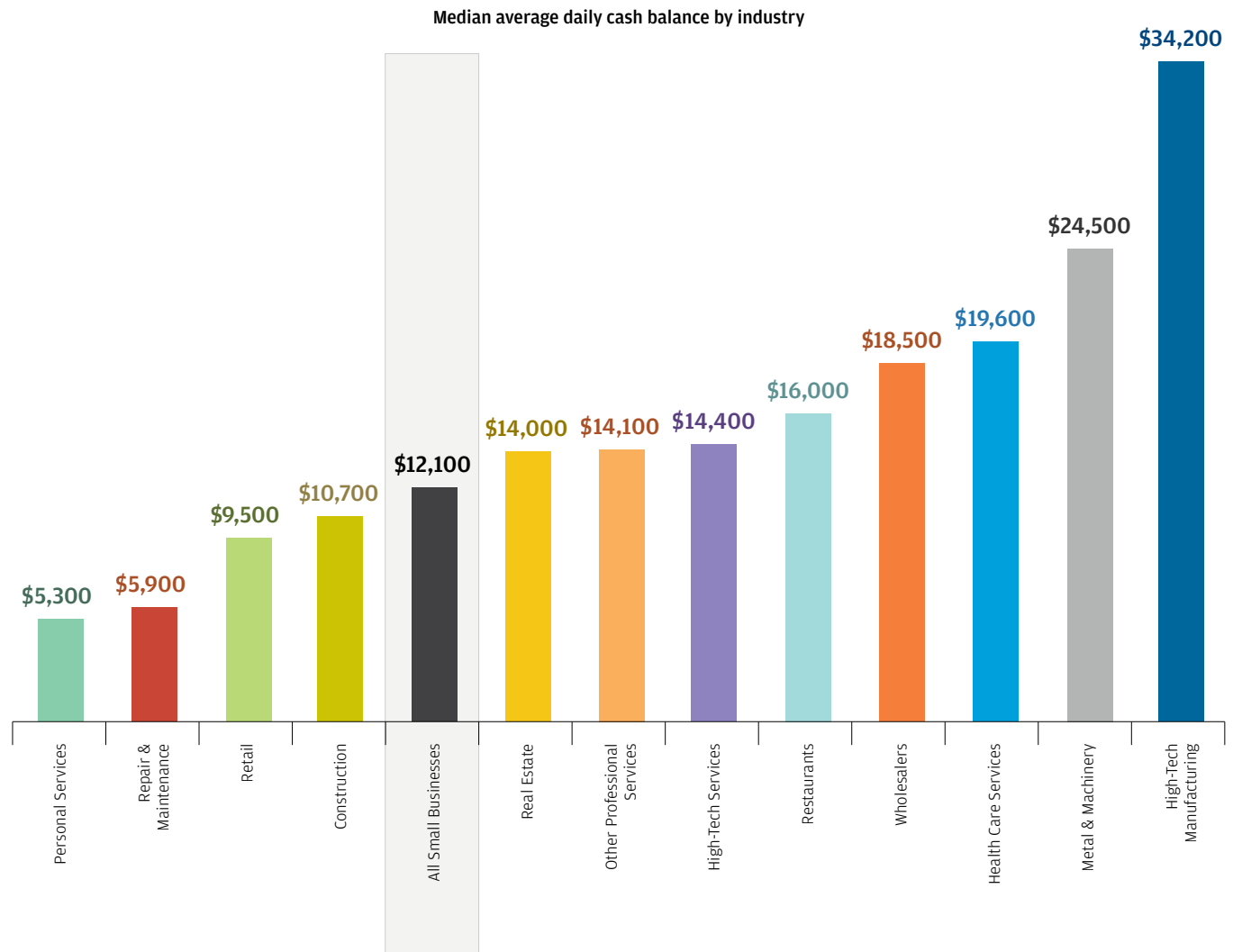
Source: JPMorgan Chase Institute

# Finding Two

The median small business holds an average daily cash balance of \$12,100, with wide variation across and within industries.

Next, we determined the average daily cash balance in our sample. Figure 3 presents the median level of this average daily balance for our entire sample as well as each of our 12 industries. The median business in our sample held an average daily balance of \$12,100. As with cash flows, we also found wide variation in average daily balances across industries. At the lower extreme, small businesses in the Personal Services industry had a median average daily balance of \$5,300. In contrast, the High-Tech Manufacturing industry had a median average daily balance of \$34,200.

Figure 3: Average Daily Cash Balances Vary Widely by Industry

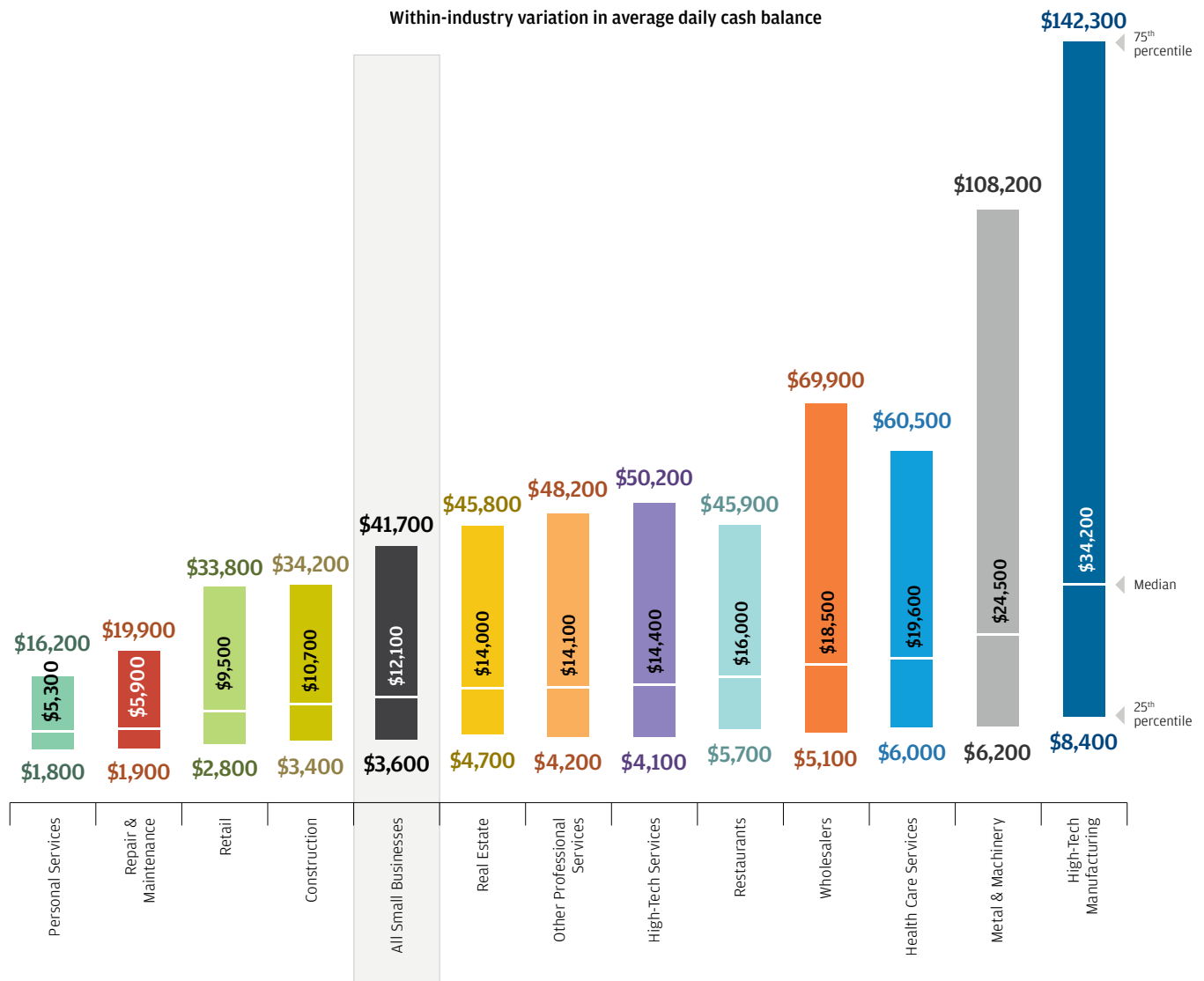


Note: Balances refer to the amount of cash held by a business across all of its business deposit or savings accounts.

Source: JPMorgan Chase Institute

Figure 4 displays the average daily balances in each industry for the median, 25th, and 75th percentiles of the distribution. As was the case with average daily outflows, the range of average daily balances within industries is also sizeable. In two industries—Metal and Machinery Manufacturing and High-Tech Manufacturing—small businesses at the 75th percentile hold relatively large average daily balances, in each case over \$100,000. In contrast, in seven of 12 industries—Personal Services, Repair & Maintenance, Retail, Construction, Real Estate, Other Professional Services, and High-Tech Services—small businesses at the 25th percentile hold average daily balances of \$5,000 or less.

Figure 4: Average Daily Cash Balances Vary Substantially Within Industries



Note: Balances refer to the amount of cash held by a business across all its business deposit or savings accounts.

Source: JPMorgan Chase Institute

Unlike what we observed for average daily outflows, the median average daily balance does offer an informative summary of the overall distribution of balances within the industry. In most industries, the small business at the 75th percentile of the average daily balance distribution has three to four times the average daily balance of the median small business in the industry. This stands in contrast to average daily outflows, where the industry with the largest median average daily outflow did not have the largest average daily outflow at the 75th percentile.

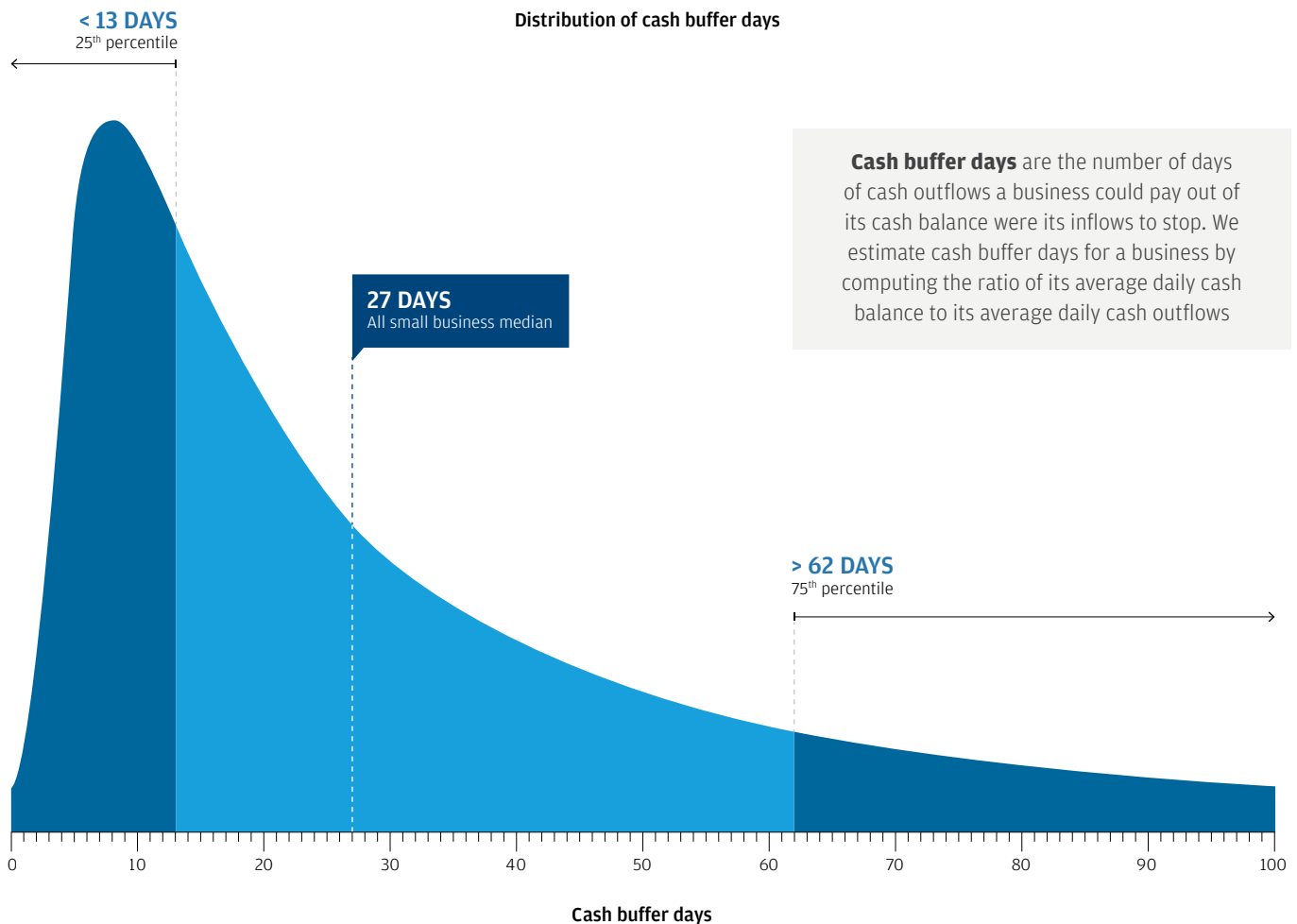
# Finding Three

The median small business holds 27 cash buffer days in reserve.

