Citi GPS



TREASURY LEADERSHIP

Does It Matter?

Citi GPS: Global Perspectives & Solutions

November 2023

Citi is one of the world's largest financial institutions, operating in all major established and emerging markets. Across these world markets, our employees conduct an ongoing multi-disciplinary conversation – accessing information, analyzing data, developing insights, and formulating advice. As our premier thought leadership product, Citi GPS is designed to help our readers navigate the global economy's most demanding challenges and to anticipate future themes and trends in a fast-changing and interconnected world. Citi GPS accesses the best elements of our global conversation and harvests the thought leadership of a wide range of senior professionals across our firm. This is not a research report and does not constitute advice on investments or a solicitations to buy or sell any financial instruments.
For more information on Citi GPS, please visit our website at www.citi.com/citigps.

Primary Authors



Dr. Duncan Cole
Digital & Partnerships, Client Advisory
Citi Treasury & Trade Solutions | Dublin

+353 1 622 6169 | duncan.e.cole@citi.com



Ron Chakravarti
Global Head, Client Advisory
Citi Treasury & Trade Solutions | New York

+1 646 725 7705 | ron.chakravarti@citi.com

Contributors

Anton Abraham
Client Advisory, Citi Treasury & Trade Solutions | Hong Kong

Joe Vasen
Client Advisory, Citi Treasury & Trade Solutions | Seattle

Kelvin Ang
Client Advisory, Citi Treasury & Trade Solutions | New York

Mariyam Baig
Client Advisory, Citi Treasury & Trade Solutions | Dublin

Jessie Hsiao
Client Advisory, Citi Treasury & Trade Solutions | Shanghai

Britt Jensen
Client Advisory, Citi Treasury & Trade Solutions | London

Carol Mah
Client Advisory, Citi Treasury & Trade Solutions | Singapore

Patrick Peters-Buhler
Client Advisory, Citi Treasury & Trade Solutions | Dubai

David Tao
Client Advisory, Citi Treasury & Trade Solutions | San Francisco

Ashley McDonough
Client Advisory, Citi Treasury & Trade Solutions | New York

Sofia Putri
Client Advisory, Citi Treasury & Trade Solutions | New York

With thanks to: We thank all our colleagues at Citi and all our clients who have participated in this study without whom this article would not have been possible. We also wish to recognise Kathleen Boyle, Veronica Lara, and Olivia Kohari for their editorial support throughout.

TREASURY LEADERSHIP

Does It Matter?



Shahmir Khaliq
Head of Services, Citi



Jane Fraser
CEO, Citi



Mark Mason
CFO, Citi

Corporate treasurers are reinventing their roles to support business growth while maintaining focus on efficiency, managing risk, and optimizing the use of capital across the entire cash lifecycle. Meanwhile, the emergence of new technologies is changing business models. Digital business models are accelerating the pace of interaction across company supply chains, increasing the velocity of cash, and creating new challenges for treasury management. Technology enables treasury to move from manual processes led by people to full automation. Technology increasingly powers data-led insights. That said, many companies still struggle to set a foundation of strong treasury fundamentals — good cash forecasting, centralized cash and banking, optimized working capital, and effective mitigation of financial risks. This is not without good reason. Many companies face a technology debt of systems that are fractured. They are plagued with manual processes, poor data, and underinvestment in technology and talent.

In the face of rising expectations and demands from executive leadership, treasurers are seeking guidance to shape their investment roadmap. How do they demonstrate that leadership in treasury matters for the firm? What are the attributes of a leading treasury function? What are the steps that treasurers need to take?

This study measures what differentiates top performing treasuries from the rest. Companies that have nurtured treasury teams to be leaders tended to enjoy better financial performance. Put another way, underperformance in treasury risks diminishing value.

We show how high-performing treasuries ensure efficient funding of working capital, proactively identify and mitigate financial risks, and deploy liquidity to fund company growth. We argue that companies can use the learnings from this study to leapfrog a historically lengthy process of becoming treasury leaders. And by doing so, they can accelerate their ability to better support company returns.

> “Our ambition is to be the number one trusted advisor for our clients, offering innovative solutions and practical insights throughout their growth journey. Our Services business remains at the heart of that, and the globality of our network uniquely positions us to deliver. I’m excited for Citi to continue supporting clients with their vision and strategy for treasury, accelerating their transformation programs, and driving growth.”
>
> – JANE FRASER, CEO, CITI

> “The ability we have to serve our clients across the globe is underpinned by our Services business, which enables us to meet our client’s needs as they grow and develop. As a CFO, I have seen first-hand the benefits that come from investing in treasury, in managing risks, and supporting business growth and I’m always excited by how Citi partners with clients to support their everchanging treasury needs.”
>
> – MARK MASON, CFO, CITI

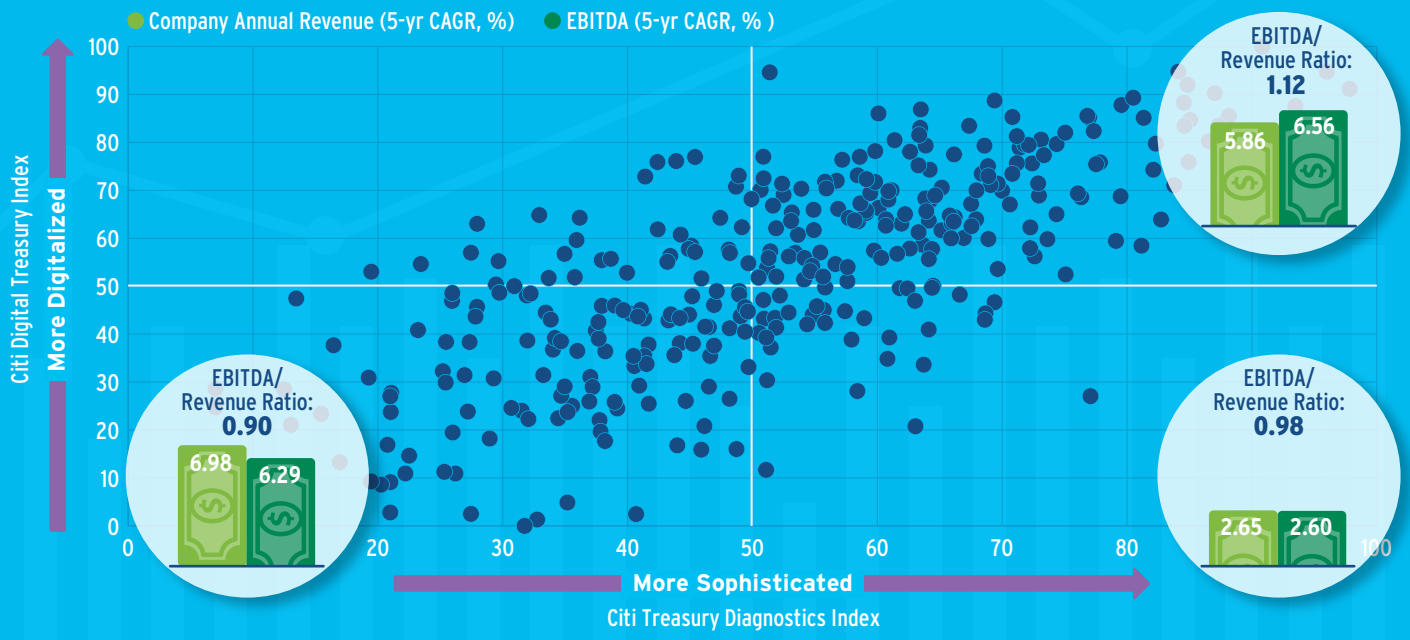
© 2023 Citigroup

Treasury Leadership: Enabling Growth

TREASURY PERFORMANCE AS A MEASURE OF COMPANY PERFORMANCE

In a survey of 335 Citi Treasury Diagnostics users, data showed that companies reporting both treasury sophistication and automation showed the highest earning-to-revenue ratio.

Positive Correlation Exists Between Company Performance, Treasury Sophistication, and Digital Enablement

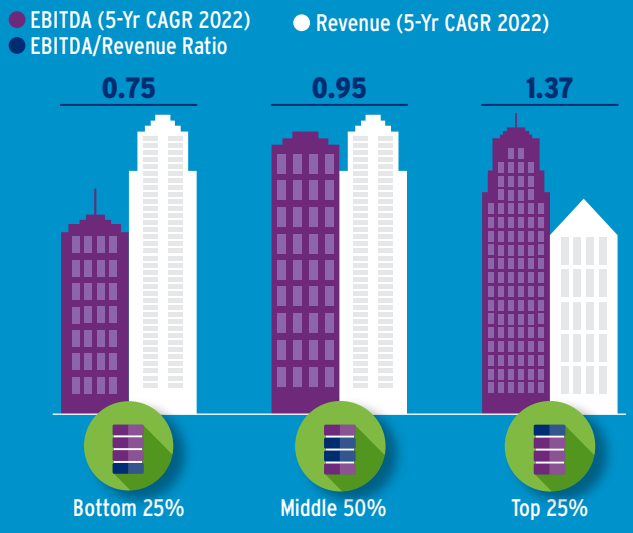


Source: Citi Treasury & Trade Solutions

TREASURY LEADERSHIP SUPPORTS IMPROVED COMPANY FINANCIAL PERFORMANCE

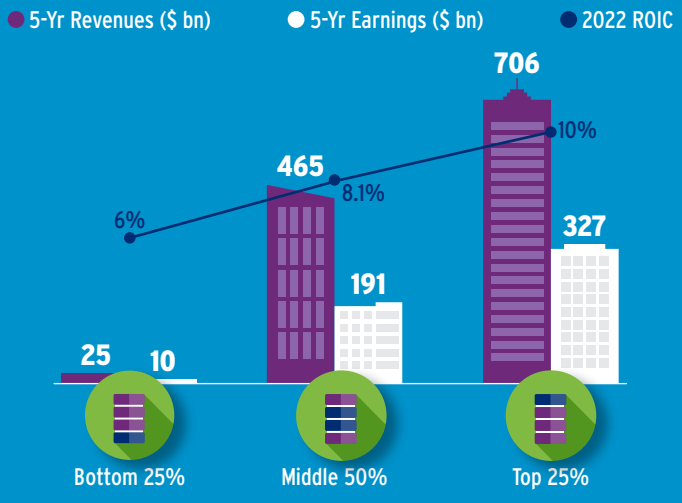
We find that companies that nurture their treasury teams to be leaders in their field enjoyed better financial performance. Company earnings-to-revenue ratio increases significantly between the bottom 25% and top 25% of treasuries, with the top 40 performing companies, as measured by this study, generating $44 billion of additional earnings over the past five years.

5-Year Compound Annual Growth Rate (%)



Source: Citi Treasury & Trade Solutions

Company Revenue, Earnings, and ROIC as a Function of Treasury Performance



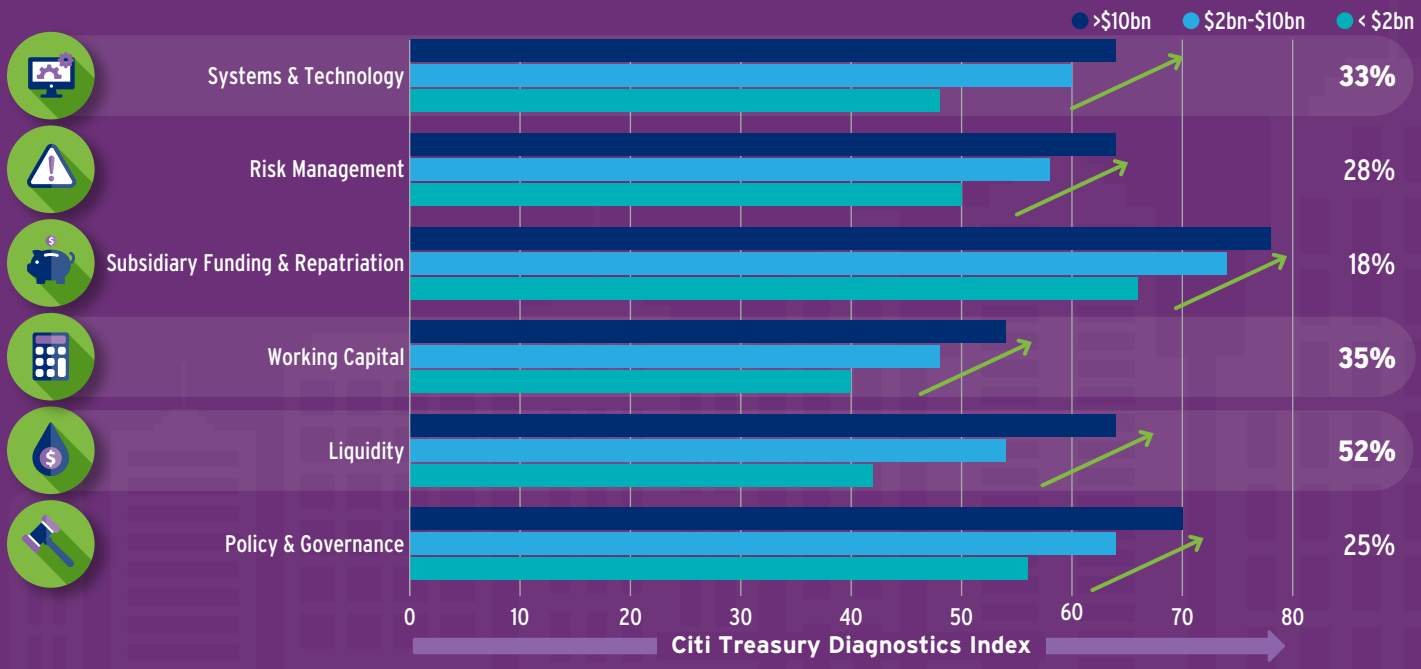
Source: Citi Treasury & Trade Solutions

© 2023 Citigroup

TREASURY LEADERSHIP IN PRACTICE

Companies that generate larger annual revenues are generally more efficient and effective in their treasury policies, processes, and procedures. However, the biggest differentials between small and large companies are in the areas of Liquidity, Working Capital, and Systems & Technology.

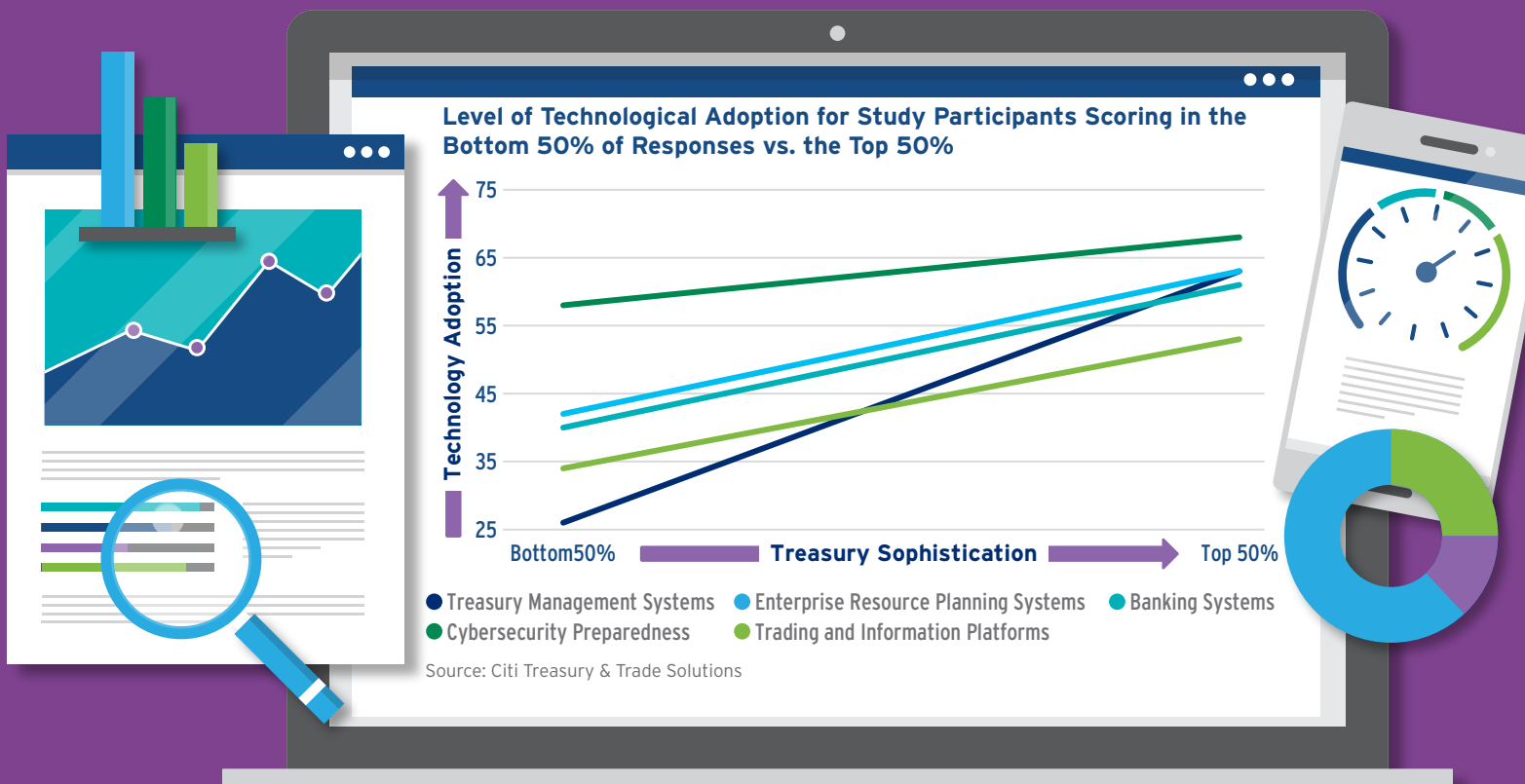
Performance of Various-Sized Companies in the Six Pillars of Treasury



Note: Company size is based on annual company revenue. Source: Citi Treasury & Trade Solutions

TECHNOLOGY DEPLOYMENT, CONNECTIVITY, AND DIGITAL ADOPTION AND AUTOMATION

The adoption and integration of treasury management systems drives the greatest improvement in overall treasury performance. Utilization and integration of enterprise resource planning (ERP) and trading platforms with both banking systems and treasury management systems showed strong positive correlation with treasury sophistication as measured by the study.



Contents

Executive Summary 7
Introduction to the Study....8
Key Findings and Insights 10
Chapter 1: Treasury Performance Correlates with Financial Performance.... 14
Treasury Performance Enabling Company Growth 16
Treasury Performance Advancement 19
Chapter 1: Summary Take Aways 24
Chapter 2: Treasury Leadership in Practice.... 25
Treasury Leadership in Practice 26
Policy and Governance: Introduction 27
Policy and Governance: Section Summary 33
Liquidity: Introduction 34
Liquidity: Section Summary 41
Subsidiary Funding and Repatriation: Introduction 42
Subsidiary Funding and Repatriation: Section Summary 46
Working Capital: Introduction 47
Working Capital: Section Summary 52
Risk Management: Introduction 53
Risk Management: Section Summary 59
Chapter 2: Summary Takeaways 60
Chapter 3: Technology Deployment, Connectivity, and Digital Adoption.... 61
Systems and Technology Adoption by Company Size 63
Systems and Technology: Section Summary 69
Digital Adoption: Section Summary 77
Chapter 3: Summary Takeaways 78
Concluding Comments 79
Key Takeaways From This Study 80

© 2023 Citigroup

Executive Summary

Treasury leadership can support company financial performance. We find that companies that have nurtured treasury teams to be leaders in their field enjoyed better financial performance. Top treasury performance and company profitability are correlated. The company earnings-to-revenue ratios increases from 0.75 to 1.37 between companies that have bottom quartiles vs. top quartile treasury performers.[1] This Citi analysis suggests that the top 40 performing treasuries, as measured by this study, may have helped generate $44 billion of additional earnings over the last five years based on this increased ratio. We infer from this that Fortune 500 companies may have left $165 billion in profits behind in 2022, again based on this increased ratio. Similarly, treasury performance and Return on Invested Capital (ROIC) are correlated. ROIC increases from 5.8% for participating companies at the bottom quartile of treasury performance to 10% for those in the highest treasury performance quartile.

Leadership in treasury can be objectively measured. This study shows what differentiates top-performing treasuries. High performance in liquidity management, working capital management, and technology (for automation and resilience) delivers value. High-performing treasuries ensure that working capital is efficiently funded and liquidity is deployed to fund the company's most important needs. They also proactively identify and mitigate financial risks.

Companies can leapfrog the historically lengthy process of becoming treasury leaders. We highlight technology as a key enabler. Higher-performing treasuries make better use of technology from systems providers and in banking services. They eliminate people-dependency with engineered processes and automation. As they advance, they put in place building blocks for digitalization (including digital and data strategies) and use technology to transform how treasury operates. The findings detailed in our study offer companies a path to building a high-performing treasury function.

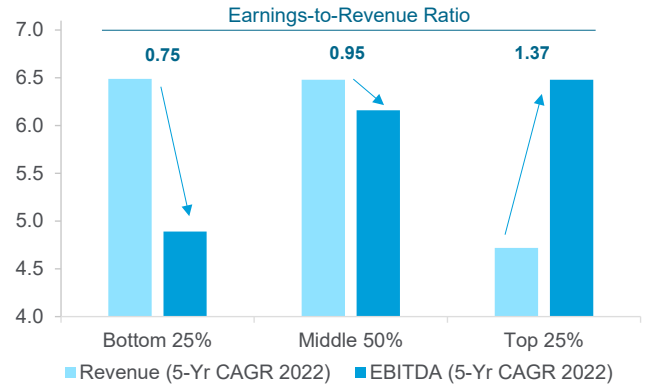
In short, companies can accelerate their journey to treasury leadership by identifying the drivers of treasury performance and take advantage of solutions available today. Our analysis suggests that doing so can help contribute to financial performance.

[1] In this report, earnings-to-revenue ratios refer to the ratio of EBITDA (earnings before interest, taxes, depreciation, and amortization) to revenue. Please see detailed explanation on p. 18 for how these earnings are attributable to treasury performance.

© 2023 Citigroup

Figure 1. Company Performance of Survey Participants Increased with Treasury Performance

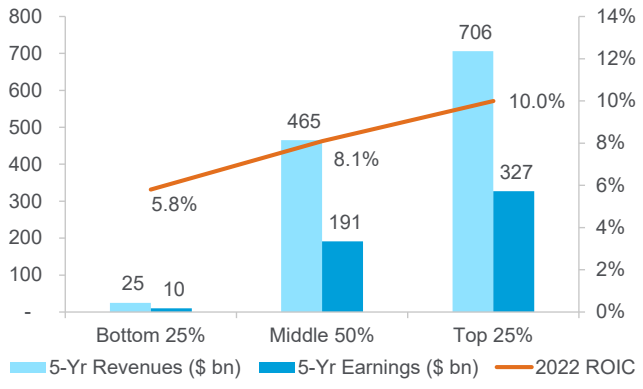
Earnings and revenue growth (5-year CAGR) ratios increased from 0.75 for the bottom-performing treasuries to 1.37 for the top performers.



Source: Citi Treasury & Trade Solutions

Figure 2. Company Revenue, Earnings, and ROIC as a Function of Treasury Performance

Absolute company revenues and earnings between 2018-23 increased with treasury performance. ROIC in 2022 increased to 10% for the top performers from 5.8% for the bottom performers.



Source: Citi Treasury & Trade Solutions

Introduction to the Study

Our study examines how treasury sophistication and digitalization is progressing. It is based on a comprehensive review of survey results gathered from corporate treasury between May 2019 and May 2023 through the Citi Treasury Diagnostics (CTD) service. The CTD service offers benchmarking analysis of a company's treasury performance across six pillars: Policy and Governance, Liquidity, Working Capital, Subsidiary Funding and Repatriation, Risk Management, and Systems and Technology. From this analysis, we created a *Citi Treasury Diagnostics Index* that measures treasury sophistication. We also leverage a *Citi Digital Treasury Index* that measures treasury digitalization.

We gathered survey results of 336 respondents from organizations representing a diverse range of sizes, industries, and geographies. Participant companies varied in annual revenue size — ranging from less than $2 billion to over $100 billion — and represented all sectors of the economy and all regions of the globe. This study is the fourth edition of its kind, with previous editions published in 2017, 2019, and 2021.

We first assess whether treasury leadership matters: Is treasury performance aligned with and a leading indicator of company performance?

Next, we assess the attributes of treasury leadership. We examine what companies achieve in practice and how those practices vary across company demographics, such as size, industry, and domicile.

Our findings and insights are presented through three chapters:

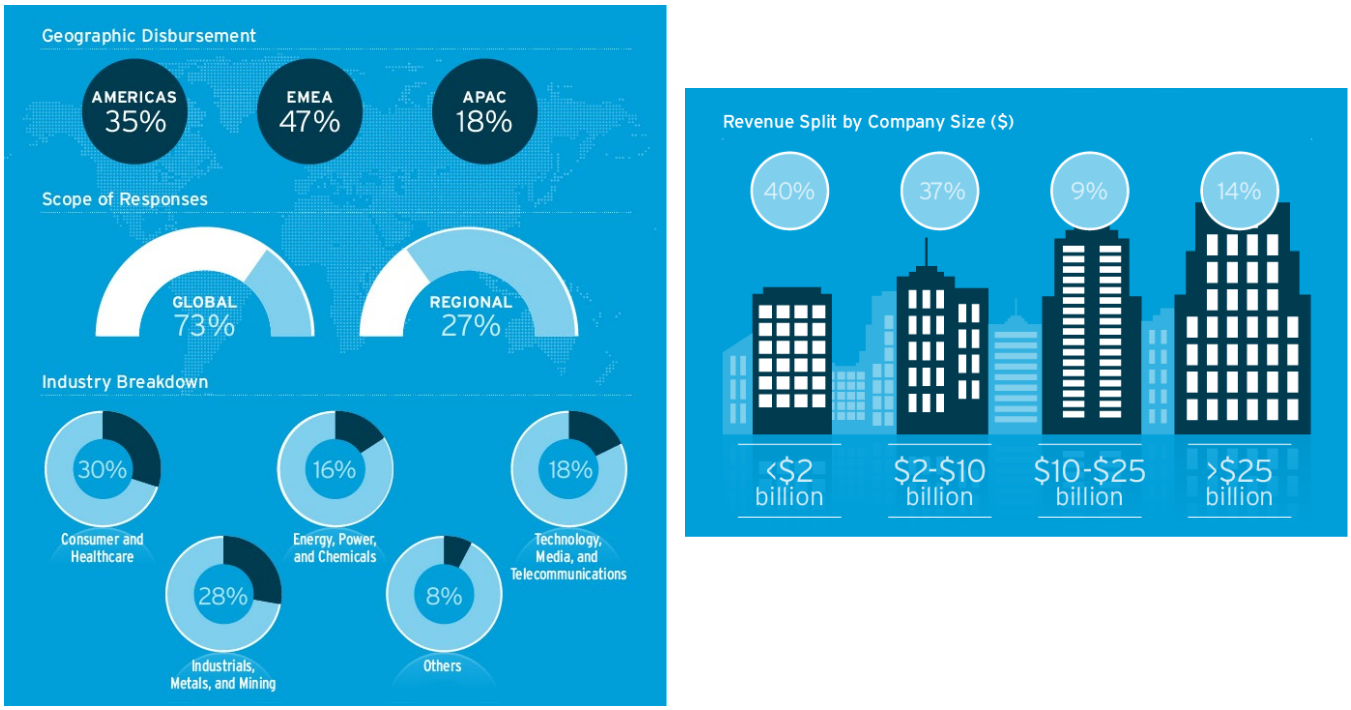
- Treasury Performance Correlates with Company Performance.
- Treasury Leadership in Practice, referring to effectiveness of policies, processes, and procedures.
- Technology Deployment, Connectivity, and Digital Adoption/Automation

© 2023 Citigroup

This study identifies the attributes of the top treasury performers and offers a path for others to follow. Companies can take advantage of these learnings to invest and deploy proven solutions and progress faster.

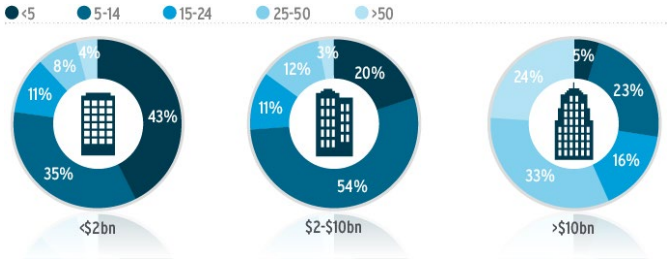
Figure 3. Participant Demographics

The study surveyed 336 participants representing a diverse range of company size, industries, and geographies across the period from April 2019 to May 2023.



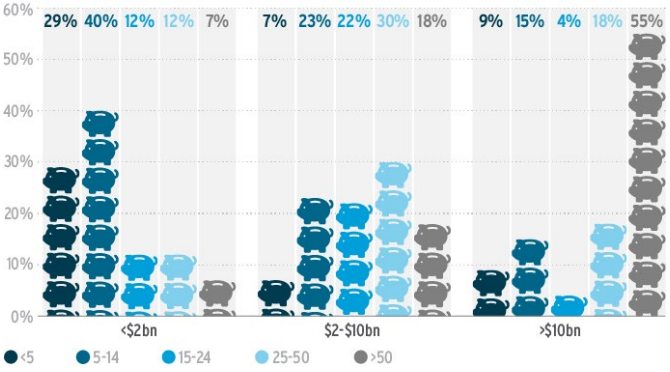
Source: Citi Treasury & Trade Solutions, Citi GPS

Figure 4. Number of Full-Time Treasury Employees by Company Size



Source: Citi Treasury & Trade Solutions

Figure 5. Number of Bank Accounts Reported by Company Size



Source: Citi Treasury & Trade Solutions

© 2023 Citigroup

"*At HPE, our endpoint is a smart treasury using data to glean insights and make real-time decisions. We are about 60% through our journey. Having put in place a foundation of reliable data, we are developing our information dashboard with automated KPIs for monitoring treasury and risk management processes. This all started with our defining a rolling 3-year vision & strategy for treasury. Citi Treasury Diagnostics provided peer benchmarking across a range of performance factors and Citi's Client Advisory team provided support to assist this digitalization project whose scope stretches from improving the efficiency of treasury functions to identifying new ways to add further value to the business by extracting insights from Treasury specific data.*"

--John Donegan, Global Head of Treasury Operations at Hewlett Packard Enterprises

Key Findings and Insights

Company profitability (measured by the earnings/revenue ratio) and treasury performance (measured in Citi Treasury Diagnostics) are correlated. From our advisory work, we believe there is causality, with top treasury performance contributing to company profitability and growth. That said, there are considerable variations in treasury performance across industry, geography, and company size.

Corporate treasuries have made measurable progress in addressing fundamentals since our last study in 2021. High-performing treasuries have gone beyond the fundamentals to adopt digital techniques that have delivered value. Throughout, we see companies generally transitioning from people-dependent tasks to established processes and moving towards automation. Indeed, high-performing treasuries are generally more digitalized. Beyond the efficiency benefits, they see digitalization as a key enabler to managing a fast-changing environment in financial markets and business models.

The Liquidity and Working Capital pillars have the lowest absolute scores across the six pillars of treasury measured. This suggests most companies can improve by focusing on these areas. That said, larger companies are generally better performing in these pillars. A company's headquarters geography and industry also has some predictive value in the level of sophistication, automation, and advancement.

Many companies report they are hampered by disconnected processes, systems, and data, partly due to inadequate past investment in resources and technology. As a result, many now need to play catch up — establishing process fundamentals, using technology to automate processes, and improving data quality to benefit from digital advancements now available.

The insights presented throughout this study provide guidance for companies to achieve a high-performance treasury. We believe companies can accelerate their journey by adopting proven treasury practices, and deploying technology solutions available from systems providers and banks,

Chapter 1: Treasury Performance Correlates with Company Performance

- Treasury performance can be an effective predictor of the ability to translate revenue to earnings.
- Treasury performance has measurably improved across companies between 2019 to 2023.
- Larger companies (measured by annual revenue) tend to have higher-performing treasuries. We believe the underlying driver is that larger companies have usually been around longer, offering more time for treasury to mature. Larger companies may also invest more in their treasury.
- Typically, companies headquartered in North America and Europe are more advanced. This raises the opportunity for companies headquartered other markets to use the learnings in this study to leapfrog in treasury, as they may have in other areas of business.

