WILEY CORPORATE F&A

TREASURY MANAGEMENT

The Practitioner's Guide

STEVEN M. BRAGG

TREASURY MANAGEMENT

The Practitioner's Guide

Steven M. Bragg

John Wiley & Sons, Inc.

Published by John Wiley & Sons, Inc., Hoboken, New Jersey.

Published simultaneously in Canada.

Library of Congress Cataloging-in-Publication Data:

Bragg, Steven M.
Treasury management : the practitioner's guide / Steven M. Bragg.
p. cm.
Includes index.
ISBN 978-0-470-49708-1 (cloth)
1. International business enterprises–Finance–Management. 2. Banks and banking, International–Management. I. Title.
HG4027.5.B73 2010
658.15'99–dc22

2009035912

Printed in the United States of America
10 9 8 7 6 5 4 3 2 1

Contents

Preface

A treasurer has a broad range of responsibilities in the modern corporation, ranging from cash management to risk management. Further, the treasurer is responsible for the proper movement of potentially large amounts of funds and the construction of hedges, which call for the integration of a comprehensive set of controls into a broad-based procedural framework. *Treasury Management: The Practitioner's Guide* shortens the treasurer's learning curve for all aspects of the position, with chapters clustered into the general categories of cash management, financing, risk management, and treasury systems.

The book is divided into four sections. In Part One, we address the various methods by which a company transfers cash, both on paper and by electronic means, and then show how to create a cash forecast and monitor its accuracy. We then cover several methods for aggregating cash from a multitude of locations, so that funds can be more effectively dispositioned. Finally, a separate chapter addresses the components of working capital and how they may be altered, thereby impacting cash flow planning.

In Part Two, we cover what the treasurer does to raise debt and equity, as well as how to invest funds. This includes a discussion of the various kinds of debt and key characteristics of each one, how to deal with credit rating agencies, and the intricacies of equity offerings. The coverage of investments includes investment criteria, types of available investments, and investment and risk reduction strategies.

Part Three addresses an increasingly important aspect of the treasurer's responsibilities, which is risk management. This includes the objectives and strategies of both interest rate and foreign exchange risk management, as well as the available risk mitigation tools that are available to the treasurer.

Finally, Part Four describes the technology that drives many treasury transactions. This includes an overview of the clearing and settlement systems used in the United States, the functions of a treasury management

system, and a discussion of how corporations can access the Society for Worldwide Interbank Financial Telecommunication (SWIFT) network.

These chapters are liberally sprinkled with examples to clarify concepts. Particular attention has also been paid to the specific accounting requirements of key treasury transactions, as well as related controls, policies, and procedures, with the intent of providing a treasurer with a complete framework for setting up and operating the treasury department.

The book answers a multitude of questions involved in running a treasury department, such as:

- How do I calculate the cost-effectiveness of a lockbox?
- How do I create a cash forecast?
- How do I set up a cross-border cash pool?
- How does notional pooling work?
- What policy changes can I implement to alter the investment in working capital?
- How can I securitize my accounts receivable?
- What types of exemptions are available from the stock registration rules?
- How do I set up a tranched cash flow strategy?
- How do I integrate risk mitigation into my investment strategy?
- How do I use forwards, futures, swaps, and options within my hedging strategy?
- How does the continuous link settlement system reduce settlement risk?
- What features should I look for in a treasury management system?

In short, *Treasury Management: The Practitioner's Guide* is the ideal sourcebook for the mechanics of how to run all aspects of the modern treasury department.

February 2010
Centennial, Colorado

About the Author

Steven Bragg, CPA, has been the chief financial officer or controller of four companies, as well as a consulting manager at Ernst & Young and auditor at Deloitte & Touche. He received a master's degree in finance from Bentley College, an MBA from Babson College, and a bachelor's degree in economics from the University of Maine. He has been the two-time president of the Colorado Mountain Club and is an avid alpine skier, mountain biker, and certified master diver. Mr. Bragg resides in Centennial, Colorado. He has written the following books:

Accounting and Finance for Your Small Business

Accounting Best Practices

Accounting Control Best Practices

Accounting Policies and Procedures Manual

Advanced Accounting Systems

Billing and Collections Best Practices

Business Ratios and Formulas

Controller's Guide to Costing

Controller's Guide to Planning and Controlling Operations

Controller's Guide: Roles and Responsibilities for the New Controller

Controllership

Cost Accounting

Essentials of Payroll

Fast Close

Financial Analysis

GAAP Guide

GAAP Policies and Procedures Manual

GAAS Guide

Inventory Accounting

Inventory Best Practices

Investor Relations

Just-in-Time Accounting

Management Accounting Best Practices

Managing Explosive Corporate Growth

Mergers and Acquisitions

Outsourcing

Payroll Accounting

Payroll Best Practices

Revenue Recognition

Run the Rockies

Running a Public Company

Sales and Operations for Your Small Business

The Controller's Function

The New CFO Financial Leadership Manual

The Ultimate Accountants' Reference

Throughput Accounting

FREE ONLINE RESOURCES BY STEVE BRAGG

Steve issues a free accounting best practices podcast. You can sign up for it at www.accountingtools.com, or access it through iTunes.

PART ONE

CASH MANAGEMENT

1

Treasury Department

The treasury department is responsible for a company's liquidity. The treasurer must monitor current and projected cash flows and special funding needs, and use this information to correctly invest excess funds, as well as be prepared for additional borrowings or capital raises. The department must also safeguard existing assets, which calls for the prudent investment of funds, while guarding against excessive losses on interest rates and foreign exchange positions. The treasurer needs to monitor the internal processes and decisions that cause changes in working capital and profitability, while also maintaining key relationships with investors and lenders. This chapter explores these and other responsibilities of the treasury department, as well as such key issues as treasury centralization, bank relations, outsourcing, and performance metrics.

ROLE OF THE TREASURY DEPARTMENT

Ultimately, the treasury department ensures that a company has sufficient cash available at all times to meet the needs of its primary business operations. However, its responsibilities range well beyond that single goal. It also has significant responsibilities in the following areas:

- *Cash forecasting.* The accounting staff generally handles the receipt and disbursement of cash, but the treasury staff needs to compile this information from all subsidiaries into short-range and long-range cash forecasts. These forecasts are needed for investment purposes, so the treasury staff can plan to use investment vehicles that are of the correct duration to match scheduled cash outflows. The staff also uses the forecasts to determine when more cash is needed, so that it can plan to acquire funds either through the

use of debt or equity. Cash forecasting is also needed at the individual currency level, which the treasury staff uses to plan its hedging operations. This topic is covered in Chapter 3, Cash Forecasting.

- *Working capital management.* A key component of cash forecasting and cash availability is working capital, which involves changes in the levels of current assets and current liabilities in response to a company's general level of sales and various internal policies. The treasurer should be aware of working capital levels and trends, and advise management on the impact of proposed policy changes on working capital levels. This topic is addressed in Chapter 5, Working Capital Management.

- *Cash management.* The treasury staff uses the information it obtained from its cash forecasting and working capital management activities to ensure that sufficient cash is available for operational needs. The efficiency of this area is significantly improved by the use of cash pooling systems. This topic is addressed in Chapter 4, Cash Concentration.

- *Investment management.* The treasury staff is responsible for the proper investment of excess funds. The maximum return on investment of these funds is rarely the primary goal. Instead, it is much more important to not put funds at risk, and also to match the maturity dates of investments with a company's projected cash needs. This topic is addressed in Chapter 8, Investment Management.

- *Treasury risk management.* The interest rates that a company pays on its debt obligations may vary directly with market rates, which present a problem if market rates are rising. A company's foreign exchange positions could also be at risk if exchange rates suddenly worsen. In both cases, the treasury staff can create risk management strategies and implement hedging tactics to mitigate the company's risk. This topic is addressed in Chapter 9, Foreign Exchange Risk Management, and in Chapter 10, Interest Risk Management.

- *Management advice.* The treasury staff monitors market conditions constantly, and therefore is an excellent in-house resource for the management team should they want to know about interest rates that the company is likely to pay on new debt offerings, the availability of debt, and probable terms that equity investors will want in exchange for their investment in the company.

- *Credit rating agency relations.* When a company issues marketable debt, it is likely that a credit rating agency will review the company's financial condition and assign a credit rating to the debt. The treasury staff responds to information requests from the credit agency's

review team and provides it with additional information over time. This topic is addressed in Chapter 6, Debt Management.

- *Bank relationships.* The treasurer meets with the representatives of any bank that the company uses to discuss the company's financial condition, the bank's fee structure, any debt granted to the company by the bank, and other services such as foreign exchange transactions, hedges, wire transfers, custodial services, cash pooling, and so forth. A long-term and open relationship can lead to some degree of bank cooperation if a company is having financial difficulties, and may sometimes lead to modest reductions in bank fees. This topic is addressed further in the Bank Relations section of this chapter.

- *Fund raising.* A key function is for the treasurer to maintain excellent relations with the investment community for fund-raising purposes. This community is composed of the *sell side*, which are those brokers and investment bankers who sell the company's debt and equity offerings to the *buy side*, which are the investors, pension funds, and other sources of cash, who buy the company's debt and equity. While all funds ultimately come from the buy side, the sell side is invaluable for its contacts with the buy side, and therefore is frequently worth the cost of its substantial fees associated with fund raising. This topic is addressed in Chapter 6, Debt Management, and Chapter 7, Equity Management.

- *Credit granting.* The granting of credit to customers can lie within the purview of the treasury department, or may be handed off to the accounting staff. This task is useful for the treasury staff to manage, since it allows the treasurer some control over the amount of working capital locked up in accounts receivable. This topic is addressed in Chapter 5, Working Capital Management.

- *Other activities.* If a company engages in mergers and acquisitions on a regular basis, then the treasury staff should have expertise in integrating the treasury systems of acquirees into those of the company. For larger organizations, this may require a core team of acquisition integration experts. Another activity is the maintenance of all types of insurance on behalf of the company. This chore may be given to the treasury staff on the grounds that it already handles a considerable amount of risk management through its hedging activities, so this represents a further centralization of risk management activities.

Clearly, the original goal of maintaining cash availability has been expanded by the preceding points to encompass some types of asset management, risk management, working capital management, and the lead role

in dealing with banks and credit rating agencies. Thus, the treasury department occupies a central role in the finances of the modern corporation.

TREASURY CONTROLS

Given the large sums of cash involved in many treasury transactions, it is important to have a broad set of controls that help to ensure that transactions are appropriate. The following chapters contain sections on controls related to those chapter topics. At a more general level, it is critical that duties be properly *segregated* among the treasury staff, so that anyone concluding a deal never controls or accounts for the resulting cash flows. For example, trading activities should be separated from confirmation activities, so that someone fraudulently conducting illicit trades cannot waylay the confirmation arriving from the counterparty. In addition, a senior-level treasury manager should approve all trades, yet another person (possibly in the accounting department, in order to be positioned out of the departmental chain of command) should reconcile and account for all transactions.

It is also useful for someone outside of the trading function to regularly compare brokerage fees or commissions to reported transactions, to see if there are any unauthorized and unrecorded trades for which the company is paying fees.

Treasury is also an excellent place to schedule internal audits, with the intent of matching actual transactions against company policies and procedures. Though these audits locate problems only after they have occurred, an adverse audit report frequently leads to procedural changes that keep similar problems from arising in the future.