Cash balances held by a business provide a buffer to absorb unexpected shortfalls in revenues or increases in expenses. Access to credit or other resources can provide some protection, but most small businesses have limited access to financing.<sup>3</sup> However, cash balances without context or scale have limited value as a measure of resilience.

We provide an enhanced view of financial resilience by introducing a new concept: cash buffer days. Cash buffer days are the number of days of cash outflows a business could pay out of its cash balance were its inflows to stop.<sup>4</sup> We estimate cash buffer days for a business by computing the ratio of its average daily cash balance to its average daily cash outflows. Figure 5 illustrates the overall distribution of cash buffer days across our sample.

Figure 5: The Median Small Business Holds 27 Cash Buffer Days in Reserve



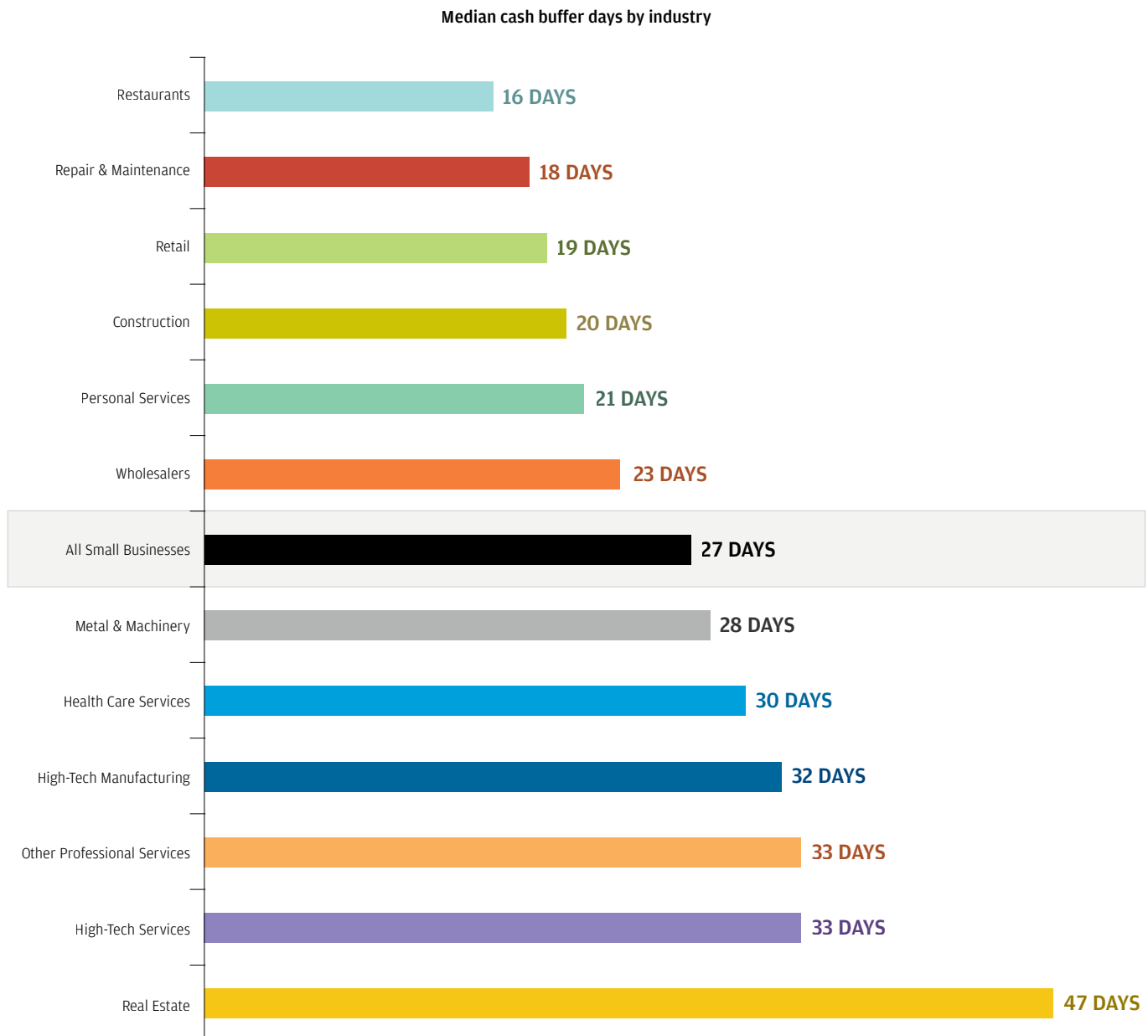
Source: JPMorgan Chase Institute



Most small businesses are operating with a cash buffer of under one month. Specifically, half of all small businesses hold an average daily cash balance level of 27 cash buffer days or fewer. Moreover, 25 percent of small businesses seem especially vulnerable, in that they hold a reserve of 13 cash buffer days or fewer. In contrast, the top 25 percent of businesses appear substantially more resilient, in that they hold a reserve of 62 cash buffer days or more.

Cash buffer days vary dramatically by industry, as illustrated in Figure 6. Restaurant owners hold particularly low balances compared to their typical outflows—the median restaurant holds 16 cash buffer days in reserve. In contrast, the median small business in the Real Estate industry holds 47 cash buffer days in reserve.<sup>5</sup>

**Figure 6: Cash Buffer Days Vary Substantially Across Industries**

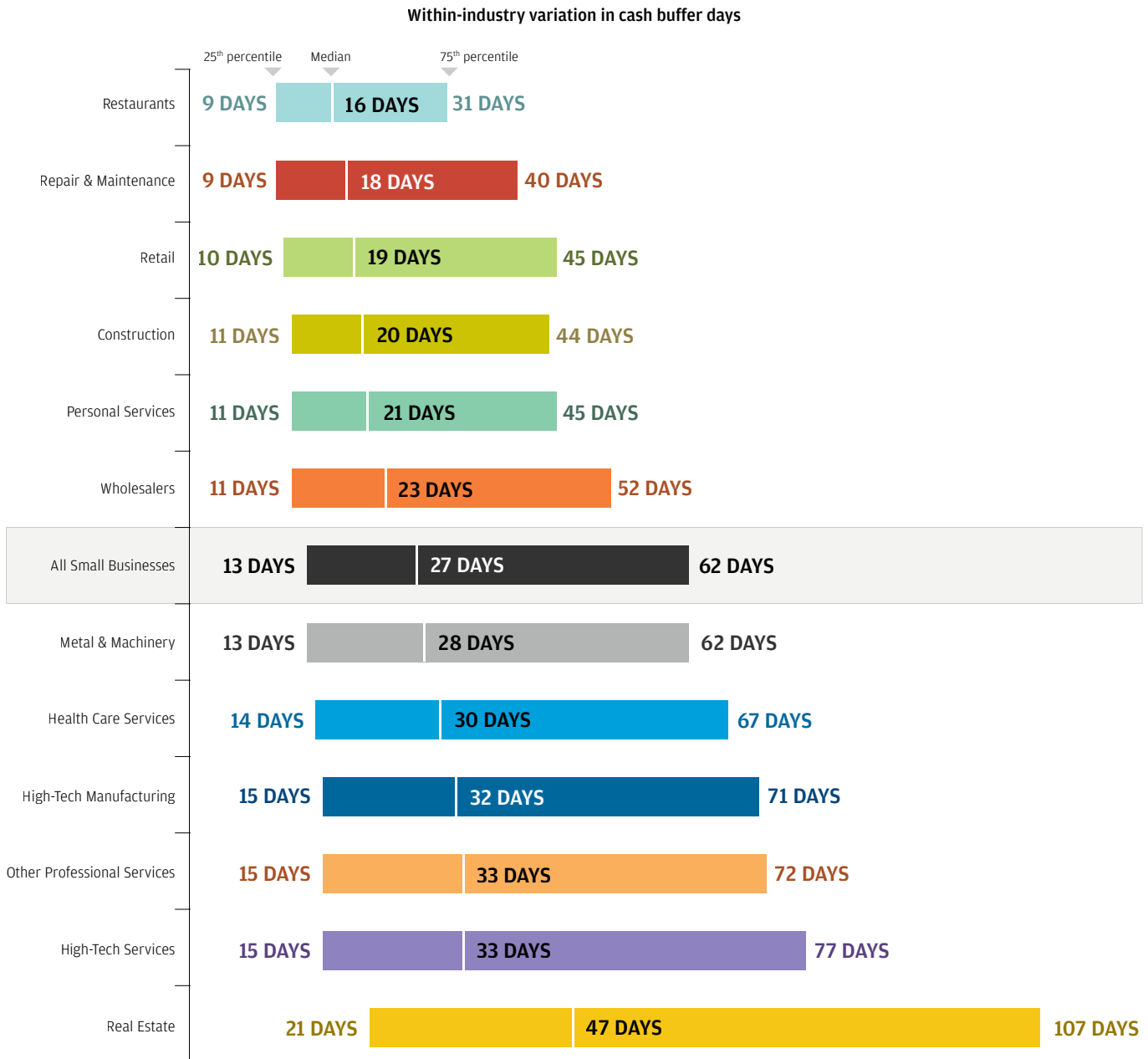


Note: Cash buffer days are the number of days of cash outflows a business could pay out of its cash balance were its inflows to stop. We estimate cash buffer days for a business by computing the ratio of its average daily cash balance to its average daily cash outflows.

Source: JPMorgan Chase Institute

Figure 7 presents cash buffer days for each small business industry for the median, 25th, and 75th percentiles of the cash buffer day distribution. The range of cash buffer days within industries is more constrained than the range of average daily outflows or average daily balances by industry. In most industries, the small business at the 75th percentile holds approximately twice as many cash buffer days than the median small business. In contrast, the small business at the 75th percentile of the average daily balance distribution in an industry holds a balance three to four times the median average daily balance of its industry. Still, the substantial within-industry variation in cash buffer days showcases the extent of heterogeneity in the small business sector.

**Figure 7: Cash Buffer Days Vary Substantially Within Industries**



Note: Cash buffer days are the number of days of cash outflows a business could pay out of its cash balance were its inflows to stop. We estimate cash buffer days for a business by computing the ratio of its average daily cash balance to its average daily cash outflows.

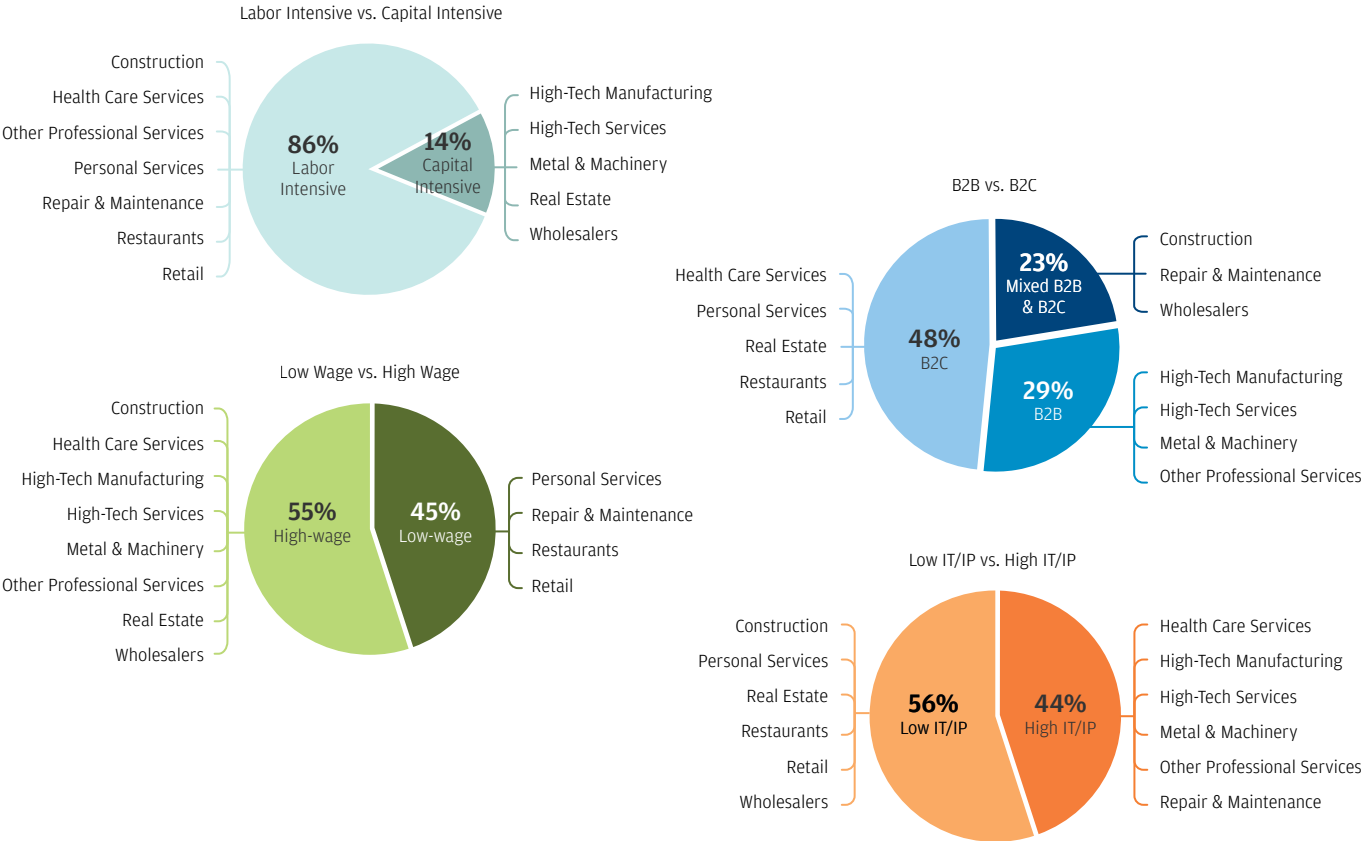
**Finding Four**

**Small businesses in labor-intensive or low-wage industries hold fewer cash buffer days than those in capital-intensive or high-wage industries.**

To better understand the cross-industry variability we observed in cash buffer days, balances, and outflows, we identified four industry-level characteristics that could potentially provide insight into these differences: labor vs. capital intensity, wage level, capital allocated to Information Technology/Intellectual Property (IT/IP), and value chain position (B2B vs. B2C). Figure 8 summarizes our characterization of the 12 identified industries.