© 2023 Citigroup

- Industry is also a factor in treasury effectiveness. Energy, Power, and Chemicals (EPC) companies score highest in levels of sophistication and automation. Technology, Media, and Telecommunications (TMT) companies score at the lower end. This may be related partly to company age and treasury maturity (see above). We also believe that TMT profitability and focus on growing revenue may have historically sheltered these companies from driving greater treasury efficiency and effectiveness.

Chapter 2: Treasury Leadership in Practice

- Most companies have formal policies across all areas of treasury responsibility.
- Effective cash and liquidity management — a minimum standard for corporate treasury — has progressed in the past four years. However, for companies in the aggregate, further improving cash and liquidity management will have the most impact on improving treasury performance.
- Most companies have established policies, frameworks, and processes to manage legal entity formation and ongoing financing. However, nearly a third of smaller companies (below $2 billion in revenues) do not have these practices in place.
- The role of treasury is expanding in working capital management. More treasuries today have either direct responsibility or significant oversight. Treasuries increasingly address working capital management across both financing and operational aspects (i.e., engaging with Procurement, Payments, and Credit and Collections to improve practices).
- Risk management is an area where many companies can improve. Unexpected funding needs were required by one in five companies even if they had a process in place to assess liquidity and funding risk. Focus on counterparty risk management has risen, especially for larger companies. Interest rate exposure management is less robust at smaller companies. There is a significant fall-off in foreign exchange (FX) hedging beyond the 12-month horizon, with only one in three companies hedging out to a two-year horizon.

Chapter 3: Technology Deployment, Connectivity, and Digital Adoption

- Adopting and integrating treasury technology drives the greatest improvement in overall treasury performance. By corollary, treasury underperformance in other areas can be linked to technology underinvestment.
- Sixty-three percent of all study participants have deployed a treasury management system (TMS) or enterprise resource planning (ERP) treasury module. Approximately 90% of larger companies (greater than $10 billion in revenues) report they are either fully or partially integrated with their banking partners for the purposes of bank statements and transaction processing. This drops to 59% for the smaller companies (below $2 billion in revenues).
- Sixty percent of companies are now looking for transformative opportunities leveraging technology across both their core business and treasury function, compared with 49% in 2018.

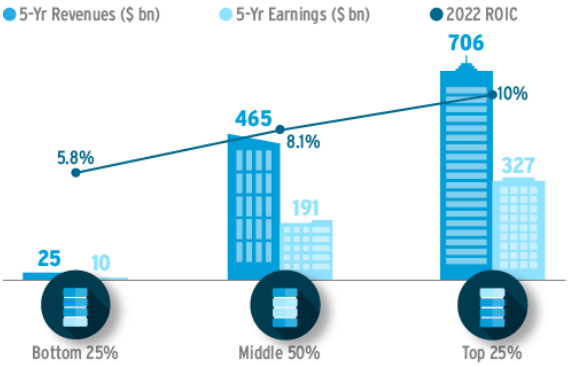
© 2023 Citigroup

- In general, companies are aspiring to deploy data and analytics. This includes using predictive analytics for forward-looking insights to make better-informed decisions. However, only 40% of participants have a data strategy in place for treasury. This suggests many companies are challenged in putting in the building blocks necessary — such as data strategies and clean data — required to support decision making through predictive and prescriptive techniques.

Delivering High Performance Through Treasury Digitalization

TREASURY PERFORMANCE MATTERS: ENABLING COMPANY RETURNS

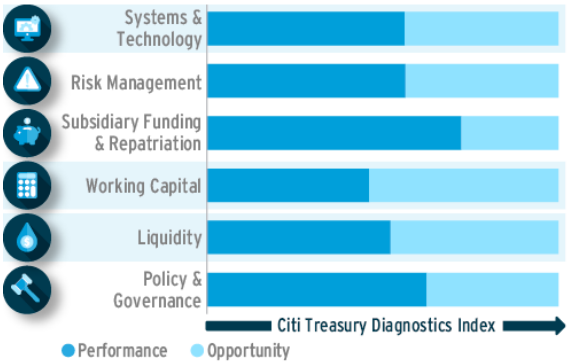
Companies that have nurtured treasury teams to be leaders in their field enjoy better financial performance.



Company earnings to revenue ratio increases significantly between the bottom 25% and top 25% of treasuries. This Citi research suggests that the top 40 performing treasuries as measured by this study have generated $44 billion of additional earnings over the last 5 years based on this increased ratio.

Fortune 500 companies may have left $165 billion in profits behind in 2022 due to underperforming treasury. Similar upward trending can be seen in the ROIC across the study participants increasing from 5.8% to 10% for those in the highest performance bracket.

Liquidity and Working Capital Management remain the top two areas of treasury showing greatest opportunity for improvement.

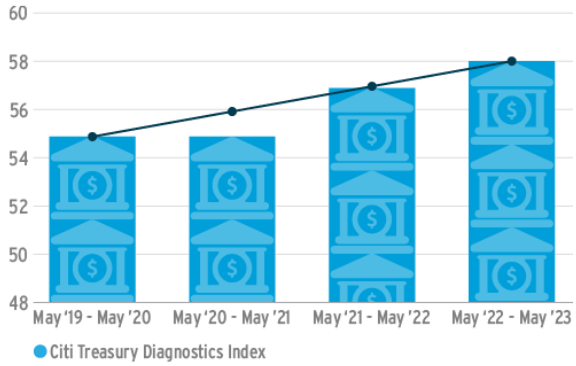


COMPANIES DIGITALLY ENABLING: PACE ACCELERATING

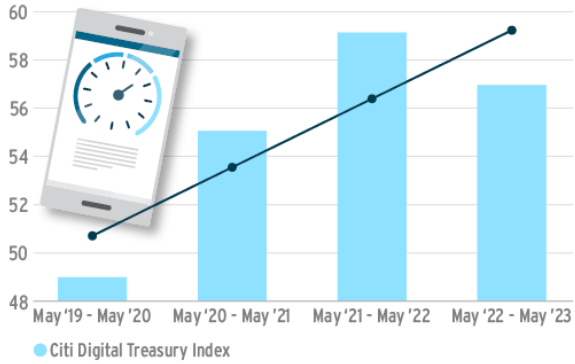
Generally, more performant treasuries are also more digitalized. Opportunities for treasury exist utilizing emerging technologies for more timely data, more advanced analytics, and utilization of machine learning (ML) and artificial intelligence (AI). Leading treasuries are leveraging digitalization as a key enabler for core automation and to leverage data for insights towards more effective decision-making

While treasuries have continued to progress in Sophistication, that has been surpassed by progress in Digitalization those in the highest performance bracket.

Sophistication Increase of 5% in Last 4 Years



Digitalization Increase of 20% in Last 4 Years



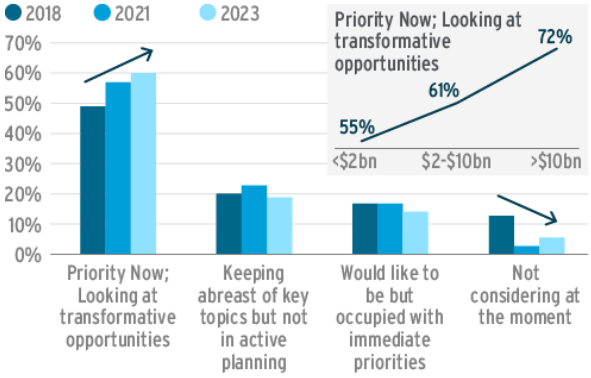
© 2023 Citigroup

DIGITAL ADOPTION/PRIORITY NOW FOR OVER 70% OF LARGE COMPANIES

Aspirations continue to transition treasury from descriptive analytics reporting what has happened in the past to seeking a more forward-looking set of insights through predictive analytics to better inform what actions to take to manage treasury objectives.

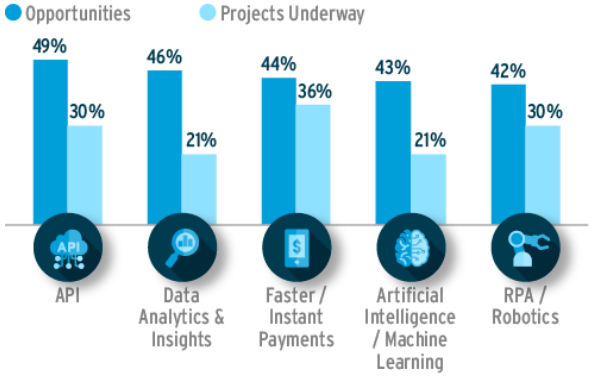
The prioritization of digitalization in treasury correlates with company size (by annual revenue). 72% of companies with annual revenues greater that $10 billion advise that this is a priority now while 53% of companies with revenues <$2 billion see this as a 2023 priority.

Focus on Digital Themes and Emerging Technologies



Significant gap between opportunities and projects underway utilizing data and ML/AI which may be attributed to the widely recognized challenge with data veracity (completeness, accuracy, timeliness) for many companies

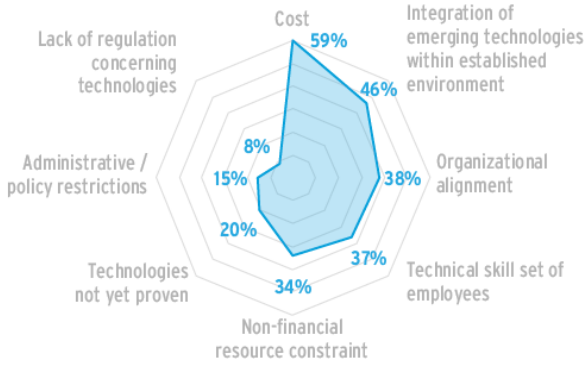
Digital Opportunities & Projects Underway (Top 5)



CHALLENGES REMAIN HALTING PROGRESS

Cost remains the biggest hurdle by study participants irrespective of company size. Integration with legacy infrastructure is also a key constraint for adoption of emerging technologies.

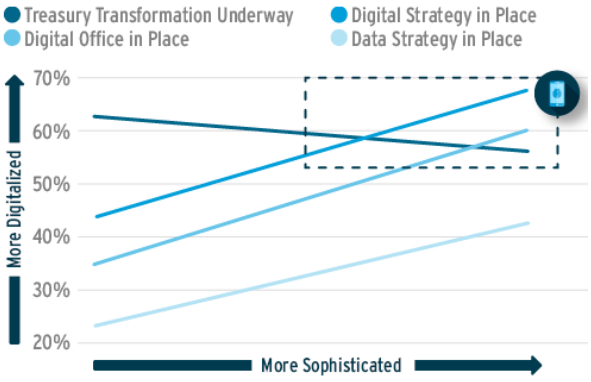
Biggest Hurdles to Treasury Transformation



Likelihood of success may be negatively impacted as building blocks necessary, such as digital & data strategies, are absent for many companies that have transformation projects underway.



Digital Readiness: Correlation with Level of Measured Company Sophistication and Digitalization



© 2023 Citigroup

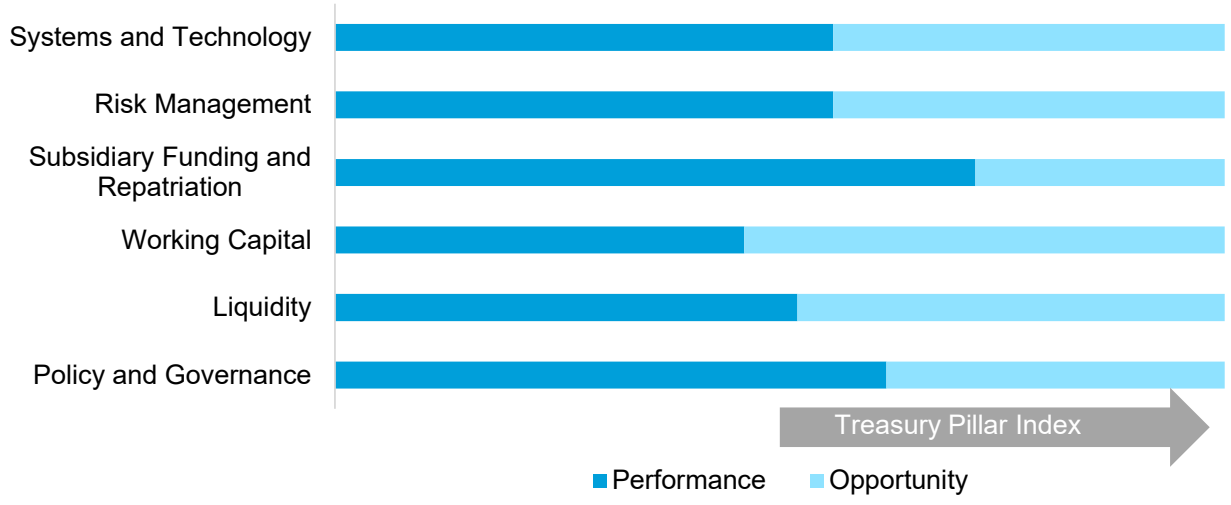
Chapter 1: Treasury Performance Correlates with Financial Performance

© 2023 Citigroup

Treasury Performance as an Indicator of Financial Performance

- There are greater opportunities for treasury through better use of data, process automation, and enhanced analytics to support decision making since our last study in 2021. High-performing treasuries have experimented and adopted many of these new techniques that have proven value.
- The ability for corporate treasury to adopt these advances remains a challenge. We find progress has been made in addressing many fundamentals since our last study. Yet, many companies need to resolve infrastructure challenges; disconnected processes and fractured data.
- Liquidity and Working Capital management remain the top two areas of greatest opportunity for improvement.

Figure 6. Areas of Treasury Performance and Opportunity



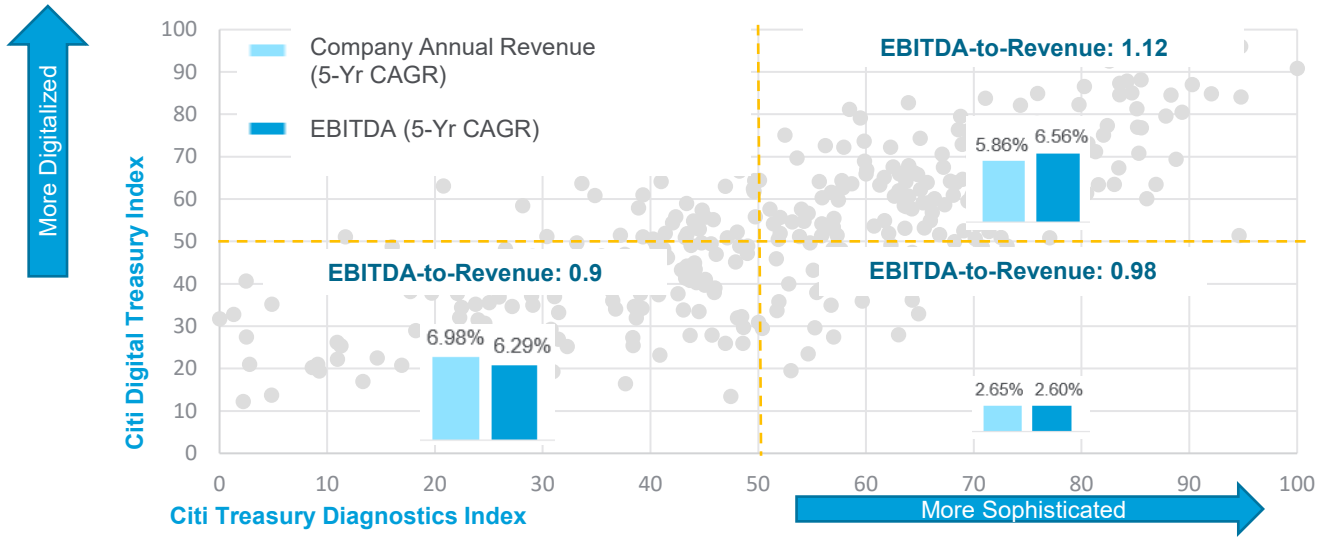
Source: Citi Treasury & Trade Solutions

© 2023 Citigroup

Treasury Performance Enabling Company Growth

- In our 2021 study we introduced the concept of a Digital Treasury Index, This measures the level of digital preparedness, technology adoption, and process automation combined with information transmission with banks and service providers.
- The intersection of the Digital Treasury Index and Treasury Diagnostics Index axes suggested playbooks for companies to progress their transition to Digital Treasury. This includes (1) shoring up fundamentals and seeking process efficiencies and cost saves to optimize treasury operations, (2) higher levels of process automation and a move towards predictive analytics to enhance treasury decision making, and (3) treasury becoming a value-add business partner through insights that enable business growth.
- In this study we investigate how treasury and digital performance relate to company performance. We find that revenue growth and earnings before interest, taxes, depreciation, and amortization (EBITDA) growth correlates with treasury sophistication and the level of treasury digitalization.
- Companies with the highest treasury sophistication and automation show the highest earnings-to-revenue ratio (1.12), as seen on the top right quadrant of Figure 7. Companies on the bottom left quadrant of Figure 7 — those least sophisticated and with the lowest levels of process automation — show the lowest earnings-to-revenue ratio (0.9).
- We suggest from this observation that the performance of treasury, as measured by this study, is an effective indicator of treasury's ability to translate revenue to earnings. Leadership in treasury can provide a positive contribution to company growth.
- This study demonstrates key attributes of top treasury performers. We believe others can learn and follow.

Figure 7. Correlation Between Financial Performance, Treasury Sophistication, and Digital Enablement



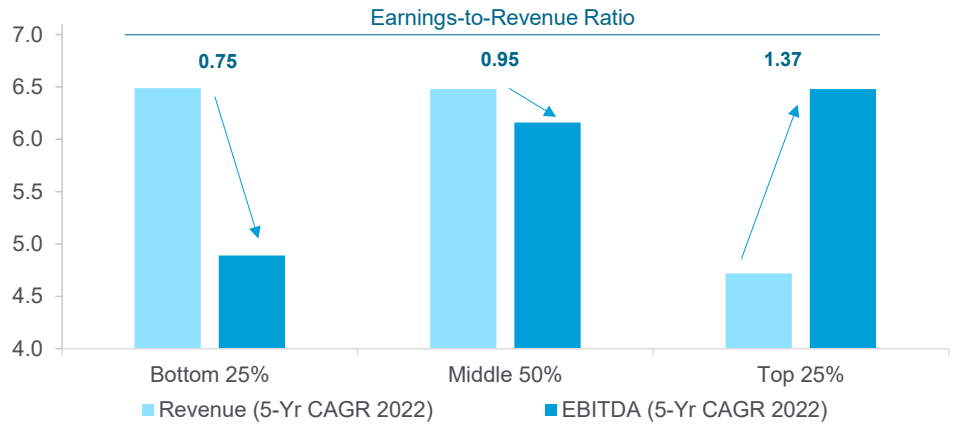
Source: Citi Treasury & Trade Solutions

© 2023 Citigroup

Treasury Performance Enabling Company Growth (cont.)

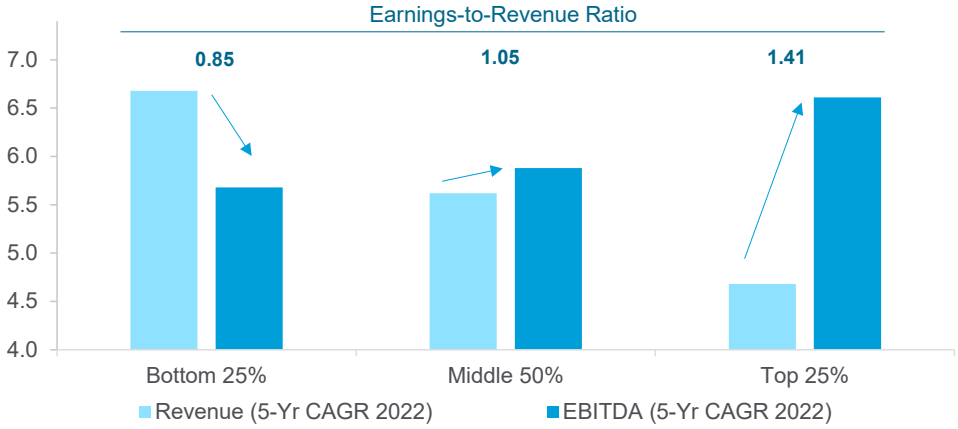
- Using study participant company treasury diagnostic index broken into quartiles as the base, earnings-to-revenue growth ratios increase from 0.75 for the bottom 25% of treasuries as measured by this study, to 1.37 for the top 25%.
- The correlation between financial and treasury performance strengthens when we exclude companies with annual revenues of less than $2 billion. Using company sophistication scores for companies with revenues in excess of $2 billion, the earnings-to-revenue ratio increases to 1.41 for the top 25% of treasury performers, from 0.85 for the bottom 25.

Figure 8. Five-Year CAGR (All Companies)



Source: Citi Treasury & Trade Solutions

Figure 9. Five-Year CAGR (All Companies > $2 Billion in Annual Revenues)



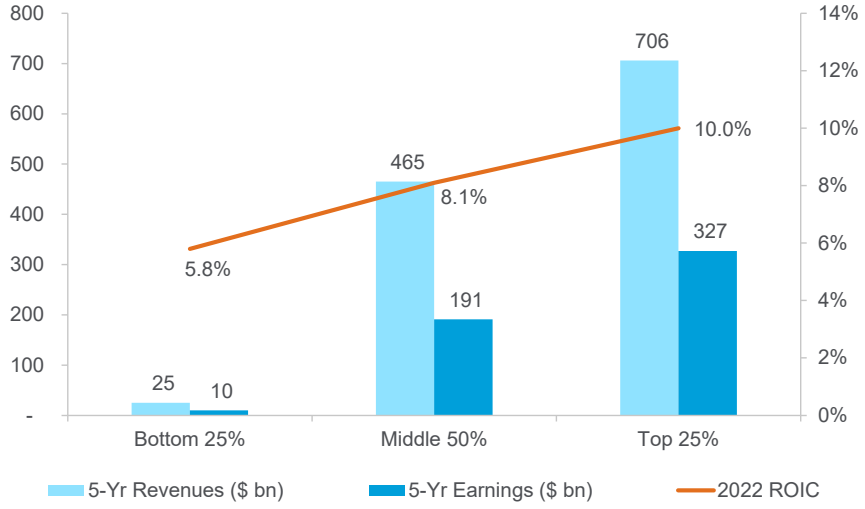
Source: Citi Treasury & Trade Solutions

© 2023 Citigroup

Treasury Performance Enabling Company Growth (cont.)

- Looking at financial performance in absolute terms, we find a strong correlation between company revenue and earnings with treasury performance.
- Companies with treasuries performing in the top 25% of those participating in this study reported 59% of total revenues and 62% of total earnings.
- Applying the earnings-to-revenue ratio of the bottom 25% of treasuries to the aggregate company revenues of the top 25% of treasuries, we estimate the top 40 performing treasuries, as measured by this study, generated $44 billion of additional earnings over the last five years attributable to their better treasury performance.[2]
- Total Fortune 500 companies reported $3.1 trillion in profits in 2022. Applying the performance quartiles and ratios inferred from this study to this larger population of companies, implies these companies may have left $165 billion in profits behind in 2022 due to underperforming treasury.[3]

Figure 10. Company Revenue, Earnings and ROIC as a Function of Treasury Performance



Note: We observed a positive correlation between absolute company revenues and earnings in 2018-23 and a similar upward curve for 2022 ROIC vs. treasury performance.
Source: Citi Treasury & Trade Solutions

[2] $44 billion is the difference between (a) the aggregate earnings of all companies categorized by this study with treasury performing in the top 25% and (b) the adjusted aggregate earnings of all companies categorized in this study with treasury performing in the top 25% — adjusted by applying the earnings/revenue ratio of companies in the bottom 25% of treasury to the revenues of companies categorized by this study with treasury performing in the top 25%. $44 billion being 14% of the earnings of companies in the top quartile of treasury performance.

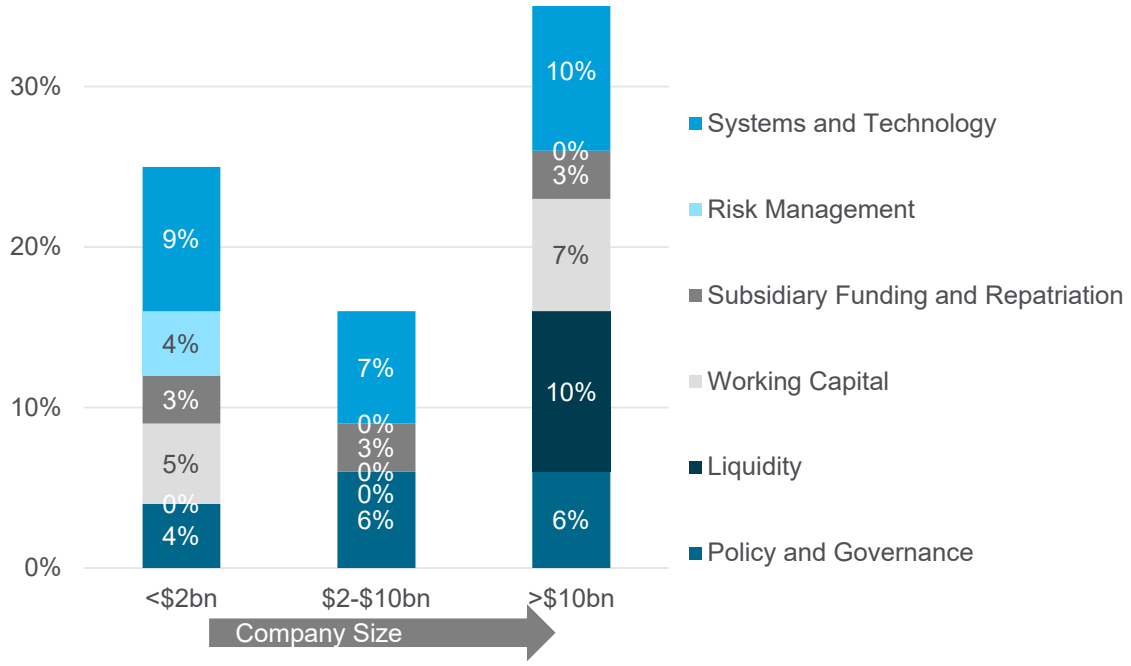
[3] $165 billion is extrapolated from (a) $3.1 trillion of profits reported in 2022 for Fortune 500 companies; (b) the population of companies in the top quartile of treasury performance in this study holding 62% of profits; and (c) an assumption that the same company performance ratios apply. This implies 38% of the $3.1 trillion is made by the bottom 75% ($1.2 trillion) and the bottom 75% could have increased profits by 14% had they had a top performing treasury (14% of $1.2 trillion = $165 billion).

© 2023 Citigroup

Treasury Performance Advancement

- In this study we find a measurable improvement in treasury performance through the period May 2019 to May 2023. While there is a difference in advancement based on company size bracketing, companies at the smaller end and those at the larger end (measured by revenue) have made the most progress. Companies in the less than $2 billion annual revenue bracket achieved an average increase of 25% in treasury effectiveness.
- All companies have made advances in Systems and Technologies supporting treasury processes, showing the clear focus on technology-led projects through the period of this study. All companies generated between a 7%-10% improvement in this pillar.
- Companies in the middle range of this study (with annual revenues greater than $2 billion but less than $10 billion) show the least improvement in the aggregate over this period, with no measurable improvement noted in Liquidity, Working Capital, or Risk Management.
- Companies with annual revenues in excess of $10 billion exhibited improvement in Liquidity management, with a 10% improvement in the aggregate over the period. Good progress was made by all companies in the area of Policy and Governance with a 4%-6% improvement across the cohorts of companies.

Figure 11. Treasury Performance Advancement by Company Size Across Six Study Pillars



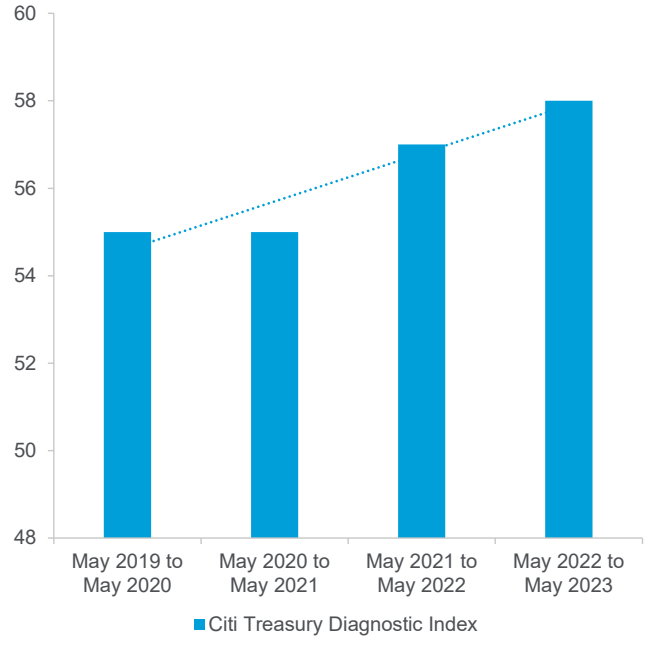
Note: Time shift between May 2019-May 2021 vs. May 2021-May 2023
Source: Citi Treasury & Trade Solutions

© 2023 Citigroup

Treasury Performance Advancement (cont.)

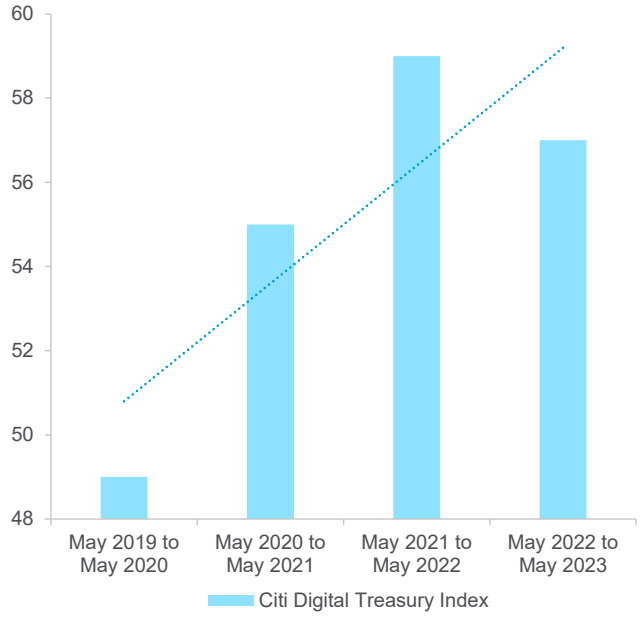
- The pace of treasury digitalization is accelerating. This is more apparent at leading treasuries.
- Treasury progress in digitalization is going at a faster pace than progress in sophistication. The improvement in treasury sophistication is 5% in the aggregate over the four years while the improvement in digital adoption was 20% over the same period. We observed a large jump in digital focus in the May 2021-22 period. We attribute this to the COVID-19 pandemic response, with companies mobilizing to support working from home model, acceleration projects such as better cash flow forecasting, and automating routine treasury tasks where possible.