In addition to segregation controls and internal auditing, the treasurer should impose *limit controls* on a variety of transactions. These limits can prohibit or severely restrict the treasury staff from investing in certain types of financial instruments (such as some types of financial derivatives) that present an unduly high risk of capital loss. Another limitation is on the amount of business a company chooses to do with a specific counterparty, which is designed to reduce company losses in the event of a counterparty failure. Limitations can also apply to certain currencies if there appears to be some risk that a country's leaders may impose currency controls in the near future. Finally, there should be monetary caps on the transaction totals to which anyone in the treasury department can commit the company. Even the treasurer should have such a limitation, with some major transactions requiring the approval of the company president or board of directors.

The controls noted here are only general concepts. For more detailed itemizations of specific controls, please refer to the Controls sections of each of the following chapters.

Exhibit 1.1 Treasurer Job Description

Reports to: CFO

Basic function: This position is responsible for corporate liquidity, investments, and risk management related to the company's financial activities.

Principal accountabilities:

1. Forecast cash flow positions, related borrowing needs, and available funds for investment.
2. Ensure that sufficient funds are available to meet ongoing operational and capital investment requirements.
3. Use hedging to mitigate financial risks related to the interest rates on the company's borrowings, as well as on its foreign exchange positions.
4. Maintain banking relationships.
5. Maintain credit rating agency relationships.
6. Arrange for equity and debt financing.
7. Invest funds.
8. Invest pension funds.
9. Monitor the activities of third parties handling outsourced treasury functions on behalf of the company.
10. Advise management on the liquidity aspects of its short- and long-range planning.
11. Oversee the extension of credit to customers.
12. Maintain a system of policies and procedures that impose an adequate level of control over treasury activities.

TREASURER JOB DESCRIPTION

Within the organizational hierarchy, the treasurer usually reports to the chief financial officer (CFO). The treasurer's job description, as noted in Exhibit 1.1, essentially establishes responsibility for the tasks noted in the preceding sections.

POSITION OF TREASURY WITHIN THE CORPORATE STRUCTURE

In a small company, there is no treasury department at all, nor is there a treasurer. Instead, treasury responsibilities are handled by the accounting

department and are under the supervision of the controller. This is an adequate situation if there are just a few bank accounts, foreign exchange exposures are minor, and there is not an excessive need for investment or borrowing expertise. However, as a company grows, the need for a specialized treasury staff increases. This typically begins with a treasurer, who personally handles all of the responsibilities of the department, and gradually includes specialized staff to handle more complex transactions, such as cash pooling and hedging. Personnel are added either as transaction volume increases or when management decides to centralize more activities under the treasurer, as described in the next section.

Once the treasurer position is created, the treasurer usually reports directly to the CFO, and may also be asked to deliver occasional reports to the board of directors or its various committees.

TREASURY CENTRALIZATION

The treasury department deals with a number of highly regimented processes, which are noted in the Procedures sections of each of the following chapters. Given the very large amounts of funds that the treasury incorporates into its transactions, it is critical that all procedures be performed precisely as planned and incorporating all controls. Procedural oversight is much easier when the treasury function is highly centralized and progressively more difficult when it is distributed over a large number of locations. Centralization is easier, because transactions are handled in higher volumes by a smaller number of highly skilled staff. There is generally better management oversight, and the internal audit staff can review operations in a single location more easily than in a distributed environment. Further, treasury activities frequently involve complicated terminology that is incomprehensible to nontreasury specialists, so it makes sense to centralize operations into a small, well-trained group.

Another reason for using treasury centralization is the presence of an enterprise resources planning (ERP) system that has been implemented throughout a company. An ERP system processes all of the transactions used to run all key operations of a company, so all of the information needed to derive cash forecasts and foreign exchange positions can be derived from a single system. If this system is available, then a centralized treasury group will find that all of the in-house information it requires is available through the nearest computer terminal. Conversely, if a company has many subsidiaries, each of which uses its own ERP or accounting system, then it becomes increasingly difficult for a centralized treasury staff to access information. Instead, it may make more sense to assign a small treasury staff to each subsidiary that is an expert in using the local system to extract information.

Exhibit 1.2 Stages in Treasury Centralization

Stage 1: Complete decentralization	Individual locations manage their own bank accounts, foreign exchange transactions, customer credit, payables, borrowings, and investments.
Stage 2: Centralized netting and hedging	A central staff nets payments between subsidiaries and hedges major foreign exchange and interest rate risks. Local locations still manage their own bank accounts, customer credit, payables, borrowings, and investments.
Stage 3: Centralized investments	In addition to prior centralization, a central treasury staff consolidates and manages all bank accounts, including pooling of funds and investment of those funds. Local locations still manage customer credit and payables.
Stage 4: Centralized working capital management	In addition to prior centralization, the central treasury staff centralizes credit granting and uses a payment factory for centralized payables management.

If a company operates in just one or a small number of countries, then banking relationships are relatively few, and can be handled by a centralized staff. However, if it operates in a multitude of countries, especially in developing countries where there may be currency controls, then there is a greater need for local treasury staff that can maintain local banking relationships and monitor local regulations that may impact treasury operations.

The preceding discussion certainly favors a centralized treasury function. However, in a company's early years, it is common to pass through a series of phases, where centralization gradually occurs over time. Exhibit 1.2 shows some typical stages in the gradual transition from dispersed to centralized treasury functions.

The transition from Stage 1 to Stage 2 may be triggered by a large loss on a foreign exchange position that could have been prevented by a proper hedge transaction, while the additional transition to Stage 3 usually arises when it becomes apparent that the increased scale of company operations has resulted in so many bank accounts that cash is not being effectively pooled and invested. In Stage 3, it is common to first create local cash pools by country, then to progress to an international cash pool in order to further aggregate cash for investment purposes. Stage 4 involves the complete integration of the accounts receivable and payable portions of working capital into the treasury department. In many companies, there is considerable resistance to Stage 4, on the grounds that working capital should remain under the control of local managers, and that centralization calls for the

prior installation of an enterprise resources planning system. Thus, many companies stop at Stage 3 and do not fully centralize their treasury activities.

Even a fully centralized treasury department may find that it needs to maintain a regional treasury center in the major time zones in which it operates, so that some treasury personnel are always available during the business hours of subsidiaries located in their regions. This typically means that a company operates a regional treasury center in one of the major money center cities of the European time zones, such as Amsterdam, Brussels, London, or Zurich. Similarly, a treasury center in Chicago or New York can cover the American time zones, while an office in Singapore or Tokyo can address the needs of the Asian time zones.

Consequently, treasury centralization is usually a gradual process that progresses through several decision points as a company increases the geographic scope and scale of its operations.

TREASURY COMPENSATION

The treasury staff should not operate under a bonus plan that issues compensation based on unusually high rates of return on investment, nor for gains from active speculation in other currencies. A company's board of directors should be much more interested in conserving a company's excess cash than in putting it at risk in exchange for the possibility of improving returns by a few percentage points. Thus, it makes considerably more sense to create a compensation plan that rewards the treasury staff for its exact adherence to a detailed set of investment guidelines.

If anything, risky investment activities should result in the *opposite* of a bonus—censure and possibly termination—even if the activities resulted in outsized earnings for the company.

BANK RELATIONS

A key part of the treasury's responsibilities includes the management of a company's banking relationships. A large company may deal with dozens of banks, so it makes sense for the treasurer to gradually reduce the total number of banks with which the treasury department transacts business. By doing so, the relationship task can be refined down to only a core group of key banks. The following subsections note key aspects of bank relations.

Relationship Bank Relations

The treasurer is responsible for maintaining relations with a company's banks. There may be a number of banks to deal with, but the most critical

one is a company's *relationship bank*. This is a company's designated long-term partner, with whom the company does the bulk of its business. The bank maintains its checking and zero-balance accounts there, and may have negotiated overdraft privileges, cash pooling, and a line of credit and possibly long-term debt. A company may rely heavily on a high-quality relationship bank, so the treasurer should maintain frequent and open discussions with his counterpart at this bank.

The treasurer should be thoroughly familiar with the monthly account analysis statement that is provided by the company's bank, since it itemizes the company's transactions with the bank and the cost of the bank's processing of those transactions and other services.

Bank Account Analysis

The treasurer should receive an account analysis statement from each of the company's banks shortly after the end of each month. The statement contains a summarization of the bank's fees for services rendered and the company's usage volume for each of those fees. Fee structure will vary by bank. Exhibit 1.3 shows a rough breakdown of the types of fees to be expected.

Exhibit 1.3 Types of Fees

General Category	Services Provided
General account services	Monthly account fees for checking, zero-balance, and concentration accounts, as well as the account analysis statement fee.
Depository services	Fees on an individual basis for domestic deposits, international deposits, scanned checks, electronic payment direct sends, and fees for the electronic clearing agent. If a check scanner is used, there is also a monthly fee for that service.
Paper disbursement services	Fees on an individual basis for paper checks paid.
General ACH services	Fees on an individual basis for ACH debit and credit transactions.
Wire and other funds transfer services	Fees on an individual basis for both incoming and outbound wire transfers. There may also be a monthly fee to maintain an on-line wire transfer capability.
Information services	Monthly fee to provide reporting services, to which may be added line item fees for each transaction listed in the reports.
Investment/custody services	Monthly investment sweep fee.

In addition, the account analysis statement contains an analysis of an *earnings credit allowance*, which is used to offset service charges. It is calculated using a monthly earnings credit rate, multiplied by the average collected balance in the account for the month. Because the earnings credit rate is low, the amount of credit earned to offset service charges will be minimal, unless the treasurer chooses to retain large cash balances in the account. Also, the earnings credit allowance can be used only to offset service charges incurred in the reporting period. If the earnings credit is higher than the service charges, then the company loses any unused earnings credit. Since any other type of investment carries a higher interest rate than the earnings credit allowance, it is generally better to shift funds to an investment account elsewhere and simply pay the bank its service charges.

The treasurer should compile the per-unit and per-month charges listed in the account analysis statement, and use this information to periodically conduct a comparison to the fees charged by other competing banks. While it is quite time-consuming to switch a company's account-level banking business to a new bank, the analysis can be useful for negotiating down those existing fees having the largest impact on the company's total service charges.

Bank Account Management

One of the most inefficient activities in bank relations is maintaining up-to-date lists of bank account signatories—that is, authorized check signers. The typical bank requires not only a signature card containing the signatures of all signatories, but also a board resolution approving the check signers. Further, each bank wants the same information, but in a different format, so there is no way to standardize the reporting required by each bank. This can be a real problem when a company has hundreds of bank accounts that are spread among multiple banks, since ongoing personnel turnover is bound to result in a continuing authorization updating process. There are more efficient methods being discussed for electronic bank account management (eBAM), but these discussions have only just begun to translate into commercial products. In the meantime, the treasury staff should have a quarterly procedure to review and update authorized signatories.

In addition to signatory management, the treasury staff must integrate information from bank accounts into its treasury management system, so that it has immediate access to bank transactional information. This integration process can take months to set up communication channels, exchange encryption and signing keys, configure formats, and test the interface. Given the large number of bank accounts used by larger companies, and ongoing account turnover, a treasury staff is constantly monitoring the progress of these integration efforts by its information technology staff.

Loan Covenants

The treasurer should have an excellent knowledge of the loan covenants imposed on the company by its banks, and be in frequent communication with them regarding any approaching covenant violations. A treasurer who spends considerable time with his banking counterparts is much more likely to be granted a waiver of a covenant violation than one who suddenly springs a violation on bankers whom he barely knows. However, a prolonged violation is likely to yield additional covenants, higher fees, or an interest rate increase. Also, if a loan was originally priced below the market rate, a lender will more likely impose fees in response to a covenant breach, simply to improve its rate of return on the loan.