**Figure 8: Industries by Labor/Capital Intensity, Wages, Value Chain Position, and Share of IT/IP Capital**

**Share of total US small business employment within each segment**



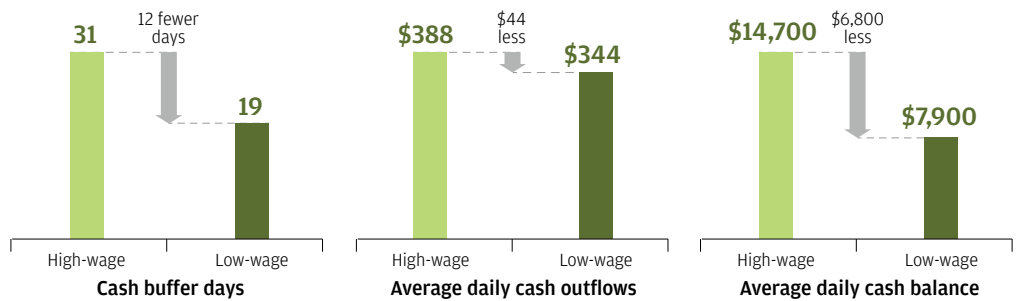
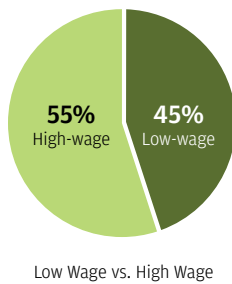
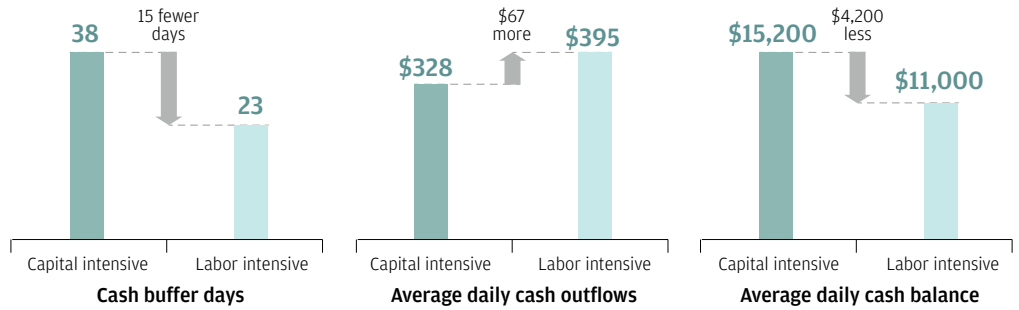
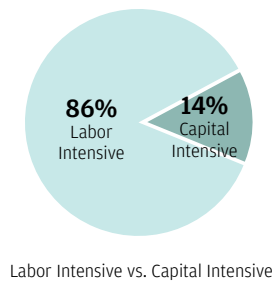
Note: We define an industry as labor-intensive if labor costs comprise over 71 percent of its combined labor and capital payments, and capital-intensive otherwise. We define an industry as high-wage if its average labor costs are greater than \$30 per hour, and low-wage otherwise. We define an industry as having a high IT/IP capital allocation if intellectual property and information technology make up more than 12 percent of all capital inputs, and as having a low IT/IP capital allocation otherwise. We define an industry as B2B if over 65 percent of its domestic output was purchased by businesses, as B2C if over 65 percent of its domestic output was purchased by households, and as Mixed otherwise. We performed all calculations at the industry level—these classifications reflect the characteristics of all employer businesses within the industry, not just small businesses within the industry.

Sources: US Bureau of Labor Statistics; US Department of Commerce, Bureau of Economic Analysis

First we consider the two industry characteristics that capture the labor characteristics of industries. Figure 9 presents differences in cash buffer days by labor vs. capital intensity and wage level.

**Figure 9: Labor vs. Capital Intensity and Wage Levels Explain Substantial Differences in Cash Buffer Days**

**Share of total US small business employment within each segment**



Note: Cash buffer days are the number of days of cash outflows a business could pay out of its cash balance were its inflows to stop. We estimate cash buffer days for a business by computing the ratio of its average daily cash balance to its average daily cash outflows. Outflows refer to debit transactions paid out of any business deposit or savings accounts, such as the purchase of material and payroll, owner transfers out of the account to private savings, loan repayments, or tax payments. Balances refer to the amount of cash held by a business across all its business deposit or savings accounts. The "Mixed" category in the B2B vs B2C comparison refers to small businesses in industries for which neither businesses nor households used 65 percent of domestic output.

Source: JPMorgan Chase Institute

We found that small businesses in labor-intensive or low-wage industries hold the fewest cash buffer days. As Figure 9 illustrates, the median business in a labor-intensive industry like Personal Services or Repair & Maintenance carries 15 fewer cash buffer days than the median business in a capital-intensive industry like High-Tech Manufacturing or Real Estate. Likewise, the median small business in a low-wage industry like Restaurants or Retail holds 12 fewer cash buffer days than the median small business in a high-wage industry like Other Professional Services or High-Tech Services.

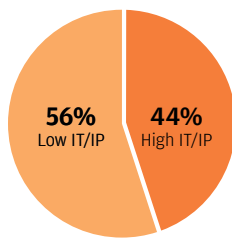
The smaller number of cash buffer days held by the median labor-intensive small business as compared to the median capital-intensive small business follows from the interaction of higher outflows with lower balances. The median labor-intensive small business has average daily cash outflows \$67 higher than the median capital-intensive small business. Labor-intensive small businesses draw these higher outflows against smaller balances. The median labor-intensive small business has an average daily balance \$4,200 lower than the median capital-intensive small business. Higher outflows and lower balances combine to produce 15 fewer cash buffer days for the median labor-intensive small business as compared to the median capital-intensive business.

In contrast, the smaller number of cash buffer days held by the median low-wage small business as compared to the median high-wage small business largely follows from lower balances. The median low-wage small business has average daily cash outflows \$44 lower than the median high-wage small business. However, these smaller outflows are more than offset by substantially lower balances. The median low-wage small business holds a balance \$6,800 lower than the median high-wage small business. Even with smaller outflows, these lower balances produce 12 fewer cash buffer days for the median low-wage business as compared to the median high-wage business.

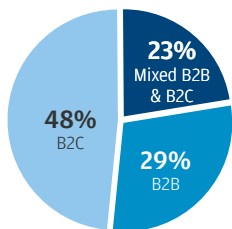
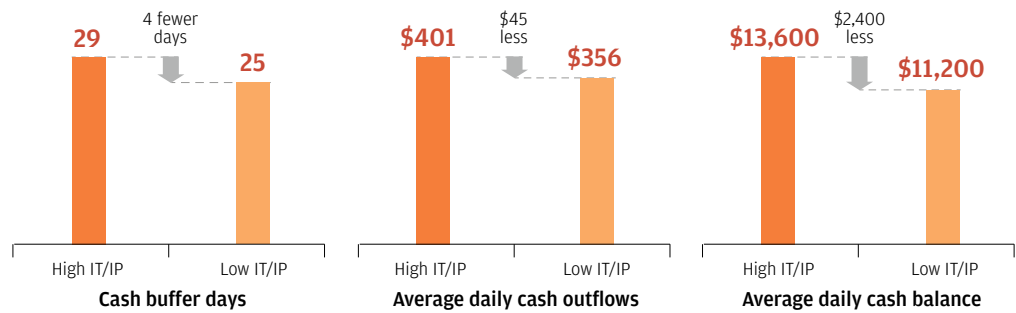
We next consider the quality of capital as measured by an industry’s IT/IP intensity and its position in the value chain. Figure 10 presents differences in cash buffer days by share of IT/IP capital intensity and value chain position. Neither of these industry characteristics seems to have a meaningful association with cash buffer days.

Figure 10: IT/IP Capital Intensity and Value Chain Position Explain Smaller Differences in Cash Buffer Days

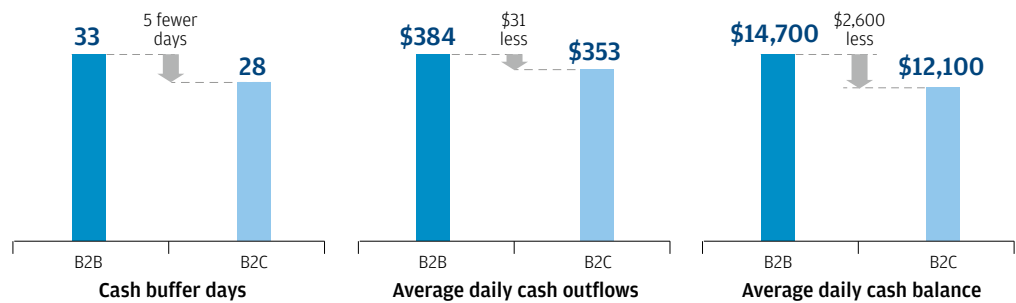
Share of total US small business employment within each segment



Low IT/IP vs. High IT/IP



B2B vs. B2C



Note: Cash buffer days are the number of days of cash outflows a business could pay out of its cash balance were its inflows to stop. We estimate cash buffer days for a business by computing the ratio of its average daily cash balance to its average daily cash outflows. Outflows refer to debit transactions paid out of any business deposit or savings accounts, such as the purchase of material and payroll, owner transfers out of the account to private savings, loan repayments, or tax payments. Balances refer to the amount of cash held by a business across all its business deposit or savings accounts. The "Mixed B2B & B2C" category in the B2B vs. B2C comparison refers to small businesses in industries for which neither businesses nor households used 65 percent or more of domestic output.

Source: JPMorgan Chase Institute

We found that small businesses in industries with a low share of IT/IP capital hold four fewer cash buffer days in reserve, have average daily outflows that are \$45 lower, and hold average daily balances that are \$2,400 lower than small businesses in industries with a high share of IT/IP capital. We also found that small businesses in consumer-facing industries hold five fewer cash buffer days in reserve, have average daily outflows that are \$31 lower, and hold average daily balances that are \$2,600 lower as compared to small businesses in business-facing industries. While technology intensity and value chain position may predict many important small business outcomes, they do not strongly correspond to financial resilience as measured by cash buffer days.