Figure 12. Sophistication Increased 5% in the Last Four Years



Source: Citi Treasury & Trade Solutions

Figure 13. Digitalization Increased 20% in Last Four Years



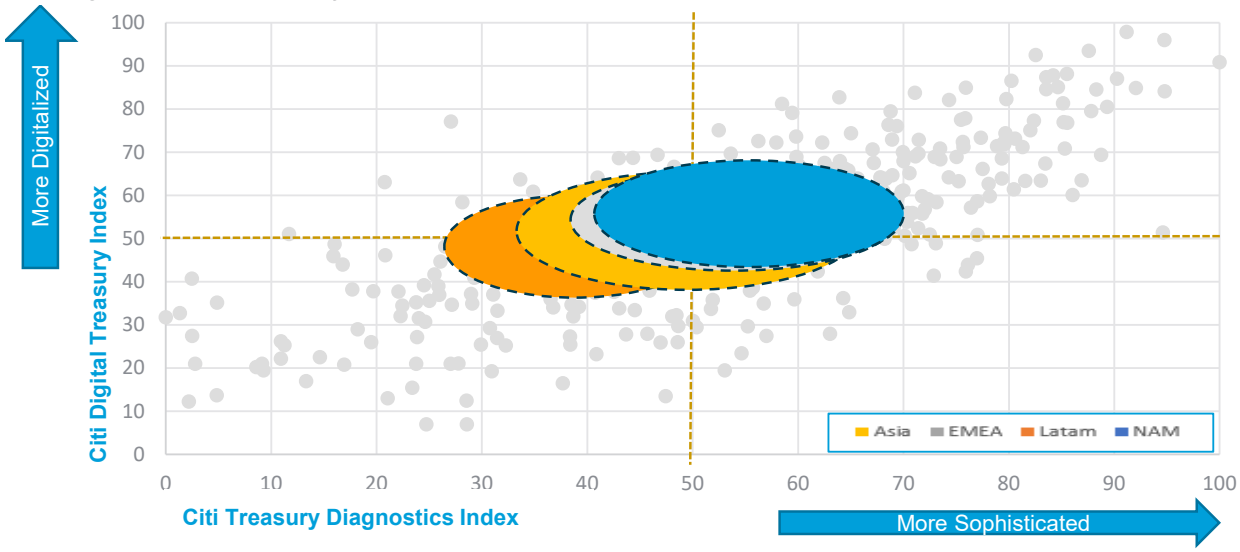
Source: Citi Treasury & Trade Solutions

© 2023 Citigroup

Headquarters Impact

- Companies based in North America and EMEA (especially Western Europe) reported more advanced treasuries in aggregate when compared with those based in Latin America and Asia. Liquidity management in Latin America and Asia is the area with the biggest relative opportunity for treasury improvement.

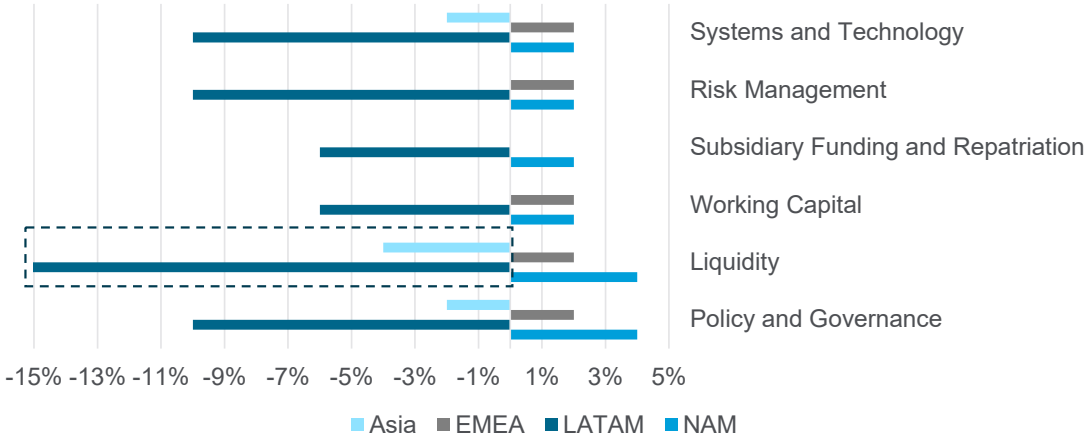
Figure 14. Regional Variation in Treasury Performance



Note: Region is defined by the companies participating in the study and aggregated as displayed. Performance is displayed as the average/mean score of participants across both axes of the chart and those within one standard deviation from the mean across both axes.

Source: Citi Treasury & Trade Solutions

Figure 15. Shift in Six Pillars by Region (%)



Note: Measured against average score of all 336 survey participants.

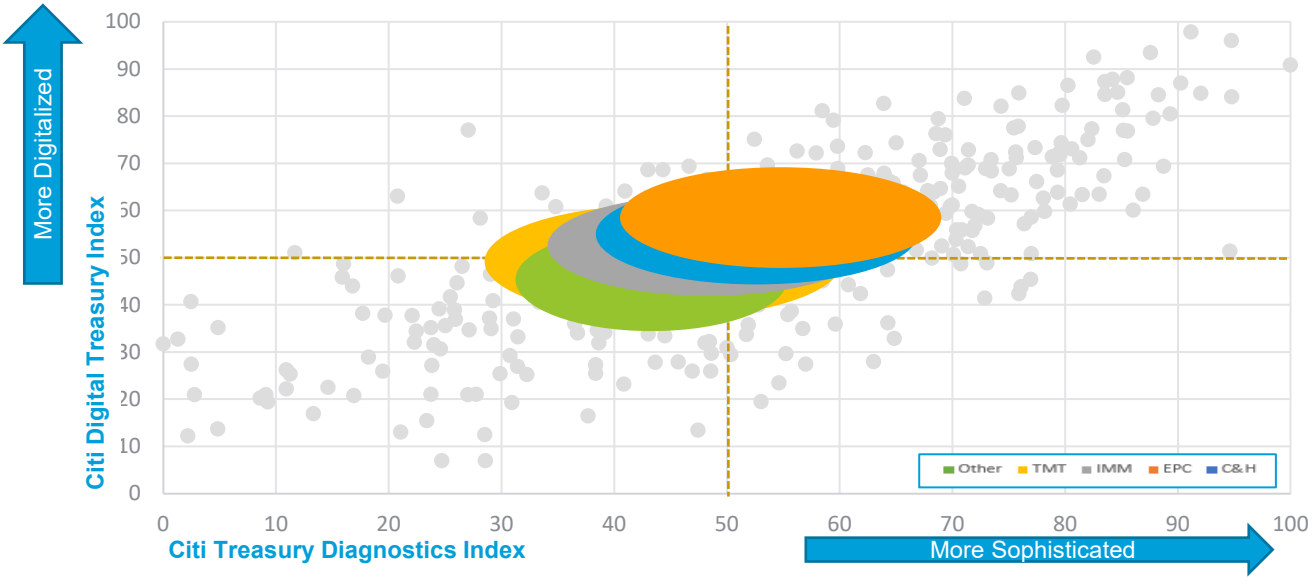
Source: Citi Treasury & Trade Solutions

© 2023 Citigroup

Industry Impact

- Energy, Power, and Chemicals (EPC) companies scored the highest in both the level of sophistication and automation. Technology, Media, and Telecommunication (TMT) companies scored the lowest. EPC companies exhibited the highest treasury relative performance across the six pillars measured. Liquidity management was the greatest area of opportunity.

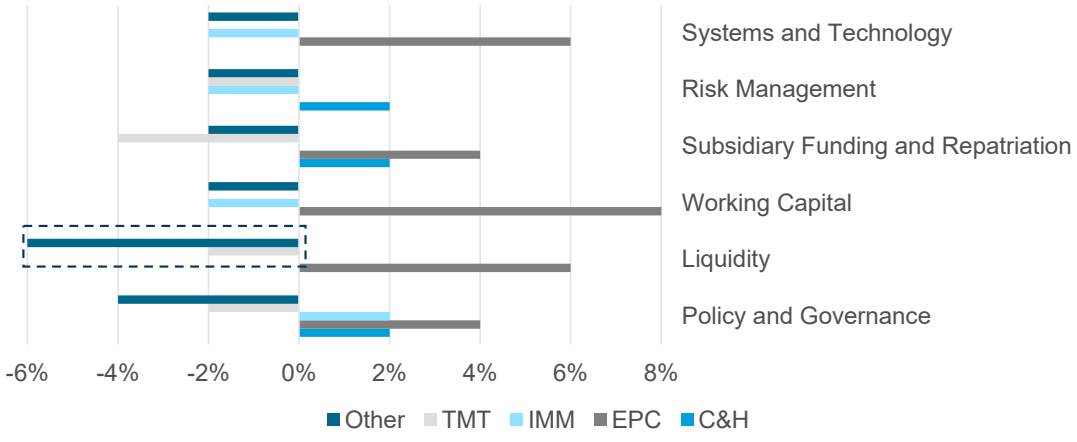
Figure 16. Industry Variation in Treasury Performance



Note: Industry is defined by the companies participating in the study and aggregated as displayed. Performance is displayed as the average/mean score of participants across both axes of the chart and those within one standard deviation from the mean across both axes.

Source: Citi Treasury & Trade Solutions

Figure 17. Shift in Six Pillars by Industry (%)



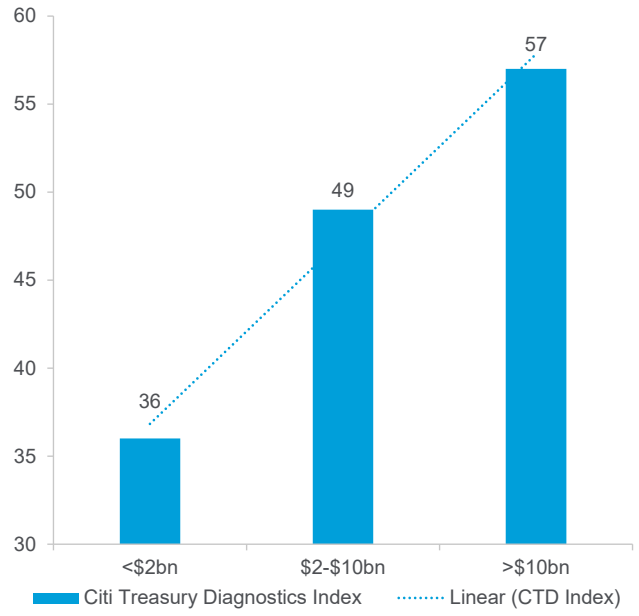
Source: Citi Treasury & Trade Solutions

© 2023 Citigroup

Size Impact

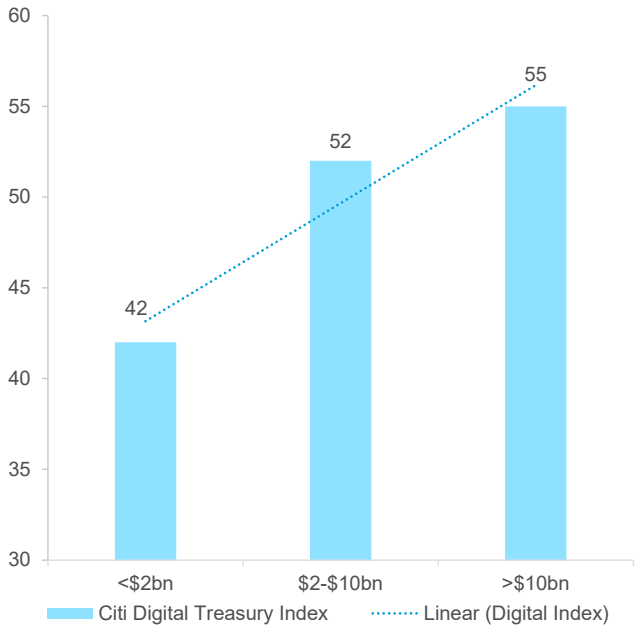
- Larger companies are generally more efficient and effective in their treasury policies, processes, and procedures. The gap is narrower when it comes to digital adoption and process automation.
- In the following chapters we investigate treasury processes to determine what is driving this difference in treasury performance across different company demographics.

Figure 18. Twenty-One Point Gap in Treasury Performance Index Based on Company Size



Source: Citi Treasury & Trade Solutions

Figure 19. Thirteen Point Gap in Digital Index Based on Company Size



Source: Citi Treasury & Trade Solutions

© 2023 Citigroup

Chapter 1: Summary Take Aways

Treasury performance is a factor in driving company profitability and returns. Treasury performance is measured by the Citi Treasury Diagnostics service. We measure profitability by the company earnings-to-revenue ratio and returns by Return on Invested Capital (ROIC).

- Companies overall continue to improve treasury performance. That said, company size, headquarters-domicile, and industry can predict to a degree where a given company is likely to stand in treasury performance.
- The question that arises is whether companies that are not fortunate with regards to their size, industry, or headquarters domicile can still achieve high performance in treasury. We provide findings in the following sections that, we believe, offer a road to higher treasury performance for all.

© 2023 Citigroup

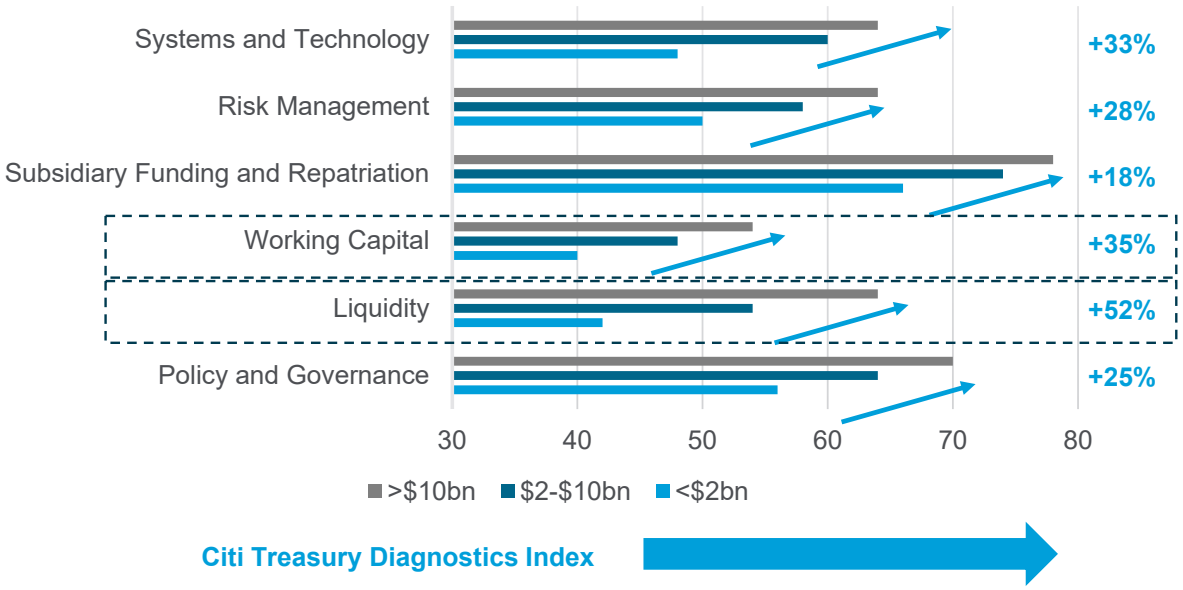
Chapter 2: Treasury Leadership in Practice

© 2023 Citigroup

Treasury Leadership in Practice

- Across participating companies as a group, Liquidity and Working Capital exhibit the lowest absolute scores across the six pillars of treasury we measure. In other words, most companies should consider prioritizing investment in these areas to improve treasury performance.
- Larger companies (those with annual revenue over $10 billion) tend to be more efficient and effective in their treasury policies, processes, and procedures than those smaller (annual revenue below $2 billion). This performance gap widens for the Liquidity, Working Capital, and Systems and Technology pillars. Put another way, for smaller companies, it is even more of an imperative to invest in these pillars and drive benefits for the company.
- In this chapter, we present findings across five of the six pillars of treasury by investigating treasury performance and looking for improvements made by study participants over the last four years. We look at Systems and Technology in the next section, Chapter 3.

Figure 20. Performance in Six Pillars by Company Size



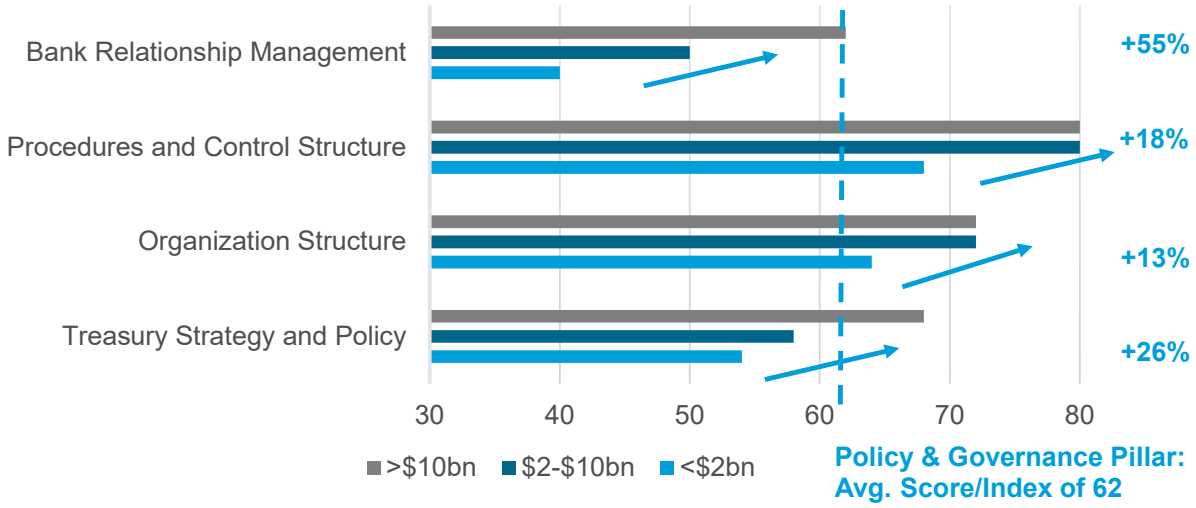
Source: Citi Treasury & Trade Solutions

© 2023 Citigroup

Policy and Governance: Introduction

- Effective treasury policies — delivered through processes and procedures in line with a documented treasury strategy and managed through key performance indicators — are the foundation for achieving financial risk management objectives and a best-in-class treasury function.
- In this section, we investigate the availability of a treasury strategy and an enabling risk management policy. We find that significant variations exist by company size, as measured by company annual revenue.
- Figure 21 shows treasury performance against the four functions within the Policy and Governance pillar.

Figure 21. Treasury Performance of Surveyed Companies in the Policy and Governance Pillar



Source: Citi Treasury & Trade Solutions

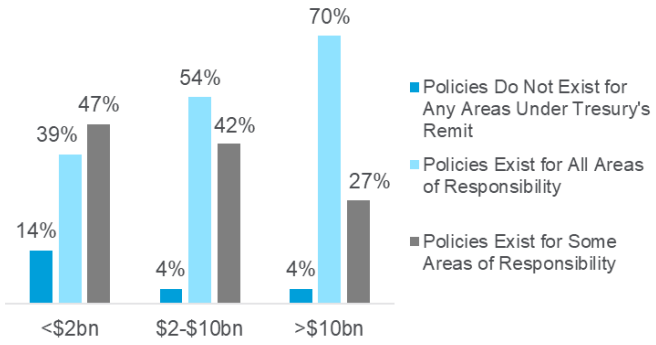
© 2023 Citigroup

Policy and Governance: Adoption Varies

The study finds broad policy adoption by treasury, with 70% of larger companies (those with annual revenue above $10 billion) indicating that policies exist across all areas of their treasury responsibility. Policy gaps are more prevalent in companies with annual revenues less than $10 billion.

- Seventy percent of larger companies have policies across all areas of responsibility while 14% of smaller companies have no policies in place.

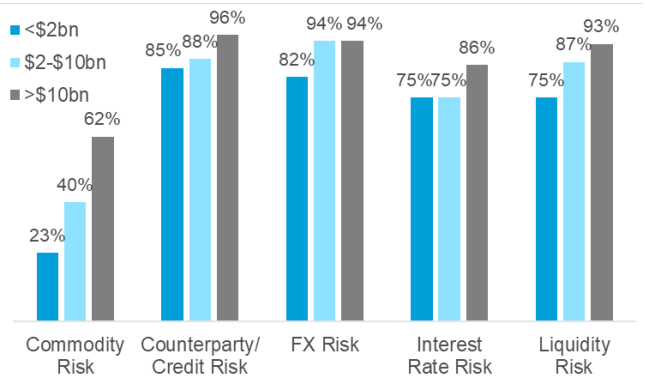
Figure 22. Existence of Policies



Source: Citi Treasury & Trade Solutions

- For those companies with policies, there is broad coverage across most groups. Commodity risk is the outlier, with only 23% of smaller companies managing this exposure.

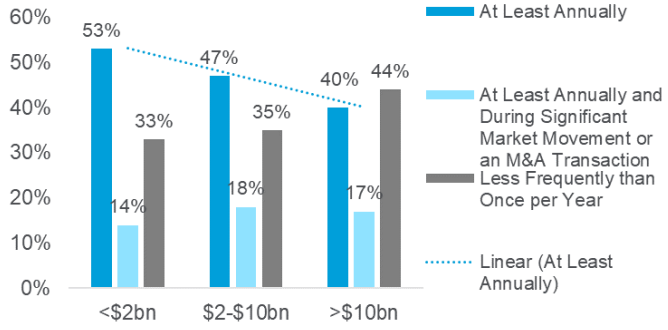
Figure 23. Policy Coverage



Source: Citi Treasury & Trade Solutions

- Perhaps counterintuitively, larger companies review their policies less frequently than those that are emerging or fast growing. Around 44% of larger companies report they review policies less than annually.

Figure 24. Policy Review



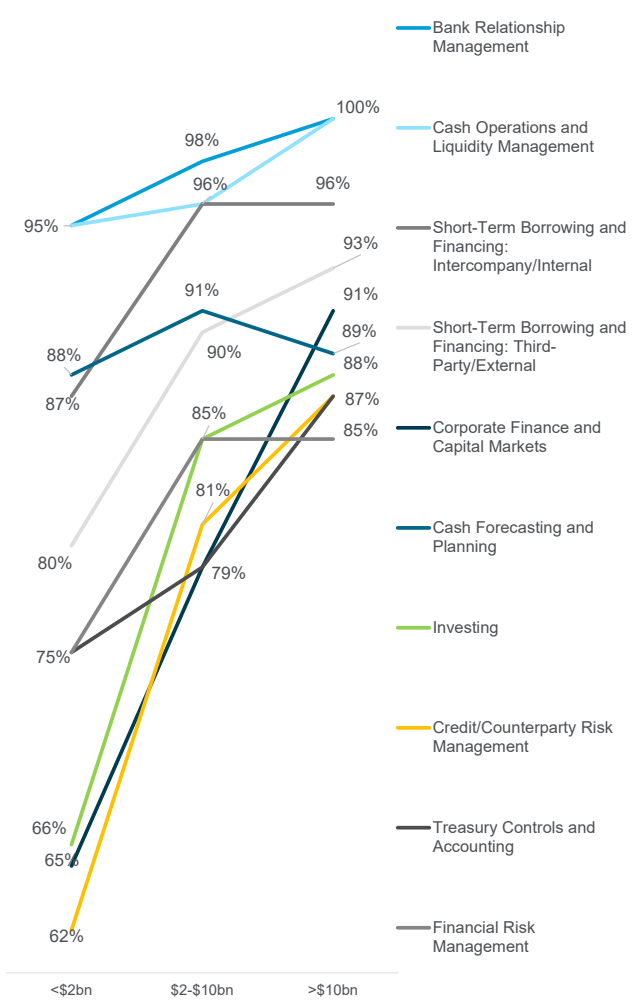
Source: Citi Treasury & Trade Solutions

© 2023 Citigroup

Policy and Governance: Role of Treasury Varies as Companies Grow

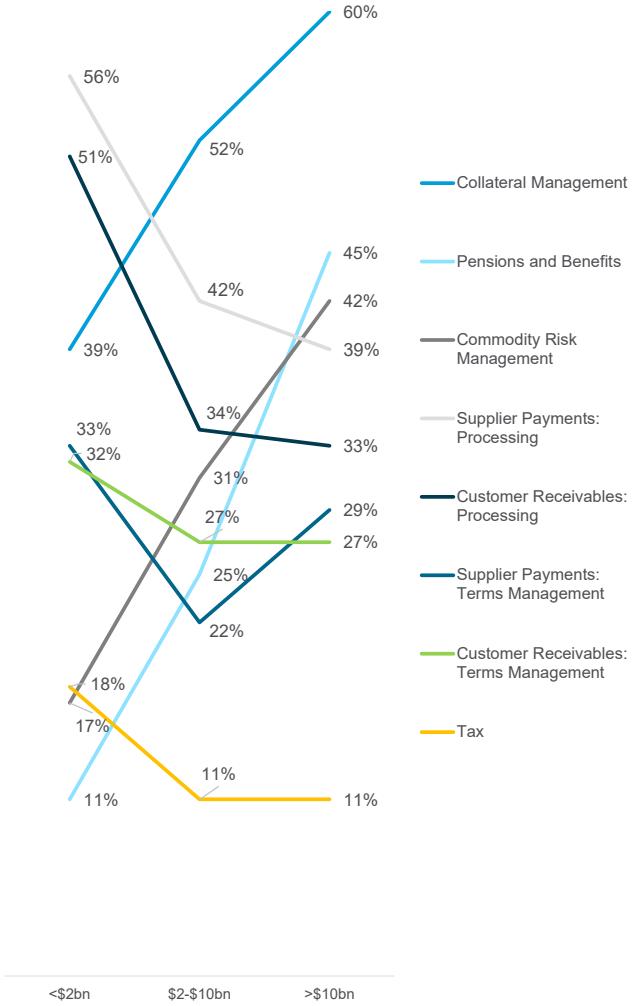
While bank relationship management, short-term financing, and cash/liquidity management are basic services, some functions are more prevalent as companies expand and grow, while other functions that were initially part of the treasury diminished. In our advisory work, we find that these functions, initially provided within treasury, often move out. They transition to specialist functions or to centers of scale (shared service centers or global business services centers) as companies scale and become more established.

Figure 25. Top 10 Functions Provided by Treasury



Source: Citi Treasury & Trade Solutions

Figure 26. Additional Functions Provided by Treasury



Source: Citi Treasury & Trade Solutions

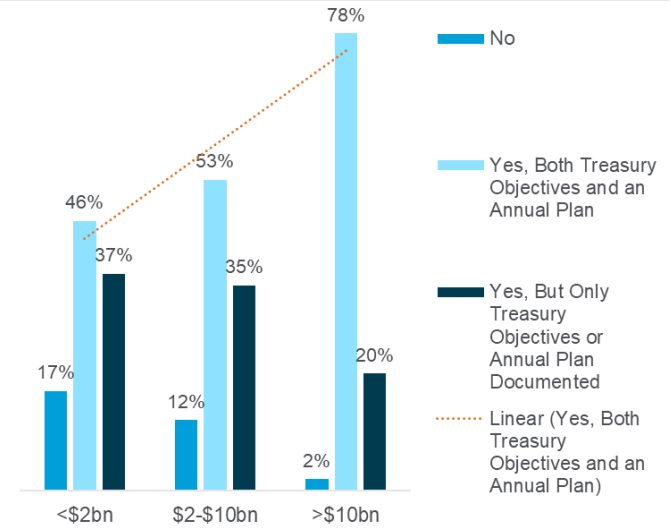
© 2023 Citigroup

Policy and Governance: Adoption and Deployment of Treasury Objectives, Plans, and Procedures

We find relatively low levels of documented treasury objectives, plans, and procedures across all study participants. One in five companies with annual revenues greater than $2 billion do not have any documented treasury procedures. Among companies of this size, a similar share (17%) report not having any documented objectives or plans.

- Seventy-eight percent of companies with annual revenues more than $10 billion have documented treasury objectives and an annual plan in place, with almost all having at least one or the other in place. Seventeen percent of companies with annual revenues less than $2 billion do not have either objectives or plans documented.

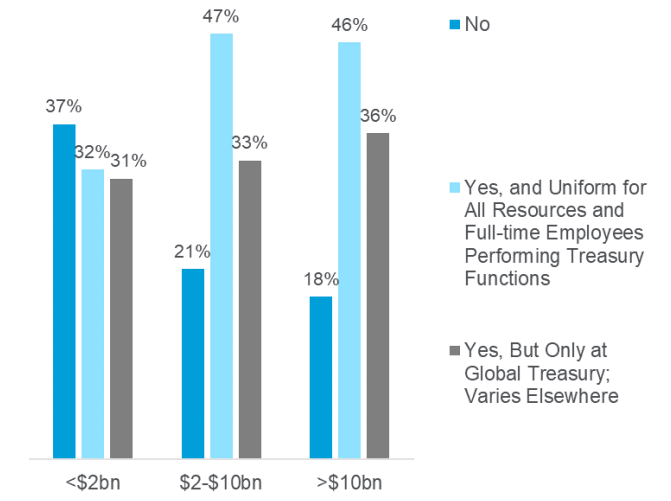
Figure 27. Existence of Documented Objectives and Plans



Source: Citi Treasury & Trade Solutions

- Less than half of all companies have documented treasury procedures in place across their organization. Of companies with annual revenues under $2 billion, 37% do not have any treasury procedures in place.

Figure 28. Existence of Documented Treasury Procedures



Source: Citi Treasury & Trade Solutions

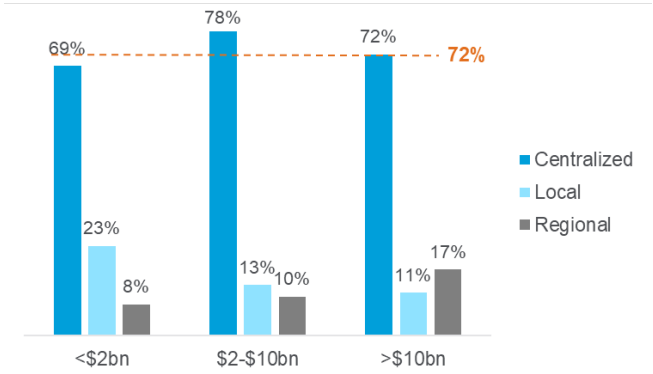
© 2023 Citigroup

Policy and Governance: Treasury Operating Model and Alignment

Centralized policy formation and financial risk management are the favored approaches for treasuries participating in this study, with the majority of companies with annual revenues less than $10 billion opting for regional or local policy execution.

- The majority of companies (72%) in this study manage financial risk through a centralized operating model. However, almost one in four companies with annual revenue less than $2 billion manage financial risk at a local level.

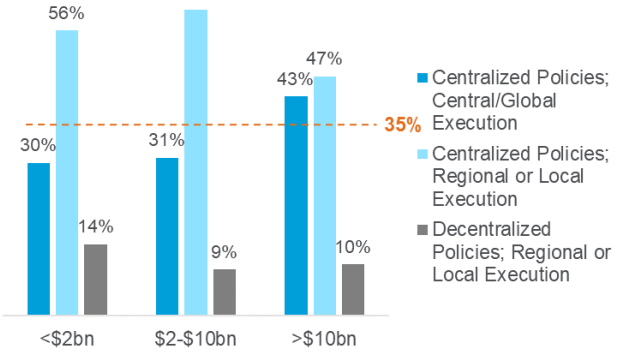
Figure 29. Financial Risk Management Operating Model



Source: Citi Treasury & Trade Solutions

- While the majority of companies have centralized policy formation in place, only 35% of all companies in this study report having both centralized policies and central/global execution. The majority of companies with revenues less than $10 billion have a regional or local execution in place.

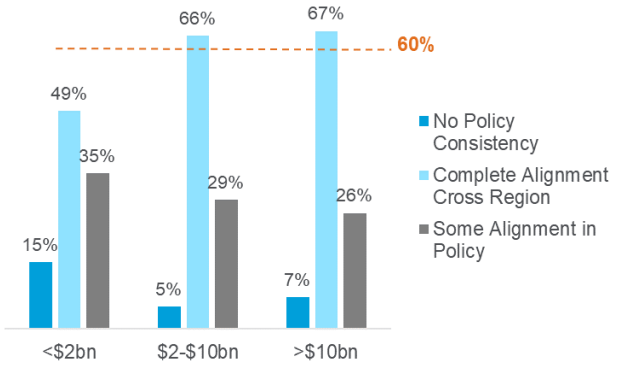
Figure 30. Centralization of Policy and Execution



Source: Citi Treasury & Trade Solutions

- Sixty percent of all companies report complete policy alignment across regions, rising to 67% for companies with annual revenues over $10 billion. For companies with annual revenues less than $2 billion, 15% report no policy consistency.