Another factor related to covenant violations is the length of a company's relationship with a lender. If the treasurer dropped the offer of a relationship bank in favor of lower-priced offer from a new lender, he may find later that the new lender set tight covenants in hope of a violation, so that it could ratchet up its fees.

Collateral

When dealing with lenders, the treasurer should use great caution in allowing company assets to be used as collateral on various loans. A lender will always attempt to maximize its access to company assets through broad-based collateral provisions, but this leaves little room for the use of those assets for additional loans at some point in the future. If a treasurer allows this situation to occur, then the result is a senior lender who has a collateral position in virtually all company assets, and any number of junior lenders whose collateral positions fall behind the senior lender's and who accordingly charge much higher rates of interest to offset their increased risk. A better scenario is to fight off demands for broad-based collateral agreements, instead of apportioning out specific assets, so that the corporate asset base can be stretched as far as possible among multiple loans. This approach requires considerable negotiation skill with bankers and is more achievable if a company is reporting excellent financial results.

TREASURY OUTSOURCING

There are several levels of outsourcing that can be applied to the treasury department, ranging from relatively minimal technology outsourcing to a broad transfer of the bulk of the department's activities to a third party.

It is possible to shift a company's treasury management system (TMS) to a third party under an application service provider (ASP) arrangement. Not only does this allow a company to eliminate the capital cost of acquiring the software and hardware needed for a TMS, but it also eliminates the need

for in-house maintenance staff to operate the system. Further, the ASP should have a considerable array of controls installed around its system to limit access, provide disaster recovery services, and so on. Many companies consider these added controls to be of considerable value, especially those public companies whose managers must personally certify their systems of internal control. Under this outsourcing scenario, the in-house treasury staff is retained, but the computer systems it uses are now accessed through the Internet, rather than through a local server.

A more expansive form of outsourcing is to retain a treasurer on the corporate staff, while shifting most other treasury functions to a third party. This means that functions such as cash flow management, foreign exchange deal execution and confirmation, cash pool management, netting, and reporting are provided by the third party. The treasurer reviews the performance of the third party against the benchmarks itemized in a service-level agreement, and sets up policies, conducts bank relations, acquires new funding, and develops the strategic direction of the department. The problem is that nearly all expertise has now left the company, which can be a problem if the company chooses to end the outsourcing arrangement and reconstitute the department in-house.

Outsourcing cannot always be proven to provide significant cost savings since the third party must also build an adequate profit into its service fee. Thus, a key reason for shifting to outsourcing may simply be that a company has experienced problems in the past with controls, transactional errors, or fraud, and so prefers to shift the function to a group of outside professionals who are presumably more competent.

Outsourcing is an especially viable option for smaller companies having smaller cash balances, banking relationships, and foreign exchange transactions. For these companies, it can be expensive to maintain a group of specialists to engage in and monitor a relatively low volume of transactions. However, as a company and its financing activities grow, it may become more cost-effective to transition the treasury function back in-house.

Treasury Metrics

Many treasury departments find that their performance falls outside of a company's normal set of performance metrics. The standard of performance is earnings before interest, taxes, depreciation and amortization (EBITDA), which essentially focuses on operational results. However, since the treasury department's primary impact is on interest expense, foreign exchange exposure, and liquidity, it does not fall within the EBITDA metric. Thus, even a stellar treasury performance may go unnoticed! The treasury department needs to look outside of EBITDA for performance measures that reveal its true effectiveness. The following subsections describe possible metrics for the treasury function.

Earnings Rate on Invested Funds

A company's investments can include interest income or an increase in the market value of securities held. The *earnings rate on invested funds* is a good measurement for tracking investment performance. To calculate it, summarize the interest earned on investments, as well as the change in market value of securities held, and divide by the total amount of funds invested. Since the amount of funds invested may fluctuate substantially over the measurement period, this can be an average value. The amount of interest earned should not be based on the actual interest paid to the company, but rather on the accrued amount (since the date of actual payment may fall outside of the measurement period). The formula is as follows:

$$\frac{\text{Interest Earned} + \text{Increase in Market Value of Securities}}{\text{Total Funds Invested}}$$

Example

The Rake and Mow Garden Centers corporate parent is earning a considerable return from its chain of small-town garden centers. Its treasurer wants to know its earnings rate on invested funds during the past year. It had $5,500,000 of invested funds at the beginning of the year and $6,200,000 at the end of the year. It earned $75,000 in interest income, and had a net gain of $132,000 on its short-term equity investments. Its total earnings rate on invested funds was as follows:

$$\frac{\text{Interest Earned} + \text{Increase in Market Value of Securities}}{\text{Total Funds Invested}}$$

$$= \frac{\$75{,}000 \text{ Interest Earned} + \$132{,}000 \text{ Increase in Market Value of Securities}}{(\$5{,}500{,}000 + \$6{,}200{,}000)/2}$$

$$= \underline{\underline{3.5\%}} \text{ Earnings Rate on Invested Funds}$$

A company can place too great a degree of reliance on this measurement, resorting to increasingly risky investments in order to achieve a higher earnings rate. The board of directors must realize that a reasonable, but not spectacular, amount of return is perfectly acceptable, because a company should also focus its investment strategy on other goals, such as liquidity and minimal loss of principal, which tend to result in lower rates of return. Thus, the rate of return metric must be evaluated alongside a summary of the *types* of investments that the treasury staff engaged in to achieve the calculated results.

Borrowing Base Usage Percentage

The *borrowing base usage percentage* is an excellent measure for keeping track of the amount of debt that a company can potentially borrow, based on that portion of its accounts receivable, inventory, and fixed assets that are not currently being used as collateral for an existing loan. A treasurer should have this information available on all standard internal accounting reports, so that the company's available debt capacity is easily available. It is particularly useful when employed within a cash budget, so that one can see at a glance not only the amount of any potential cash shortfalls, but also the ability of the company to cover those shortfalls with collateralized debt from existing assets.

To calculate the borrowing base usage percentage, multiply the current amount of accounts receivable, less those invoices that are more than 90 days old, by the allowable borrowing base percentage (as per the loan document). Then multiply the current amount of inventory, less the obsolescence reserve, by the allowable borrowing base percentage (as per the loan document). Add the results of these two calculations together and divide the sum into the amount of debt outstanding. It is also possible to include in the denominator the amount of fixed assets (net of a borrowing base percentage), but many lenders do not allow a company to use fixed assets as part of its collateral, on the grounds that fixed assets are too difficult to liquidate. The formula is as follows:

$$\frac{\text{Amount of Debt Outstanding}}{\begin{array}{c}(\text{Accounts Receivable} \times \text{Allowable Percentage}) \\ +(\text{Inventory} \times \text{Allowable Percentage})\end{array}}$$

Example

The Spinning Wheel Company, maker of heirloom-quality spinning wheels, has been in a breakeven cash flow situation for a number of years. The market for its products is gradually declining, and the president is searching for alternative products that will shift the company into a more profitable situation. In the meantime, she needs to know the proportion of debt available under the company's borrowing arrangement, in order to see how much funding is available to start new lines of business. Under the terms of the loan, the borrowing base percentage for accounts receivable is 70 percent, 50 percent for inventory, and 20 percent for fixed assets. According to the company's balance sheet, it has the following assets and liabilities:

Account	Amount
Accounts receivable	$350,000
Inventory	$425,000
Fixed assets	$205,000
Accumulated depreciation	–$65,000
Loans	$250,000

The borrowing base calculation for the denominator of the ratio is as follows:

$350,000 Accounts receivable × 70% borrowing base	$245,000
$425,000 Inventory × 50% borrowing base	212,500
$140,000 Net fixed assets × 20% borrowing base	28,000
Total borrowing base	$485,500

(Note that the fixed assets borrowing base calculation was net of the accumulated depreciation figure; otherwise, the borrowing base would not properly reflect the reduced resale value of older fixed assets.)

Using the preceding borrowing base calculation, the president of Spinning Wheel can complete the borrowing base usage percentage as follows:

$$\frac{\$250,000 \text{ Loans Outstanding}}{\$485,500 \text{ Total Borrowing Base}} = 51.5\% \text{ Borrowing Base Usage}$$

The president notices that about one-half of the total borrowing base has been used to collateralize existing debt levels. Also, by subtracting the numerator from the denominator, she sees that the company can borrow another $235,500 before the borrowing base is maximized.

Other Metrics

If a company is operating in a negative or neutral cash flow situation and has minimal available sources of excess cash, then the *accuracy of its cash forecast* might be a useful metric. The treasury staff needs to predict cash balances as close to actual results as possible, so that the company does not find itself running out of cash. However, it is a difficult metric to hold the treasurer responsible, because the sources of information that comprise the forecast come from all over the company, and the treasurer is not responsible for those cash flows. Thus, even if the cash forecast is inaccurate, the cause may not lie within the control of the treasury department.

Another possible metric is *bad debts as a percentage of sales*. This metric is relevant only if the treasury department is responsible for the granting of customer credit. However, if the accounting department is responsible for collections, then this percentage is really the joint responsibility of the treasurer and the controller.

A more viable metric is a *transaction error rate*, which can be subdivided by each type of transaction in which the treasury staff engages. This can be

a valuable tool for upgrading controls, procedures, and training, to mitigate the risk of such errors occurring again. This metric is not easily translated into a simplified presentation report that compares error totals by period because some errors may have much worse repercussions than others, and this is not readily apparent in a simplified report.

It is also possible to track the *cost of outside services*. The most obvious one, and most easily derived, is the cost of banking services, which can be tracked on a trend line. This information can also be compared to benchmark information, or used to compare the fees of different provider banks; the comparison provides a tool for negotiating reduced service charges.

A final metric to consider is *unhedged gains and losses*. These gains and losses can be quite large, and would initially appear to be a good way to judge the hedging activity of the treasury staff. However, the amount of hedging risk that a company chooses to expose itself to is set by the board of directors (admittedly with the advice of the treasurer), and the treasury staff is supposed to follow the board's guidelines. If the board elects not to hedge, then there will be gains and losses, but they will not be the responsibility of the treasurer.

Metrics Summary

The treasury department is not easily measured, and in fact is particularly resistant to metrics. A well-run treasury department will produce unspectacular gains on its investments, and will manage to avoid outsized gains or losses on its currency positions, while ensuring that corporate cash needs are met in a steady and reliable manner. In short, the treasury department provides functions that appear to be largely invisible unless something goes wrong—and it is difficult to build metrics around such a situation.

Of the two metrics fully explored here, the earnings rate on invested funds should be used with considerable caution, while the borrowing base usage percentage can provide useful information, but only in regard to what may be a limited amount of available borrowing capacity.

SUMMARY

A well-run treasury department is critical for the proper management of a company's liquidity. It is staffed by specialists in money and risk management, who are responsible for aggregating cash flow information from around the company, integrating it with current market data, and managing the ebb and flow of cash in a conservative and responsible manner that does not put the company's capital at risk.

The following chapters delve into considerably more detail regarding the mechanics of cash forecasting and cash concentration, the management

of working capital, debt, equity, and investments, and how to use hedging to mitigate various financing risks. Where needed, the chapters include considerable detail regarding the policies, procedures, controls, and accounting required to ensure that treasury activities are properly enacted and accounted for.