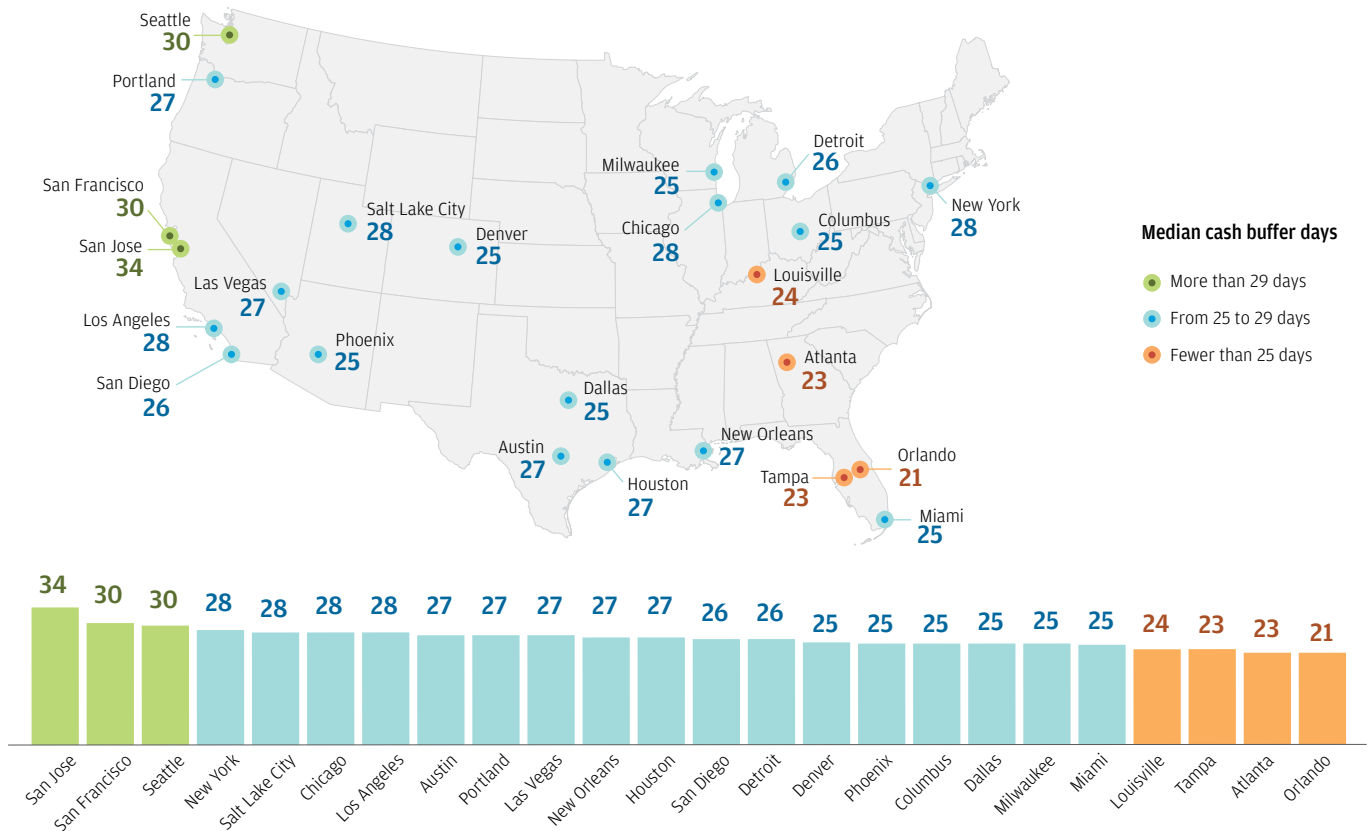
# Finding Five

## Small business cash buffer days vary across metropolitan areas, but no clear pattern emerges from this variance.

Small business cash flows vary substantially across local economies. In part, these differences are driven by the differences in industry mix across these locales. Metropolitan areas like those surrounding San Francisco, San Jose, Seattle, and Austin are known for their concentration of high technology businesses. Los Angeles is known for its focus on the entertainment industry, while travel and hospitality-related businesses might play an outsized role in Orlando and Las Vegas. These industry mix differences notwithstanding, metropolitan area economies also differ fundamentally in their costs of doing business. Our unique data asset allows us to directly observe differences in cash outflows by metropolitan area.

We found substantial differences in median cash buffer days for small businesses across 24 metropolitan areas, as displayed in Figure 11. The 34 cash buffer days held in reserve by the median small business in San Jose are nearly 60 percent higher than the 21 cash buffer days held in reserve by the median small business in Orlando.

Figure 11: Cash Buffer Days Vary Widely Across Metropolitan Areas



Note: Cash buffer days are the number of days of cash outflows a business could pay out of its cash balance were its inflows to stop. We estimate cash buffer days for a business by computing the ratio of its average daily cash balance to its average daily cash outflows.

Neither population nor industry mix explained variation in cash buffer days across the 24 metropolitan areas we explored. Figure 12 presents the correlation between the median number of cash buffer days in a metropolitan area, its population, and its share of restaurants and real estate businesses. The correlation between population and cash buffer days was very weak at 0.15. Industry composition also explained very little of the variation in cash buffer days across these metropolitan areas. Both the restaurant and real estate industries contain substantial shares of small businesses, and each industry is at one extreme of the cash buffer days distribution. As a result, the median small business in a metropolitan area with especially large numbers of small restaurants might have relatively few cash buffer days, while the median small business in a metropolitan area with especially large numbers of real estate small businesses might have relatively more cash buffer days. However, our data do not bear this pattern out. We found very weak correlations of 0.14 between median cash buffer days and both of these industry composition measures.

Small businesses in San Jose have the most cash buffer days with a median of 34; those in Orlando have the least with a median of only 21.

**Figure 12: Neither Population Nor Industry Mix Correlate Strongly with Cash Buffer Days**

Metropolitan area measure	Correlation with median cash buffer days
Population	0.15
Share of small businesses in restaurant industry	0.14
Share of small businesses in real estate industry	0.14

Note: We measure population using Census CBSA 2010 population estimates.

Sources: JPMorgan Chase Institute, Bureau of Economic Analysis, Moody's, US Census Bureau

We found a complex relationship between living costs and the cost of doing business in a metropolitan area and the cash buffer days held by its median small business. On the surface, this relationship is straightforward. There is a moderately strong relationship between the median number of cash buffer days in a metropolitan area and both its cost of living and its cost of doing business<sup>6</sup>. The correlation coefficients between these two measures and median cash buffer days were 0.68 and 0.60, respectively. However, these correlations imply that small businesses in area with higher costs carry cash balances levels that more than offset the higher costs they face. Small businesses facing higher costs might reasonably be expected to have larger average daily cash outflows, and as a result hold higher average daily cash balances<sup>7</sup>. It is less clear why average balances would grow with higher costs at a faster rate than average daily outflows, as these strong correlations imply. The weak relationship between population, industry mix and cash buffer days and this complex relationship between costs and cash buffer days together suggest that a rich set of mechanisms link the unique features of local economies to the cash liquidity of their small businesses.

# Implications and Conclusion

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This report, based on a new data set of small business cash flows, balances, and buffer days, provides new and important insights into the small business sector on the critical topic of managing cash and liquidity. We summarize the key conclusions and implications below.

- **Most US small business cash flows are lower than is conventionally believed.** With median inflows and outflows of approximately \$380 per day (approximately \$140,000 per year) and median daily balances of only \$12,100, the typical small business can provide few full-time incomes after covering other expenses. Without strong and continuous cash flow management, even small changes in cash inflows or outflows—especially if unexpected—can have large impacts on the financial health of these businesses.
- **Cash buffer days offer a useful benchmark for individual small businesses.** While it is clear that the small business sector is heterogeneous and that each business will have its own challenges, cash flows, balances, and cash buffer days help to illustrate the liquidity and financial resilience of small businesses. The data in this report provide initial benchmarks by industry and metropolitan area that can serve as a starting point for businesses to better understand their own financial situation.
- **A large share of small businesses in the US has limited liquidity (as seen through their deposit accounts), potentially making them vulnerable to shocks.** With a median of only 27 cash buffer days—and far fewer in industries such as restaurants and repair and maintenance—the typical small business has a low margin of error in the face of economic headwinds and shocks. In an environment with readily available high-return, low-risk and high-liquidity investments, small business owners might invest excess cash in these opportunities, rather than holding cash in a deposit account. Active management of cash along these lines would keep balances relatively low, and minimize cash buffer days as a result. However, the interest rate environment in 2015 provided few such opportunities for the typical small business owner. Moreover, given that cash flow management and costs have been the top two concerns of small business owners<sup>8</sup>, and given the costs and uncertainty associated with short-term credit options, we posit that most small business owners use cash held in deposit accounts as a primary financial buffer.

Twenty-seven cash buffer days can seem particularly fragile when considering the impact of recent local economic shocks on small businesses. For instance, during the harsh Northeast winter in 2015, small businesses in Massachusetts reported an average fall in sales of 24 percent from January 26 to February 22, 2015. Restaurants and retailers were hit particularly hard, losing half of their sales during the month-long period.<sup>9</sup> With a median of only 16 cash buffer days and only 50 percent of expected sales during the month, many of these restaurants likely faced a liquidity crunch.

Moreover, beyond regional or market-wide economic shocks, many small businesses also face unexpected expenses, late or unpaid payments from customers, or other idiosyncratic shocks. Given that the median small business averages only \$381 in inflows each day, these shocks need not be large to be impactful. And while some small businesses will be fortunate enough to obtain access to credit, it may be too little too late. Small businesses spend between 24 and 33 hours simply applying for traditional loan products<sup>10</sup> and can expect to wait 60-90 days to close these loans after submitting their application.<sup>11</sup> As a result, most small businesses must rely on their cash buffer days to survive during liquidity crunches, and 27 cash buffer days leaves the typical small business with limited margin for error.

- **Both small business owners and employees in labor-intensive and low-wage industries are especially vulnerable.** Small businesses in industries that are labor-intensive or pay low wages hold significantly fewer cash buffer days than small businesses in industries that are capital-intensive or pay high wages. Moreover, small businesses in labor-intensive industries provide jobs for a substantial fraction of all US employees. As a result, any financial vulnerability that affects these businesses and their owners may pose financial risks to their employees as well. It therefore becomes particularly important that these small business owners understand all the components of their labor costs—including the costs for salaries, benefits, training, and turnover—and ensure that they have enough cash buffer days to fulfill their obligations to employees if faced with sudden economic shocks or idiosyncratic challenges.



## Managing Liquidity and Improving Financial Resilience

Small business policymakers, advocates, and private-sector partners should increase their focus on helping small business owners manage liquidity and improve their financial resilience. These stakeholders can take two approaches to help small businesses address their liquidity challenges. First, increasing access to credit can provide a lifeline to small businesses in the face of economic and/or idiosyncratic shocks. Second, helping small business owners better manage their cash flows and build up their cash buffer days to weather challenging times without relying on (often expensive) sources of credit.

As a first approach, stakeholders should diversify the set of available credit offerings to better match the needs of the smallest and most financially fragile small businesses. Many current credit offerings target small businesses that seek to grow through capital investment. While these offerings play an important role in supporting the growth of some small businesses, many others have qualitatively different credit needs. Specifically, small businesses that lack financial resilience could benefit significantly from access to lines of credit that could be drawn on to manage short-term liquidity. The four types of loans the SBA already offers through its CAPLine program are designed to specifically address these kinds of short-term and cyclical working capital needs. These loans can help small businesses cope with seasonal fluctuations and serve as a general line of credit during challenging times.

As a second approach, educational programs offered to small business owners should use cash buffer days to concretely illustrate the consequences of effective cash flow management. Local programs offered by cities like NYC Small Business Services, federal programs offered and coordinated by the SBA, and other programs offered by public, private and non-profit organizations provide small business owners with the opportunity to learn about the fundamentals of running a business. By helping small business owners understand typical levels of cash buffer days for their industry and region, providing information about typical causes of unexpected cash shortfalls, and providing concrete information about the timing and cost of credit options, these programs could help small business owners make better-informed decisions about the levels of cash balances they should seek to hold.

Finally, tax policy is also frequently mentioned as a potential tool to help small business owners. First and foremost, however, policy makers and advocates must help small business owners meet a more fundamental need: managing their records. This can help small business owners improve their cash flow management, reduce the cost of filing taxes, and take better advantage of incentives offered through tax programs.

In conclusion, the vulnerability of small businesses to liquidity crunches is a serious concern regarding the health and resilience of this important sector. Substantial numbers of small businesses in the United States face liquidity challenges in ways not fully measured by the existing data or addressed well by current policy discourse. The extent of this liquidity challenge—as measured by cash buffer days—maps against the industry and geographic heterogeneity of the small business sector as a whole. This variation provides an opportunity for targeted policies and other tools to address the liquidity needs of small businesses in specific industries and local economies.

# Data Asset and Methodological Appendix

## Data Asset

In this report, the JPMorgan Chase Institute seeks to inform the public debate on the financial lives of small businesses in the US. To draw conclusions about cash flow outcomes, we adapted the firm's internal data on US small business accounts into a secure groundbreaking data asset. As the first financial institution to channel this wealth of information for the benefit of the public good, JPMorgan Chase put strong guardrails and strict privacy policy protocols in place to protect personal information throughout the creation and analysis of this data asset.

### Data Privacy

The JPMorgan Chase Institute has adopted rigorous security protocols and checks and balances to ensure all customer data are kept confidential and secure. Our strict protocols are informed by statistical standards employed by government agencies and our work with technology, data privacy, and security experts who are helping us maintain industry-leading standards.

There are several key steps the Institute takes to ensure customer data are safe, secure and anonymous:

- Before the Institute receives the data, all unique identifiable information—including names, account numbers, addresses, dates of birth, Social Security numbers, and Employer Identification Numbers (EIN)—is removed.
- The Institute has put in place privacy protocols for its researchers, including requiring them to undergo rigorous background checks and enter into strict confidentiality agreements. Researchers are contractually obligated to use the data solely for approved research, and are contractually obligated not to re-identify any individual represented in the data.
- The Institute does not allow the publication of any information about an individual consumer or business. Any data point included in any publication based on the Institute's data may only reflect aggregate information.
- The data are stored on a secure server and can be accessed only under strict security procedures. The data cannot be exported outside of JPMorgan Chase's systems. The data are stored on systems that prevent them from being exported to other drives or sent to outside email addresses. These systems comply with all JPMorgan Chase Information Technology Risk Management requirements for the monitoring and security of data.