Figure 31. Policy Alignment Across Regions



Source: Citi Treasury & Trade Solutions

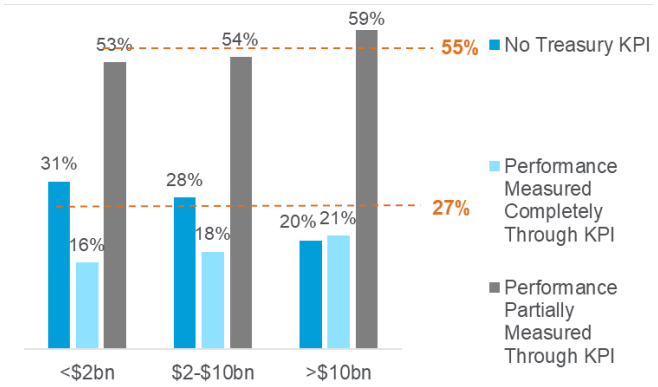
© 2023 Citigroup

Policy and Governance: KPIs to Measure and Manage Treasury Outcomes

The majority of companies in this study have embedded key performance indicators (KPIs) for treasury. Manual processes are used for most KPIs, with utilization of reporting capabilities from treasury technologies used primarily by larger companies (with annual revenue over $10 billion). Treasury KPIs are now widely used as part of treasury staff performance evaluations.

- The majority (55%) of all companies in this study partially manage performance of their treasury through KPIs. But 27% of treasuries do not use KPIs to manage performance, and almost one in three companies with annual revenues less than $2 billion do not use treasury KPIs.

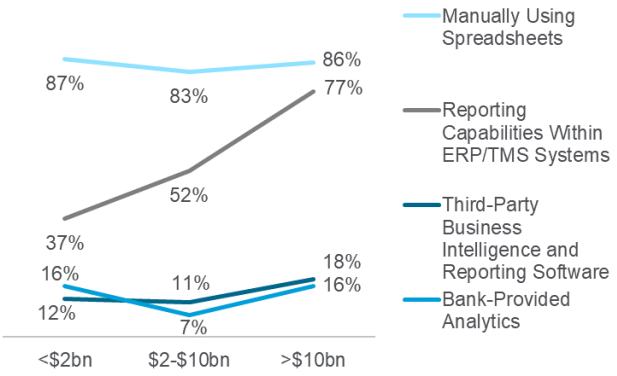
Figure 32. Existence of KPIs in Treasury



Source: Citi Treasury & Trade Solutions

- For those that have deployed KPIs to manage performance, the majority do so manually through spreadsheets. As company revenues grow, this process is supported by reporting capabilities from companies' core technology platforms. A smaller share of companies utilized 3rd party business intelligence software or bank-provided analytics to measure performance.

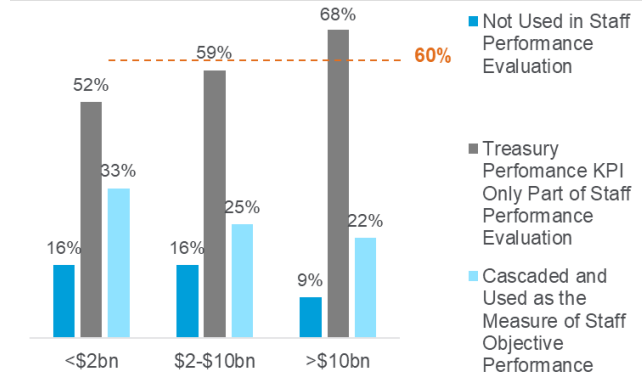
Figure 33. Approach to Measuring KPIs



Source: Citi Treasury & Trade Solutions

- Treasury performance KPIs are now used to some extent in staff performance evaluations in 60% of all companies participating in this study. Only 9% of larger companies currently do not use treasury department KPIs as part of staff performance evaluations.

Figure 34. Use of KPIs in Performance Evaluations



Source: Citi Treasury & Trade Solutions

© 2023 Citigroup

Policy and Governance: Section Summary

Effective treasury policies — delivered through processes and procedures in line with a documented treasury strategy and managed through key performance indicators — are the foundation for achieving financial risk management objectives and a best-in-class treasury function.

- The study finds broad policy adoption by treasury with 70% of larger companies (with annual revenue above $10 billion) indicating that policy exists across all areas of their treasury responsibility. Policy gaps are more prevalent in companies with annual revenues less than $10 billion.
- Bank relationship management, short-term financing, and cash/liquidity management are among core services within treasury. Other functions can be prevalent initially within treasury, then move out as companies expand and grow. From our advisory work we see these functions migrate to specialist functions or centers of scale (such as shared service centers or global business service centers) as companies become more established.
- We find low levels of documented treasury objectives, plans, and procedures across all study participants. One in five companies with annual revenues greater than $2 billion do not have any documented treasury procedures. Among companies of this size, a similar share (17%) report not having any documented objectives or plans.
- Centralized policy formation for financial risk management is the favored approach for treasuries participating in this study, with the majority of companies with annual revenues less than $10 billion opting for regional or local policy execution.
- KPIs for treasury are embedded in the majority of companies participating in this study. Manual processes are used for most KPIs, with utilization of reporting capabilities from treasury technologies used primarily by larger companies. Treasury KPIs are now widely used as part of treasury staff performance evaluations.

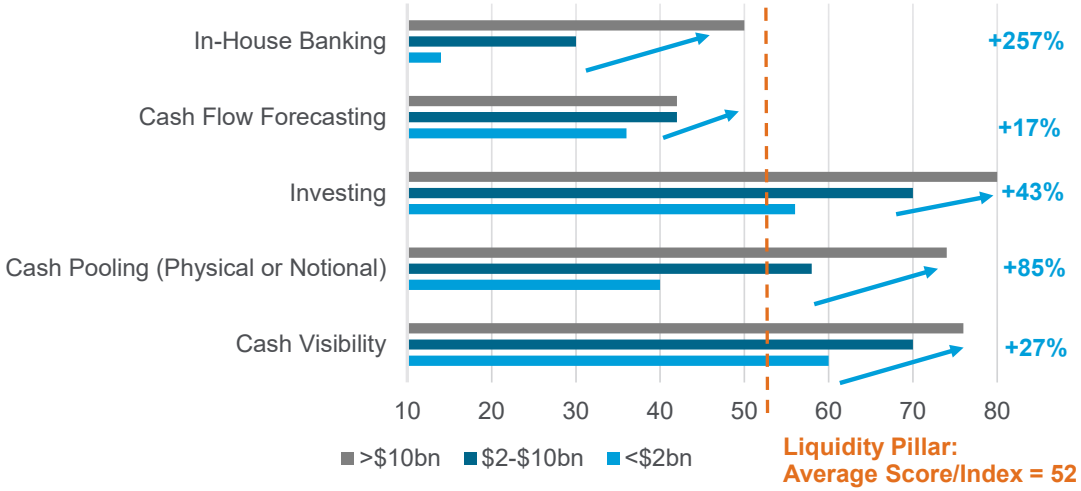
© 2023 Citigroup

Liquidity: Introduction

- Effective cash and liquidity management is a minimum standard for corporate treasury, yet this study shows that it holds the most opportunity for performance improvement through better process utilization and automation.
- Deployment of an in-house banking entity to centralize cash/risk and perform forecasting of the company's future cash position are the two most underperforming areas of liquidity management.
- In-house banking shows the most variance in adoption by company size. Only 14% of companies with annual revenues less than $2 billion who participated in this study have deployed in-house banking.
- All companies have challenges with their cash flow forecasting. This process scored well below the pillar average score irrespective of company size.
- Most companies now have high visibility over their cash, but opportunities remain.
- Optimizing structures to centralize cash for better risk management through cash pooling also presents opportunities — particularly in smaller companies where only 40% of companies with annual revenues less than $2 billion are centralizing their cash through a pooling construct.

> As new business models evolve, we know that treasury transformation is a key strategic investment that many companies are now making to ensure their treasury is equipped to both effectively and efficiently manage liquidity and offer the insights to support business growth. We are helping clients navigate this journey via thoughtful investments into our Citi solutions such as real-time liquidity solutions, as well as advisory services to help guide our clients through their journey to high-performing treasury.
>
> – STEPHEN RANDALL, GLOBAL HEAD OF LIQUIDITY MANAGEMENT SERVICES, CITI

Figure 35. Treasury Performance of Surveyed Companies in the Liquidity Pillar



Source: Citi Treasury & Trade Solutions

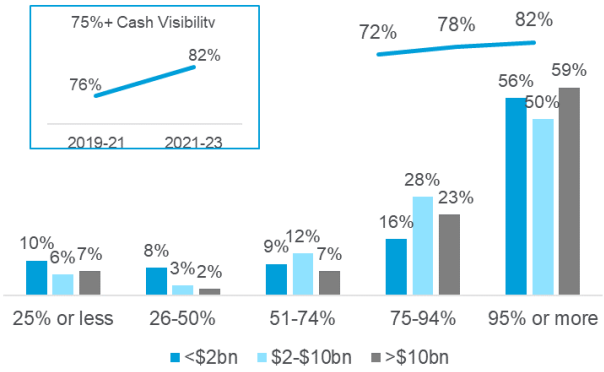
© 2023 Citigroup

Liquidity: Current Position Visibility

Progress has been made with the majority of companies now having visibility of 75% or greater over their cash and investments. Eighty-two percent of larger companies (with annual revenue over $10 billion) achieved visibility of 75% or greater visibility in the 2021-23 period of this study, up from 76% in 2019-21. For short-term investments, 85% of larger companies now report having visibility of 75% or greater. Auto reconciliation solutions continue to be underutilized.

- Among larger companies, 82% have visibility on 75% or more of their cash position. Among smaller companies (with annual revenue under $2 billion), 72% achieve the same success.

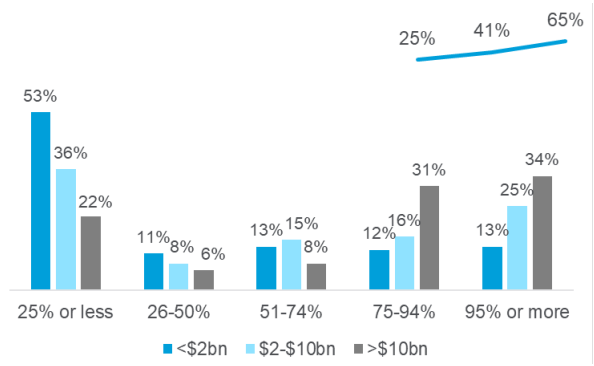
Figure 36. Cash Visibility



Source: Citi Treasury & Trade Solutions

- Sixty-five percent of larger companies have deployed auto-match technologies achieving 75% or higher levels of auto reconciliation of their bank accounts. However, adoption rates and levels of auto-reconciliation achieved falls significantly with company size.

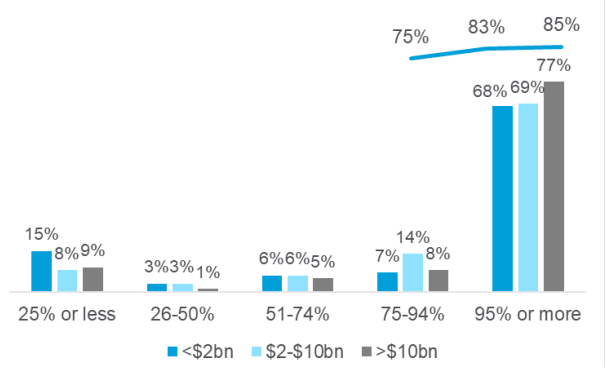
Figure 37. Auto Reconciliation



Source: Citi GPS, Citi Treasury & Trade Solutions

- Eighty-five percent of larger companies have visibility on 75% or more of their short-term investments.

Figure 38. Short-Term Investment Visibility



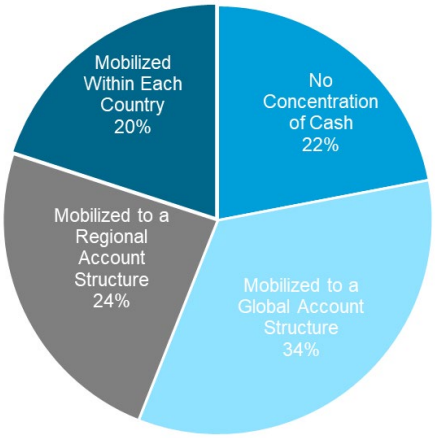
Source: Citi Treasury & Trade Solutions

© 2023 Citigroup

Liquidity: Cash Concentration

Concentration of cash on a daily basis across multiple locations, entities, currencies, and banks into a central, global cash pool through a regular automated process is the basis of effective and efficient cash and liquidity management. Establishing and maintaining an efficient liquidity structure can be a challenge as companies grow and regulations evolve.

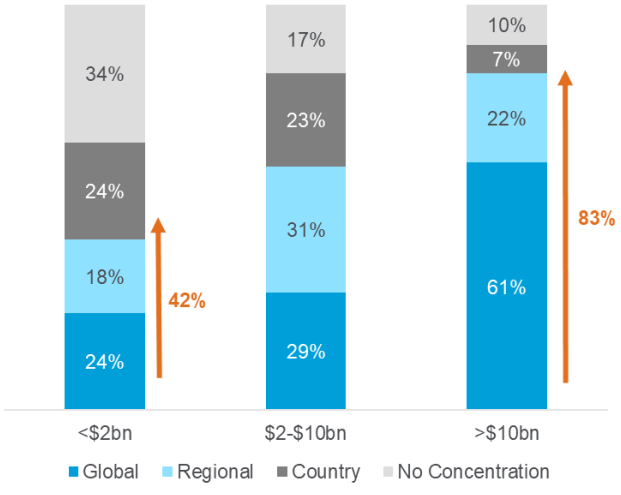
Figure 39. Overall Concentration of Cash



Source: Citi Treasury & Trade Solutions

- While concentration of cash is broadly adopted by participants and recognized as a treasury best practice, almost one-quarter (22%) of all companies surveyed have not yet deployed such structures. As companies scale their revenues, we find they are more likely to automatically concentrate cash daily and to the highest level possible where allowable.

Figure 40. Cash Concentration Level



Source: Citi Treasury & Trade Solutions

- Eighty-three percent of larger companies in our survey concentrate their cash at either the global or regional level, almost double the share of smaller companies (42%).

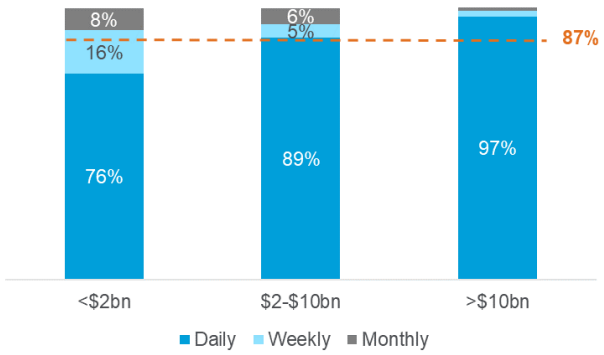
© 2023 Citigroup

Liquidity: Cash Concentration (cont.)

Centralization of cash and risk to the highest level allowable through the adoption of liquidity structures to single entity header account is generally accepted as best practice and foundational for the deployment of an in-house bank. Allowable flow participation levels can drop without regular reviews with the appropriate legal and tax experts.

- For those that do concentrate their cash, 87% of all those participating in this study do so on a daily basis.

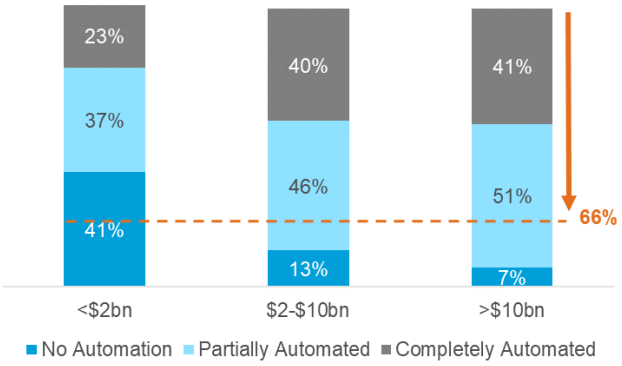
Figure 41. Concentration Frequency



Source: Citi Treasury & Trade Solutions

- The majority (66%) of those surveyed have some level of manual processing involved to concentrate cash.

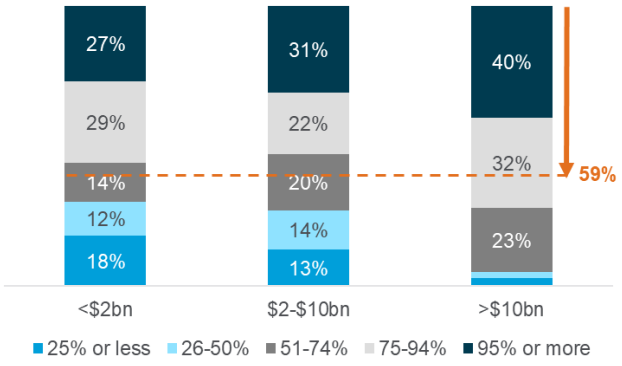
Figure 42. Automation Level



Source: Citi Treasury & Trade Solutions

- Of those concentrating cash, 59% do so either manually or through concentration engines, achieving 75% or higher allowable flows participation.

Figure 43. Flows Participation



Source: Citi Treasury & Trade Solutions

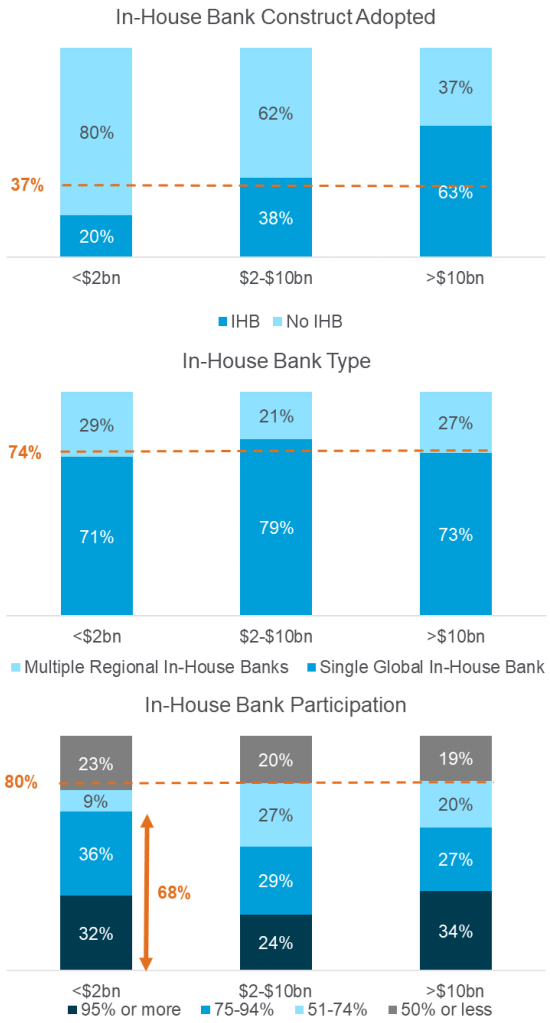
© 2023 Citigroup

Liquidity: In-House Banking

Less than half (37%) of companies participating in this study have deployed an In-House Bank (IHB).

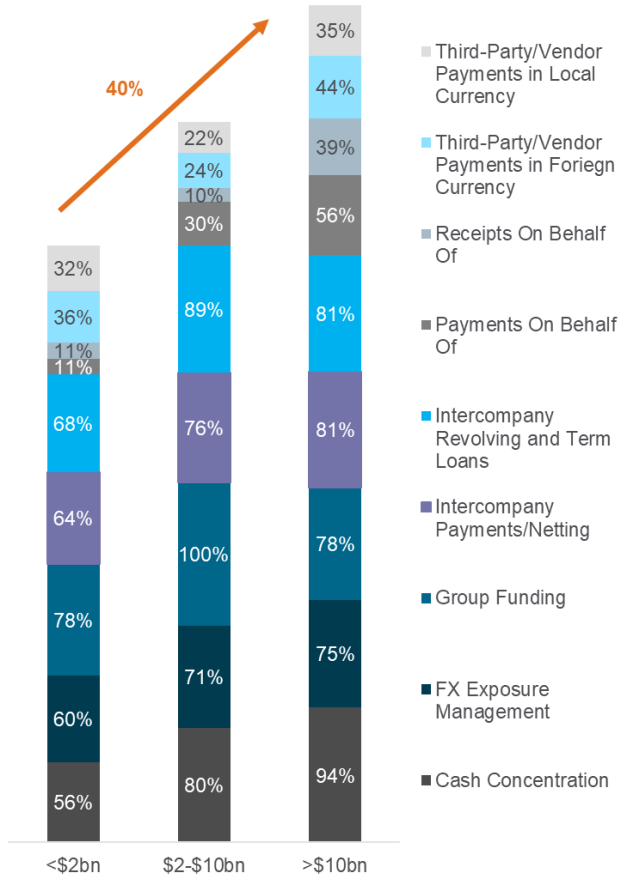
- However, as companies scale their revenue, they are more likely to deploy an IHB, with 63% of companies with annual revenues over $10 billion employing an IHB construct.
- As companies scale, they use IHBs to provide a broader range of financial services internally to support the business. The largest cohort of companies offer, on average, 40% more services.
- The majority of companies concentrating cash and risk through an IHB entity have deployed a Single Global IHB construct (74%, irrespective of company size).
- Eighty percent of those surveyed had more than 50% of flows being accounted for in the IHB. And 68% of companies with annual revenue below $2 billion had 75% or more flows participating in the IHB — the larger companies struggling to achieve/maintain participation to those levels.

Figure 44. In-House Banking



Source: Citi Treasury & Trade Solutions

`Figure 45. In-House Bank Service Scope Provision



Note: The chart shows the services provided by companies of different size (by revenue). Each company IHB provides multiple services.

Source: Citi Treasury & Trade Solutions

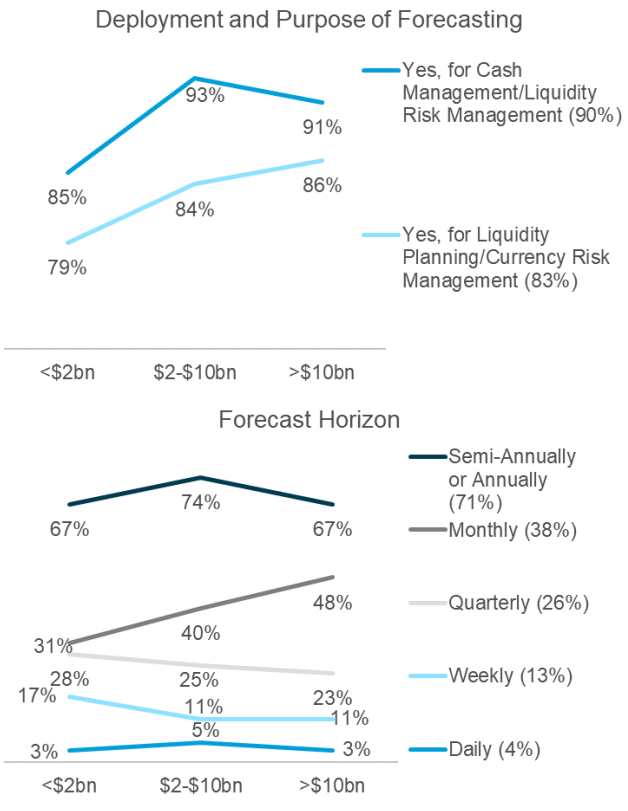
© 2023 Citigroup

Liquidity: Forecasting

The majority of study participants forecast their future cash position, with 90% performing a near-term forecast to manage liquidity and over 80% looking further out to, for example, better manage their currency exposure and test their liquidity access plan.

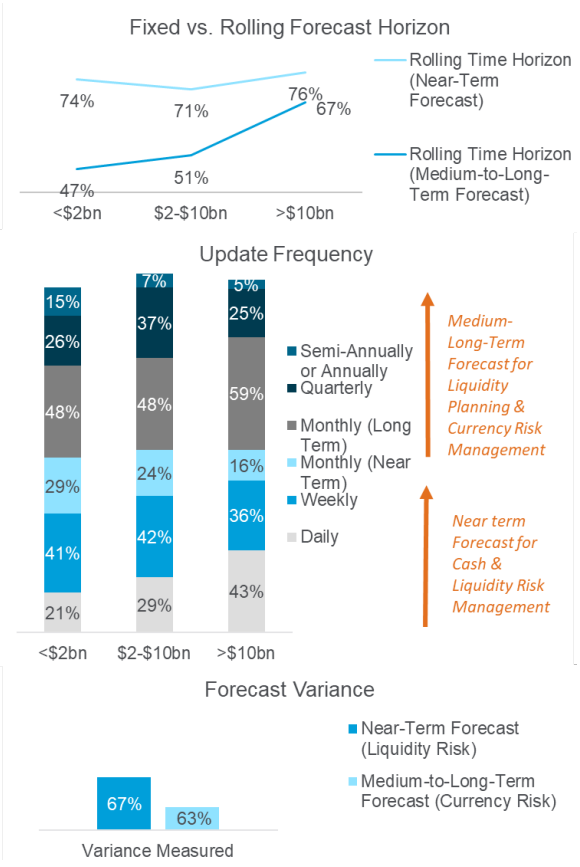
- Over 70% of participants have a process in place to project cash position to a six- or twelve-month time horizon. Almost half of larger companies (with annual revenue above $10 billion) perform one-month forecasts. For the overall sample, daily or weekly forecasts are less common (4% and 13%, respectively); they are instead part of the longer monthly or quarterly horizon.
- A rolling forecast methodology is deployed by most participants in their near-term forecasting, while forecasting to a fixed time horizon is more prevalent for longer-term projection, e.g., budgeting. This is particularly apparent for the smaller companies participating in this study, with 53% of companies with less than $2 billion in annual revenues adopting a fixed time horizon approach for their longer-term forecasts.
- The most common forecast horizon and frequency for medium- to long-range outlooks would be semi-annually or annually, updated monthly. For nearer-term cash management objectives, a 30-day rolling forecast is the most prevalent for companies in this study, updated weekly.

Figure 46. Forecasting



Source: Citi Treasury & Trade Solutions

Figure 47. Forecasting



Source: Citi Treasury & Trade Solutions

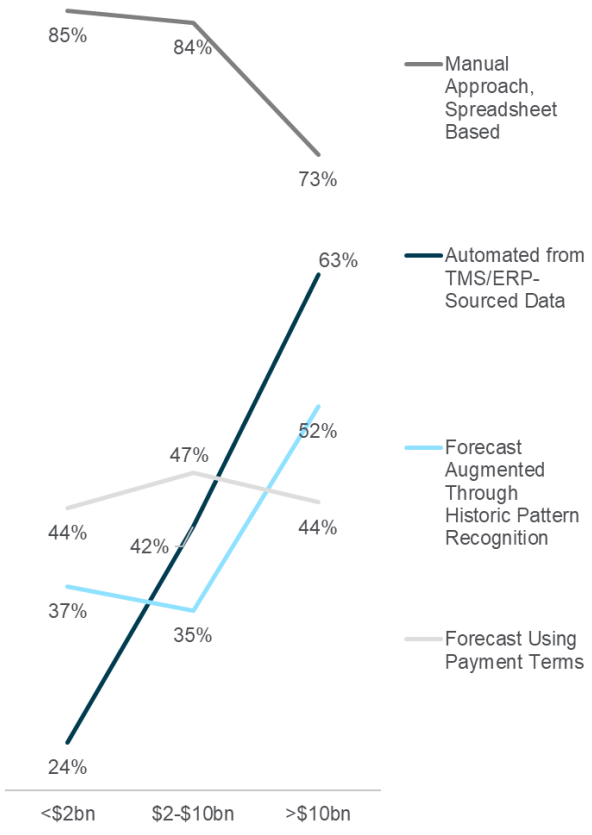
© 2023 Citigroup

Liquidity: Forecasting (cont.)

The methodologies deployed by study participants vary significantly; they use multiple approaches, often depending on the forecast time horizon. While participants, regardless of company size, most often cite using spreadsheet-based approaches, we observe a reduced dependence by companies on spreadsheets in the higher revenue brackets.

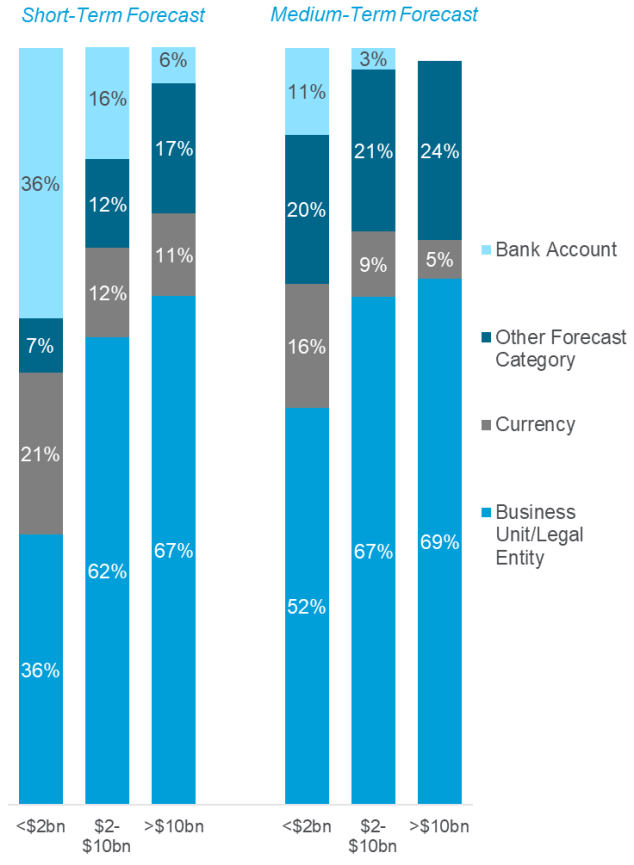
- The study suggests that larger companies are utilizing payables and receivables data from enterprise resource planning (ERP) and risk management flows from their treasury systems to determine forecasts, with a reduced dependence on spreadsheets relative to smaller companies. Also noteworthy among larger companies is the uptick in using pattern recognition techniques as an input in forecast preparation relative to others.
- For those that measure forecast variance, which is about two thirds of study participants that forecast their future cash position, we find that measuring the variance down to the business unit or legal entity level is sufficient for most. Measuring variance at the account level is less common, outside of smaller companies forecasting short-range cash positions.

Figure 48. Forecasting Methodology



Source: Citi Treasury & Trade Solutions

Figure 49. Forecast Variance Measurement (Lowest Level)



Source: Citi Treasury & Trade Solutions

© 2023 Citigroup

Liquidity: Section Summary

Effective cash and liquidity management is a minimum standard for treasury, yet this study shows that it holds the most opportunity for performance improvement through better process utilization and automation. While we see progress since our 2021 equivalent study, opportunities remain across all sub-processes reviewed.