2

Cash Transfer Methods

The treasurer should understand the implications of different methods of transferring cash to or from a company, since there are significant differences in the costs and cash flow speed of each one. Further, the level of manual processing and related controls is significantly different for each kind of transfer, which has a major impact on the long-term efficiency of the finance and accounting functions. This chapter intends to give the treasurer a thorough understanding of each form of cash transfer; when it should be used; what it will cost; and any required policies, procedures, and controls.

CHECK PAYMENTS

A *check payment* is made on a paper document, which has traditionally been physically routed from the payer to the payee, to the payee's bank, and then back to the payer's bank. The number of routings and the need for physical handling of the check results in significant delays in the transfer of cash between the principal parties.

The vast majority of checks are issued directly by companies. However, they may also be issued directly by a bank, which is called a *bank check* or *bank draft*. The bank check is a payment on behalf of the payer, which is guaranteed by the bank (and therefore of value to the payee). The bank can safely issue this guarantee because it immediately debits the payer's account for the amount of the check, and therefore has no risk. Not only is this a safe transaction for the bank, it is also beneficial to the bank, since the bank has ownership of the funds from the time when it debits the payer's account to when the money is eventually paid to the payee (which could be several weeks, depending on when the payer elects to send the check to the payee).

Mechanics of a Check Payment

Portland Cement Company creates a check to pay for a supplier invoice. It immediately adjusts its own records to reflect the reduction in available cash. However, its bank balance remains unchanged for several days because several additional events must occur. First, there is a delay while the payment is delivered through the postal service, which is the *mail float*. Second, the supplier must deposit the check at its bank; the time from when the supplier receives the check and deposits it is the *processing float*. The duration of the processing float is driven by the recipient's internal processes, staff training, and the existence of any work backlog. Third, the time between when the check is deposited and when it is available to the recipient is *availability float*. Availability float is generally no longer than two days. The time between when the check is deposited and when it is charged to the payer's account is the *presentation float*. Thus, while the check is clearing, Portland Cement retains ownership of the payment amount at its bank.

The same process works in reverse when a company receives a payment from a customer. In this instance, the company receives a payment and records the receipt in its own records, but must wait multiple days before the cash is credited to its bank account. This *availability float* works against the company, because it does not immediately have use of the funds noted on the check.

The combination of the floats associated with these inbound and outbound check payments is the *net float*. The net float should be relatively neutral, but a company can influence it with more aggressive working capital management to accelerate inbound payments and delay outbound payments (as described in Chapter 5).

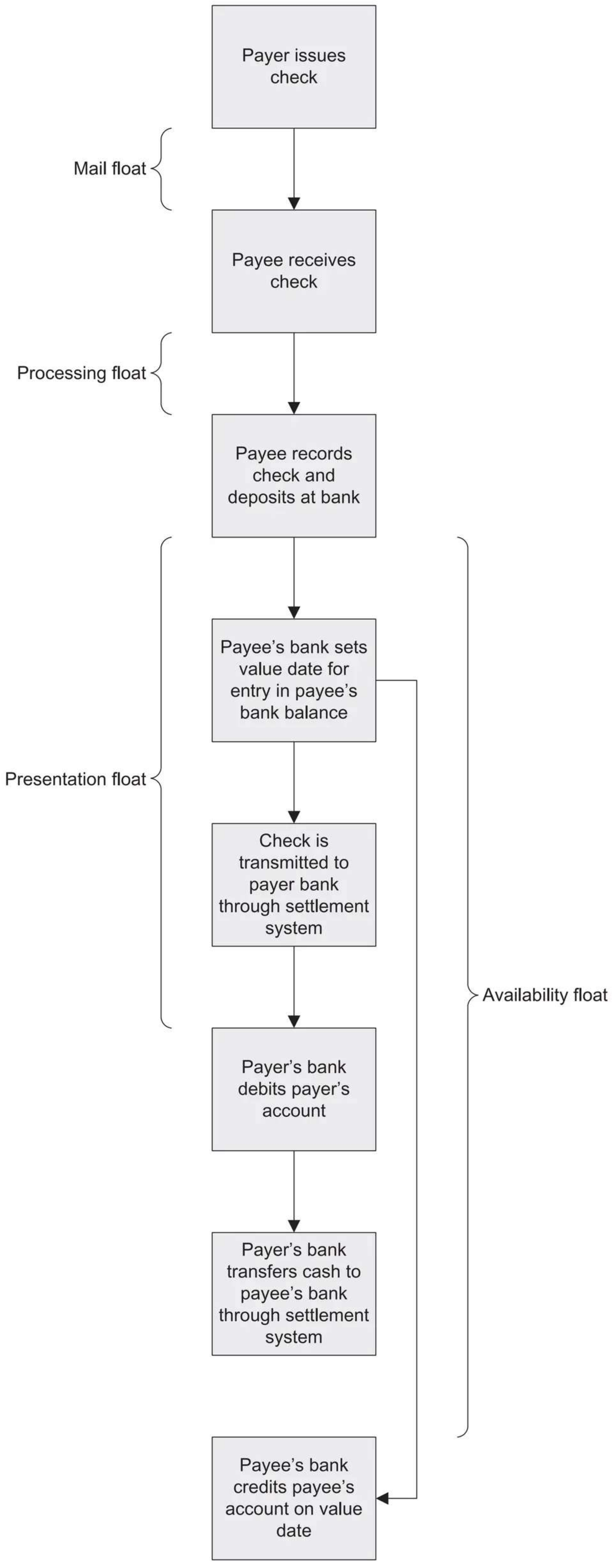
The check process flow, with float periods included, is shown in Exhibit 2.1.

Investing Float-Related Funds

When a company has written a large volume of checks that have not yet cleared, the available cash balance shown by the company's bank will be larger than the company's ledger balance. If the treasurer can reliably predict how long it will take for the checks to clear, it is then possible to invest some of the cash that is available due to uncleared checks.

If a company has significant cash holdings, then it may be worthwhile to spend time investing in float-related funds. However, maintaining an abnormally small cash balance requires active float monitoring on a daily basis. If there is a gap of even a single day in float monitoring, then the company will very likely not have sufficient funds for all presented checks, and will incur expensive account overage fees.

Exhibit 2.1 Check Process Flow



Value Dating

When a bank receives a deposit of checks from a payee, it will credit the payee's account with the funds represented by the checks. However, the bank has not really received the cash yet, since it must still collect the funds from the bank of the paying party. Until the bank collects the funds, it is at risk of having a negative cash flow situation if the payee uses the cash it has just received.

To avoid this risk, the bank posts the amount of the deposit with a *value date* that is one or more days later than the book date. This value date is the presumed date of receipt of the cash by the bank. Once the value date is reached, the payee has use of the funds. The value date may also be categorized by a bank as 1-day float, 2+-day float, or some similar term.

Value dating is not noticed by many treasurers, since it may not be mentioned at all in a monthly bank statement, and can be evaluated only through a close examination of online records. Because of this obscurity, some banks take advantage of their customers and extend the value dating out beyond the point when they have actually received the cash. This gives a bank use of the funds for an additional period of time, at the expense of its customers. If an enterprising treasurer spots this problem, it is possible to negotiate with the bank to implement shorter-duration value dating.

Check Payments through a Lockbox

A company can have its bank receive and process checks on its behalf, which is termed a *lockbox* service. The bank assigns a mailbox address to the company, which forwards this information to its customers. The customers mail their checks to the lockbox, where the bank opens the envelopes, scans all checks and accompanying documents, deposits the checks, and makes the scans available to the company through a web site. By using a lockbox, a company can eliminate some of the float involved in check processing and eliminate some check processing labor. This means that checks are no longer processed through the company's location, which greatly reduces the amount of cash controls that it needs.

How many lockboxes are needed? It depends on where customers are and the speed of the mail service from those locations. If customers are evenly distributed throughout the country and it is economically feasible to install multiple lockboxes, then the bank that will provide the lockbox can likely conduct an analysis of possible locations, based on sales by zip code. However, when conducting this analysis, it is useful to examine the larger-value checks mailed in by customers to see if the checks are being mailed from more distant locations, under a remote disbursement scheme (see the following section). If such disbursements are being made, then the lockbox analysis should use the remote disbursement bank locations, rather than the locations of the customers who are using such services.

Alternatively, if it appears that only a single lockbox is needed, then it is generally best to set up the lockbox in a large city that is roughly centrally located. For example, Chicago is an excellent location for checks being received within the United States.

Also, it is entirely possible that the company's current mail-to location yields acceptable results already. To see if this is the case, the following example shows the model results for the proposed lockboxes versus the current situation.

Example

The treasurer of Portland Cement wants to know if it would be cost-effective to open a lockbox for the collection of receivables from customers. He gathers the following information for the group of states where customers would be asked to send their payments to a lockbox:

Average number of daily payments to lockbox	165
Average size of payment	$1,450
Rate of interest per day	0.02%
Mail time savings	1.0 days
Processing time savings	0.8 days

Based on this information, the treasurer calculates the collected balance at the lockbox as follows:

$$165 \text{ items per day} \times \$1,450 \text{ each} \times (1.0 + 0.8) \text{ days saved} = \underline{\$430,650}$$

When invested at 0.02 per day, the $430,650 increase in the collected balance yields interest income of:

$$0.0002 \times \$430,650 = \underline{\$86} \text{ daily interest income}$$

The bank's lockbox fee is $0.25 per check processed, for which the daily cost calculation is:

$$165 \text{ checks} \times \$0.25 \text{ fee per check} = \underline{\$41} \text{ daily lockbox fee}$$

The treasurer finds that Portland will have a net daily gain of $45, or $11,700 over the standard number of 260 business days per year, and decides to implement the lockbox solution.

Additional factors in this calculation are the initial cost of contacting customers to have them route their payments to the new lockbox address, and the reduced cost of directly handling the checks that are now routed through the lockbox.

Remote Deposit Capture

Remote deposit capture allows a company to avoid the physical movement of received checks to its bank. Instead, one can use a special scanner and scanning software to create an electronic image of each check, which it then transmits to the bank. The bank accepts the online image, posts it to the company's account, and assigns funds availability based on a predetermined schedule.

The key benefit of remote deposit capture is the complete elimination of the transportation float that arises when shifting checks from the company to the bank—which can be a considerable delay. If the delivery person misses the bank's cutoff time, then an entire extra day is added to this float. However, since remote deposit capture typically has extended processing hours, there is far less risk of incurring this extra delay.

Another benefit is that a company no longer needs a bank that is physically located near the company location. Instead, it can consolidate its banking relationships and use just a single provider, who may be located anywhere in the country.

The system does not allow for the capture of non-U.S.-dollar checks, so they must still be deposited at a local banking institution. However, for most companies, the volume of these checks is so low that they can be mailed to a bank with minimal additional contribution to float.

Finally, the company using this system should be aware that it is financially liable for the accuracy of the information they enter into the system. This is a factor only when the system cannot correctly scan the dollar amount and the operator must manually enter the information instead. If the operator enters an incorrect check total, then the company will be liable for the variance.

Remote Disbursement

The float concept can also be applied to a company's payments. The key area that can be lengthened is the presentation float. A check written on a New York or Chicago bank will likely have a minimal lapse of a day or so before it is presented for payment. However, if a check is written on a bank in a remote location, such as Montana or Idaho, presentation may require several additional days, all of which allow a company to continue using its cash during that time. This delay is difficult for a check recipient to spot, since the check itself arrives on time, thereby triggering no late payment warnings from the accounting system.