The Institute provides valuable insights to policymakers, businesses, and nonprofit leaders. But these insights cannot come at the expense of customer privacy. We take precautions to ensure the confidence and security of our account holders' private information.

## Constructing our samples

**Cash Flows and Cash Balances in 2015 Non-Holiday Months:** In this first small business report, we chose to focus exclusively on transaction and balance data from the calendar year 2015. This allowed us to compare the cash flow characteristics of a set of small businesses that faced a largely stable macroeconomic environment.

Moreover, many small businesses experience substantial changes in their patterns of cash inflows, outflows and balance levels during the holiday season and at the change of a calendar year. While these fluctuations are part of the financial lives of small businesses, in this first report we chose to focus on months likely to exclude these effects. Specifically, our analyses are limited to cash inflows, outflows and balance levels measured from February up to and including October 2015. To the extent that small businesses experience a greater need for liquidity in the holiday and change-of-year months of November, December, and January, the findings we report here likely reflect a conservative view of the challenges these small businesses face.

**Identifying Operating Small Businesses:** From the universe of business customers that had active deposit accounts in 2015 in our 12 identified industries, we selected a sample of 597,000 customers for whom we observe a set of accounts that likely reflects the operating activity of the business. Specifically, we applied five additional screening criteria:

1. Each business must be associated with a single geographic location in a metro area<sup>12</sup> and a single industry for each observed month.
2. Each business must have both a cash inflow and outflow for each month from February through October 2015.
3. For at least five of these nine months, the business must have at least \$500 in outflows and 10 combined inflows and outflows.
4. The business must never exceed a combined balance of \$20 million across all of its accounts.
5. The business must have continuously identifiable daily balances for each posting day from February through October 2015

In combination, these criteria allow us to observe cash inflows, outflows, and balance levels that provide a window into the cash operations of small businesses that flow through their Chase Business Banking accounts. In particular, these criteria are intended to screen out larger businesses that might have deposit accounts across multiple banks. While some businesses may engage in cash transactions that do not flow through their bank accounts, our sample criteria identify a set of businesses that are likely to substantially transact through their accounts.

## Representativeness of our Sample

**Industry Mix:** Figure 13 compares the share of our small businesses in each industry to two benchmarks for our 12 identified industries. We first compare to the share of total small businesses in the US—both employer businesses with fewer than 500 employees and nonemployer businesses. Our sample contains both employer and nonemployer businesses, though likely not the smallest and least well-established of the nonemployer businesses. To offer a second perspective, we also compare to shares of only employer small business with fewer than 500 employees. With some exceptions, our sample approximates these industry shares closely. Notably, real estate businesses comprise 18 percent of our data asset but only 13 percent of small businesses in the US. In contrast, personal services only comprise 8 percent of our data asset, but 14 percent of small businesses in the US.

Figure 13: Industry Composition of JPMCI Small Business Data Asset

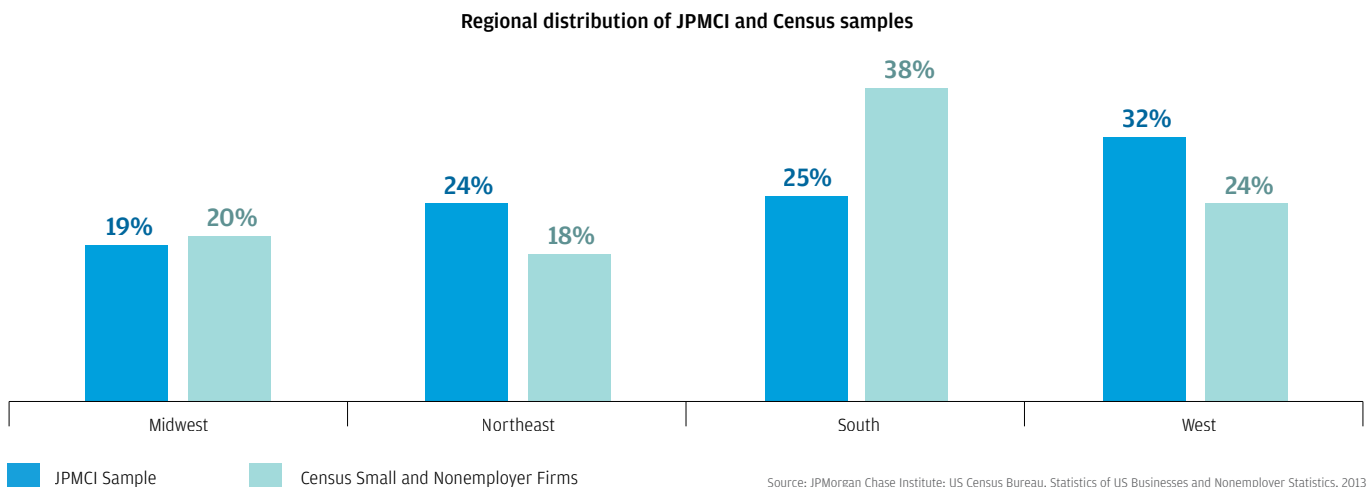
Industry	JPMCI Small Business Sample Share	US Total Small Business Share	US Employer Small Business Share
Construction	11%	15%	15%
Health Care Services	11%	8%	12%
High-Tech Manufacturing <sup>13</sup>	0%	0%	0%
High-Tech Services	4%	3%	3%
Metal & Machinery	1%	1%	2%
Other Professional Services	17%	13%	14%
Personal Services	8%	14%	4%
Real Estate	18%	13%	6%
Repair & Maintenance	7%	12%	9%
Restaurants	4%	4%	11%
Retail	11%	13%	16%
Wholesalers	6%	4%	7%

Source: JPMorgan Chase Institute; US Census Bureau, Statistics of US Businesses and Nonemployer Statistics, 2013

**Regional Distribution:** Guided by the Chase footprint, we focus on small businesses in Metropolitan Statistical Areas (MSAs). MSAs consist of core urban areas with a population of 50,000 or more as well as any adjacent counties that have a high degree of social and economic integration with the urban core, as measured by work commuting. While some of these adjacent counties may be rural in nature, our focus on MSAs implies a focus on mostly non-rural areas.

Figure 14 compares the share of our small businesses to the share of all small businesses in the US by region. The figure identifies regions in which we observe significantly larger or smaller shares of small businesses than are observed in the combined numbers of small employer firms and nonemployer firms. The regional differences we observe largely reflect the Chase branch footprint across the US. Our sample offers large numbers of small businesses across all four regions, with stronger coverage in the Northeast and West, and less strong coverage in the South.

Figure 14: JPMCI Small Businesses Well-Represented Across US Regions



# Methodology

## Industry Characteristics

We use public data sources to identify four key characteristics of each of our 12 industries that might shed light on critical differences and help determine the economic outcomes of their constituent small businesses.

First, we determined whether an industry was labor-intensive or capital-intensive. Small businesses in labor-intensive industries contribute to GDP growth primarily through employment, while small businesses in capital-intensive industries contribute to GDP growth primarily through capital investment. To do this, we used the US Bureau of Labor Statistics 2013 Nonmanufacturing and Manufacturing Multifactor Productivity data to estimate the total dollars of Capital Payments, Cost of Labor and Value of Production for each covered industry. The small business sector is overwhelmingly labor-intensive—86 percent of employees in our 12 selected industries work in industries with an above average share of labor costs. With this in mind, we identified a benchmark for labor-intensity based on capital and labor payments within our 12 selected industries. We first identified the share of labor payments as a fraction of labor and capital payments for each industry. The mean of these labor cost shares was 71 percent. We then characterized an industry as labor-intensive if labor costs comprise over 71 percent of its combined labor and capital payments, and capital-intensive otherwise.

To estimate the relative productivity of labor, we determined whether an industry was high-wage or low-wage. Higher quality jobs with higher wages can attract employees with greater human capital, and the small businesses that pay these higher wages contribute proportionally more to GDP. We used data series from the US Bureau of Labor Statistics Labor and Productivity Costs website to identify the number of hours worked in each industry. We first divided aggregate labor costs by aggregate hours worked to estimate an aggregate hourly wage across the US economy. We estimate this average wage at \$30/hour. We then divided labor costs by hours worked by industry to estimate an hourly wage for the 10 industries covered by the data. We characterized an industry as high-wage if its estimated hourly wage is over \$30/hour, and as low-wage otherwise. Notably, the data were not complete for two of our industries—Personal Services and Construction. We assigned wages for these two industries qualitatively.

In order to evaluate the relative productivity of capital, we then determined whether an industry invested a high or low share of its capital in Information Technology (IT) and Intellectual Property (IP). The relative productivity of capital is difficult to measure or conceptualize precisely. However, to the extent that multifactor productivity reflects technological progress, firms that utilize a greater share of technology-intensive capital should be more productive than those that utilize less technology-intensive capital (Zelenyuk, 2014). When computing total IP capital, we excluded capital invested in Artistic Originals as these assets seem weakly related to technological investment that increases capital productivity. To establish a benchmark, we computed the aggregate share of IT/IP capital as a fraction of productive capital across all industries. We found this aggregate ratio to be 12 percent. We then divided IT/IP capital for each industry by its productive capital. We characterize an industry as having a high IT/IP share capital if over 12 percent of its productive capital is IT/IP capital, and as having a low IT/IP share of capital otherwise.

To assess the position of an industry in the value chain, we used data from the 2007 Bureau of Economic Analysis Input-Output Accounts Use Table. For commodities associated with each industry we summed the total domestic business, household and government consumption, investment and final use. From these we computed shares of expenditure for each industry by business, consumers, and government for each of our 12 industries. We characterized an industry as B2C if 65 percent or more of its domestic use was by households. We characterized an industry as B2B if 65 percent or more of its domestic use was by businesses. We characterized an industry as Mixed if neither households nor businesses captured 65 percent or more of the use of its commodities. Figure 15 summarizes the results of these calculations and assignments for all 12 of our industries.

Figure 15: Share of Small Business Employment by Industry and Industry Attributes

Industry	Share of Small Business Employment	Labor / Capital Intensity (% Labor Costs)	Wages (Hourly Wage)	IT/IP Share of Capital (% IT/IP Capital)	B2B vs B2C
Construction	8%	Labor (86%)	High (-)	Low (3%)	Mixed
Health Care Services	10%	Labor (84%)	High (\$40)	High (42%)	B2C
High-Tech Manufacturing	2%	Capital (51%)	High (\$59)	High (47%)	B2B
High-Tech Services	12%	Capital (69%)	High (\$66)	High (50%)	B2B
Metal & Machinery	1%	Capital (64%)	High (\$33)	High (18%)	B2B
Other Professional Services	4%	Labor (81%)	High (\$58)	High (50%)	B2B
Personal Services	2%	Labor (92%)	Low (-)	Low (7%)	B2C
Real Estate	3%	Capital (22%)	High (\$42)	Low (0%)	B2C
Repair & Maintenance	2%	Labor (85%)	Low (\$26)	High (35%)	Mixed
Restaurants	6%	Labor (80%)	Low (\$14)	Low (2%)	B2C
Retail	6%	Labor (72%)	Low (\$12)	Low (4%)	B2C
Wholesalers	9%	Capital (61%)	High (\$45)	Low (10%)	Mixed
Excluded Industries	35%	--	--	--	--

Note: US Bureau of Labor Statistics Labor and Productivity Costs data do not provide hours worked for Construction and Personal Services industries.