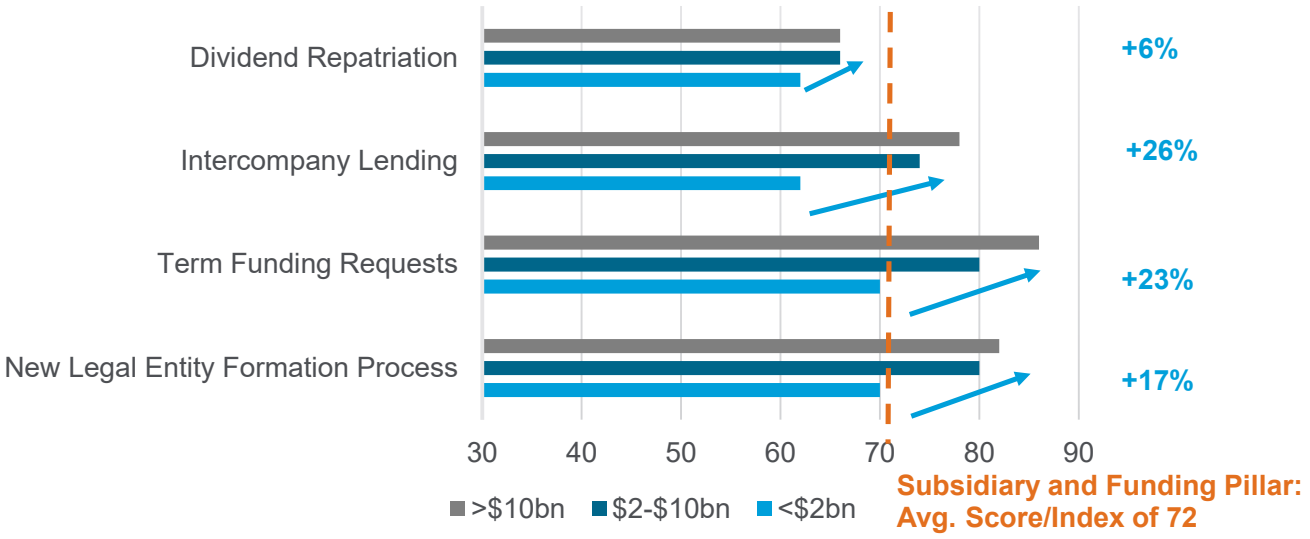
- Progress has been made with the majority of companies now having 75% or more visibility over their cash and investments. Eighty-two percent of larger companies achieved 75% or more visibility in the 2021-23 period of this study, up from 76% of companies in 2019-21. For short-term investments, 85% of larger companies now report having 75% or more visibility over their short-term investments. Auto reconciliation solutions continue to be underutilized.
- While cash concentration is broadly adopted by participants and recognized as a treasury best practice, almost one-quarter (22%) of all companies surveyed have not yet deployed such structures. As companies scale their revenue, they are more likely to automatically concentrate cash daily and to the highest level possible where allowable.
- Less than half (37%) of companies participating in this study have deployed an in-house bank (IHB). However, as companies scale in revenue, they are more likely to deploy an IHB, with 63% of companies with annual revenues over $10 billion employing an IHB construct.
- The cash flow forecasting challenge is being addressed. Over 70% of study participants reported having processes in place to project cash positions to a six- or twelve-month time horizon, updated monthly. For nearer-term cash management objectives, a 30-day rolling forecast is the most prevalent, updated weekly. While spreadsheets are still a key tool for cash forecasting, technology is starting to improve matters. Larger companies are starting to move cash forecasting away from dependence on spreadsheets (85% down to 73%). Companies are also integrating data from ERP into their cash forecasting tools, with this increasing to 63% with larger companies.

© 2023 Citigroup

Subsidiary Funding and Repatriation: Introduction

- In this section, we investigate the availability of company policy, frameworks, and processes to manage legal entity formation and the ongoing financing of the same through term funding and intercompany lending.
- We investigate the relative adoption across companies based on their size (by revenue). Figure 48 introduces these findings at the summary score level; subsequently, we discuss the drivers of these results.

Figure 50. Treasury Performance of Surveyed Companies in the Subsidiary Funding and Repatriation Pillar



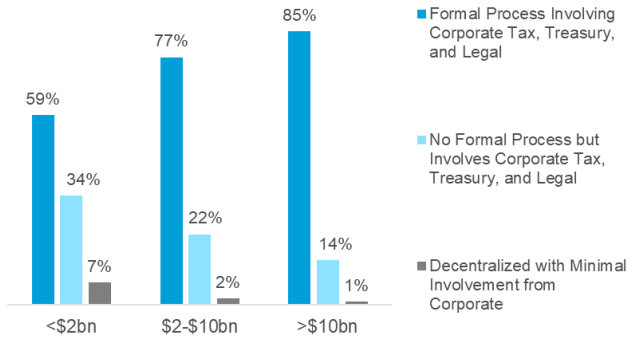
Source: Citi Treasury & Trade Solutions

© 2023 Citigroup

Subsidiary Funding and Repatriation: Formation and Term Funding

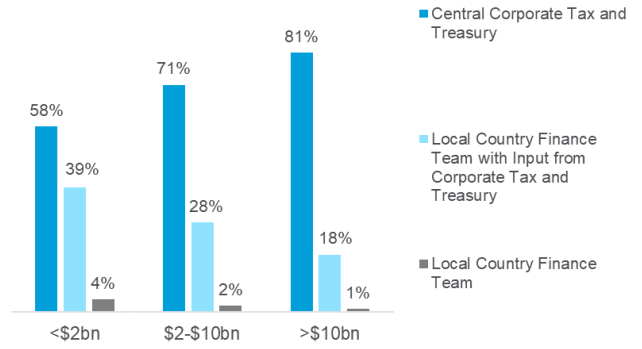
A majority of those surveyed have a formal process in place for the formation of new legal entities. Eighty-four percent of larger companies (with annual revenue over $10 billion) have policies in place and execute formal loan agreements for the upstreaming and downstreaming of funds, with 49% of all companies generating financing plans across all subsidiaries.

Figure 51. Framework for Forming New Entities



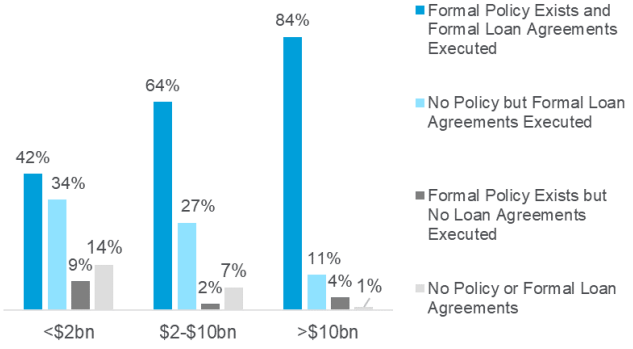
Source: Citi Treasury & Trade Solutions

Figure 52. Capital Structure Decision Making for New Legal Entities



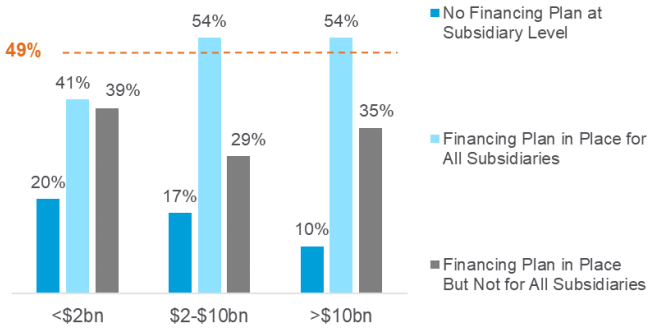
Source: Citi Treasury & Trade Solutions

Figure 53. Framework for Upstreaming and Downstreaming of Funds Through the Group on a Term Basis



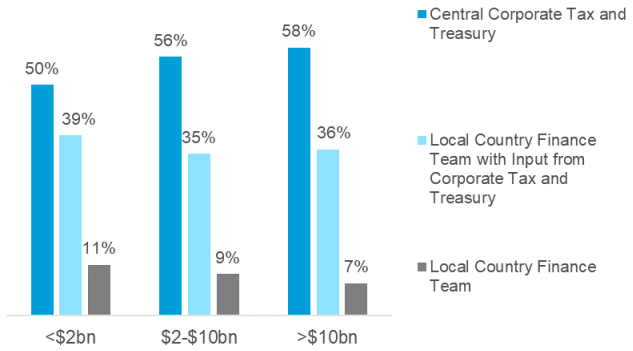
Source: Citi Treasury & Trade Solutions

Figure 54. Internal Financing Plan per Subsidiary, Defining Cash Flow and Dividends Incorporating Your Cash Flow Forecasting Process



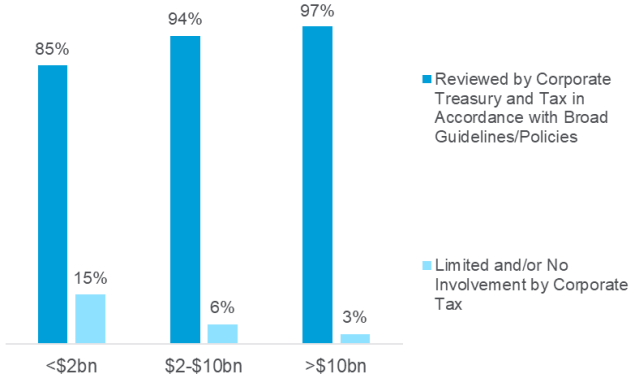
Source: Citi Treasury & Trade Solutions

Figure 55. Functional Currency Decision Making for New Legal Entities



Source: Citi Treasury & Trade Solutions

Figure 56. Subsidiary Funding Requests Approval Approach



Source: Citi Treasury & Trade Solutions

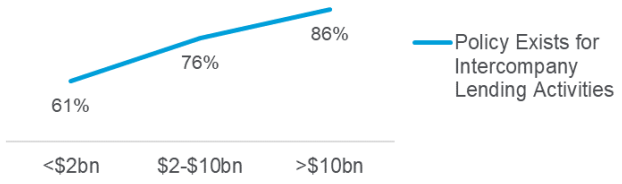
© 2023 Citigroup

Subsidiary Funding and Repatriation: Intercompany Lending

Most companies, irrespective of size, have a policy and process in place to manage their intercompany loans book. Subsidiaries that are allowed to borrow locally require central approval and benchmarking of costs.

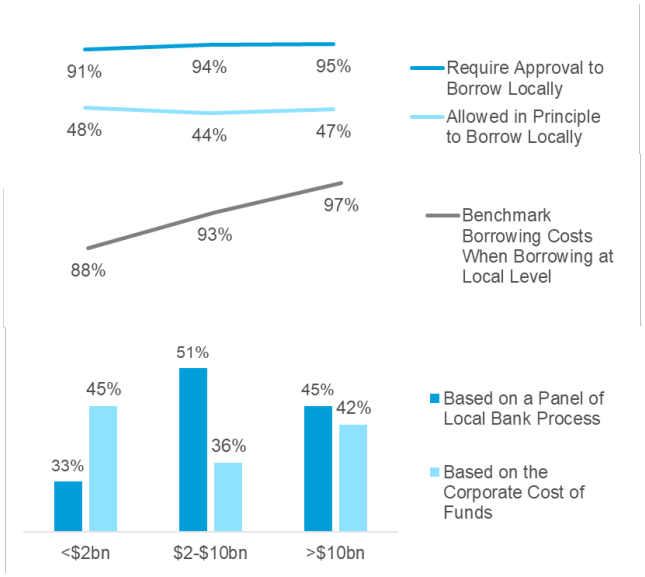
- Twenty-eight percent of all companies surveyed have no formal intercompany lending process in place. This extends to 39% of companies with annual revenues less than $2 billion.
- While almost half of all companies are allowed in principle to borrow locally, over 90% require central approval before doing so and require borrowing costs to be benchmarked against either a panel of banks and/or based on corporate cost of funds.
- The majority of companies (ranging from 54%-60%) always have legal entities borrow in their local/functional currency to avoid introducing currency exposure.
- Fifty-five percent of companies with annual revenues greater than $10 billion have standardized processes in place to produce loan documentation.

Figure 57. Policy Formation



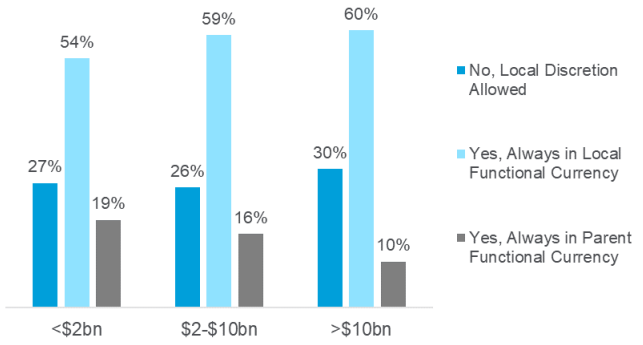
Source: Citi Treasury & Trade Solutions

Figure 58. Approvals and Pricing



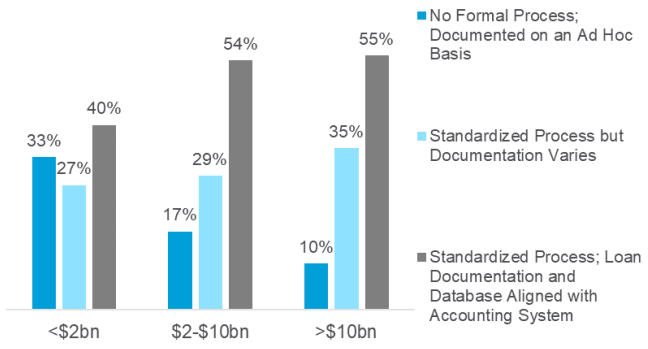
Source: Citi Treasury & Trade Solutions

Figure 59. Policy Governing the Borrowing Currency of Subsidiaries



Source: Citi Treasury & Trade Solutions

Figure 60. Loan Documentation Approach



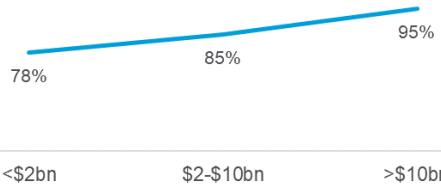
Source: Citi Treasury & Trade Solutions

© 2023 Citigroup

Subsidiary Funding and Repatriation: Dividend Repatriation

The majority of companies surveyed include dividend repatriation as part of their cash centralization strategy. Almost half return cash profits to headquarters on an annual basis, with respondents most likely to have decision making at the corporate level to determine the repatriated amount.

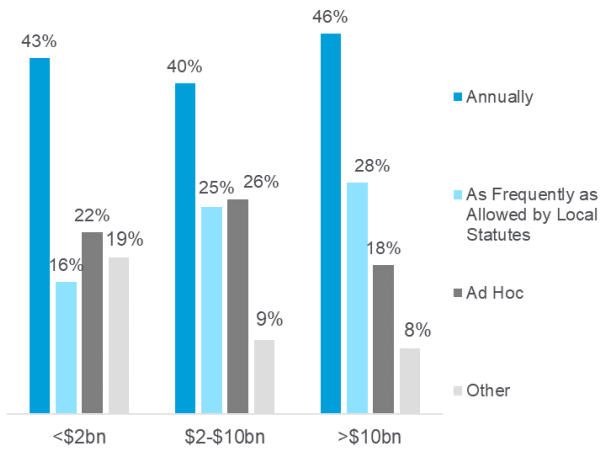
Figure 61. Dividend Repatriation Is Part of Cash Deployment Strategy



Source: Citi Treasury & Trade Solutions

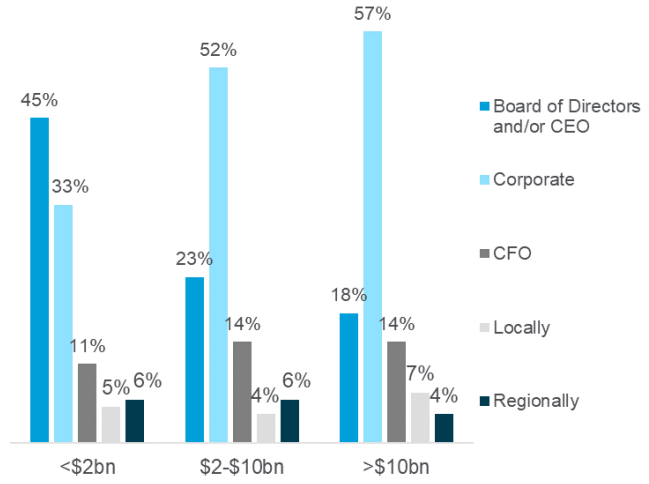
- At 95%, almost all larger companies (with annual revenues greater than $10 billion) repatriate dividends as part of their cash centralization strategy.
- Almost half of all surveyed repatriate cash on an annual basis, with 28% of larger companies repatriating as frequently as allowed by local statutes.
- Larger companies favor decisions making at the corporate treasury level to determine the repatriation amount, while smaller companies (with annual revenues less below $2 billion) are more likely to engage their Board of Directors and/or CEO for such decisions.

Figure 62. Plan Frequency for Dividend Repatriation



Source: Citi Treasury & Trade Solutions

Figure 63. Organizational Level Deciding the Final Amount of Dividends to be Repatriated



Source: Citi Treasury & Trade Solutions

© 2023 Citigroup

Subsidiary Funding and Repatriation: Section Summary

Established policies, frameworks, and processes are in place for companies with annual revenue over $2 billion to manage legal entity formation and the ongoing financing of the same. Just under one-third of smaller companies do not yet have such practices in place.

- A majority of those surveyed have a formal process in place for the formation of new legal entities. Eighty-four percent of larger companies have a policy in place and execute formal intercompany loan agreements for the upstreaming and downstreaming of funds. Among all companies, 49% generate financing plans across all subsidiaries.
- Most companies, irrespective of size, have a policy and process in place to manage their intercompany loan book. Subsidiaries that are allowed to borrow locally require central approval and benchmarking of costs.
- The majority of companies surveyed include dividend repatriation as part of their cash centralization strategy. Almost half return profits to headquarters on an annual basis, with respondents most likely to favor decision making at the corporate treasury level to determine the repatriated amount.

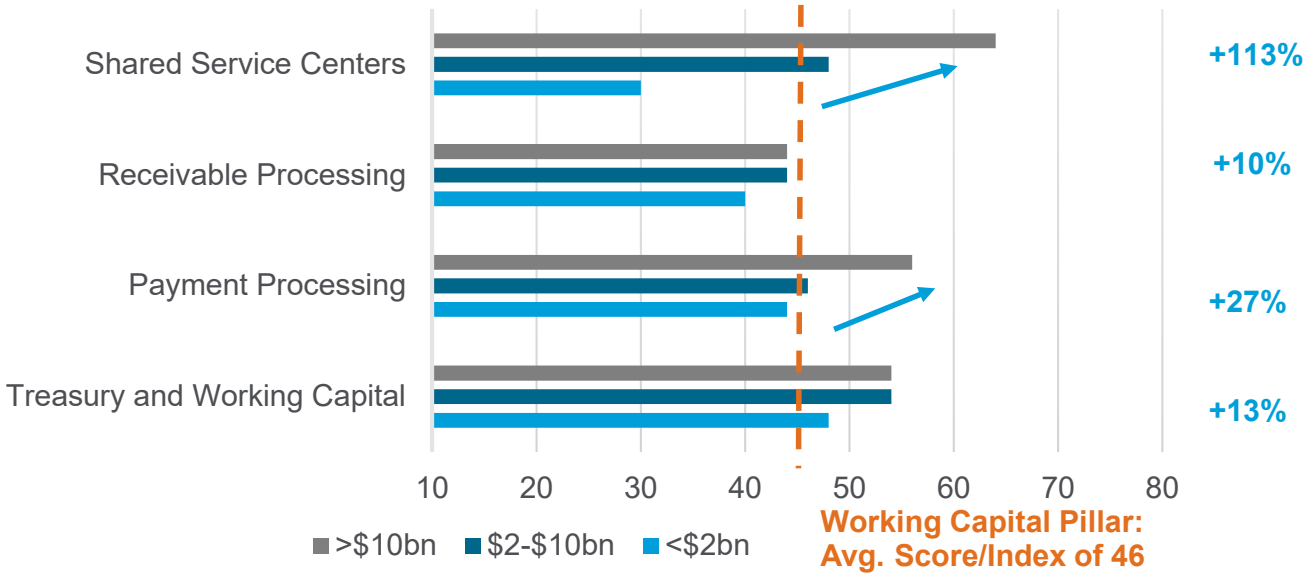
© 2023 Citigroup

Working Capital: Introduction

The role of treasury in managing working capital continues to evolve with the transition from ad-hoc advisory to direct accountability now underway.

- The role of treasury in working capital management can be viewed as spanning two broad areas: financing decisions and operational advisory (i.e., with Payments, Procurement, Credit and Collections, and other areas within the firm).
- The adoption of shared service centers is more prevalent for larger companies (with annual revenue above $10 billion), as one might expect. Payments processing remained a challenge for smaller companies in particular, while receivables processing remained a challenge for companies regardless of size.

Figure 64. Treasury Performance of Surveyed Companies in the Working Capital Pillar



Source: Citi Treasury & Trade Solutions

© 2023 Citigroup

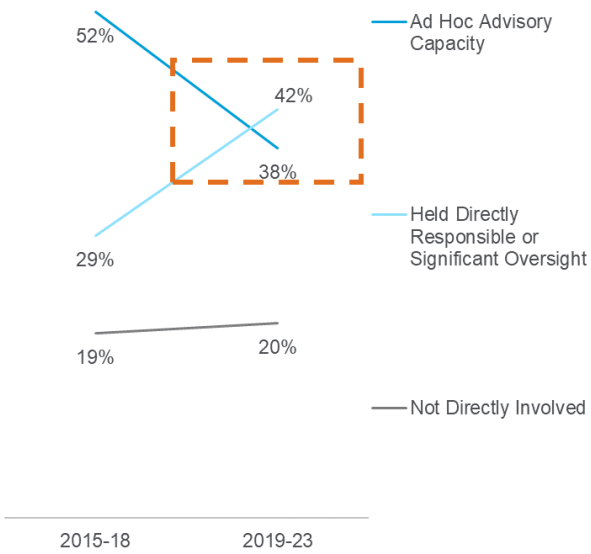
Working Capital: Extending the Role of Treasury

While the role of treasury differs by company, a majority (80%) are involved in working capital management. This share has been consistent since 2015-18, the period covered in the first edition of our study.

- This study, however, is showing a transition, with more treasuries being held directly responsible or having significant oversight (42%, up from 29% in 2015-18). In parallel, the share of treasury only offering ad-hoc advisory fell to 38% from 52% over the same period.
- This transition seems to be originating from companies with annual revenues of $10 billion and less. For example, 43% of Treasury are held directly responsible or have significant oversight, with this share dropping to 39% for larger companies.

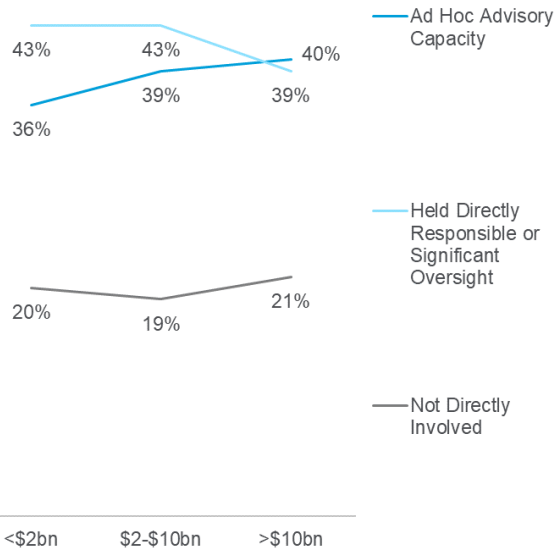
> Treasury plays a role in facilitating the digital ecosystem by ensuring efficient, secure, and rapid payments and collections and optimizing working capital and liquidity. By doing so, we help the group in its aims to minimize supply friction and provide customers with an excellent, end-to-end experience. We need the right tools in treasury to do this, such as accurate, timely cash flow forecasting; secure, rapid payments and collection; and reliable risk information to help inform our business expansion plans.
>
> – GROUP TREASURER, NORTH AMERICAN TECHNOLOGY COMPANY

Figure 65. Role of Treasury Over Time



Source: Citi Treasury & Trade Solutions

Figure 66. Role of Treasury by Company Size (2019-23 Study in Aggregate)



Source: Citi Treasury & Trade Solutions

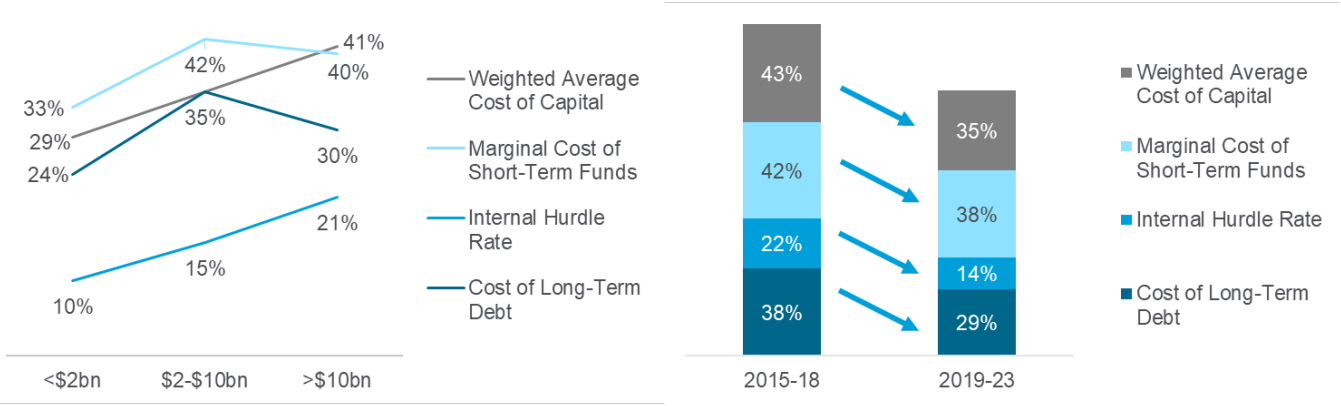
© 2023 Citigroup

Working Capital: Financing Program Adoption

The weighted average cost of capital and the cost of short-term funds are the two favored measures to evaluate the benefits of deploying a financing program utilizing external sources.

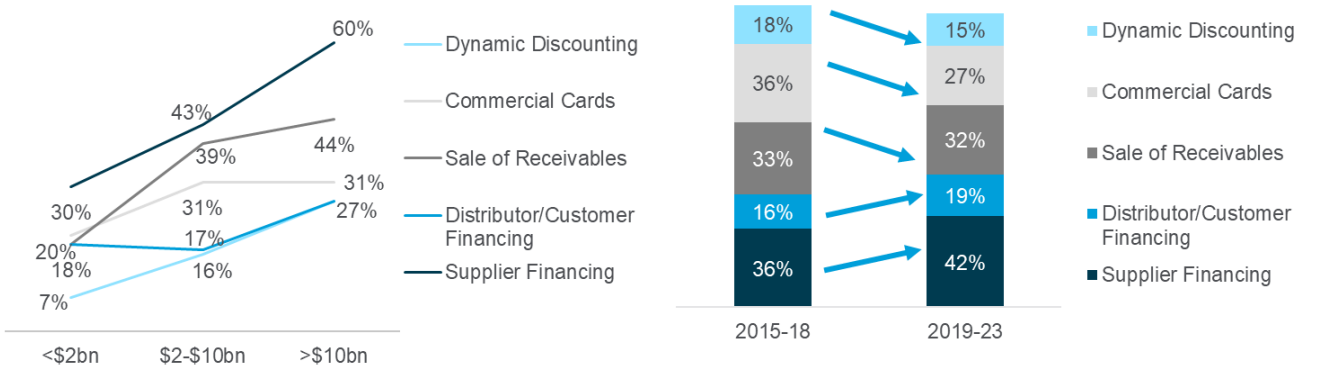
- This study shows a narrowing in the range of measures used over time.
- Supplier financing is the favored program across companies of all sizes (by revenue).
- As companies grow in size (by revenue), the adoption of supplier financing programs gain further traction, with 60% of larger companies (with annual revenues over $10 billion) adopting such programs.
- The adoption of Supplier and Receivables/Customer financing programs have risen over time relative to other programs.

Figure 67. Measures Used to Evaluate Working Capital Programs



Source: Citi Treasury & Trade Solutions

Figure 68. Use of Working Capital Optimization Programs



Source: Citi Treasury & Trade Solutions

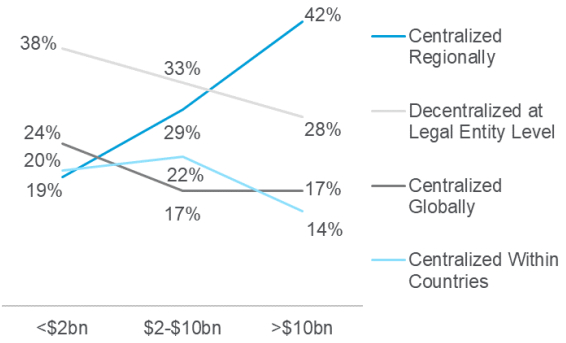
© 2023 Citigroup

Working Capital: Payments and Receivables Processing — Methods

With changes in business models and adoption of faster payment methods taking hold across all companies, treasury is now more closely involved in strategy and selectin of payment methods for competitive advantage.

- Centralization of payment and collection processes to regional hubs increases with companies of size, rising to 42% for companies with annual revenues greater than $10 billion.

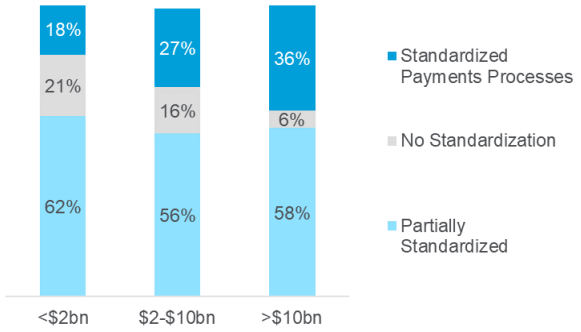
Figure 69. Payment and Collection Methods Management and Oversight: Centralization



Source: Citi Treasury & Trade Solutions

- Over half of all study participants report to have partially standardized payment processes and practices to, for example, reduce cost and optimize cash usage. Thirty-six percent of the large companies adopted standardized payments processes.

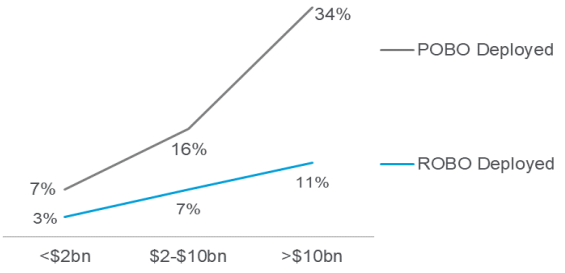
Figure 70. Payment and Collection Methods Management and Oversight: Standardization



Source: Citi Treasury & Trade Solutions

- Generally low levels of on-behalf-of construct adoption, with the exception of payments on-behalf-of, reported to be in place for one in three companies with annual revenues greater than $100 billion.

Figure 71. Payments and Receivables Processing: On-Behalf-Of Adoption



Source: Citi Treasury & Trade Solutions

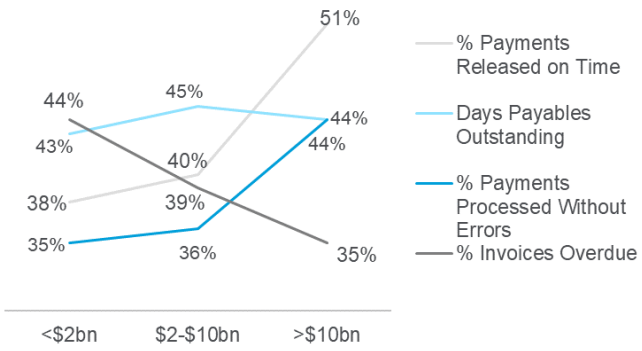
© 2023 Citigroup

Working Capital: Payments and Receivables Processing — Methods

With changes in business models and adoption of faster payment methods taking hold across all companies, treasury is now more closely involved in strategy and selectin of payment methods for competitive advantage.

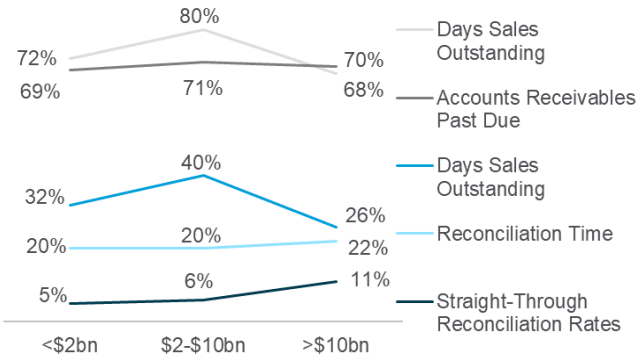
- Wide range of KPIs are used to monitor payments and receivables processing. Percentage of payments released on time and accounts receivables past due being the two most favored across outbound and inbound flows, respectively.
- Over half of those participating in the study have reviewed their collections and payments processes in the last 12 months. While a majority of companies have an audit process, larger companies also deployed fraud training, compliance programs, and whistleblowing schemes for added protection.