At a more sophisticated level, a company can set up controlled disbursement accounts in different parts of the country, and then write checks on whichever banks are most distant from its check recipients.

The usefulness of remote disbursing has declined over time, as central banks have gradually driven down clearing times, with a particular emphasis on eliminating those regions where clearing intervals were unusually long.

WIRE TRANSFERS

A wire transfer sends funds to the recipient's bank account more rapidly than any other form of payment, and is the standard form of international payment. To initiate a wire, the treasury staff must send the following information to its bank:

- Sending company's name, address, and account number
- Recipient's name and account number
- Recipient bank's name and bank identification number
- Amount of the payment

To send a wire transfer, a company can access a bank's web site to enter the wiring instructions, fax the information to the bank, or call in the information. No matter what method is used, the wiring information must be received by the bank prior to its *cutoff time*. Any wiring instructions received after this time will be delayed until the beginning of the next business day.

A wire transfer between countries may not be credited to the account of the recipient for several days. Part of the problem is a bank-imposed delay in the value date. In addition, if the initiating bank does not have a direct correspondent relationship with the receiving bank, then it must route the payment through a third bank that does have a correspondent relationship with the receiving bank, which takes time. Also, some banks still manually review incoming wires and apply them to beneficiary accounts, which takes more time. Finally, the time of day when a wire is initiated can be a factor; if it begins near the close of business, then an extra day may be added to the transaction.

There are several ways to improve the situation. One is to use the same bank at both ends of a transaction. This makes the transfer a simple *book transfer*, which passes immediate value dating to the recipient. The receiving bank may be making its profits on delayed value dating; if so, specify a different receiving bank.

When a company sends funds internationally via a wire transfer, the recipient will likely be charged a stiff foreign exchange conversion fee by the receiving bank. The receiving bank can get away with a high fee (sometimes as much as 10 percent for smaller funds transfers), because it is the designated recipient, and so has a monopoly on the conversion of the funds into the local currency; the recipient cannot shop for a better exchange rate with other banks. To avoid these fees, the paying company can offer the recipient to pay in the recipient's currency in exchange for a lower price. The payer can then shop among several foreign exchange providers for the best exchange rate. At a minimum, a company should have its international customers quote in both the company's home currency and the supplier's local currency, so that the company can see if it can achieve a better exchange rate through its foreign currency provider.

Both the issuing and receiving banks in a wire transfer transaction charge high transaction fees. In particular, the payment recipient is charged a *lifting fee*, which its bank imposes for handling the transaction. This fee is deducted from the amount of the funds being transferred, which means that the amount ultimately received is always somewhat less than the amount expected, which interferes with account reconciliation.

If a company engages in a large number of wire transfer transactions, these fees can add up to a significant expense. To avoid it, some countries have created local electronic payment facilities, such as the automated clearing house (ACH) system used in the United States and Canada, which allows for low-cost electronic funds transfers. The ACH system is described in the following section.

ACH PAYMENTS

The ACH is an electronic network for the processing of both credit and debit transactions within the United States and Canada. ACH payments include direct deposit payroll, Social Security payments, tax refunds, and the direct payment of business-to-business and consumer bills. Within the ACH system, the *originator* is the entity that originates transactions, and the *receiver* is the entity that has authorized an originator to initiate a debit or credit entry to a transaction account. These transactions pass through sending and receiving banks that are authorized to use the ACH system.

The transaction costs associated with ACH payments are low, typically about 10 percent of the fees charged for wire transfers. In addition, it is easy to set up recurring payments through the ACH system, and settlements are fast. Consequently, the ACH system is the electronic payment method of choice within the geographic region where it can be used.

ACH Debits

An ACH debit allows a payee to initiate a debit of the payer's bank account, with the funds shifting into the payee's bank account. This is normally done with the written approval of the payer. The ACH debit is typically implemented between companies that plan to do business with each other for a long period of time, and who wish to avoid the expense of preparing a large amount of checks during that time. For example, ACH debits are common for lease and loan payments, as well as overnight delivery charges. The ACH debit is much less common for more complex transactions, where the payer wants to retain some control over denying payment in the event of delivery or service problems.

The ACH debit can be fraudulent, so many companies install ACH debit blocks on their accounts, preventing such debits except for those that are specifically authorized in advance, or debits that are less than a maximum cap.

The ACH debit is a boon for the initiating company, since it can predict the exact amount and timing of the incoming cash transfer. However,

the transfer will not take place if there are not sufficient funds in the payer's account.

Global ACH Payments

There is no comprehensive equivalent of the ACH system that is available worldwide. Instead, similar electronic payment systems have been created in a number of countries, which are intended for payment transactions within those countries. A few large international banks have created links between these systems, which simulate a global ACH system. Under their systems, a company enters payment information, which the banks then reformat into the standard format of the country where the payment will be made. As such integrated systems become more common, there will likely be a decline in wire transfers in favor of global ACH payments. Such payments will be especially popular among recipients, who are not charged the lifting fees that are common for wire transfers.

The existing global ACH payment system is not perfect. Here are two limitations that are of particular concern:

- *Limited coverage.* Global ACH systems are by no means truly global. National ACH systems have been built in parts of Europe, North America, India, Singapore, Hong Kong, New Zealand, and Australia, and these systems can be linked into the ACH systems of other countries. However, outside of these regions, wire transfers remain the most reliable method of funds transfer.
- *Limited remittance information.* Some national ACH systems do not allow for the inclusion of remittance information with a payment, so the payer needs to send this information by some alternative method, or make the information available on a web site.

Letters of Credit

When dealing with counterparties in other countries, it is difficult to evaluate their financial condition, and the legal systems in their countries make it more difficult to collect overdue receivables. For these reasons, exporters are more concerned with using cash transfer methods that have a high probability of payment.

A well-established method for doing so is the *letter of credit*. This is an arrangement where the importer's bank (the *issuing bank*) formally authorizes an obligation to pay the exporter's bank during a specific period of time, assuming that several documented conditions have been met. The documents that must be presented to the issuing bank include an invoice and proof of delivery. In addition, a certificate of insurance may be required, as well as a quality certificate. The issuing bank creates the letter of credit, and therefore has control over its terms.

When all terms of the letter of credit have been completed, the exporter presents all required documents to its bank, which pays the exporter the

amount noted in the letter of credit. If the exporter's bank is unwilling to make this payment, then it is called the *advising bank*, and merely passes along the documentation to the issuing bank, which is now designated as the *nominated bank*, and makes the payment. If the exporter is uncertain of the reliability of the nominated bank, it may ask its own bank to confirm the letter of credit. If the bank agrees, then it is designated as the *confirming bank*, and enters into an agreement to pay the exporter immediately following receipt of the required documents. Upon completion of this step, the letter of credit is said to be a *confirmed* letter of credit. A bank will charge a fee in exchange for being the confirming bank. This fee can be quite high if a banker feels that there is a significant risk of the issuing bank's failing to pay, and a banker may refuse confirmation entirely if the risk is perceived to be excessively high.

The key party in making a letter of credit work is the issuing bank, which is guaranteeing the credit. In order to do so, this bank may block out

Example

Portland Cement, based in Portland, Maine, is contemplating a sale of its masonry cement to Amsterdam Architectural Consultants (AAC), a firm located in the Netherlands. The contract has a total value of $500,000. Delivery will be at Amsterdam, with an expected shipment date of June 15. Payment under a letter of credit is to be through the nominated bank, which is ABN AMRO. Portland's bank, which is the advising bank, is Citibank. The steps in the letter of credit payment process are as follows:

1. AAC asks ABN AMRO to issue a letter of credit to be confirmed by Citibank.
2. ABN AMRO reviews AAC's application and issues the letter of credit. It also requests that Citibank confirm the letter of credit.
3. Citibank confirms the letter of credit and sends the letter of credit, along with a confirmation advice, to Portland.
4. Portland ships the cement to AAC.
5. Portland presents all required letter of credit documentation to Citibank, which reviews and approves them, and pays Portland $500,000, less transaction costs.
6. Citibank sends the documents to ABN AMRO, which reviews and approves them. ABN AMRO sends $500,000 to Citibank.
7. ABN AMRO sends the letter of credit documents to AAC, while also charging its account for the euro equivalent of $500,000, plus transaction costs.
8. AAC takes delivery of the masonry cement at Amsterdam on June 15.

a portion of its line of credit to the importer, which it will not release until the letter of credit transaction has been completed and the bank has been paid by the importer.

The letter of credit is useful for the importer, who receives proof of title to the goods, as well as evidence that the goods have been shipped. However, the real benefit goes to the exporter, who obtains a guarantee of payment from a bank, which is a distinct improvement over a guarantee of payment from the importer.

The letter of credit requires significant administrative time and manual effort by the importer, exporter, and their banks. There is also a significant risk that a bank will refuse to pay under the terms of a letter of credit if there are any discrepancies in the submitted documents (a number of controls are provided later in the Controls section). For these reasons, there has been ongoing pressure for a number of years to use other, more streamlined ways to transfer cash.

PROCUREMENT CARDS

A company can make smaller-scale payments with a procurement card program. This can involve the use of *debit cards*, which deduct cash directly from a company's bank account, but more commonly employ *credit cards*. Under this system, the bank managing the procurement card program will bill the payer on a monthly basis for all charges made during the month, while remitting funds to the payee within a few days of each charge. If the payer pays the monthly bill late, then the bank charges interest on the open balance. A procurement card program is an excellent tool for any company making payments to its suppliers, since it circumvents the lengthy and expensive process of issuing purchase orders, matching receiving documents to supplier invoices, and making check payments.

If a company accepts payments via credit cards, then it must sign a credit card agreement with a credit card processor, under which it agrees to be charged a processing fee in exchange for being in the program. The fee charged varies considerably by type of credit card, as well as by the amount of card volume that a company transacts. Typically, the company pays 2 to 3 percent of charged amounts to the processor as a fee. This fee is significantly lower for debit card transactions.

Because of the fee charged to the recipient of funds under a credit card program, the payee is not usually willing to accept large payments—it would seriously impact profits. Instead, procurement cards are normally used for smaller, high-volume transactions, especially in a retail environment.

Procurement cards are less commonly used for international payments, because the payer is also charged a fee for any conversions of foreign currencies back into the credit card processor's home currency.

CASH PAYMENTS

Inbound cash payments tend to be for very small transactions, though possibly in very high volume, especially in retail situations. However, business-to-business cash payments are not common.

If a company receives large volumes of cash, it is usually more secure to hire a professional money transporter to move the cash to the bank on behalf of the company. To do so, the company locks the cash into a cash box, which the transporter takes to the bank. The receiving bank also has a key for the cash box; the bank staff opens the cash box and then counts and deposits the cash for the company.

Cash is bulky, requires significant controls to maintain on-site, and does not earn interest income until deposited. Given the extra cost of counting it at the bank, it is also expensive to deposit. Consequently, companies have a strong incentive to avoid both paying with or accepting cash.

FEES FOR CASH TRANSFERS

The fees charged by banks vary considerably for different types of cash transfers. Exhibit 2.2 outlines the fee arrangements for the most common types of cash transfers.

Of these types of cash transfer, the value dating delay is usually the shortest for wire transfers, though this can be delayed in some countries where wire transfer processing is still accomplished manually. The value dating delay is normally the longest for company checks, though this can vary depending on the source of checks, as well as the negotiated value dating terms between the payee company and its bank.