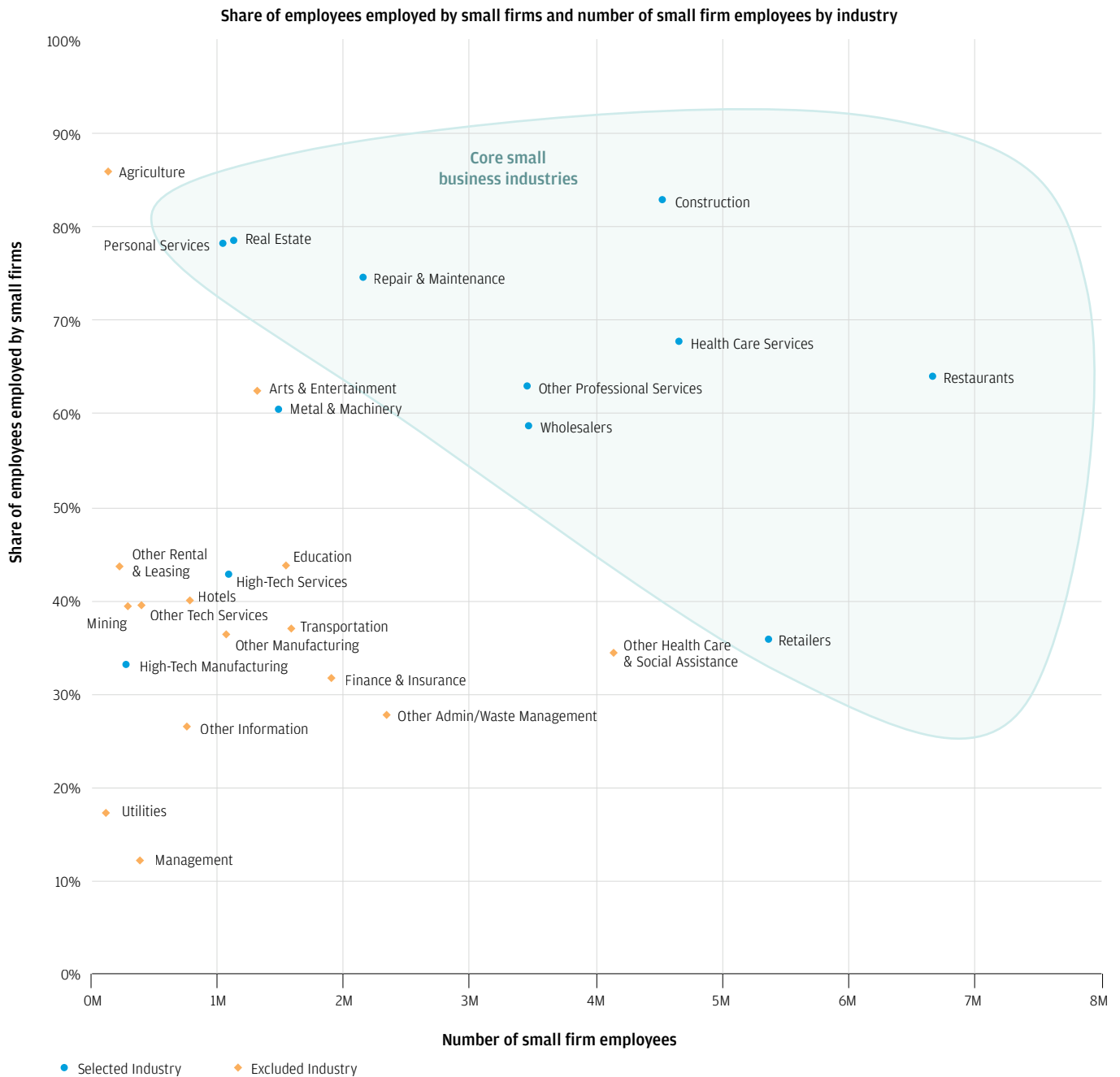
Sources: US Department of Commerce Bureau of Economic Analysis, US Bureau of Labor Statistics, US Census Bureau Statistics of US Businesses

## Selecting Key Industries

The analyses in this report are based on a selection of 12 key industries that either represent a large fraction of the small business sector, or are relevant to broader policy discussions about small businesses and the growth of the US economy.

Figure 16 maps small businesses across 27 industries that capture all for-profit<sup>14</sup> employer businesses in the US economy. The figure highlights nine core small business industries that strongly represent the sector: Personal Services, Real Estate, Wholesalers, Repair & Maintenance, Restaurants, Health Care Services, Other Professional Services, Construction, and Retailers. Each of these industries has large numbers of small business employees and large shares of employees working for small firms.

Figure 16: Share of Employees Employed by Small Firms and Number of Small Firm Employees by Industry



We draw attention to three additional industries: Metal & Machinery Manufacturing, High-Tech Services, and High-Tech Manufacturing. The small firms in these three industries have captured the attention of policy makers interested in scalable entrepreneurial growth (Audretsch, 2007). Much of what is known about innovation in small businesses derives from empirical observation of technology intensive firms (Shane, 2000; Hsu, Roberts and Eesly, 2007). Moreover, small manufacturers, technology-intensive or otherwise, have been noted as a key source of economic growth (Haltiwanger, Hathaway and Miranda, 2014; Mills, 2012).

# Glossary

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Capital-intensive industry	An industry where labor payments are below 40 percent of its combined labor and capital payments (see Methodology section for details).
Cash balance level	The amount of cash held by a business across all its business deposit or savings accounts.
Cash buffer days	The number of days of cash outflows a business could pay out of its cash balance were its inflows to stop. We estimate cash buffer days for a business by computing the ratio of its average daily cash balance to its average daily cash outflows.
Cash flow	Inflow, outflow, sum of inflows, sum of outflows, or sum of inflows and outflows.
Employer business	A business with paid employees (see Nonemployer business).
High-wage industry	An industry where the estimated hourly wage is over \$30/hour (see Methodology section for details).
High-IT/IP capital industry	An industry where over 12 percent of its productive capital is IT/IP capital (see Methodology section for details).
Inflow	Credit transactions into any business deposit or savings account, such as revenues, owner transfers into the account from private savings, loan funding, or tax rebate.
IT/IP capital	Capital invested in Information Technology and Intellectual Property, excluding capital invested in Artistic Originals
Labor-intensive industry	An industry where labor payments exceed 60 percent of its combined labor and capital payments (see methodology section for details).
Low-wage industry	An industry where the estimated hourly wage is below \$30/hour (see Methodology section for details).
Low-IT/IP capital industry	An industry where less than 12 percent of its productive capital is IT/IP capital (see methodology section for details).
Metropolitan Statistical Area	A core urban area with a population of 50,000 or more as well as any adjacent counties that have a high degree of social and economic integration (measured by commuting to work) with the urban core.
Micropolitan Statistical Area	A core urban area with a population of more than 10,000 but less than 50,000 as well as any adjacent counties that have a high degree of social and economic integration (measured by commuting to work) with the urban core.
Nonemployer business	A business subject to federal taxes with no paid employees and receipts over \$1,000. Construction businesses subject to federal taxes that have no paid employees are classified as nonemployers if they have more than \$1 in receipts.
Outflows	Debit transactions paid out of any business deposit or savings accounts, such as the purchase of material and payroll, owner transfers out of the account to private savings, loan repayments, or tax payments.
Percentile	N percent of a sample has values below the N-th percentile value.
SBA	Small Business Administration.
Sole proprietorship	Unincorporated business owned by a natural person.



# Endnotes

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- 1 See Bottazzi, Secchi and Tamagni (2014) for an overview of financial constraints of businesses of all size classes, including small businesses in particular; see Hall (2010) for an overview of financial constraints of innovative small businesses. Finally, see Campello (2015) as well as Carpenter and Petersen (2002) for an overview discussion of cash as an internal source of finance in the presence of financing frictions.
- 2 Our data asset may underrepresent restaurant franchisees. As a result, any findings about small businesses in the restaurant industry likely reflect independent restaurants.
- 3 Financing data on the large universe of non-employer businesses is hard to obtain, though these small businesses are the least likely to receive financing. Among the smaller world of employer small business, only 37 percent received financing in 2015. Specifically, 47 percent applied for financing, and 79 percent of those received some financing. Moreover, of those that received financing, 50 percent received less than they applied for—only 19 percent of employer small businesses applied for financing and received the level of financing they applied for (Federal Reserve Bank of New York, 2016).
- 4 Cash buffer days are similar to the accounting ratio “days of cash on hand.” Cash buffer days differ from days of cash on hand in that the former measure the ability of a firm to support all cash outflows, while the latter only measure the ability of a firm to support operating outflows.
- 5 We also find preliminary evidence that cash buffer days correspond to small business exit rates. Three of our industries map to the 2013 Census Business Dynamics Statistics sector-level data series on business exit rates—Construction, Retail, and Wholesale. Our Real Estate industry also may map to the smaller firms in the Finance, Insurance, and Real Estate sector. Across these four sectors, exit rates for small firms with 1-4 or 5-9 employees are lowest in Finance, Insurance, and Real Estate—which maps to Real Estate, the industry with highest number of cash buffer days. Median cash buffer days decrease from the Wholesale industry to Construction and then Retail, while exit rates increase across these sectors correspondingly.
- 6 We measured cost-of-living using the Bureau of Economic Analysis Regional Price Parities measure. We measured the cost of doing business using Moody's Cost of Doing Business Index, 2010.
- 7 The cost of living in a metropolitan area correlates with its median average daily cash outflows at 0.28 and with its median average daily cash balance at 0.56. The cost of doing business in a metropolitan area correlates with its median average daily cash outflows at 0.61 and its median average daily cash balance at 0.73.
- 8 <https://www.newyorkfed.org/medialibrary/media/smallbusiness/2015/Report-SBCS-2015.pdf>
- 9 <https://www.bostonglobe.com/business/2015/03/05/winter-storms-battered-sales-small-businesses-survey-shows/RAH81B5w6MWvV4dkS8xOFL/story.html>
- 10 Federal Reserve Bank of New York, 2013, 2015.
- 11 Balle, 2016.
- 12 We identify a business as being in a metropolitan area if its zip code overlaps with a Census Metropolitan Statistical Area (rather than a Micropolitan Statistical Area).
- 13 Zero values due to rounding.
- 14 We exclude (NAICS 813: Religious, grant-making, civic, professional, and similar organizations) from Figure 1 and from our selected set of industries. Notably, 43.7 percent of employees in this sector work for firms with less than 500 employees, and over 298,000 of these firms had fewer than 500 employees.

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# Small Business Data Dashboard

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## Topics Covered

- Economic Activity
- Regional Employment
- Diverse Ownership
- Innovation
- Business Dynamism
- Longevity

Small businesses are an economically important component of the US economy and a key driver of production, employment, and growth. As such, comprehending the evolving role of small businesses is crucial for many policymakers, economists, and state and local officials. To complement and frame the research we conduct using JPMorgan Chase's unique data on small businesses, we have assembled data from other sources that help provide a broad picture of the state of the small business sector.

Small businesses with fewer than 500 employees account for 99 percent of all business establishments in the US and are pervasive across the entire country. These businesses accounted for 45 percent of GDP in 2010, although this share is lower than earlier in the decade. Notably, business startup rates and exit rates have also fallen significantly over the past decade. Small businesses account for 34 percent of exports and 21 percent of patents granted in the US.

Small businesses employ nearly half of all US employees (48 percent) and contribute over 45 percent to net job creation. However, of the total 28.7 million small businesses, most—23 million—are non-employer businesses. In addition, most employer businesses have relatively few employees—a full 88 percent of all employer businesses have fewer than 20 employees. Moreover, small businesses are very young. Over half are less than 10 years old and nearly half of small businesses exit within the first five years.

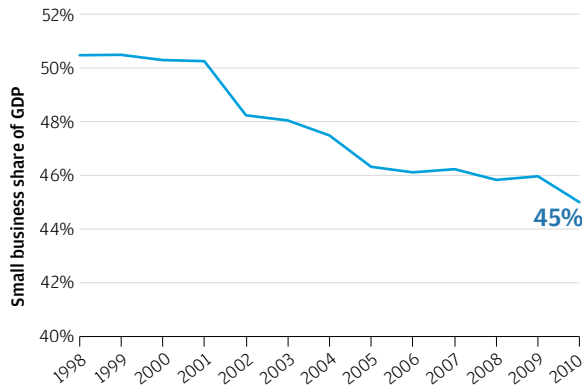
Finally, the smallest businesses have relatively diverse ownership. The smaller the business, the more likely it is to be owned by a woman or a member of a racial or ethnic minority (although women and minorities still constitute a minority of all small business owners).

This dashboard offers additional details about the state of the small business sector in the US. We will update it periodically as new data become available.

## Economic Activity

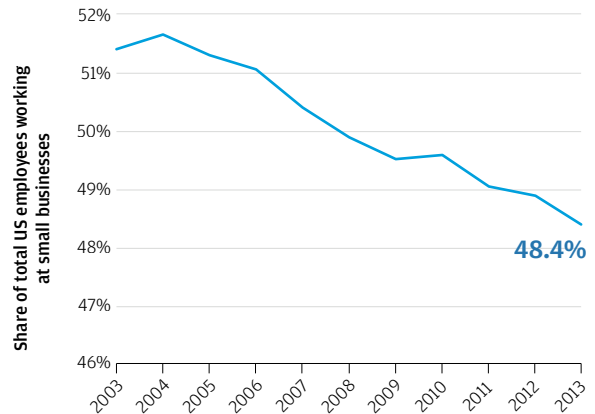
### Small businesses are an anchor of the US economy.

Small businesses accounted for 45 percent of GDP in 2010, down from 50 percent in the late 1990s.



Source: SBA - Small Business GDP: Update 2002-2010, by Kathryn Kobe, Economic Consulting Services, LLC, UC Berkeley Washington, DC 20036. Published January 2012 [https://www.sba.gov/sites/default/files/rs390tot\\_0.pdf](https://www.sba.gov/sites/default/files/rs390tot_0.pdf)

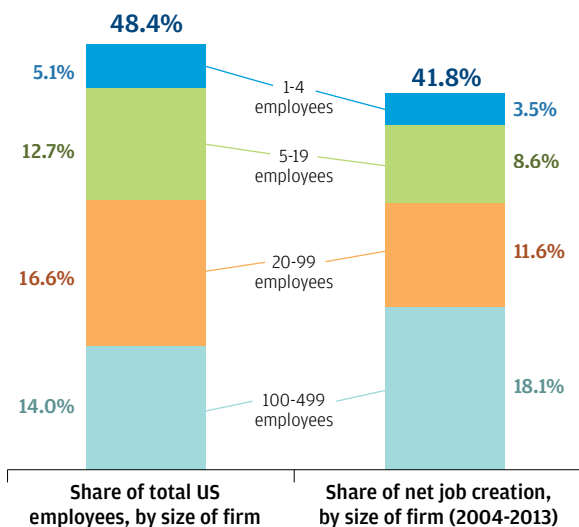
48 percent of all US employees work for small businesses, down from 52 percent in the early 2000s.