Figure 72. Top Payments Processing KPIs



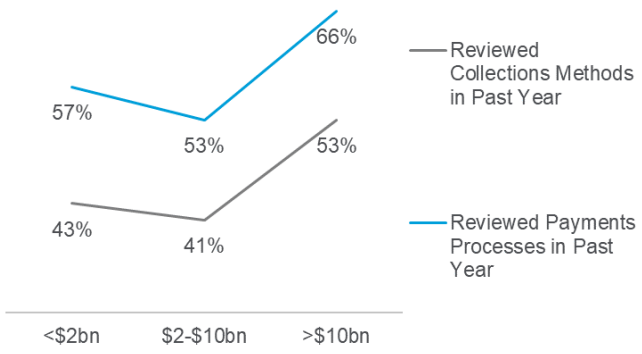
Source: Citi Treasury & Trade Solutions

Figure 73. Top Receivables Processing KPIs



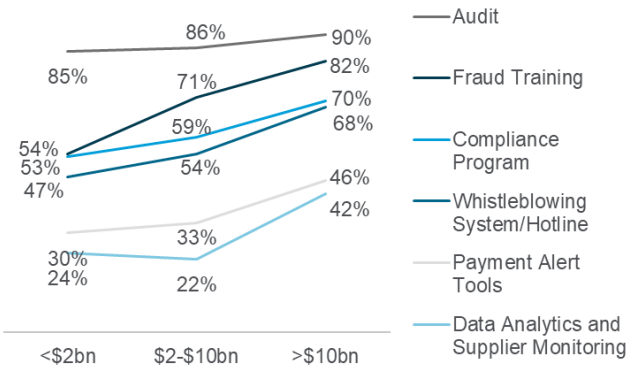
Source: Citi Treasury & Trade Solutions

Figure 74. Payment and Collection Methods Management and Oversight: Diligence



Source: Citi Treasury & Trade Solutions

Figure 75. Payment and Collection Methods Management and Oversight: Protection



Source: Citi Treasury & Trade Solutions

© 2023 Citigroup

Working Capital: Section Summary

The role of treasury is expanding with more treasuries now held directly responsible or having significant oversight than those with only ad-hoc involvement.

- While the role of treasury varies across companies, the majority (80%) are involved in working capital management. This share has been consistent since 2015-18, the period covered in the first edition of our study.
- This study, however, now shows a transition, with more treasuries being held directly responsible or having significant oversight (42%, up from 29% in 2015-18). In parallel, the percentage of treasury surveyed only offering ad-hoc advisory fell from 52% to 38% over the same period.
- The role of treasury in working capital management can be viewed as across two broad areas: financing decisions and operational advisory across payments and receivables.
- The weighted average cost of capital and the cost of short-term funds are the two favored measures to evaluate the benefits of deploying a financing program utilizing external sources. Supplier financing is the favored program across companies of all sizes (by revenue), with 60% of larger companies now with a supplier financing program in place.
- With changes in business models and adoption of faster payment methods taking hold across all companies, treasury is now more closely involved in payments strategy for competitive advantage.

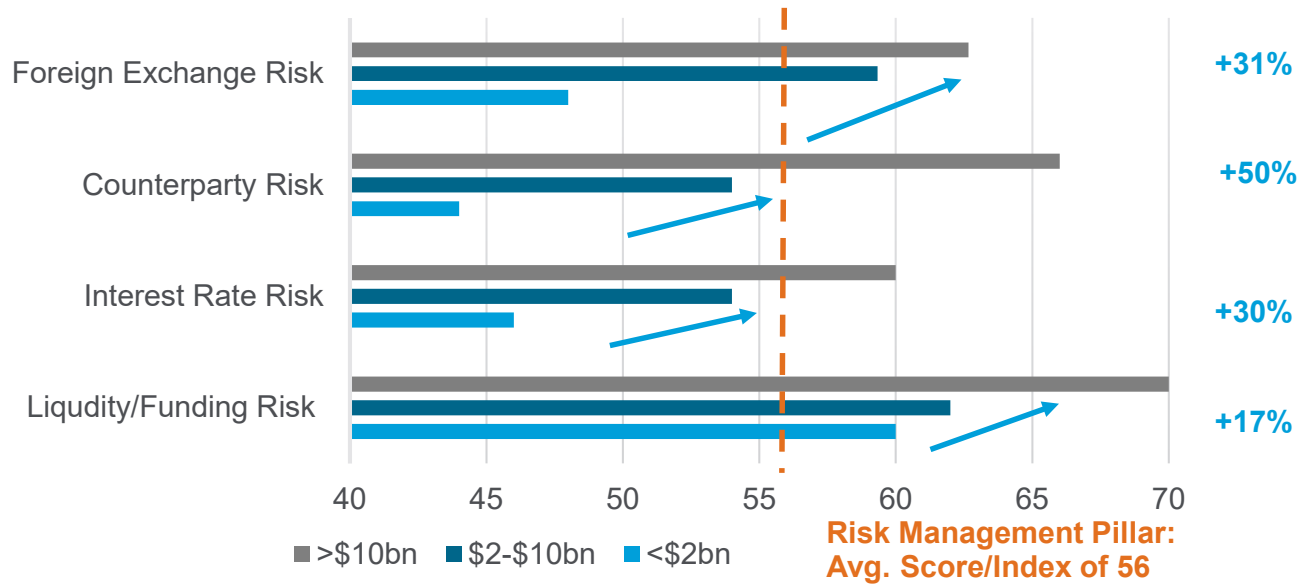
© 2023 Citigroup

Risk Management: Introduction

Opportunity exists for greater management of the risks arising from the commercial business through better process utilization and automation.

- In this section we explore the practices of participants across the fundamentals of risk management.
- We find that:
  - Despite most surveyed companies managing liquidity/funding risk regularly through matching sources and uses of funds, unexpected sources of cash were utilized.
  - Almost one-third of smaller companies and one-in-five companies of significant size do not assess their interest rate risk.
  - Two-thirds of companies with revenues in the $2 billion to $10 billion revenue range measure their counterparty exposure, with most utilizing excel to do so.
  - Most companies report they assess change to their foreign exchange (FX) risk, but less than one in four hedge their earnings.

Figure 76. Treasury Performance of Surveyed Companies in the Risk Management Pillar



Source: Citi Treasury & Trade Solutions

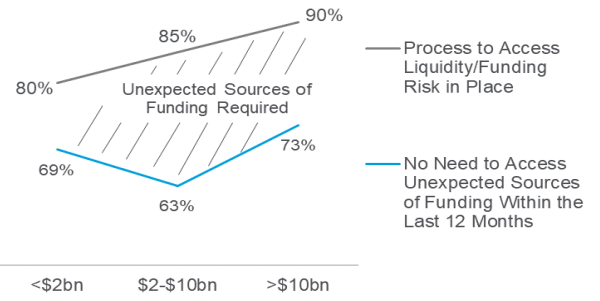
© 2023 Citigroup

Liquidity Risk Management: Unexpected Funding Required Despite Processes in Place

Despite processes being in place to monitor liquidity and funding needs across the majority of companies participating in this study, room for improvement exists to mitigate unexpected funding needs.

- Most companies surveyed (greater than four in five) monitor and report liquidity and funding risk, with 40% doing so on a monthly basis. Despite this, unexpected sources of funding were required by one in five of those participating in the survey.

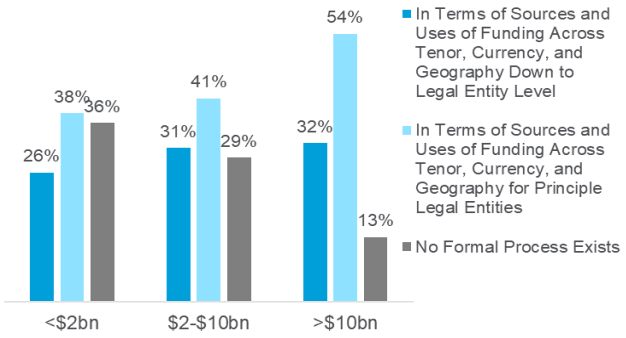
Figure 77. Effectiveness of Liquidity Risk Management Processes in Place



Source: Citi Treasury & Trade Solutions

- At 54%, monitored sources and uses of funds to principal legal entities is the favored approach by most large companies (with annual revenues over $10 billion).

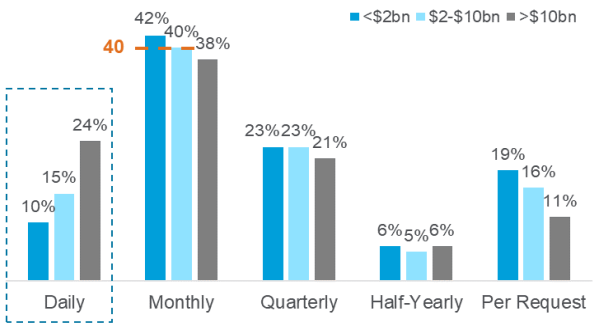
Figure 78. Assessment of Liquidity/Funding Risk



Source: Citi Treasury & Trade Solutions

- Daily assessment is more apparent in larger companies (24% vs. 10% for smaller companies, or those with annual revenue under $2 billion).

Figure 79. Frequency of Liquidity/Funding Risk Assessment and Reporting



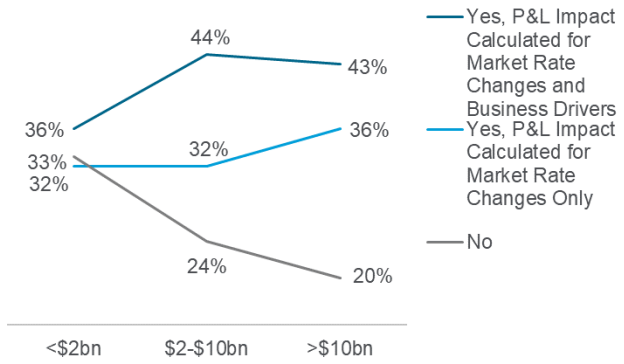
Source: Citi Treasury & Trade Solutions

© 2023 Citigroup

Interest Rate Risk Management: Monthly Process Favored

- Most companies within this study assess interest rate risk for market rate changes and/or business drivers. One in five of the larger companies participating in this study with annual revenues greater than $10 billion do not.

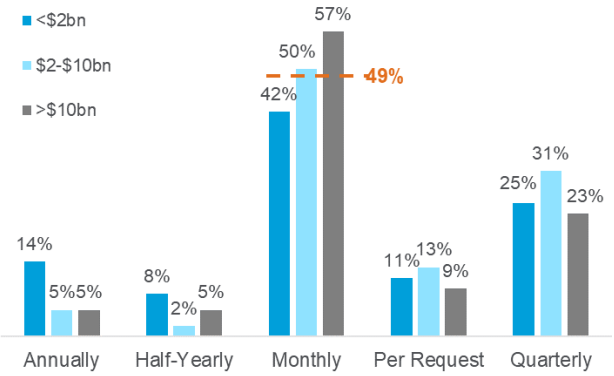
Figure 80. Study Participant Assessment of Interest Rate Risk



Source: Citi Treasury & Trade Solutions

- Monitoring company exposure to interest rate changes is less apparent for smaller companies, with only 67% of companies with annual revenues less than $2 billion having such processes in place.

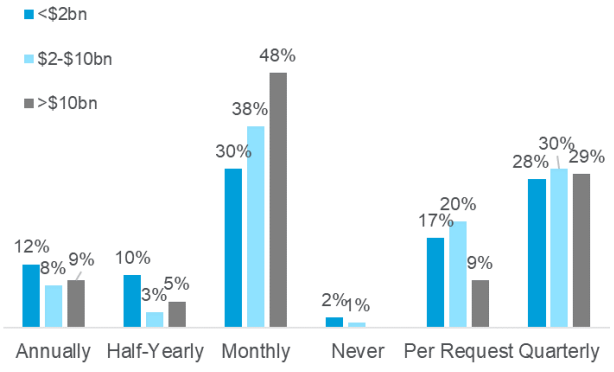
Figure 81. Frequency of Interest Rate Risk Assessment and Reporting



Source: Citi Treasury & Trade Solutions

- Monthly assessment and reporting of interest rate risk is most favored, with 49% of all companies surveyed opting for this cadence.

Figure 82. Frequency of Interest Cost and Market Sensitivity Analysis



Source: Citi Treasury & Trade Solutions

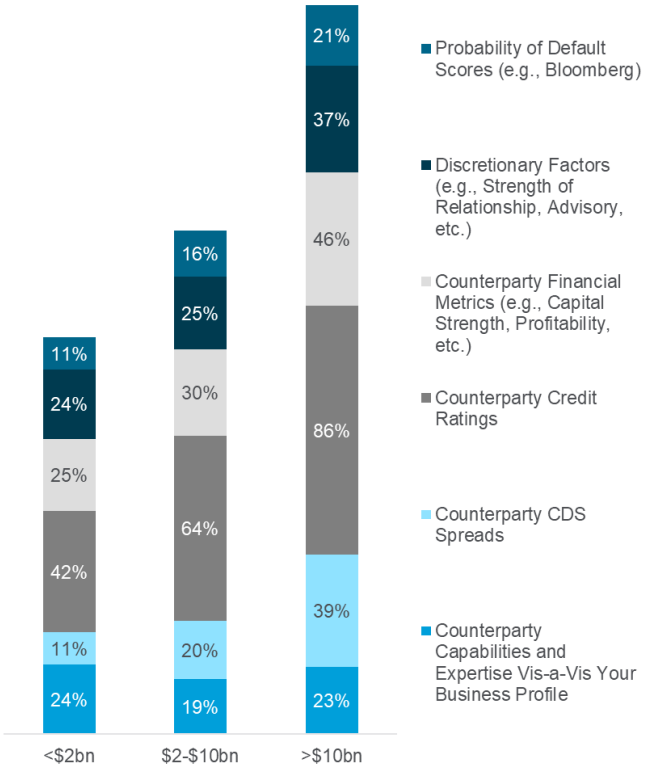
- Similarly, a monthly assessment of interest cost and market sensitivity analysis is favored by companies surveyed.

© 2023 Citigroup

Counterparty Risk Management: Greater Concern for Larger Companies

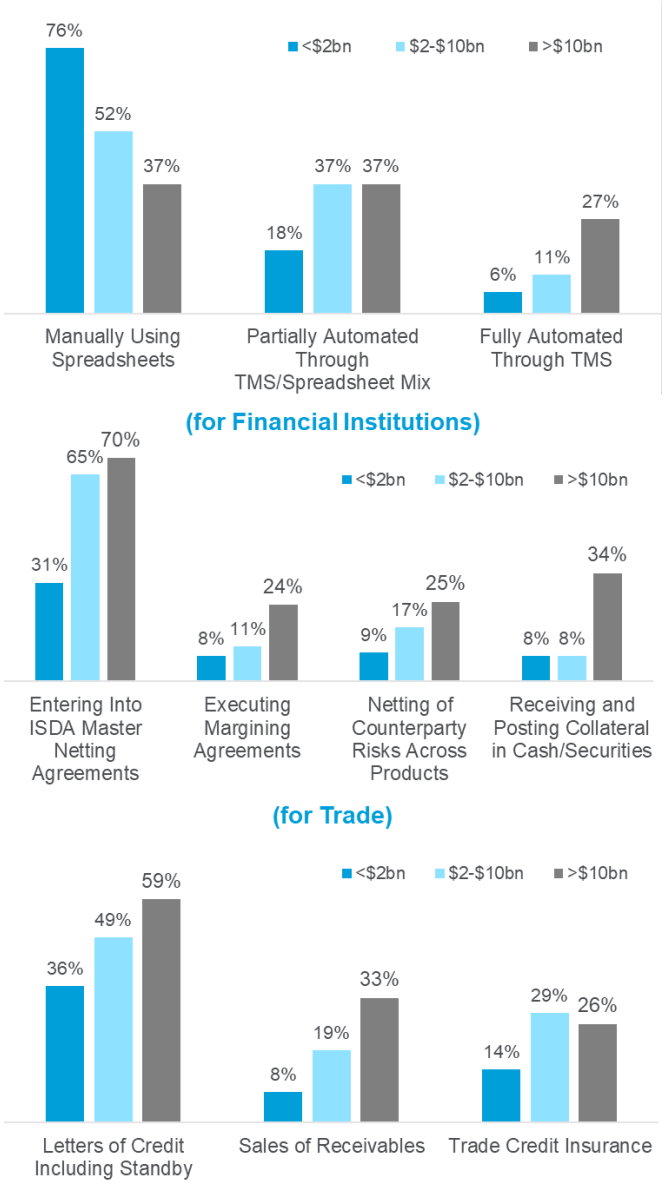
Among companies with annual revenues greater than $10 billion, 83% monitor counterparty risk within treasury. Among companies with annual revenues less than $2 billion, 62% do not.

Figure 83. Techniques for Setting Financial Counterparty Risk Limits



Source: Citi Treasury & Trade Solutions

Figure 84. Measurement and Mitigation of Counterparty Risk



Source: Citi Treasury & Trade Solutions

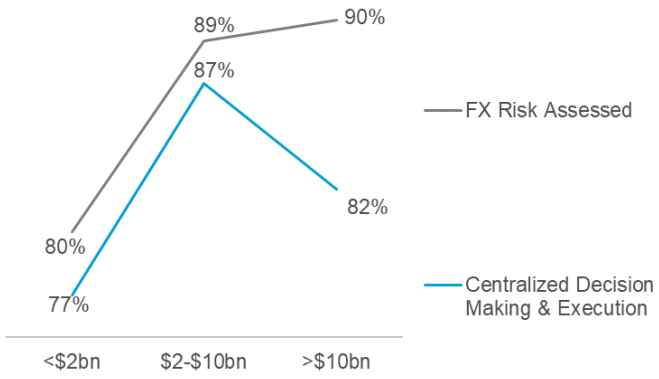
© 2023 Citigroup

FX Risk Management: Hedging Programs in Place for Majority to Reduce Risk to Both Earnings and Cash Flow

Over 80% of companies report that they assess their foreign exchange (FX) exposure, with most opting for centralized decision making and execution at a monthly cadence. Among larger companies (with annual revenue over $10 billion), 39% perform a daily FX risk management process. In terms of objectives for managing risk, the majority of companies do so to reduce risk to both cash flows and earnings. While 64% reported reducing earnings volatility as a key risk management objective (Figure 87, 52% + 12%), only 20% of companies with greater than $10 billion in annual revenues report hedging their earnings translation exposures.

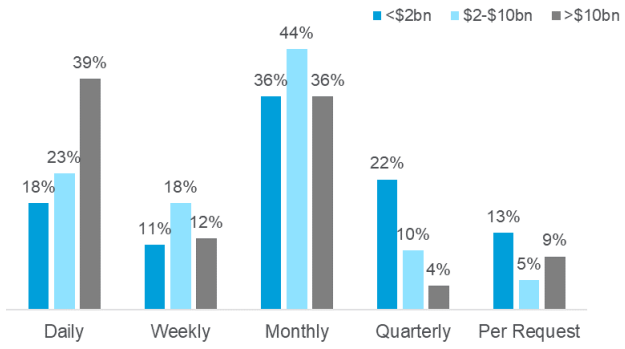
> As Treasurers reassess risk management strategies, we are pleased to support clients with insights gleaned from our market-leading corporate FX franchise.
>
> – SAM HEWSON, GLOBAL HEAD OF FX SALES, CITI

Figure 85. Assessment of FX Risk



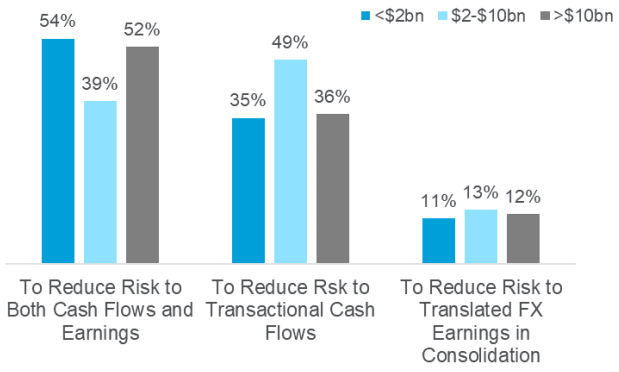
Source: Citi Treasury & Trade Solutions

Figure 86. Frequency of Risk Assessments



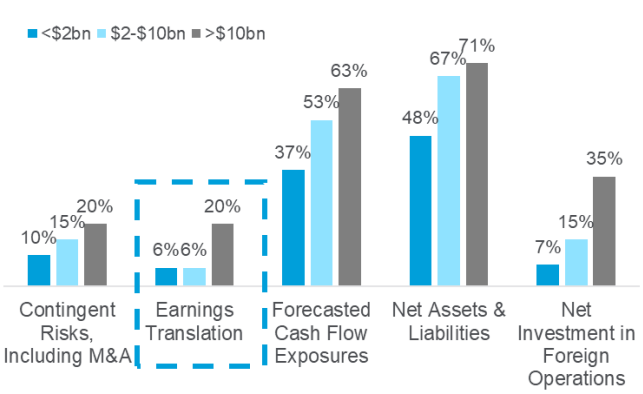
Source: Citi Treasury & Trade Solutions

Figure 87. Risk Management Objectives



Source: Citi Treasury & Trade Solutions

Figure 88. Types of FX Hedged



Source: Citi Treasury & Trade Solutions

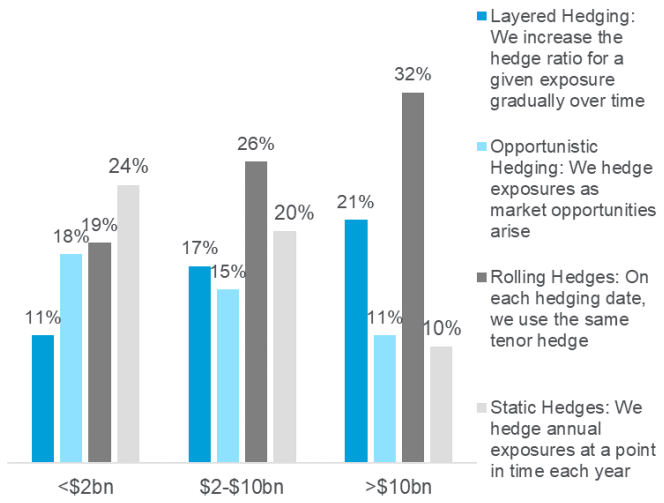
© 2023 Citigroup

FX Risk Management: Hedging Programs in Place for Majority to Reduce Risk to Both Earnings and Cash Flow

In terms of hedging approaches, larger companies favor rolling and layered hedging programs. Static hedges are favored by the smaller companies. Opportunistic hedging reduces as companies grow and introduce more considered hedging methodologies.

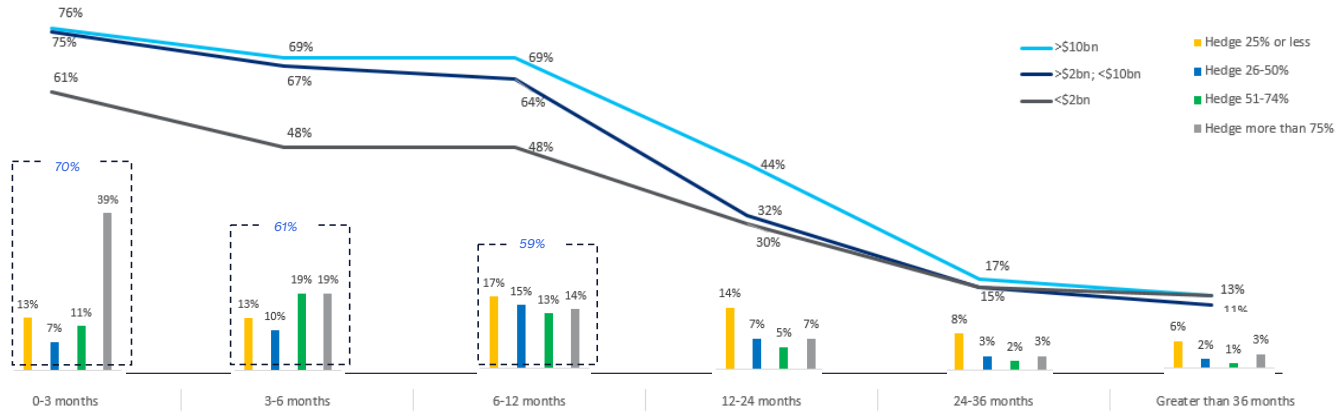
- Fifty-nine percent of all companies hedge out to 12 months, with this number rising to 69% for larger companies (by revenue). Company size correlates with hedge ratios, with 39% of larger companies hedging more than 75% of their exposure out to a three-month horizon. There is significant fall off in hedging practices beyond the 12-month horizon, with only one in three companies hedging at all out to two years, with most only hedging 25% or less at this tenor and beyond.

Figure 89. Hedge Approach



Source: Citi Treasury & Trade Solutions

Figure 90. Proportion of Forecasted Exposures Hedged



Source: Citi Treasury & Trade Solutions

© 2023 Citigroup

Risk Management: Section Summary

Opportunities remain for most to optimize risk management processes deployed.

- Unexpected sources of funding are required by study participants despite the Liquidity Risk Management processes in place:

  -- Most companies (over four in five) within this study monitor and report liquidity and funding risk, with 49% doing so monthly. Despite this, unexpected sources of funding were required by one in five study participants.

  -- At 54%, monitoring sources and uses of funds to principal legal entities is the favored approach by most larger companies.

  -- Daily assessment is more apparent in larger companies (24% vs 10% for smaller companies).

- Most companies within this study assess interest rate risk for market rate changes and/or business drivers, with 49% doing so on a monthly basis. Monitoring company exposure to interest rate changes is less apparent for smaller companies, with only 68% having such processes in place. The role of treasury in working capital management can be viewed as across two broad areas: financing decisions and operational advisory across payments and receivables.

- Counterparty risk is a greater concern for larger companies, with 83% monitoring counterparty risk within treasury. Among smaller companies, 62% do not monitor counterparty risk.

- Over 80% of companies report that they assess their FX exposure, with most opting for centralized decision making and execution. In terms of objectives for managing risk, the majority of companies do so to reduce risk to both cash flows and earnings. Among larger companies, 39% perform a daily FX risk management process. While 64% reported reducing earnings volatility as a key risk management objective, only 20% of companies with greater than $10 billion in annual revenues report hedging their earnings translation exposures.

- Fifty-nine percent of all companies hedge out to 12 months, with this number rising to 69% for larger companies. Company size correlates with hedge ratios, with 39% of larger companies hedging more than 75% of their exposure out to a three-month horizon. There is a significant fall off in hedging practices beyond the 12-month horizon, with only one in three companies hedging at all out to two years, with most only hedging 25% or less at this tenor and beyond. In terms of hedging approaches, larger companies favor rolling and layered hedging programs.

© 2023 Citigroup

Chapter 2: Summary Takeaways

While larger companies are generally more efficient and effective in their treasury policies, processes, and procedures, Liquidity and Working Capital exhibit the lowest absolute scores across the pillars of treasury measured and/or the most variation by size. In other words, for the typical company, these areas offer the most immediate opportunity for further improvement in treasury performance.

- Companies accept and drive towards having robust treasury policies, processes, and procedures in place, aligned with a documented treasury strategy. Key performance indicators (KPIs) for treasury are another foundation for a best-in-class treasury function.
- The scope of treasury becomes more focused as companies get larger. Scale functions such as Payables and Receivables typically exit treasury (if they were there in the first place), while treasury's remit expands in areas requiring expert skills such as Working Capital Management. We now also see treasury more often involved in the company payments strategy (vs. Accounts Payable), a consequence of changing business models and adoption of new payment methods as a competitive differentiator. All this reflects recognition of treasury as a center of expertise with a key role increasing the velocity of cash for the company.
- Effective Cash and Liquidity Management is a minimum standard for treasury. Yet this study shows that this area (along with Technology, to be covered in the next chapter) still holds the most opportunity for performance improvement through better process utilization and automation across cash visibility, cash concentration, and cash forecasting. A hallmark of a leading treasury is to also deploy an in-house bank.
- A leading treasury also establishes policies, centralized processes (and formalized documentation) for legal entity funding, intercompany lending, and dividend repatriation. When well-managed, these activities, along with robust cash and liquidity management, ensure that cash is optimally deployed across the legal entity chain to fund the business while minimizing wasteful or inaccessible excess capital.
- The role of treasury is expanding in Working Capital Management, with most treasuries now held directly responsible or having significant oversight. This role is across two broad areas: financing decisions and operational advisory across payments and receivables. The weighted average cost of capital and the marginal cost of short-term funding are the two favored measures to evaluate the benefits of deploying a financing program utilizing external sources. Supplier financing has become a common working capital management program across companies of all sizes. All that said, companies as a whole still have opportunities to improve on this critical pillar.
- Risk management is another area of opportunity — whether avoiding unexpected funding needs through better liquidity planning or ensuring good risk management measures and processes are in place around counterparty risk management, interest rate risk, and foreign exchange risk.

© 2023 Citigroup

Chapter 3: Technology Deployment, Connectivity, and Digital Adoption

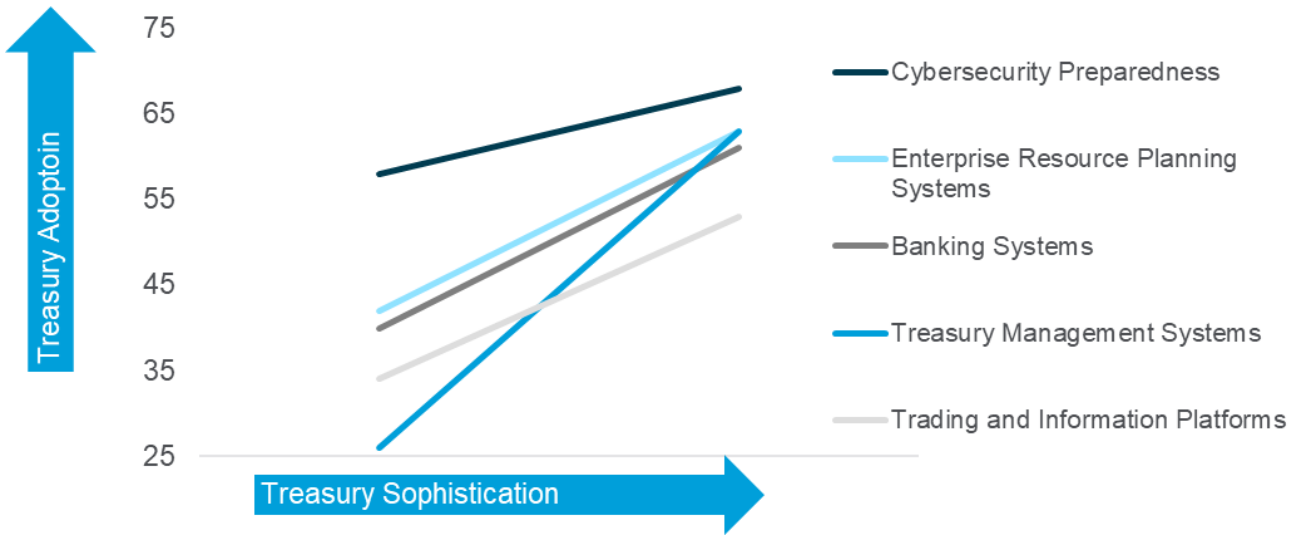
© 2023 Citigroup

Chapter 3: Technology Deployment, Connectivity, and Digital Adoption

- The adoption and integration of treasury technology — typically in the shape of a Treasury Management System (TMS) or treasury modules within the Enterprise Resource Planning (ERP) system — is among the biggest drivers of overall treasury performance. In this study we use TMS as shorthand for treasury technology.
- By corollary, treasury underperformance in other areas can be linked to underinvestment in treasury technology.
- Utilization and integration of ERP and trading platforms externally with banking systems and internally with the company's TMS show a strong positive correlation with treasury sophistication.
- Cybersecurity is also typically enhanced through the digitalization agenda, for example, by deployment of outlier detection tools.
- The remainder of this section takes a closer look at the deployment and utilization of treasury technology driving overall treasury sophistication.