The key point regarding the fees associated with cash transfers is that banks now charge their clients for both the initiation and receipt of *any* type of cash—the only difference is the amount charged. For example, the wire transfer fee can easily be 50 times more expensive than an ACH payment.

A cash transfer that crosses an international border is usually processed through a correspondent bank, which introduces both additional fees and delays into the transfer process. For these reasons, multinational companies may set up in-country bank accounts, through which these transfers are routed. By doing so, transfers can take advantage of the more automated and lower-cost settlement systems of local institutions.

SUMMARY OF CASH TRANSFER METHODS

The table in Exhibit 2.3 shows the advantages and disadvantages of each of the cash transfer methods described earlier in this chapter, along with the best use of each one.

Exhibit 2.2 Comparison of Bank Fees for Cash Transfer Methods

	Initiator Charged	Recipient Charged	Fee Size
ACH	√	√	Low
Bank check	√	√	Medium
Company check	√	√	Low
Letter of credit	√		Medium
Procurement card		√	Medium
Wire transfer	√	√	Large

Exhibit 2.3 Summary of Cash Transfer Methods

	Advantages	Disadvantages	Primary Use
ACH debit	- Assured delivery on scheduled date	- Risk of fraud	- Recurring payments
ACH payment	- Low cost - Efficient processing	- Requires setup, so not as efficient for one-time pays	- Corporate payables
Bank check	- Payment requires time to clear	- Less efficient process	- Corporate payables
Book transfer	- Low cost - Fast cash transfer	- None	- Payments between accounts at the same bank
Cash	- None	- Requires strong controls - Expensive to handle	- Retail sales
Company check	- Timing is under the control of the payer - Payer takes advantage of float	- Payment may not clear - Less efficient process	- Corporate payables
Letter of credit	- Secure for the seller	- Administratively tedious	- International payments
Procurement card	- Consolidate small billings	- Significant fee for cash recipient	- Retail and small sales
Wire transfer	- Relatively fast - Assured delivery	- Can experience delays in some countries - Requires some manual processing	- Large one-time payments that are required on short notice

In general, the ACH payment is the best alternative—it is inexpensive and can transfer cash quickly. However, it requires some initial setup time for a new payee. At the other extreme is check payments—the payee must wait a number of days before the cash arrives in its bank account, and it also involves extensive manual processing by the payer. The only viable reason for continuing to use checks is that the payer can take advantage of a favorable float. All of the other types of cash transfer lie somewhere between the extremes of these two forms of cash transfer.

CASH TRANSFER CONTROLS

Cash transfers can subject a company to a considerable risk of loss, and so require a broad array of controls, which vary considerably by transfer method. This section describes both basic and enhanced controls for multiple types of cash transfer. Flowcharts are included for the more comprehensive systems of control.

Controls for Check Payments

The control system for check payments assumes that a fully documented packet of payables information has already been created, which contains receiving, purchase order, and supplier invoice information. With this information in hand, the following controls should be used to create and monitor check payments:

- *Remove check stock from locked storage.* Unused check stock should always be kept in a locked storage cabinet. In addition, the range of check numbers used should be stored in a separate location and cross-checked against the check numbers on the stored checks to verify that no checks have been removed from the locked location.
- *Restrict access to check-signing equipment.* If a company uses any form of computerized check-printing equipment, it may be necessary to lock down all access to it. This can include any printers in which check stock is maintained, signature plates, and signature stamps.
- *Require a manual signature on checks exceeding a predetermined amount.* This control is useful when signature plates are used for smaller check amounts. When signature plates are used, there is no longer a final review of payments before they are mailed. Therefore, requiring a "real" signature for large checks adds a final review point to the payment process.
- *Check signer compares voucher package to check.* The check signer must compare the backup information attached to each check to the check itself, verifying the payee name, amount to be paid, and the

due date. This review is intended to spot unauthorized purchases, payments to the wrong parties, or payments being made either too early or too late. This is a major control point for companies not using purchase orders, since the check signer represents the only supervisory-level review of purchases.

- *Implement positive pay.* A strong control that virtually eliminates the risk of an unauthorized check's being cashed is "positive pay." Under this approach, a company sends a list of all checks issued to its bank, which clears only checks on this list, rejecting all others. However, this approach also calls for consistent use of the positive pay concept, since any manual checks issued that are not included on the daily payments list to the bank will be rejected by the bank.

- *Use electronic payments.* There are several types of fraud that employees can use when a company pays with checks, while outside parties can also modify issued checks or attempt to duplicate them. This problem disappears when electronic payments are made instead. In addition, the accounts payable staff no longer has to follow up with suppliers on uncashed checks, or be concerned about remitting payments to state governments under local escheat laws, since there are no checks.

- *Reconcile the checking account every day.* An excellent detective control, this approach ensures that any fraudulently modified checks or checks not processed through the standard accounting system will be spotted as soon as they clear the bank and are posted on the bank's web site.

Controls for Remote Deposit Capture

Remote deposit capture eliminates the need to physically transfer check payments to the local bank for deposit. However, the replacement process of converting the checks to an electronic format still requires some controls. They are:

- *Verify receipt by the bank.* When processing checks through a remote deposit capture system, always print out a verification statement that the image was successfully sent to and received by the bank, and attach this verification to copies of the checks for storage. This ensures that the deposit has taken place.

- *Train for handling of foreign checks.* Remote deposit capture works only for checks originating in the United States. However, if the person operating the scanning equipment were to mistakenly scan a foreign check, the system may indicate initial acceptance of the payment and then reject it a few days later. To avoid this

delay in check presentation, train the staff regarding the treatment of foreign checks, and use periodic audits of scanned checks to see if any such checks were erroneously entered in the system.

Controls for Electronic Payments

Electronic payments can involve large amounts of money, and so require a stringent set of controls to mitigate the risk of loss. A baseline set of controls over the standard electronic payment process is noted in Exhibit 2.4.

The controls shown in the flowchart are described in the following bullet points, in sequence from the top of the flowchart to the bottom:

- *Restrict access to master vendor file.* For those electronic payments being made automatically by the accounting software, it is important to keep tight control over changes to the vendor master file, since someone could access the file and alter the bank account information to which payments are being sent.

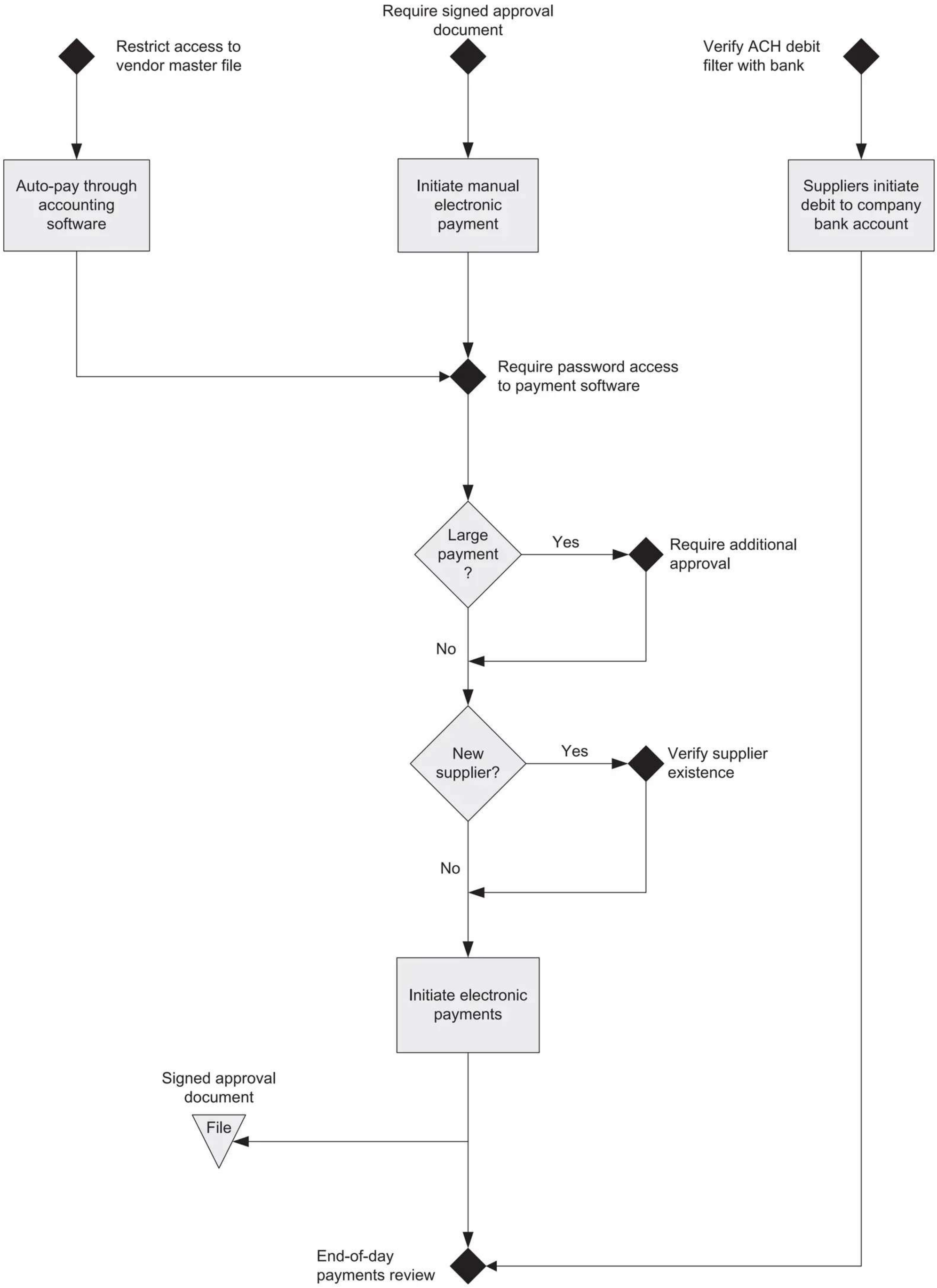
- *Require signed approval document for manually initiated electronic payments.* In a high-volume payment environment, nearly all electronic payments are routed through the accounting software, which handles the payments automatically. However, since a manually initiated payment falls outside the controls already imposed on the regular accounts payable process, the addition of an approval document is mandatory, preferably requiring multiple approval signatures.

- *Verify ACH debit filter with bank.* If the business arrangement with a supplier is for the supplier to initiate an ACH debit from the company's account, rather than the company's initiating the transfer to the supplier, then the company should verify that it has authorized the bank to allow a specific supplier to debit an account.

- *Require password access to payment software.* It is necessary not only to enforce tightly limited access to the software used to initiate electronic payments, but also to ensure that passwords are replaced on a frequent basis. This is a critical control and should be rigorously enforced.

- *Require additional approvals.* Additional approvals are useful for larger payments. Another approval should be required whenever a new supplier is set up for electronic payment, since this is an excellent spot to detect the initiation of payments to a shell company. The additional approval could be linked to the generation of a credit report on the supplier, to verify its existence as a valid business entity. The highest level of control over electronic payments would be to require dual approvals for *all* such payments, though this may prove too onerous for ongoing business operations.

Exhibit 2.4 Electronic Payment Controls



- *Require an end-of-day payments review.* A standard detection control should be to have a third party who is unrelated to the electronic payments process review all payments made at the end of each day. This review should encompass a comparison of authorizing documents to the actual amounts paid, as well as verification that payments are made to the correct supplier accounts.