Source: Business Dynamics Statistics, 2013

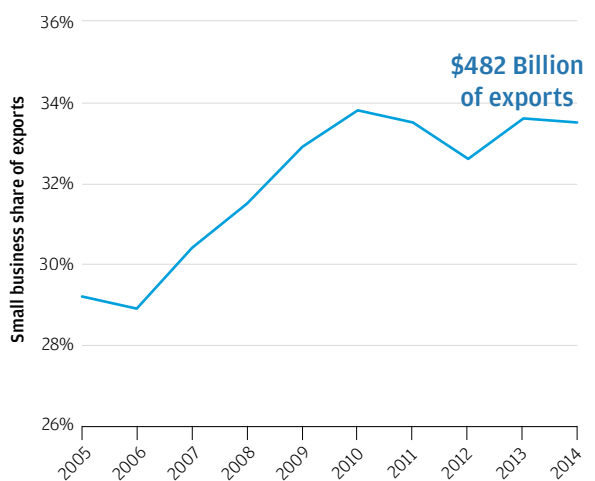
18 percent of all US employees work for businesses with fewer than 20 employees.

Small businesses account for over 41 percent of net job creation.



Source: Business Dynamics Statistics, 2013

Small businesses produced 34 percent of US exports in 2014, up significantly since 2006.

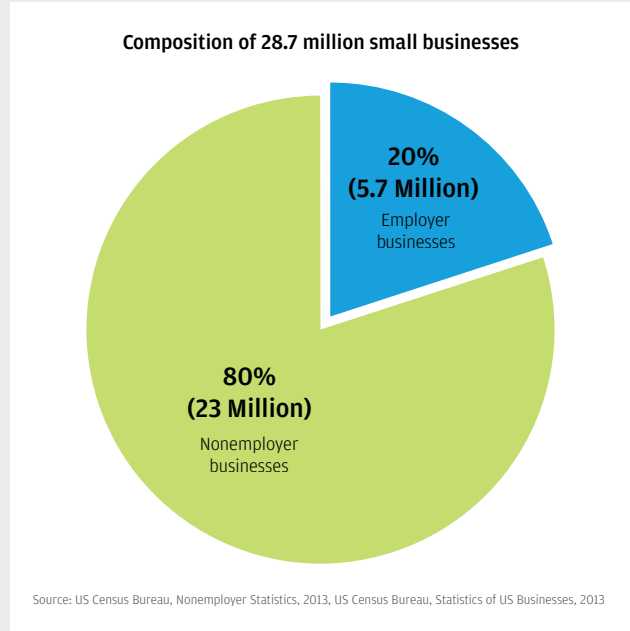
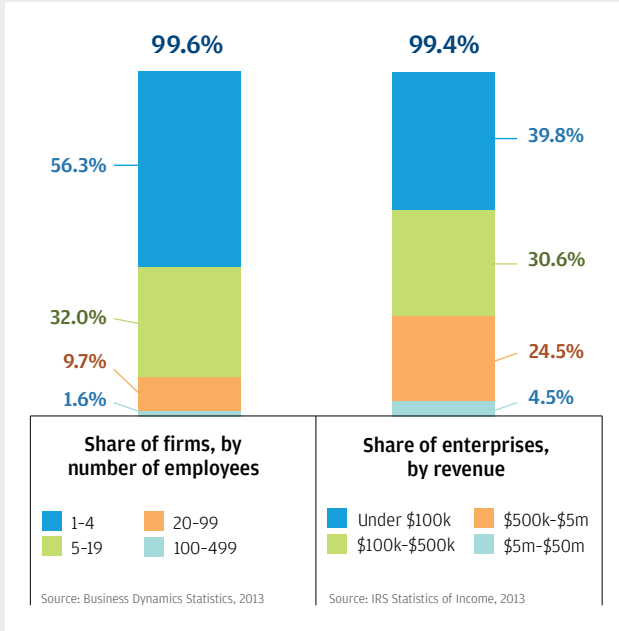


Note that a small business in this table is defined as a business with fewer than 500 employees.

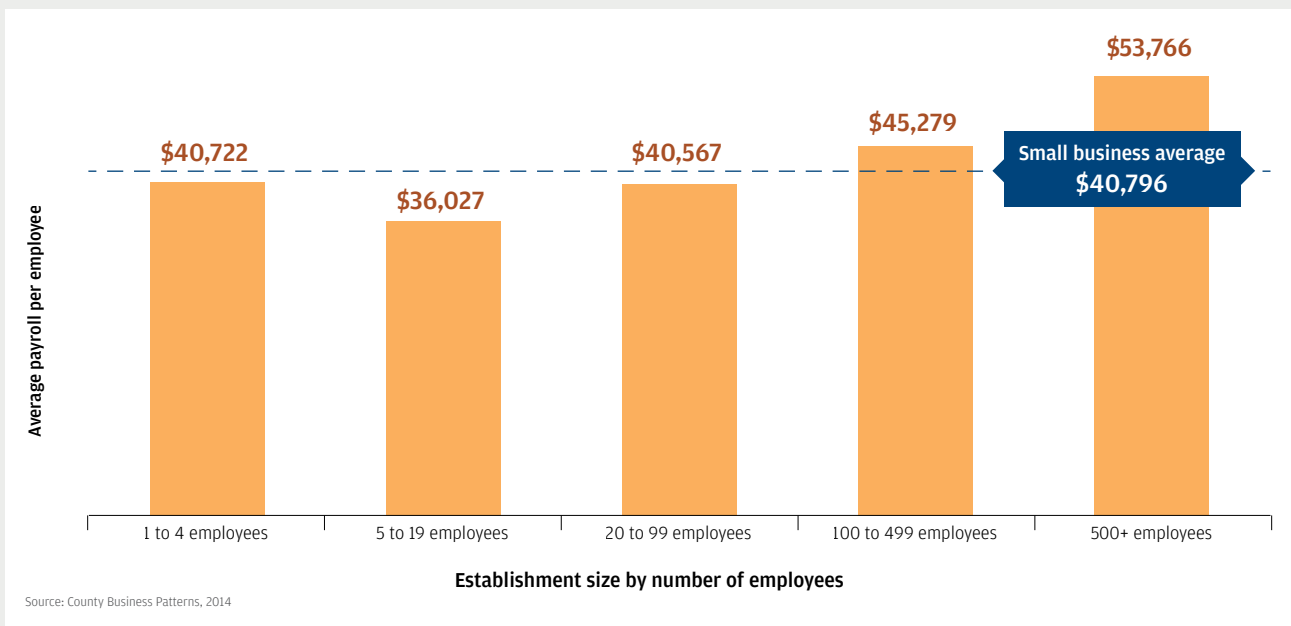
Source: US Census Bureau, A Profile of US Importing and Exporting Companies

Over 99 percent of America's 28.7 million firms are small businesses. The vast majority (88 percent) of employer firms have fewer than 20 employees, and nearly 40 percent of all enterprises have under \$100k in revenue.

20 percent of small businesses are employer businesses and 80 percent are nonemployer businesses.

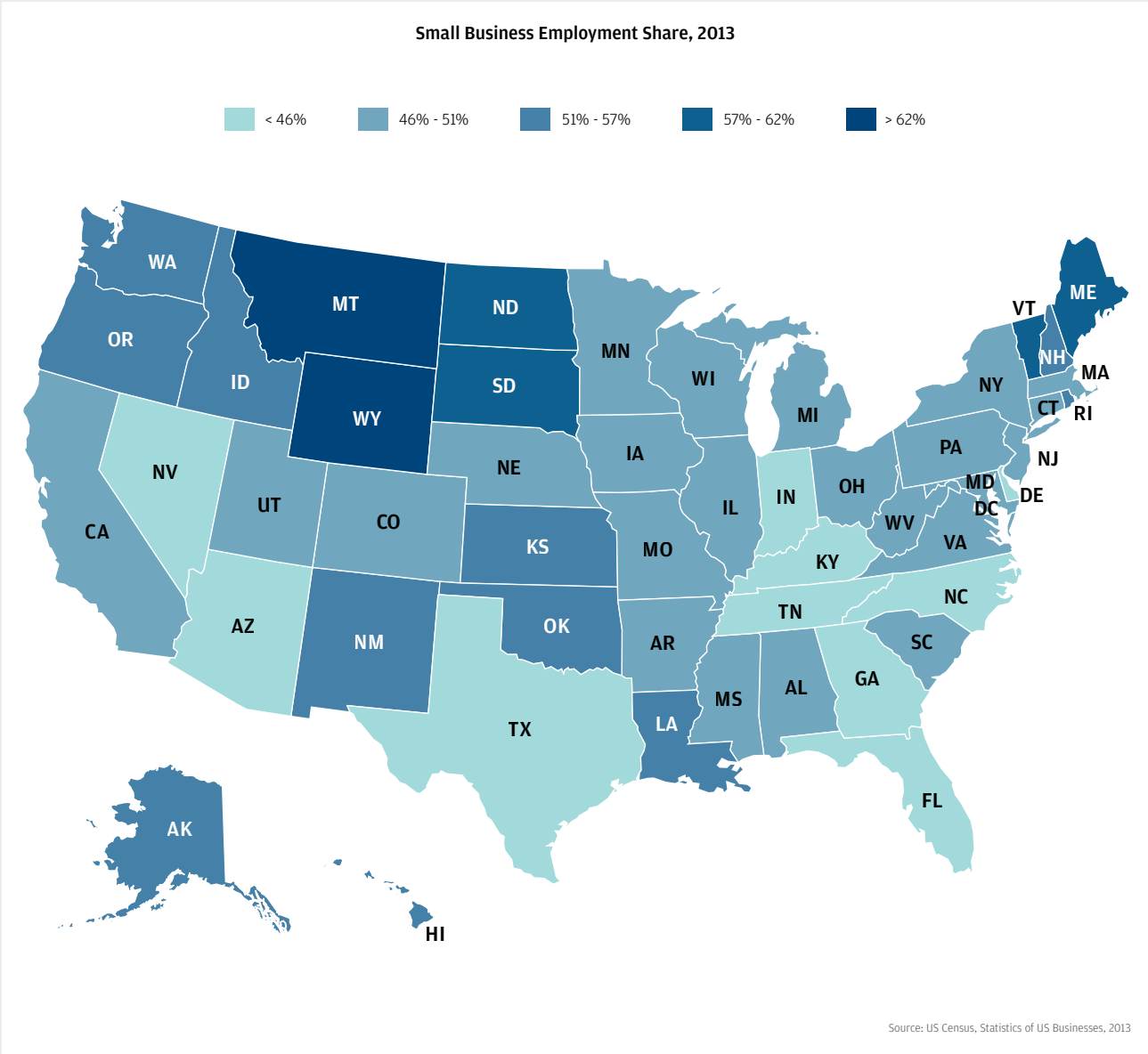


The average small business employee earned \$40,796 in 2014. In general, the larger the business, the higher the average employee pay. The smallest businesses (those with 1-4 employees) are an exception.