> We plan to leverage data to create a 'no touch' treasury. Everything, from the suggestion of the parameters of a potential hedge, to the cash settlement and the accounting of that hedge, will be automated. Technology plays an enormous role, leveraging innovation and efficiency opportunities to automate processes, provide effective controls, help in decision making and achieve the scalability and agility that are so important for our business.
>
> – INTERNATIONAL TREASURER, NORTH AMERICAN MULTINATIONAL CONSUMER COMPANY

Figure 91. Systems & Technology Pillar Processes/Study Scores (%)



Source: Citi Treasury & Trade Solutions

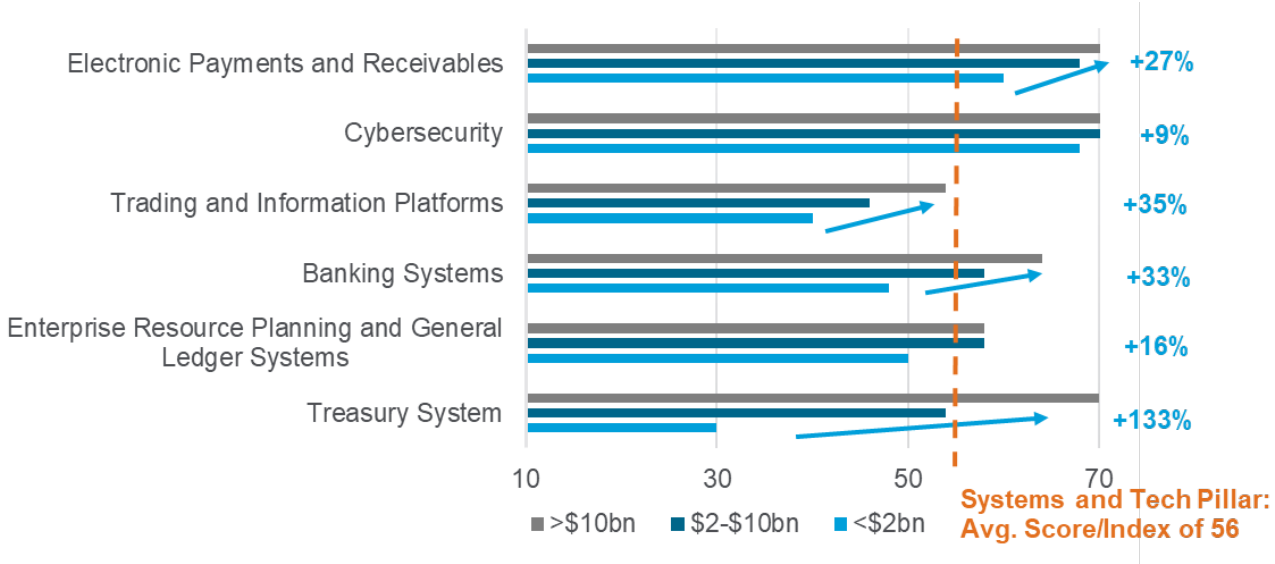
© 2023 Citigroup

Systems and Technology Adoption by Company Size

Investment in a TMS is most strongly aligned (+133%) with company size. A limited number of companies with annual revenues under $2 billion were investing in such technology.

- We also observe a positive correlation in the deployment of both trading/information platforms (+35%) and banking systems (+33%).
- Cybersecurity threat and response preparedness was broadly consistent across companies, irrespective of size.
- We also observed low levels of trading and information platform adoption across participants. Low scores may also indicate incomplete installations and low levels of application integration.

Figure 92. Treasury Performance of Surveyed Companies in the Systems and Technology Pillar



Source: Citi Treasury & Trade Solutions

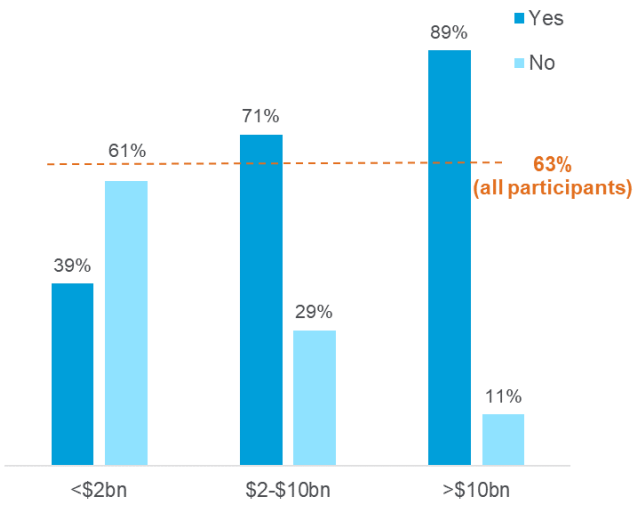
© 2023 Citigroup

Systems and Technology: Usage of Treasury Systems

While 63% of all study participants have deployed a TMS, this drops to 39% for smaller companies (with annual revenues less than $2 billion) and increases to 89% for larger companies (with annual revenues over $10 billion).

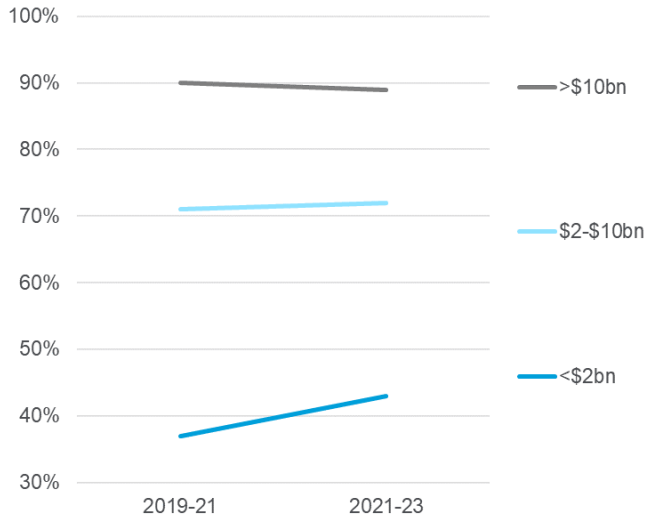
- There was no significant change through the period of this study (2019-23) with only a marginal change in the deployment rates for smaller companies.
- Cash management, enablement of in-house banking (IHB), and accounting integration (with the ERP or General Ledger) remain the top three services supported by a TMS.
- While outside the scope of the study data, we observe that the cost of acquiring a TMS has materially dropped over the past several years. The advent of multiple providers, built on a Software-as-a-Service (SaaS) model, provides, in our view, options suitable for the budgets of many more companies.

Figure 93. TMS Usage by Company Size



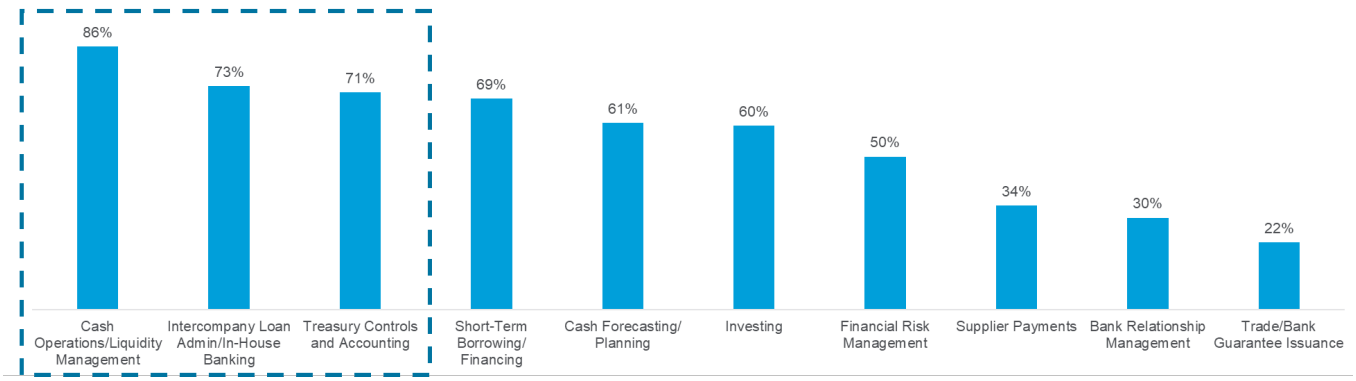
Source: Citi Treasury & Trade Solutions

Figure 94. TMS Usage by Company Size Over Time



Source: Citi Treasury & Trade Solutions

Figure 95. Service Supported by Treasury Management Systems



Source: Citi Treasury & Trade Solutions

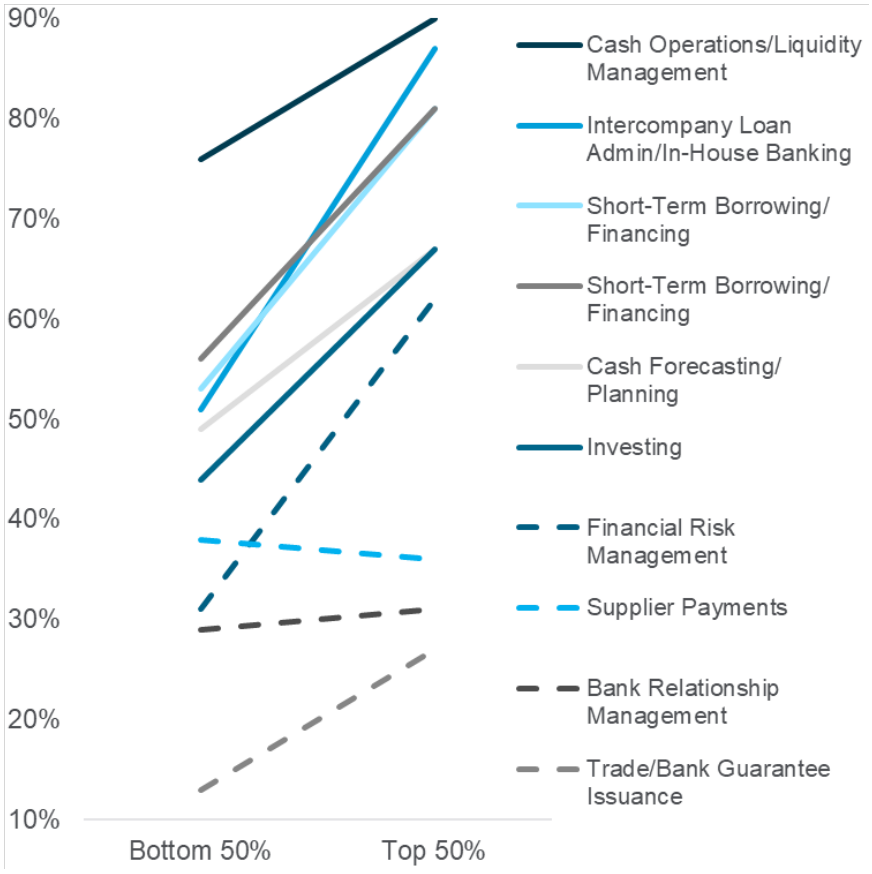
© 2023 Citigroup

Systems and Technology: Processes Supported by TMS/Adoption Levels Vary by Treasury Sophistication

The number of treasury processes supported by a TMS or treasury modules of ERP generally increases with treasury performance as measured by this study.

- Bifurcating companies that have scored in the bottom 50% of both treasury effectiveness and digital adoption, we find:
  - Cash management, enablement of in-house banking, and accounting integration remain the top three services supported by a TMS. This is even more apparent for the top 50% of companies.
  - Similar adoption trends can be seen for cash flow forecasting, financing, and investing in that more of the high-performing companies utilize TMSs to support these activities.
  - A smaller share of high-performing companies use their TMS to support supplier payments, and there is little measurable difference in bank relationship management.

Figure 96. TMS Adoption Rates by Treasury Sophistication



Source: Citi Treasury & Trade Solutions

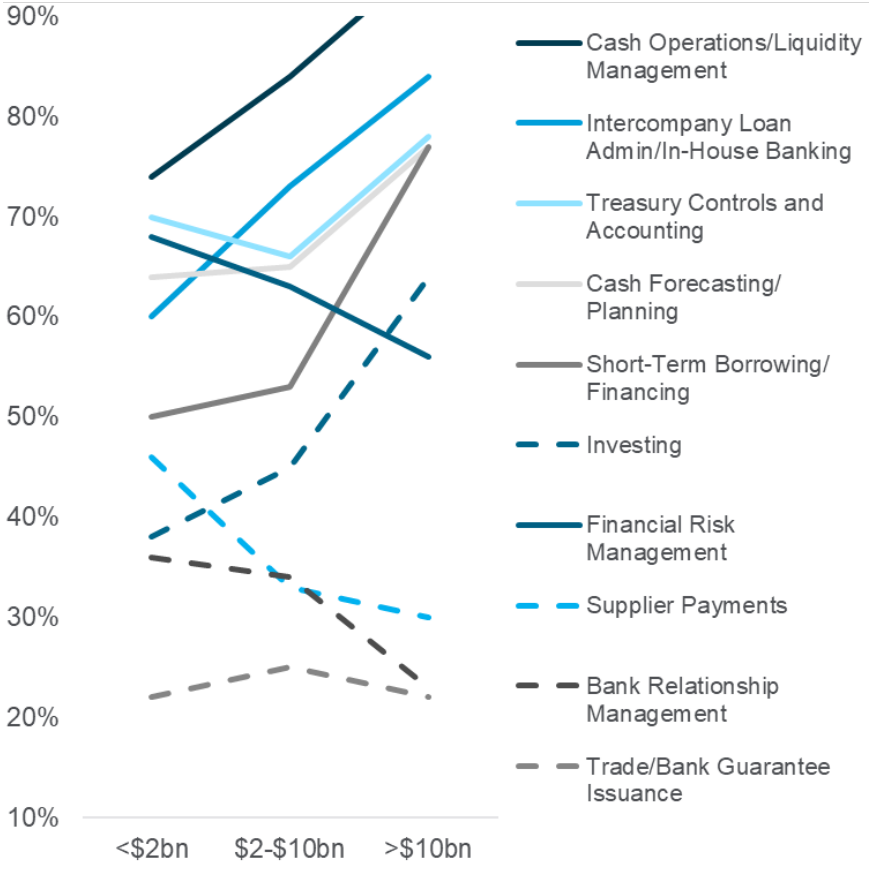
© 2023 Citigroup

Systems and Technology: Processes Supported by TMS/Adoption Levels Vary by Company Size

Treasury processes supported by a TMS vary depending on the size of companies participating in this study, as measured by annual revenues.

- Bifurcating companies across the three revenue buckets we use:
  - Cash management, enablement of In-House Banking, and accounting integration remain the top three services supported by TMS. This is even more apparent for the top 50% of companies.
  - Similar adoption trends can be seen for financing and investing in that we see positive correlation with company size.
  - However, we see negative correlation for cash flow forecasting, supplier payments, and bank relationship management. This suggests that, as companies grow, and their needs become more complex, they often seek best-of-breed alternatives beyond the TMS to support these processes. For example, in cash flow forecasting, we observe companies using strategies ranging from in-house development to acquiring technology from emerging FinTechs.

Figure 97. TMS Adoption Rates by Company Size



Source: Citi Treasury & Trade Solutions

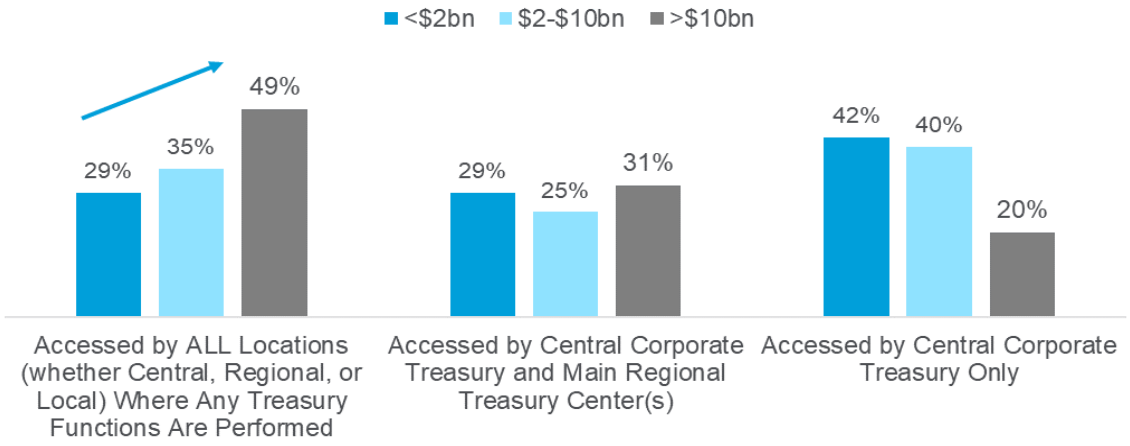
© 2023 Citigroup

Systems and Technology: Processes Supported by TMS/Adoption Access and Integration

Deployment approach varies with company size, with 49% of larger companies (with annual revenue greater than $10 billion) deploying their TMS to all locations where any treasury function is performed.

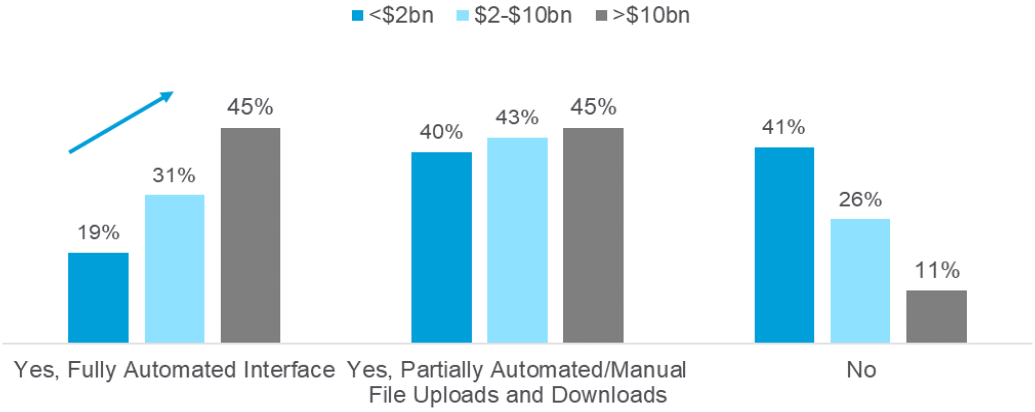
- Others have yet to deploy their TMS across the organization with about one-third of companies with revenues less than $10 billion allowing access to all locations.
- The level of treasury system integration also varies with company size, with approximately 90% of larger companies reporting to have their TMS either fully or partially integrated with their ERP.
- Among companies with less than $2 billion in annual revenues, 41% have yet to integrate their ERP and TMS.

Figure 98. System Access



Source: Citi Treasury & Trade Solutions

Figure 99. Treasury System Integration with Enterprise Resource Planning (ERP) and General Ledger (GL)



Source: Citi Treasury & Trade Solutions

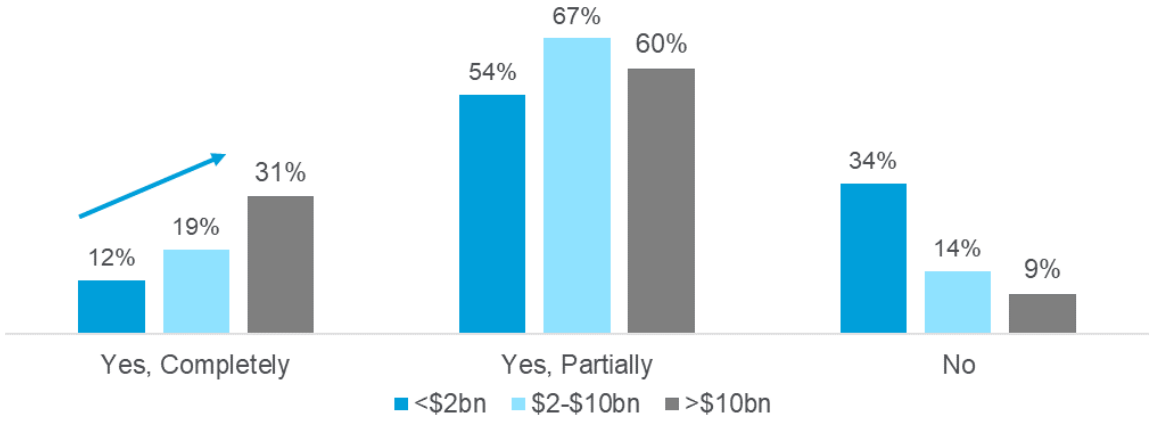
© 2023 Citigroup

Systems and Technology: Treasury Systems and Bank Integration

System integration varies with company size, with 31% of larger companies stating they are fully integrated with their banking partners for the purposes of bank statements and transaction processing.

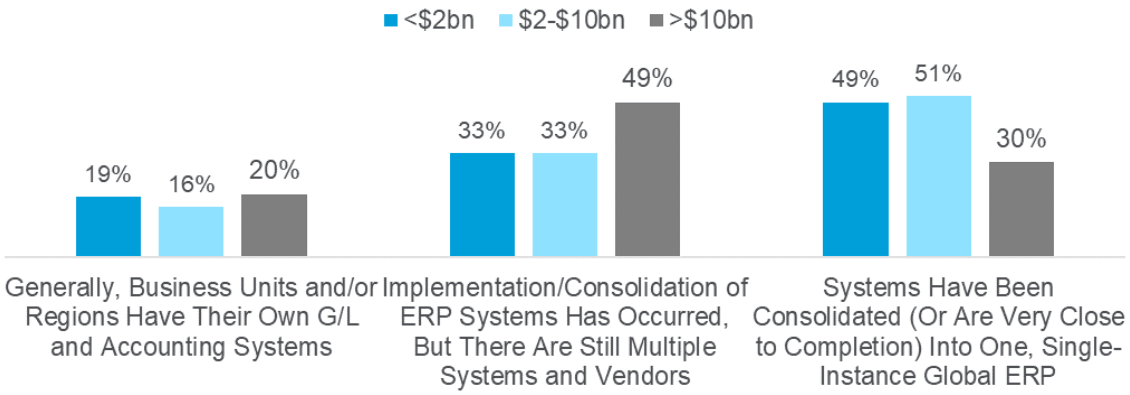
- Others have yet to digitally connect with their banks, with over one-third of companies with annual revenues less than $2 billion being fully manual.
- The level of ERP consolidation can be used as a proxy for the complexity of the company infrastructure upon which treasury is managing risk and providing insights to help enable growth.
- As one might expect, the level of complexity through multiple instances of ERP supporting the company's commercial business is greatest in larger companies. Less than one in three companies with annual revenues greater than $10 billion report single instance global ERP. Our observation is this is frequently a consequence of inorganic growth through acquisitions. In other words, many companies trade-off complexity vs. cost of converting acquired targets to the enterprise technology of the "mother ship" company.

Figure 100. Systems (TMS/ERP) Integration with Bank Systems



Source: Citi Treasury & Trade Solutions

Figure 101. ERP Consolidation



Source: Citi Treasury & Trade Solutions

© 2023 Citigroup

Systems and Technology: Section Summary

The adoption of treasury technology to support treasury processes, along with effective integration with the corporate ERP and the banks used by a company, is fundamental to enabling treasury leadership. By corollary, treasury underperformance is linked to technology underinvestment.

- Sixty-three percent of all study participants have deployed a treasury management system (TMS). This drops to 39% for smaller companies (with annual revenues less than $2 billion) and increases to 89% for larger companies (with annual revenues greater than $10 billion). This is an untapped opportunity given that — outside the scope of the study data — we observe that the cost of acquiring a TMS has materially dropped over the past several years.
- The top three services supported by TMS are cash management, enablement of in-house banking, and accounting integration. This is even more apparent for the top performing 50% of companies.
- As companies grow in size (and needs typically become more complex), they tend to seek alternatives to their TMS for areas including cash flow forecasting, supplier payments, and bank relationship management.
- While companies should deploy their TMS to all locations where any treasury function is performed, unfortunately, many give up. Among larger companies, 49% deployed their TMS to all locations where any treasury function is performed. One-third of companies with revenues less than $10 billion deploy access to all locations.
- Ninety percent of larger companies reported having their TMS either fully or partially integrated with their ERP. Among smaller companies, 41% have yet to integrate their ERP and TMS.
- Among larger companies, 31% stated they are fully integrated with their banking partners for the purposes of bank statements and transaction processing. Others have yet to digitally connect with their banks, with over one-third of companies with revenues less than $2 billion being manual.

© 2023 Citigroup

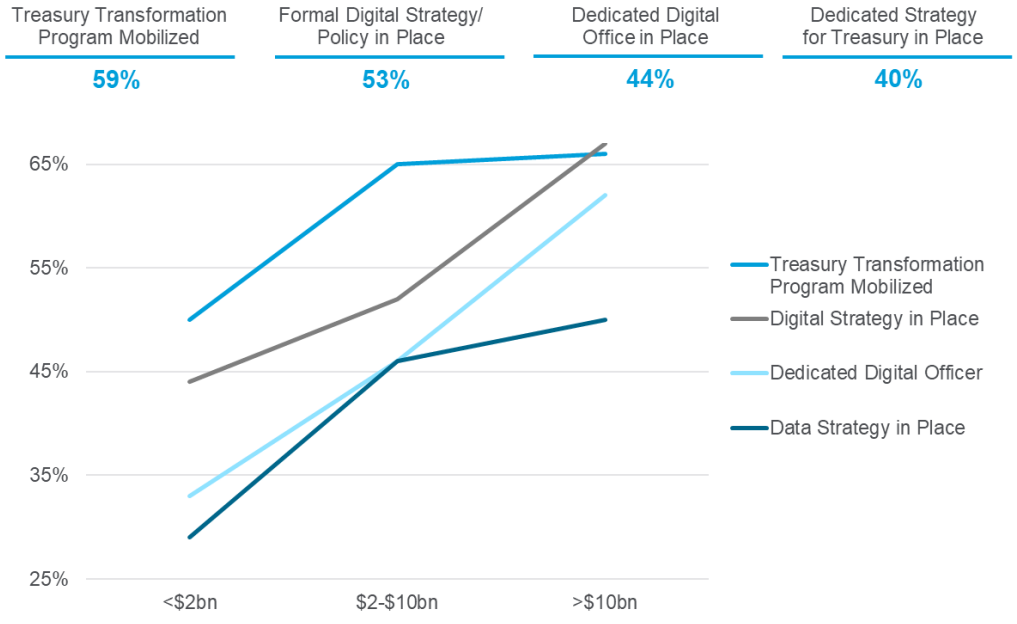
Digital Adoption/Transformation Programs Mobilizing With Policy; Strategy and Resourcing Playing Catch Up

Fifty-nine percent of companies in this study have mobilized treasury transformation programs (areas we will focus on in subsequent pages).

- However, a formal digital strategy/policy and the appointment of a dedicated Digital Officer lag behind, at 53% and 44%, respectively.
- This finding is particularly prevalent in companies with annual revenues of less than $10 billion. Companies with annual revenues over $10 billion are making good progress in digital transformation policy and resourcing.
- It is well established that data veracity – i.e., accurate, complete, and timely data – is necessary to apply predictive and prescriptive techniques to support decision making. Despite this, only 40% of participants have a data strategy in place for treasury.

> The success of our transformation so far has been based on a combination of centralization discipline, innovation, and process efficiency. Strong and consistent senior sponsorship from the beginning helped to inspire a common purpose and the confidence and vision to achieve it. A formal digital policy and robust risk management approach to underpin the new treasury function — and rigorously observing it — was essential.
>
> – INTERNATIONAL TREASURER, UK MULTINATIONAL PUBLISHING COMPANY

Figure 102. Transformation Programs Mobilized



Source: Citi Treasury & Trade Solutions

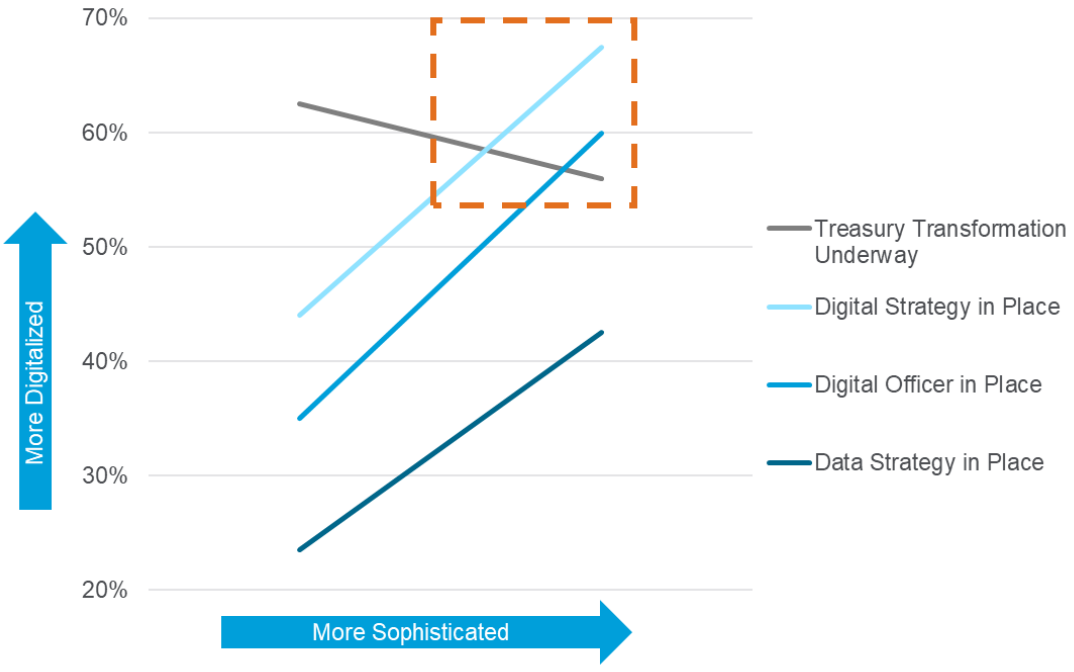
© 2023 Citigroup

Digital Readiness: Prerequisites for Success

Likelihood of success may be negatively impacted as building blocks necessary, such as digital and data strategies, are absent for many companies that have transformation projects underway.

- The proxy adopted by this study to define a company's digital preparedness/readiness to mobilize treasury transformation projects is having in place: (1) a digital policy/strategy, (2) a data strategy, and (3) a Digital Officer.
- A good correlation exists for all three of these measures against companies' overall treasury sophistication, as measured by this study.
- However, we find that only the most sophisticated companies that have mobilized transformation programs, have both a digital strategy and a Digital Officer in place, as highlighted in Figure 103.
- Even the most sophisticated companies, as measured here, do not all have a data strategy in place, which is arguably at the root cause of the digitalization adoption delays discussed later in this chapter.
- It is interesting to note the drop in reported treasury transformation projects underway by the more sophisticated treasuries. This is perhaps explained as those companies are first focusing on putting prerequisites in place.

Figure 103. Digital Readiness: Correlation with Level of Measured Company Sophistication and Digitalization



Note: The chart shows the shift in adoption of Digital and Data Strategies and the assignment of a Digital Officer as a function of treasury sophistication, as measured by this study

Source: Citi Treasury & Trade Solutions

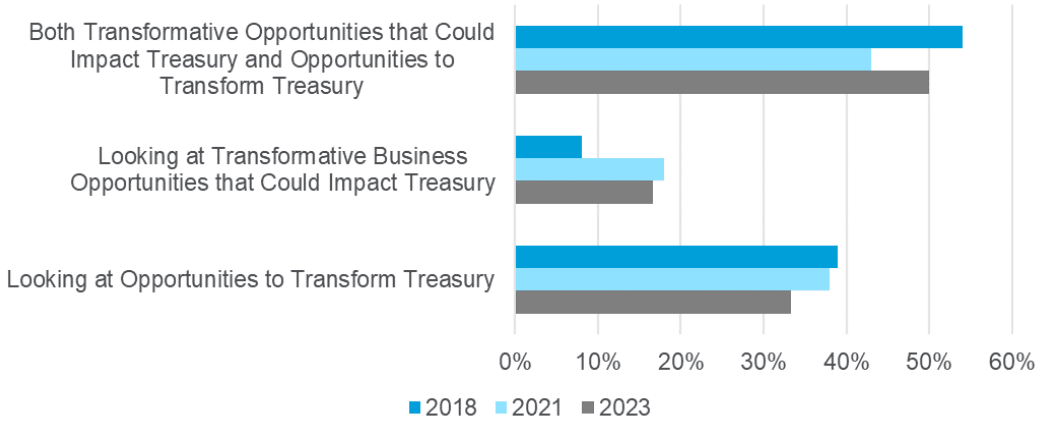
© 2023 Citigroup

Digital Adoption: A Priority Now for Many Companies

Aspirations continue to transition treasury from descriptive analytics (i.e., reporting what has happened in the past) to seeking a more forward-looking set of insights through predictive analytics to better inform what actions to take to manage treasury objectives.