The preceding set of controls relate only to the process of either issuing an electronic payment to a supplier or of allowing a supplier to debit the company's bank account, and do not address problems such as unauthorized account debits and the sheer size of potentially incorrect or fraudulent payments. The following controls address these additional issues:

- *Impose an outright debit block on all company accounts.* If the company does not wish to incur any risk of having a third party initiate a debit transaction against one of its bank accounts, it can impose a blanket debit block on those accounts, thereby preventing debit transactions from posting to a company account. A result of this control is that all electronic payments be initiated solely by the company, not by its trading partners.

- *Request a daily cumulative limit for authorized trading partner debits.* Even if a company has installed ACH debit filters that authorize only certain suppliers to initiate an ACH debit, there is still a risk that the employees of an authorized supplier could fraudulently initiate a very large ACH debit. To mitigate this risk, see if the company's bank can impose a daily cumulative limit on those suppliers who are allowed to initiate account debits.

- *Request notification of duplicate debits.* If a supplier initiates a debit transaction that is identical to one posted in the past day or two, there is an increased risk that this could be a duplicate charge. To reduce the risk of this problem going undetected, have the bank notify the company whenever a duplicate debit is posted, or (even better) prior to posting.

- *Use a separate bank account as the source of electronic payments.* Because there is a risk of making extremely large fraudulent electronic payments, a useful control is to use a separate bank account as the source of electronic payments, with cash levels kept only high enough to fund those electronic payments made during the normal course of business, based on historical patterns. If an extremely large electronic payment is due to be made, this should initiate additional perusal of the transaction before additional cash is shifted to the account from which the payment will be made. To achieve a greater level of control, the person responsible for shifting funds

into the electronic payments account should not be the same person who initiates or approves electronic payments.

Controls for Letters of Credit

The greatest risk with a letter of credit is not being paid. The documents that a payee must present in order to be paid are usually prepared and controlled by other parties, and the terms of those documents may be very strictly defined, thereby delaying payment. All controls related to letters of credit are designed to improve the odds of being paid. The following controls should be implemented prior to finalizing a letter of credit:

- *Avoid approval by the buyer.* There should not be any documentation requirement under the letter of credit where the document must be signed by someone who is under the control of the buyer, since the buyer can use this requirement to effectively block payment.
- *Avoid tight dating.* The letter of credit contains dates by which goods must be shipped and documents presented. The seller should add a large margin of error to these dates to ensure that they can be met. If they cannot be met, then the seller should avoid shipping anything until the dates have been revised and agreed to in writing by all parties. In addition, the expiry date of the letter of credit should be sufficiently far off to allow for several rounds of document resubmissions.
- *Minimize presentment documents.* If there are fewer documentation requirements under the letter of credit, then it will be easier for the payee to obtain payment. This must be negotiated with the buyer prior to issuance of the letter of credit.
- *Require a financially strong issuing bank.* The issuing bank assumes the risk of the buyer's insolvency, so the payee should insist that a bank with a strong credit rating be the issuing bank.
- *Require confirmation by a U.S. bank.* If the issuing bank is in suspect financial condition, or if the political stability of the issuing bank's country is questionable, then have a U.S. bank confirm the payment obligation. This confirmation makes the U.S. bank liable for the payment. If the confirmation cost is too high or cannot be obtained at all, then try to have the letter of credit issued outside of the political area that is causing the problem.
- *Require payment prior to buyer possession.* The letter of credit should require that the seller is paid before the buyer takes possession of the goods. Otherwise, if there are discrepancies in the presented documents, a buyer that is already in possession of the goods will be less likely to waive the discrepancies, thereby delaying payment to the seller.

The following control involves the timing of shipments under a letter of credit to ensure that the buyer will pay in the event of an amendment to the letter of credit:

Complete amendments prior to shipment. If there are issues with the letter of credit that require amendment by the buyer and seller (and agreement by the issuing and confirming banks), then verify that these changes have been completed and approved in writing *prior to* shipping the goods to the buyer. Otherwise, it is possible that the bank will not allow the amendments and refuse to pay, even though the goods have shipped.

The following control involves the creation of the seller's invoice to the buyer, to ensure that it will be acceptable to the bank:

- *Match the description of goods on the invoice to the letter of credit.* A bank will not pay under the terms of a letter of credit unless the description of goods on the invoice exactly match those on the letter of credit. The invoice preparer should be well trained on this issue, and it may also be useful to have a second person verify the invoice information.

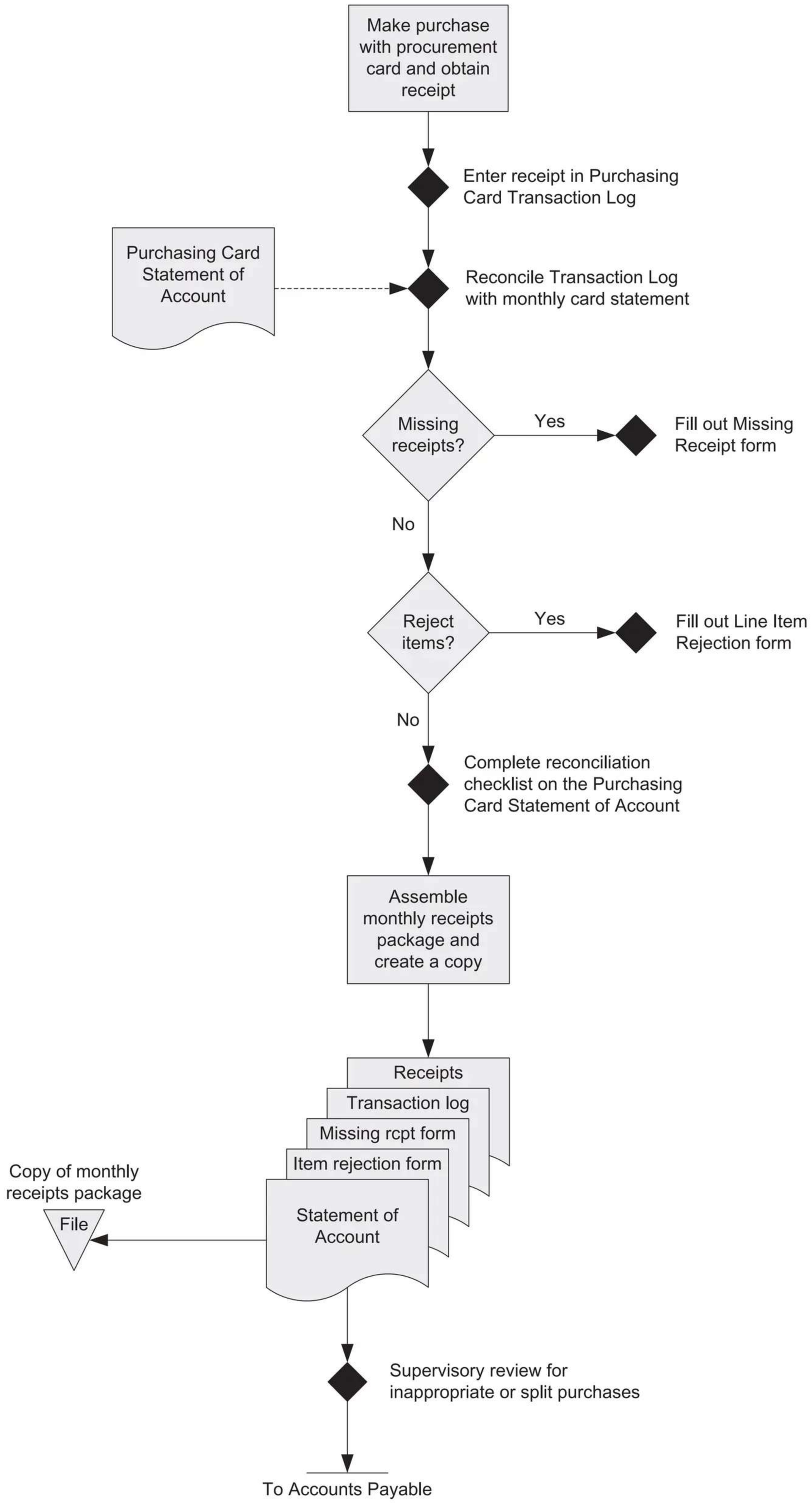
Controls for Procurement Cards

The key procurement card controls are enumerated in Exhibit 2.5, where controls are summarized next to the small black diamonds. The first control calls for card users to itemize each of their purchases in a separate log, which they then reconcile against the monthly card statement, noting missing receipts and rejected line items as part of the reconciliation. They then assemble this information into a packet of receipts and forms, and have a supervisor review it for inappropriate or split purchases, who then forwards the packet to the accounts payable department for payment.

The controls noted in the flowchart are described in the following bullet points, in sequence from the top of the flowchart to the bottom:

- *Enter receipt in procurement card transaction log.* When employees use procurement cards, there is a danger that they will purchase a multitude of items and not remember all of them when it comes time to approve the monthly purchases statement. By maintaining a log of purchases, the card user can tell which statement line items should be rejected.
- *Reconcile transaction log with monthly card statement.* Each cardholder must review his or her monthly purchases, as itemized by the card issuer on the monthly card statement.
- *Fill out missing receipt form.* Each card user should attach original receipts to the statement of account, in order to verify that they have made every purchase noted on the statement. If they do not have a receipt, they should fill out a missing receipt form, which itemizes

Exhibit 2.5 Procurement Card Controls



each line item on the statement of account for which there is no receipt. The department manager must review and approve this document, thereby ensuring that all purchases made are appropriate.

- *Fill out line item rejection form.* There must be an organized mechanism for cardholders to reject line items on the statement of account. A good approach is to use a procurement card line item rejection form, which users can send directly to the card issuer.

- *Complete reconciliation checklist.* The statement of account reconciliation process requires multiple steps, some of which cardholders are likely to inadvertently skip from time to time. Accordingly, a standard reconciliation checklist that they must sign is a useful way to ensure that the procedure is followed.

- *Supervisory review for inappropriate or split purchases.* There must be a third-party review of all purchases made with procurement cards. An effective control is to hand this task to the person having budgetary responsibility for the department in which the cardholder works. By doing so, the reviewer is more likely to conduct a detailed review of purchases that will be charged against his or her budget.

The preceding set of controls relate only to the process of tracking receipts and reconciling them against the monthly card statement. There are several additional controls that can be used to keep excessive or inappropriate purchases from being made; they are as follows:

- *Restrict purchasing levels.* A major control over the use of procurement cards is the restriction of amounts that can be purchased. This may be a maximum amount of daily purchases, a limitation on the total purchased over a month, or restriction to purchases only from suppliers having certain Standard Industry Classification (SIC) codes. This approach is extremely useful for ensuring that cardholders do not run amok with their card purchases, while ensuring that losses are restricted if cards are stolen and used by a third party to make purchases.

- *Require supervisory approval of changes in spending limits.* The initial spending limitation on a procurement card is intended to meet the purchasing needs of the user. Consequently, any request for an increase in the spending limit may mean that the user fraudulently intends to purchase beyond the budgeted spending level. To ensure that spending limits do not result in a significant level of overspending, all spending limit changes should be closely monitored and approved by a supervisor.

- *Verify that purchases are made through an approved supplier.* The purchasing staff may have negotiated special volume pricing deals with selected suppliers, so it may be necessary to review statements of account to ensure that card users are making purchases from those suppliers. This control can be made more robust by issuing an approved supplier "Yellow Pages" to all cardholders, so they know where they are supposed to make purchases.