# Regional Employment

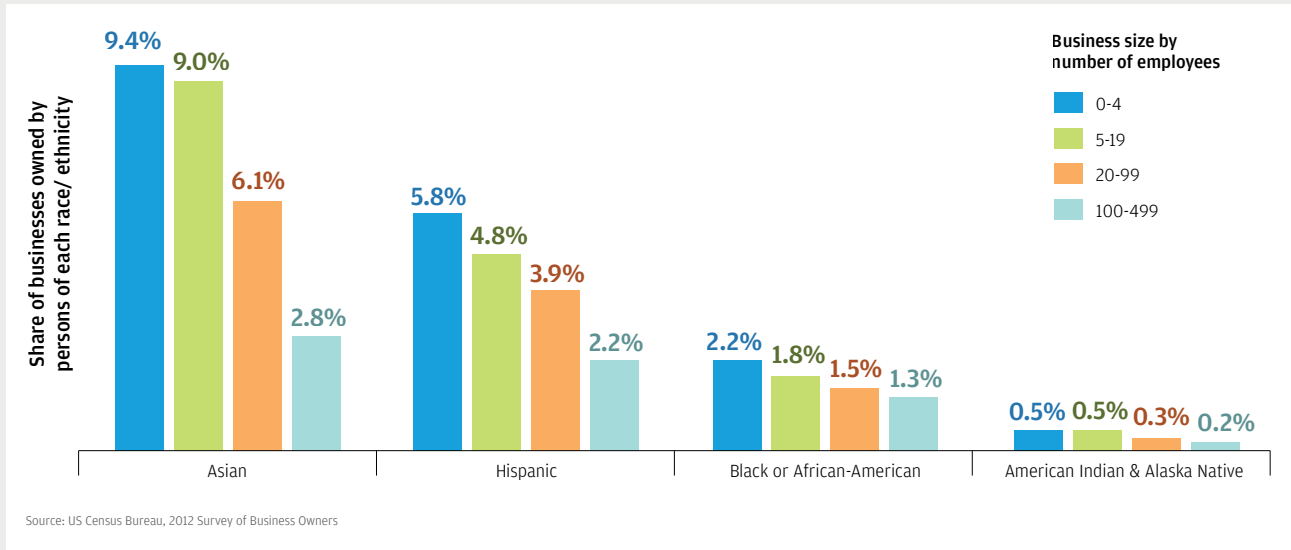
## Small businesses are prevalent across all states



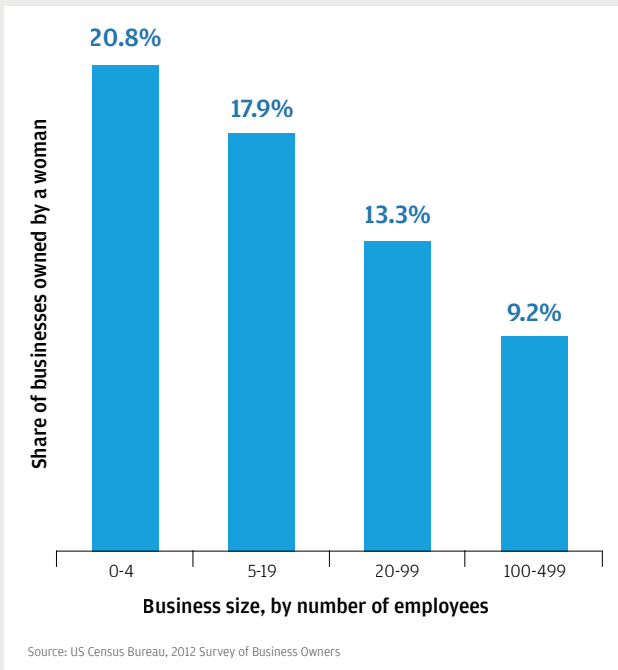
## Diverse Ownership

Smaller businesses are more likely to be owned by women and minorities.

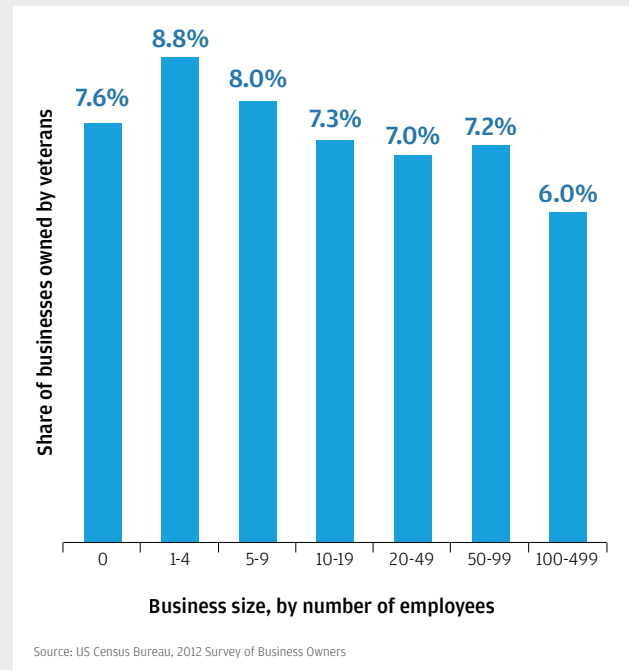
The smaller the business, the more likely it is to have minority ownership.



The smaller the business, the more likely it is to be owned by a woman.

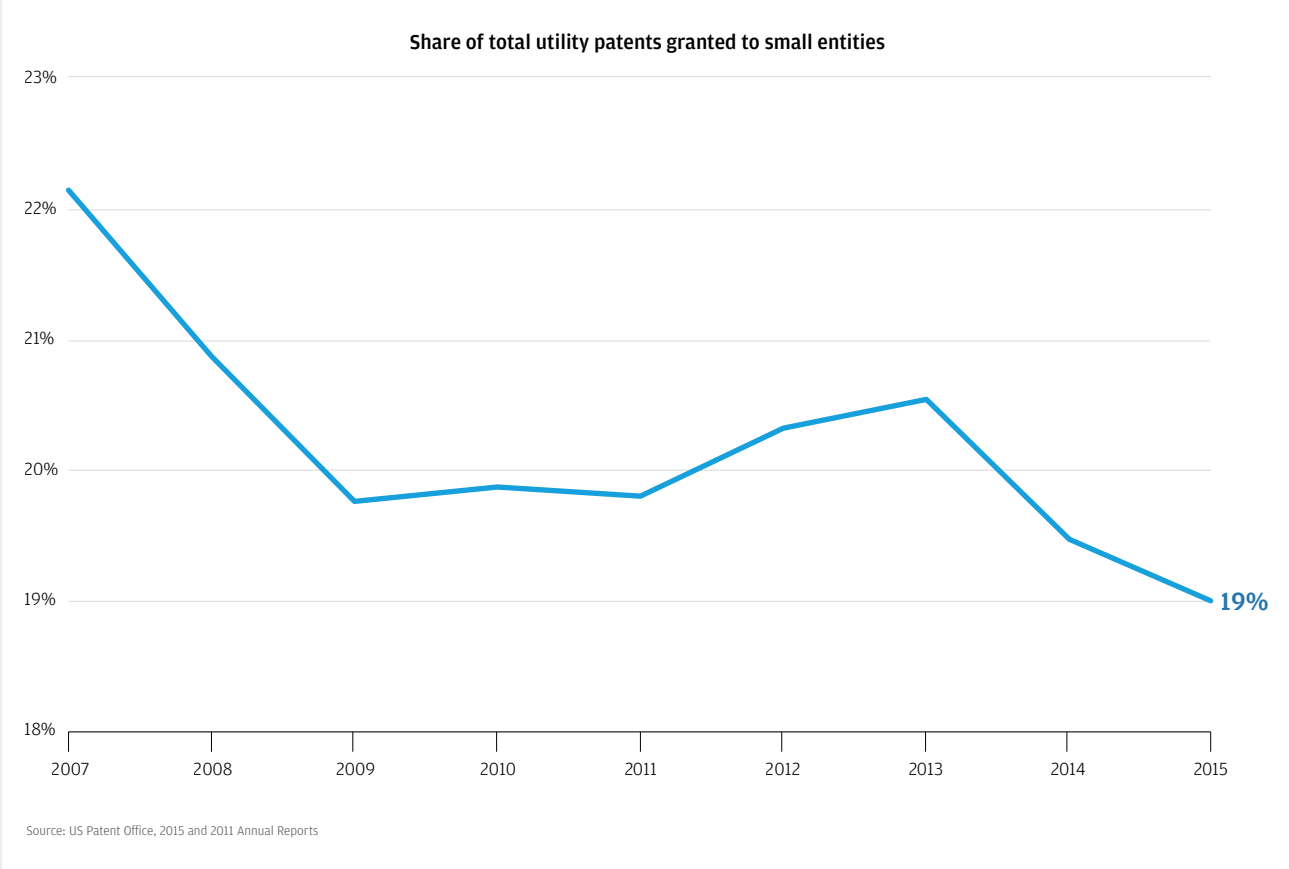


Roughly 8 percent of small businesses are owned by veterans.



Innovation

Small businesses generated 19 percent of patents in the United States in 2015





## Business Dynamism

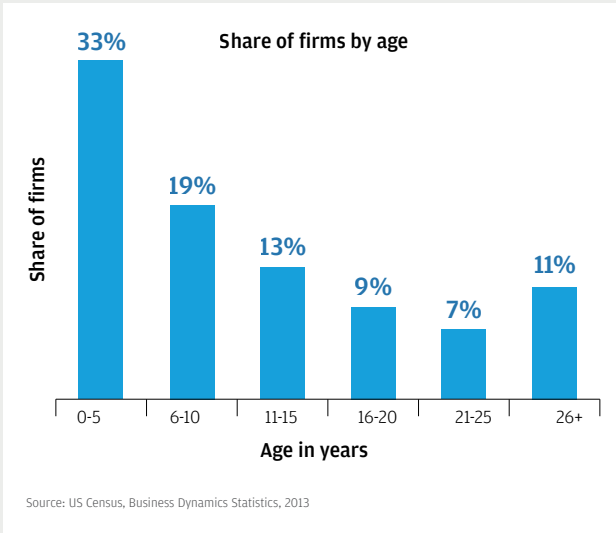
Business startup rates have decreased significantly over the last thirty years, as have business exit rates.



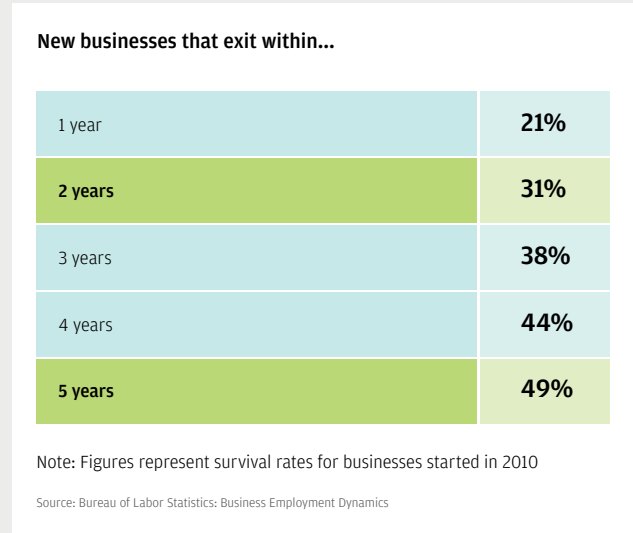
## Longevity

A large share of small businesses are young businesses.

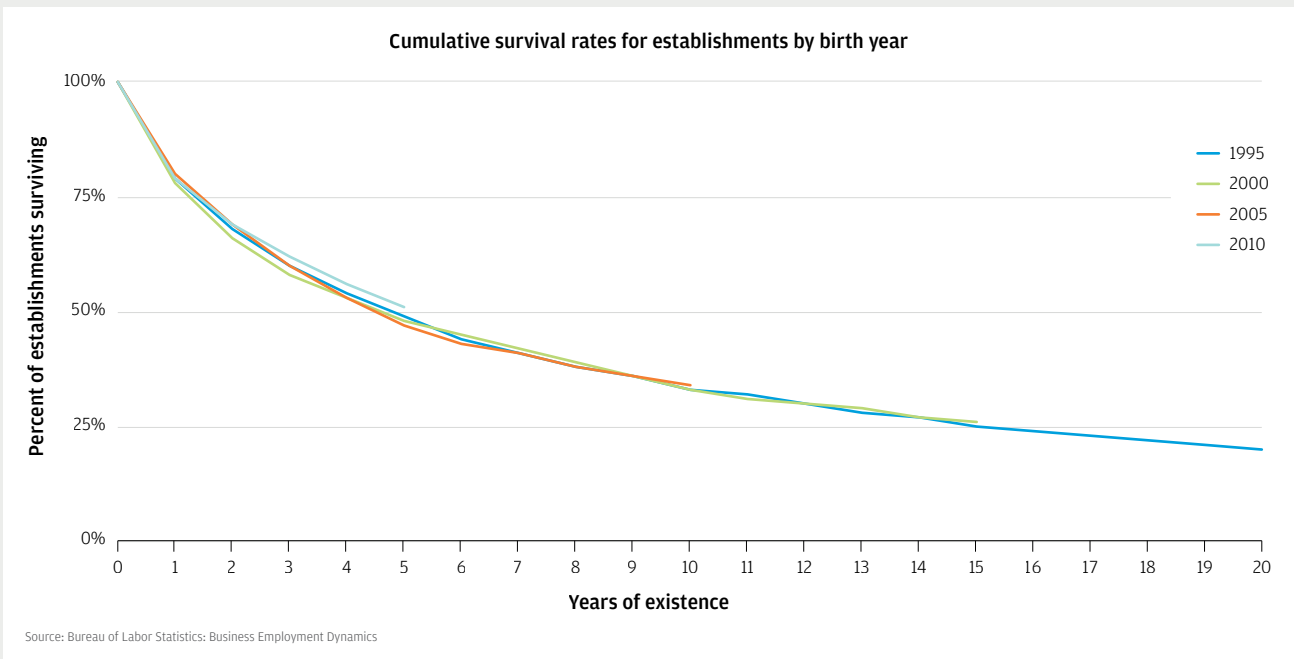
52 percent of small businesses are 10 years old or less, and 33 percent of small businesses are 5 years old or less.



Roughly a third of new businesses exit within their first two years, and half exit within their first five years.



The survival rate of new businesses has been remarkably consistent over time.





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