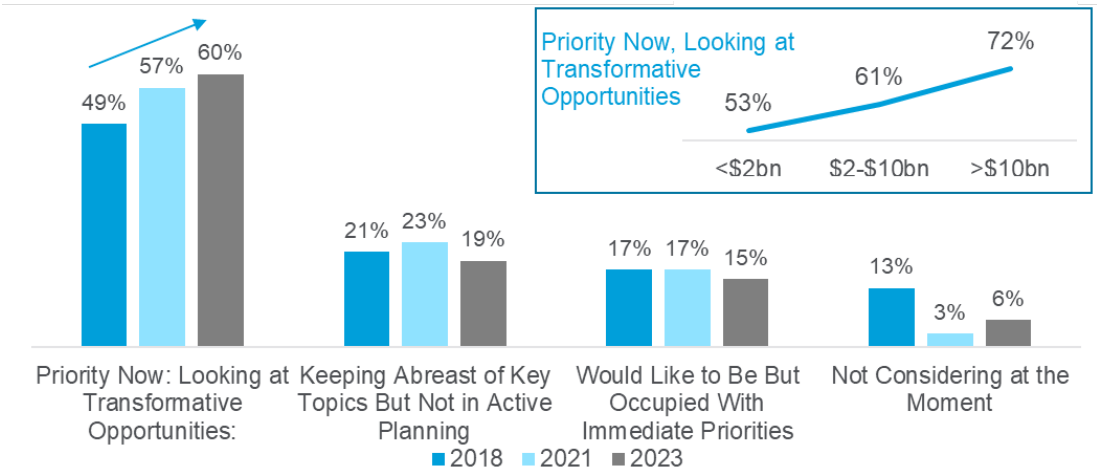
- Sixty percent of companies are now looking for transformative opportunities across both their core business and treasury function (compared with 57% in 2021 and 49% in 2018).
- The prioritization of digitalization in treasury correlates with company size. Seventy-two percent of larger companies (with annual revenues greater than $10 billion) advise that this is a priority now, while 53% of smaller companies (with revenues less than $2 billion) see this as a 2023 priority.
- Fifteen percent would like to investigate the opportunity but are occupied with more immediate priorities, while 19% are keeping abreast of the topic but not actively pursuing at this time. Similar shares appear in the prior two editions of this study.

Figure 104. Priority Now: Looking at Transformative Opportunities



Source: Citi Treasury & Trade Solutions

Figure 105. Focus on Digital Themes and Emerging Technologies



Source: Citi Treasury & Trade Solutions

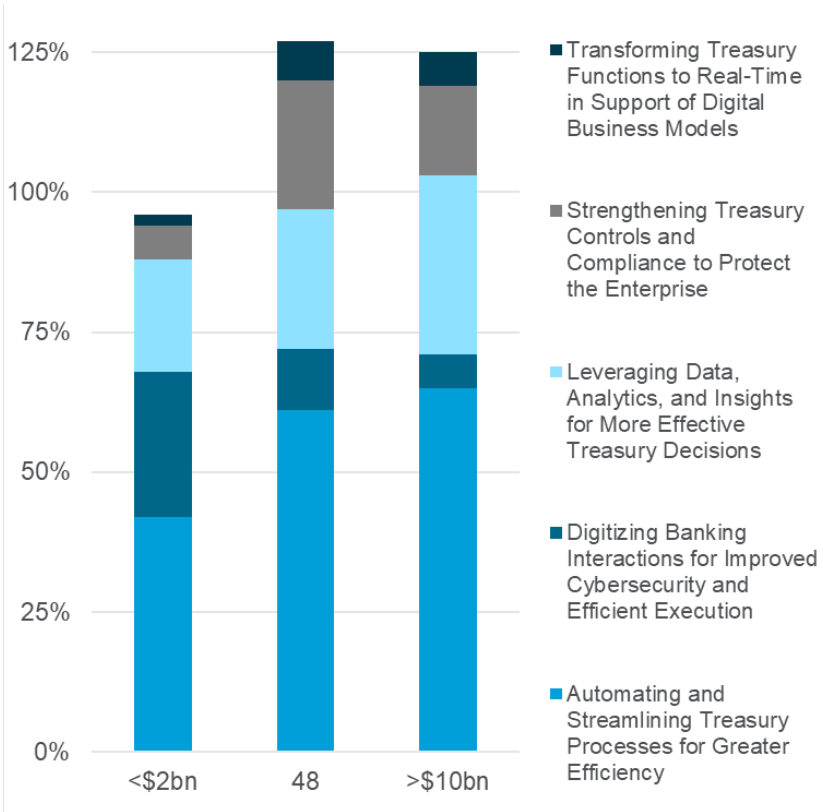
© 2023 Citigroup

Digital Adoption: A Focus Area

Automating and streamlining treasury processes for greater efficiency is the greatest priority for all participants in this study. Sixty-five percent of larger companies (with annual revenues of over $10 billion) include this as priority.

- Relative to other company sizes, smaller companies (with annual revenues less than $2 billion) are most likely to indicate that digitizing banking interactions for improved cybersecurity and efficient execution is a priority.
- All companies, irrespective of size, are focused to some extent on the opportunity to leverage data, analytics and insights for more effective decision-making. Increasingly of interest for the larger companies.
- Relative to other company sizes, companies in the $2 billion to $10 billion range are most likely to indicate that strengthening treasury controls and compliance to protect the enterprise through digital adoption is a focus.
- Transforming treasury functions in real time in support of digital business models is yet to attract priority attention.

Figure 106. Digital Adoption by Company Size



Source: Citi Treasury & Trade Solutions

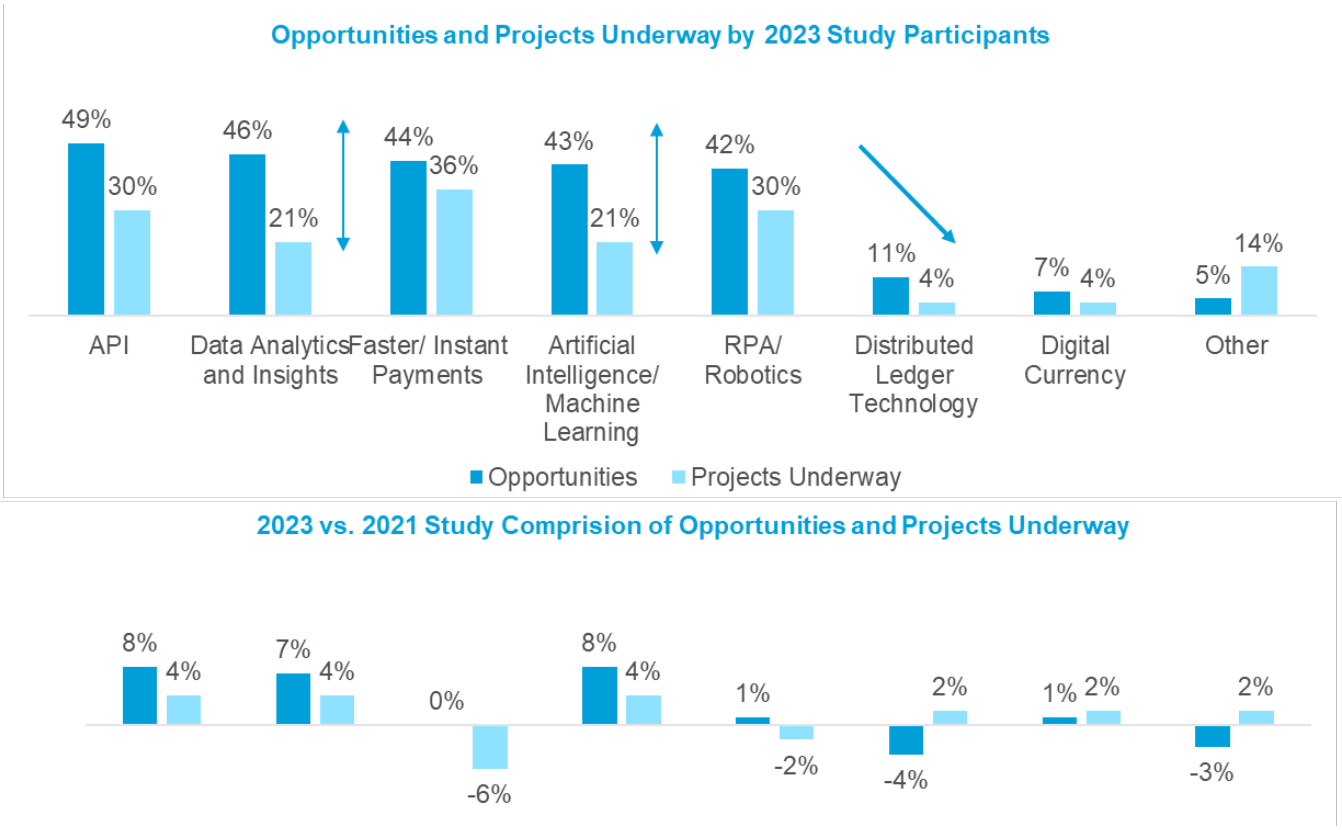
© 2023 Citigroup

Digital Adoption: Emerging Technologies, Opportunities, and Projects Underway

Opportunities exist for study participants utilizing emerging technologies for more timely data, more advanced analytics, and utilization of machine learning (ML) and artificial intelligence (AI).

- However, opportunities are less clear for the application of distributed ledger technologies (DLT) and digital currency in treasury. These have yet to attract much attention in the aggregate for study participants.
- There is a significant gap between opportunities and projects underway utilizing data and ML/AI. This may be attributed to the widely recognized challenge with data veracity for many companies.
- Comparison with equivalent 2021 figures show a small contraction in projects underway that utilize instant payments. However, there was an equivalent increase in projects across application programming interfaces (APIs), data insights, and ML/AI.

Figure 107. Opportunities and Projects Underway



Source: Citi Treasury & Trade Solutions

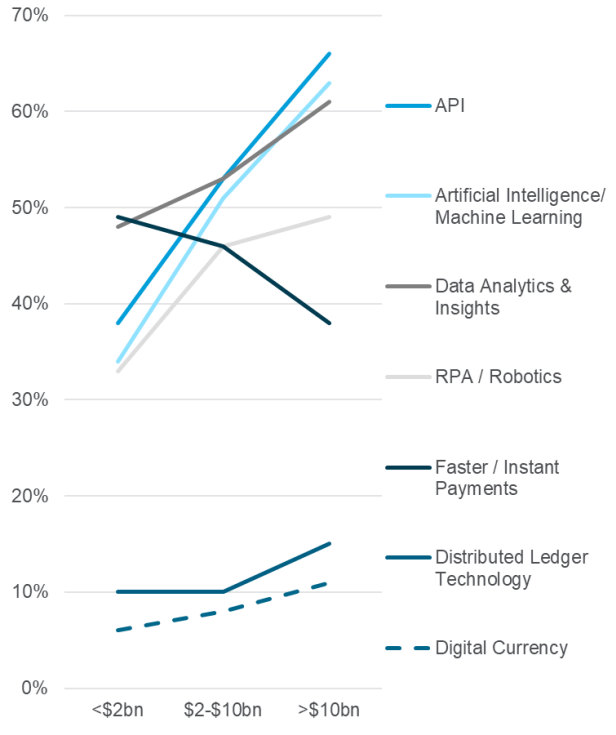
© 2023 Citigroup

Digital Adoption: Emerging Technologies, Opportunities, and Projects Underway

The emerging technologies that companies focus on varies by participant size.

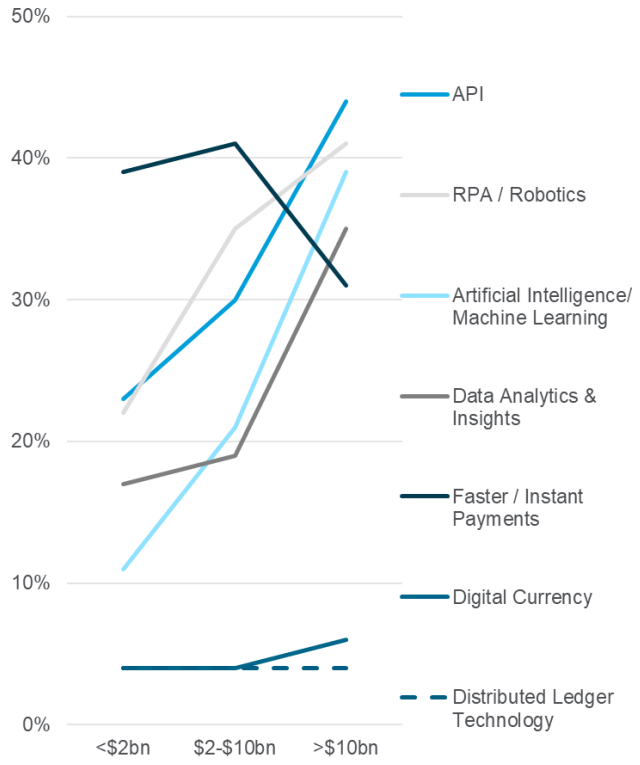
- Among smaller companies (with less than $2 billion in annual revenues), the treasuries surveyed have a bias towards seeking opportunities through utilizing faster payments.
- Among larger companies, we see a greater focus on data analytics, utilization of data through ML/AI for greater insights, and utilization of API for data transmission and process integration.
- Robotic process automation (RPA) is also more prevalent in larger-sized companies for automation of treasury.
- There are limited projects underway by survey participants utilizing digital currency or distributed ledger technologies.

Figure 108. Areas of Opportunity Identified Utilizing Emerging Technologies



Source: Citi Treasury & Trade Solutions

Figure 109. Projects Underway Utilizing Emerging Technologies



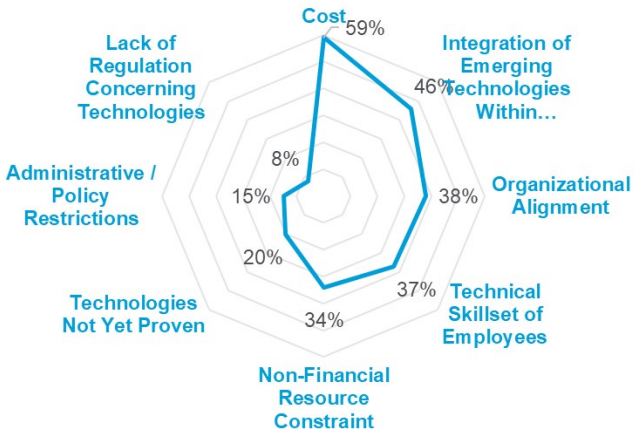
Source: Citi Treasury & Trade Solutions

© 2023 Citigroup

Digital Adoption: Challenges Remain, Halting Progress

- Cost remains the biggest hurdle by study participants, irrespective of company size. Integration with legacy infrastructure is also a key constraint for the adoption of emerging technologies.
- The unproven nature of emerging technologies is a bigger concern for larger companies (Fig 104), perhaps indicating greater adoption risk appetite in companies with annual revenues less than $2 billion. Unproven technology was of heightened concern in the most recent 2023 survey results.
- Figure 112 shows the change in perceived hurdles to mobilizing treasury transformation projects over time, charted in yearly survey participant tranches between May 2019 and May 2023.
- While cost remains the biggest hurdle by study participants irrespective of company size, this hurdle has been diminishing over time, reducing from 63% to 56% over the period of the study.
- There is limited change over time in concerns expressed in resolving legacy infrastructural challenges or obtaining technical skills and other non-financial resources.

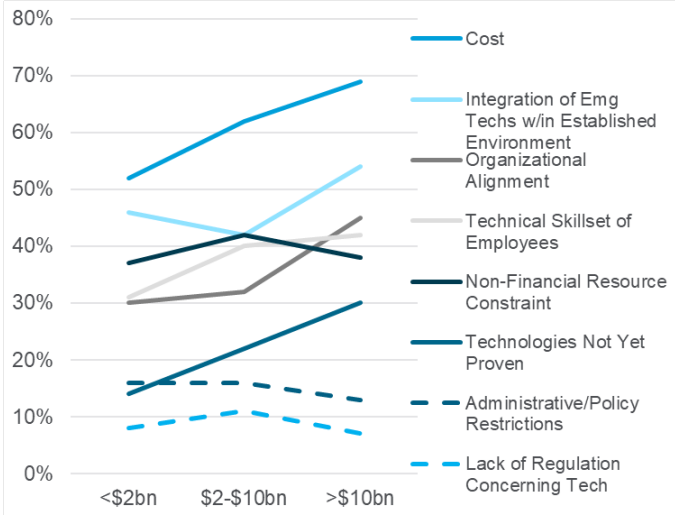
Figure 110. Biggest Hurdles to Treasury Transformation



Source: Citi Treasury & Trade Solutions

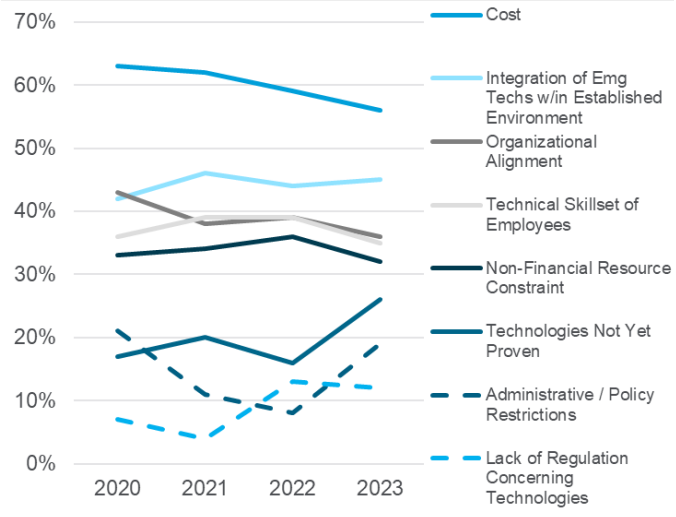
- Company policy restrictions and a lack of regulation concerning the emerging technologies are becoming more of an issue for corporate treasury.

Figure 111. Challenges Vary Depending on Company Size



Source: Citi Treasury & Trade Solutions

Figure 112. Challenges Vary Over Time



Source: Citi Treasury & Trade Solutions

© 2023 Citigroup

Digital Adoption: Section Summary

Almost two-thirds of companies participating in this study have now mobilized treasury transformation programs utilizing emerging technologies. However, we believe the likelihood of success will be much higher for companies that have already addressed the necessary building blocks, such as digital and data strategies. This is absent for many.

- Aspirations continue to transition treasury from descriptive analytics (i.e., report what has happened in the past) to seeking a more forward-looking set of insights through predictive analytics to better inform what actions to take to manage treasury objectives.
- Sixty percent of companies are now looking for transformative opportunities across both their core business and treasury functions (compared to 57% in 2021 and 49% in 2018). Seventy-two percent of larger companies (with annual revenue over $10 billion) report that they have now mobilized transformational projects for treasury.
- Automating and streamlining treasury processes for greater efficiency is the greatest priority for all participants in this study. At 65%, larger companies note this as a core priority. Relative to others, smaller companies (with less than $2 billion in annual revenue) are most likely to indicate that digitizing banking interactions for improved cybersecurity and efficient execution is their priority. All companies, irrespective of size, are focused to some extent on the opportunity to leverage data, analytics, and insights for more effective decision making.
- The data veracity necessary to support digitalization, and in particular to enable predictive and prescriptive analytics to augment human decision making, is well documented. Despite this, only 40% of those participating in this study have a data strategy in place for treasury — well below the share that has mobilized data-led initiatives. We find that only the most sophisticated companies, that have mobilized transformation programs, have both a digital strategy and a Digital Officer in place.
- We believe the absence of these prerequisite building blocks is at the root cause of project failure for some, and cause of delay for others — delay being the material difference between digital opportunities identified vs. mobilized as projects.
- Cost remains the biggest hurdle by study participants, irrespective of company size. Integration with legacy infrastructure is also a key constraint for the adoption of emerging technologies. The unproven nature of emerging technologies is a bigger concern for larger companies and an increasing concern for all.

© 2023 Citigroup

Chapter 3: Summary Takeaways

Leading treasuries are especially focusing on digitalization as a key enabler to managing in a faster-changing environment in financial markets and business models. Others are playing catch-up and need to invest in raising skills, establishing processes, and deploying readily-available technology. The benefits from digital advancements are apparent and achievable for many more companies.

- The adoption and integration of Treasury Management Systems (TMSs) drives the greatest improvement in overall treasury performance. Utilization and integration of enterprise resource planning (ERP) and trading platforms with both banking systems and a TMS also show a strong positive correlation with treasury sophistication, as measured by this study. By corollary, overall treasury underperformance tends to be linked to underinvestment in technology and internal/external integration.
- Aspirations continue to transition from descriptive analytics (i.e., reporting what has happened in the past) to seeking a more forward-looking set of insights through predictive analytics to better inform what actions to take to manage treasury objectives.
- Most companies — sixty percent — are now looking for transformative opportunities across both their core business and treasury function (compared with 57% in 2021 and 49% in 2018). Seventy-two percent of larger companies report that they have now mobilized transformational projects for treasury. Almost two-thirds of companies participating in this study have now mobilized treasury transformative programs utilizing emerging technologies.
- However, for many, the likelihood of success may be negatively impacted as the building blocks necessary, such as digital and data strategies, remain absent for them.

© 2023 Citigroup

Concluding Comments

© 2023 Citigroup

Key Takeaways From This Study

- Top-performing treasuries efficiently fund working capital, deploy liquidity, and identify and mitigate risks. They put in place the fundamental building blocks to perform well in each of these areas, and transition from people-dependency to well-defined processes. They apply technology to automate repeatable processes that would otherwise occupy significant day-to-day time. They also develop data strategies and invest to ensure access to timely, complete, and accurate data.
- Other companies can learn from this. The analysis and insights presented throughout this study lay a path to achieving high-performance in treasury. Doing so creates value by contributing to a company's profitability and growth.
- With this in hand, we suggest there are fewer excuses for treasury underperformance as we move into 2024 and beyond.

© 2023 Citigroup

As our premier thought leadership product, **Citi Global Perspectives & Solutions (Citi GPS)** is designed to help readers navigate the most demanding challenges and greatest opportunities of the 21st century. We access the best elements of our global conversation with senior Citi professionals, academics, and corporate leaders to anticipate themes and trends in today's fast-changing and interconnected world.

All Citi GPS reports are available on our website www.citi.com/citigps



Philanthropy and the Global Economy v3.0
Perspectives on the Future of Giving
October 2023



Supply Chain Technology
Improving Efficiency, Resilience, and Transparency
October 2023



Technology at Work v7.0
The Third Phase of Globalization
October 2023



Africa
A New Growth Model
October 2023



Skills That Pay
The Returns from Specific Skills
October 2023



Future of Cross-Border Payments
Who Will Be Moving $250 Trillion in Next Five Years?
September 2023



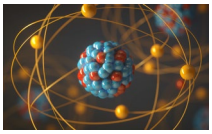
Unleashing AI
The AI Arms Race
September 2023



Hydrogen
A Reality Check on the Hydrogen Craze
August 2023



Quantum Computing
Moving Quickly From Theory to Reality
July 2023



Future of Nuclear Energy in a Low-Carbon Environment
Fission and Fusion Advanced Reactors to Prevail
July 2023



Voluntary Carbon Market
A Critical Piece of the Net Zero Puzzle
July 2023



Economic and Social Mobility
The Role of Business in Improving Outcomes
June 2023



Sustainable Ocean Economy
Charting a Prosperous Blue Future: Risk to Resilience
June 2023



Asia as a Time Machine to the Future
Seven Areas Where Asia Gives Insights Into the Future
May 2023



Money, Tokens, and Games
Blockchain's Next Billion Users and Trillions in Value
March 2023



The Cyber Problem
Causes and Consequences of the Rise in Cyber Skill Demand
March 2023



The Creator Economy
Getting Creative and Growing
March 2023



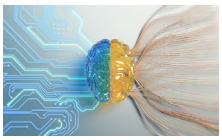
Generative AI
ChatGPT and Search
February 2023



Supply Chain Finance
Uncertainty in Global Supply Chains Is Going to Stay
January 2023



State of Global Electric Vehicle Adoption
A Trip Around the World
January 2023



Disruptive Innovations IX
Ten More Things to Stop and Think About
December 2022



Antimicrobial Resistance
The Silent Pandemic
December 2022



Climate Finance
Mobilizing the Public and Private Sector to Ensure a Just Energy Transition
November 2022



Food Security
Tackling the Current Crisis and Building Future Resilience
November 2022



Energy Transition: Vol 1
Mixed Momentum on the Path to Net Zero
November 2022



Energy Transition: Vol 2
Building Bridges to Renew Momentum
November 2022



China's Inward Tilt
The Pursuit of Economic Self-Reliance
October 2022



Philanthropy v2.0
Reinventing Giving in Challenging Times
October 2022



Food and Climate Change
Sustainable Foods Systems for a Net-Zero Future
July 2022



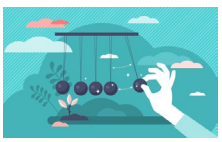
Home of the Future 2
PropTech – Towards a Frictionless Housing Market?
June 2022



Global Supply Chains
The Complexities Multiply
June 2022



Space
The Dawn of a New Age
May 2022



Investing for Outcomes
Why Impact Is Relevant Beyond Impact Investing
April 2022



Metaverse and Money
Decrypting the Future
March 2022



Global Art Market Disruptions
Pushing Boundaries
March 2022



Women Entrepreneurs
Catalyzing Growth, Innovation, and Equity
March 2022

© 2023 Citigroup

© 2023 Citigroup

© 2023 Citigroup

If you are visually impaired and would like to speak to a Citi representative regarding the details of the graphics in this document, please call USA 1-888-800-5008 (TTY: 711), from outside the US +1-210-677-3788

IMPORTANT DISCLOSURES

This communication has been prepared by Citigroup Global Markets Inc. and is distributed by or through its locally authorised affiliates (collectively, the "Firm") [E6GYB6412478]. This communication is not intended to constitute "research" as that term is defined by applicable regulations. Unless otherwise indicated, any reference to a research report or research recommendation is not intended to represent the whole report and is not in itself considered a recommendation or research report. The views expressed by each author herein are his/ her personal views and do not necessarily reflect the views of his/ her employer or any affiliated entity or the other authors, may differ from the views of other personnel at such entities, and may change without notice.

You should assume the following: The Firm may be the issuer of, or may trade as principal in, the financial instruments referred to in this communication or other related financial instruments. The author of this communication may have discussed the information contained herein with others within the Firm and the author and such other Firm personnel may have already acted on the basis of this information (including by trading for the Firm's proprietary accounts or communicating the information contained herein to other customers of the Firm). The Firm performs or seeks to perform investment banking and other services for the issuer of any such financial instruments. The Firm, the Firm's personnel (including those with whom the author may have consulted in the preparation of this communication), and other customers of the Firm may be long or short the financial instruments referred to herein, may have acquired such positions at prices and market conditions that are no longer available, and may have interests different or adverse to your interests.

This communication is provided for information and discussion purposes only. It does not constitute an offer or solicitation to purchase or sell any financial instruments. The information contained in this communication is based on generally available information and, although obtained from sources believed by the Firm to be reliable, its accuracy and completeness is not guaranteed. Certain personnel or business areas of the Firm may have access to or have acquired material non-public information that may have an impact (positive or negative) on the information contained herein, but that is not available to or known by the author of this communication.

The Firm shall have no liability to the user or to third parties, for the quality, accuracy, timeliness, continued availability or completeness of the data nor for any special, direct, indirect, incidental or consequential loss or damage which may be sustained because of the use of the information in this communication or otherwise arising in connection with this communication, provided that this exclusion of liability shall not exclude or limit any liability under any law or regulation applicable to the Firm that may not be excluded or restricted.

The provision of information is not based on your individual circumstances and should not be relied upon as an assessment of suitability for you of a particular product or transaction. Even if we possess information as to your objectives in relation to any transaction, series of transactions or trading strategy, this will not be deemed sufficient for any assessment of suitability for you of any transaction, series of transactions or trading strategy.

The Firm is not acting as your advisor, fiduciary or agent and is not managing your account. The information herein does not constitute investment advice and the Firm makes no recommendation as to the suitability of any of the products or transactions mentioned. Any trading or investment decisions you take are in reliance on your own analysis and judgment and/or that of your advisors and not in reliance on us. Therefore, prior to entering into any transaction, you should determine, without reliance on the Firm, the economic risks or merits, as well as the legal, tax and accounting characteristics and consequences of the transaction and that you are able to assume these risks.

Financial instruments denominated in a foreign currency are subject to exchange rate fluctuations, which may have an adverse effect on the price or value of an investment in such products. Investments in financial instruments carry significant risk, including the possible loss of the principal amount invested. Investors should obtain advice from their own tax, financial, legal and other advisors, and only make investment decisions on the basis of the investor's own objectives, experience and resources.

This communication is not intended to forecast or predict future events. Past performance is not a guarantee or indication of future results. Any prices provided herein (other than those that are identified as being historical) are indicative only and do not represent firm quotes as to either price or size. You should contact your local representative directly if you are interested in buying or selling any financial instrument, or pursuing any trading strategy, mentioned herein. No liability is accepted by the Firm for any loss (whether direct, indirect or consequential) that may arise from any use of the information contained herein or derived herefrom.

Although the Firm is affiliated with Citibank, N.A. (together with its subsidiaries and branches worldwide, "Citibank"), you should be aware that none of the other financial instruments mentioned in this communication (unless expressly stated otherwise) are (i) insured by the Federal Deposit Insurance Corporation or any other governmental authority, or (ii) deposits or other obligations of, or guaranteed by, Citibank or any other insured depository institution. This communication contains data compilations, writings and information that are proprietary to the Firm and protected under copyright and other intellectual property laws, and may not be redistributed or otherwise transmitted by you to any other person for any purpose.

IRS Circular 230 Disclosure: Citi and its employees are not in the business of providing, and do not provide, tax or legal advice to any taxpayer outside of Citi. Any statements in this Communication to tax matters were not intended or written to be used, and cannot be used or relied upon, by any taxpayer for the purpose of avoiding tax penalties. Any such taxpayer should seek advice based on the taxpayer's particular circumstances from an independent tax advisor.

© 2023 Citigroup Global Markets Inc. Member SIPC. All rights reserved. Citi and Citi and Arc Design are trademarks and service marks of Citigroup Inc. or its affiliates and are used and registered throughout the world.

NOW / NEXT

Key Insights regarding the future of Treasury Leadership

INNOVATION

Our study finds that companies that have nurtured treasury teams to be leaders in their field enjoy better financial performance. Company earnings to revenue ratio increases significantly between the bottom 25% and top 25% of treasuries. / Through this study, we see how the top treasury performers achieved success – the opportunity is now there for all.



POLICY

The study finds broad policy adoption by treasury, with 70% of larger companies indicating that policy exists across all areas of their treasury responsibility. Policy gaps are more prevalent in companies with annual revenues less than $10 billion. / Effective treasury policies, delivered through processes to deliver against a documented treasury strategy, and managed through key performance indicators, are critical for achieving financial risk management objectives.



TECHNOLOGY

The adoption and integration of treasury management systems drives the greatest improvement in overall treasury performance. Utilization and integration of enterprise resource planning and trading platforms with both banking systems and treasury management systems show a strong positive correlation with treasury sophistication. / Leading treasuries are especially focusing on digitalization as a key enabler to managing rapid changes in financial markets and business models.



© 2023 Citigroup

© 2023 Citigroup