Cash Transfer Policies

The policies in this section are used to designate a preferred form of funds transfer, and to define the authorizations for various transfers. They are as follows:

- *The preferred method of payment is by ACH transaction.* A company incurs the lowest transaction costs by using ACH transactions, and allows for precise cash planning, which makes ACH a good default form of cash transfer.
- *The preferred method of payment for amounts less than $___ is by procurement card.* For small-dollar payments, a single monthly payment through a procurement card program is more efficient than a large number of ACH payments.
- *The employees authorized to sign checks and approve electronic payments shall be reviewed at least annually.* This policy calls for a periodic review to see if the most appropriate people are involved in the check-signing and wire transfer approval processes.
- *All wire transfers greater than $___ must be approved by an authorized employee.* Many banks allow one person to set up a wire transfer, and then require a second person to log in separately and approve the transaction before it will be completed. This is an excellent method for maintaining oversight over wire transfers.

CASH TRANSFER PROCEDURES

The procedure shown in Exhibit 2.6 shows the basic steps required to issue a payment by check.

The procedure shown in Exhibit 2.7 shows the basic steps required to issue an electronic payment.

The procedure shown in Exhibit 2.8 shows the basic steps required to issue a letter of credit.

The procedure shown in Exhibit 2.9 shows the basic steps required to pay using a company procurement card.

Exhibit 2.6 Check Payment Procedure

Procedure Statement Retrieval No.: TREASURY-08

Subject: Steps required to create, sign, and issue check payments.

1. PURPOSE AND SCOPE

This procedure is used by the accounting staff to issue payments by check, and includes key control points in the process.

2. PROCEDURES

2.1 Print Checks (Payables Clerk)

1. Print the scheduled check payment report. Have the controller review and approve the report.
2. If any items on the report are not scheduled for payment, designate them as such in the payables database.
3. Unlock the cabinet containing check stock and remove a sufficient number of checks for the check run, and load the check stock into the printer.
4. Unlock the safe containing the signature plate and load it into the printer.
5. Access the accounting software, call up the check printing module, and print checks.
6. Print the check register and compare it to the original scheduled payment report. Note any discrepancies.
7. Return remaining unused check stock to the storage cabinet, and log in the range of check numbers used.
8. Return the signature plate to the safe.

2.2 Sign Checks (Payables Clerk)

1. Schedule a check signing session with the controller.
2. Attach backup documentation to each of the checks to be signed.
3. Sit with the controller during the check signing session in order to answer questions.
4. If the controller is not available, then use the backup check signer, and notify the controller that the backup person was used, and for which checks.
5. If a check amount is large enough to require a second signature, then have an additional authorized person sign the check.

2.3 Distribute Checks

1. Detach backup documentation from each check, burst one copy of the remittance advice from each check, and staple the remittance advice to the backup documentation. File the documentation by supplier name.
2. Stuff checks into envelopes and send to the mail room for mailing.
3. Compile all check numbers and amounts into an electronic file and forward to the positive pay program of the company's bank.

Exhibit 2.7 Electronic Payment Procedure

Procedure Statement Retrieval No.: TREASURY-09

Subject: Steps required to issue electronic payments.

1. PURPOSE AND SCOPE

This procedure is used by the accounting staff to issue electronic payments, and includes key control points in the process.

2. PROCEDURES

2.1 Authorize Payment (Payables Clerk)

1. Print the scheduled electronic payment report. Have the controller review and approve the report.
2. If any items on the report are not scheduled for payment, designate them as such in the payables database.
3. Access the password-protected electronic payment module in the accounting software.
4. Set up preliminary payment authorizations for all approved items on the scheduled electronic payment report.
5. Print the preliminary electronic payment register and match it against the approved list. Adjust payments to match the approved list.
6. Authorize the electronic payments.
7. Print the final electronic payment register, staple it to the approved scheduled electronic payment report, and file the packet by date.

2.2 Authorize Large Payments (Controller)

1. Access the password-protected electronic payment module in the accounting software, using a supervisory password.
2. Review and approve all electronic payments above the approval threshold that are scheduled for payment.

2.3 Final review (Assistant Controller)

1. At the end of each business day, match the amount of electronic payments as reported by the bank to the approved scheduled electronic payment report. Report any discrepancies to the controller.

Exhibit 2.8 Letter of Credit Procedure

Procedure Statement Retrieval No.: TREASURY-10

Subject: Steps required for processing a letter of credit.

1. PURPOSE AND SCOPE

This procedure is used by the treasury staff to process a letter of credit originated by a customer.

2. PROCEDURES

2.1 Review Initial Letter of Credit Document (Treasury Clerk)

1. Review the proposed letter of credit forwarded by the customer's bank. Review items include due dates for goods shipment and document presentation, the complexity of documents to be presented, and the credit rating of the issuing bank.
2. Request that the company's bank confirm the letter of credit. If the confirmation fee exceeds $___, forward the confirmation proposal to the treasurer for approval.
3. If the company's bank refuses to confirm the letter of credit, then meet with the assistant treasurer to discuss alternative financing arrangements.
4. If amendments are required, then verify that all parties have agreed to the amendments in writing. Then issue authorization to the shipping department to ship the goods, and send the shipping manager a copy of the letter of credit.

2.2 Submit Documentation (Treasury Clerk)

1. Copy the exact text of the delivered goods in the letter of credit into an invoice, and print the invoice on the letterhead of the company noted in the letter of credit.
2. Add the bill of lading for the shipment to the invoice, and forward this information to the confirming bank by overnight delivery service, along with a request for payment under the terms of the letter of credit.
3. Contact the bank daily to determine the progress of its review of the letter of credit payment request. The review should take no longer than three days. If the letter of credit expiry date is within ___ days, then notify the treasurer.
4. Upon receipt of funds, debit cash and credit accounts receivable for the full amount of the original invoice, and then debit the banking fees expense and credit cash for the transaction fees the bank deducted from the payment.

Exhibit 2.9 Procurement Card Payment Procedure

Procedure Statement Retrieval No.: TREASURY-11

Subject: Steps required to pay with a procurement card.

1. PURPOSE AND SCOPE

This procedure is used by designated staff to make purchases with a procurement card, as well as to reconcile their purchases with the month-end purchasing report and to note variances.

2. PROCEDURES

2.1 Initial Payment (Authorized Procurement Card Users)

1. When first making a purchase with a procurement card, inquire if the supplier accepts credit card payments. If so, pay with the card if the purchase is less than the per-transaction purchasing maximum for the card. When making the transaction, give the supplier the address listed on the purchasing card billing statement.
2. If a purchase is declined by the supplier, refer the matter to the procurement card manager. This may call for an increase in the authorized spend limit on the card.
3. Obtain an itemized receipt for all purchases made with the procurement card. Receipts will be used at month-end to verify purchases listed on the procurement card statement.
4. Log all receipts into a procurement card transaction log.
5. Verify that items ordered are actually received. Note all items not received.

2.2 Reconcile Purchases to Statement (Authorized Procurement Card Users)

1. Upon receipt of the monthly procurement card statement, match all items on the statement to the procurement card transaction log.
2. If any receipts are missing, contact the supplier and attempt to obtain a replacement receipt.
3. If any receipts are still missing, list them on a procurement card missing receipt form, and send it to the department manager for approval.
4. If any items on the card statement are to be disputed, circle them on the statement and note "In Dispute" next to them.
5. Sign and date the billing statement, attach the missing receipt form and all receipts to it, and forward it to the procurement card manager for approval.

2.3 Review Forwarded Expense Packets (Procurement Card Manager)

1. Upon receipt of each employee's expense packet, scan the list of purchased items to determine if any inappropriate purchases were made, or if there is any evidence of split purchases being made. If so, discuss the issue with the employee's manager to see if further action should be taken.
2. Forward the expense packet to the accounts payable department for payment.

SUMMARY

A company that wants to create an efficient cash transfer system should stay away from cash, checks, and even letters of credit—they simply involve too many controls, process steps, and administrative hassles. The better forms of cash transfer are ACH payments, wire transfers, and procurement cards, because they involve fewer of the problems just noted. Of this latter group, ACH payments and procurement cards involve the least manual intervention, and so are the preferred forms of cash transfer. While a company normally deals with all of the forms of transfer noted in this chapter, the treasurer should push for a larger proportion of ACH and procurement card payments wherever possible.

3

Cash Forecasting

Cash forecasting is absolutely crucial to the operation of every organization. If there is ever a cash shortfall, payroll cannot be met, suppliers are not paid, scheduled loan payments will not be made, and investors will not receive dividend checks. Any one of these factors can either bring down a business or ensure a change in its management in short order.

Conversely, if a company is burdened by too much cash, it may be losing the opportunity to invest it in higher-yielding, longer-term investments unless it knows its projected cash balances. A quality cash forecast ideally allows the treasurer to determine how much cash is available for short-, medium-, and long-term investments, each having progressively higher returns. Since longer-term investments may have less liquidity, it is imperative that the treasurer be able to invest the correct amounts with confidence.

In order to avoid these problems, this chapter covers how to construct a cash forecast and automate the creation of some of the information contained within it, and how to create a feedback loop for gradually increasing the accuracy of the forecast. We also describe several related topics, including the bullwhip effect and the integration of business cycle forecasting into the cash forecast.

CASH FORECASTING MODEL

The core of any cash management system is the cash forecast. It is imperative for the management team to be fully appraised of any cash problems with as much lead time as possible. The sample model shown in Exhibit 3.1 is a good way to provide this information. The model is based on the *receipts and disbursements method*, which is primarily based on a combination of actual and estimated receivables and payables.

Exhibit 3.1 Sample Cash Forecast

Cash Forecast					
Date Last Updated	**1/4/2010**				
	For the Week Beginning on				
	1/4/2010	1/11/2010	1/18/2010	1/25/2010	2/1/2010
Beginning Cash Balance	**$ 1,037,191**	$ 1,009,796	$ 936,763	$ 957,771	$ 915,935
Receipts from Sales Projections:					
Coal Bed Drilling Corp.					
Oil Patch Kids Corp.					
Overfault & Sons Inc.					
Platte River Drillers					
Powder River Supplies Inc.					
Submersible Drillers Ltd.					
Commercial, Various					
Uncollected Invoices:					
Canadian Drillers Ltd.			$ 9,975		
Coastal Mudlogging Co.			$ 6,686		
Dept. of the Interior	$ 18,250			$ 11,629	
Drill Tip Repair Corp.				$ 5,575	
Overfault & Sons Inc.			$ 9,229		
Submersible Drillers Ltd.				$ 4,245	
U.S. Forest Service		$ 2,967	$ 8,450	$ 8,715	
Cash, Minor Invoices	$ 2,355	$ —	$ 3,668	$ —	$ 21,768
Total Cash In	$ 20,605	$ 2,967	$ 38,008	$ 30,164	$ 21,768
Cash Out:					
Payroll + Payroll Taxes		$ 62,000		$ 65,000	
Commissions		$ 7,000			
Insurance	$ 18,000				$ 18,000
Rent	$ 20,000				$ 20,000
Capital Purchases			$ 10,000		
Other Expenses	$ 10,000	$ 7,000	$ 7,000	$ 7,000	$ 10,000
Total Cash Out:	$ 48,000	$ 76,000	$ 17,000	$ 72,000	$ 48,000
Net Change in Cash	$ (27,395)	$ (73,033)	$ 21,008	$ (41,836)	$ (26,232)
Ending Cash:	$ 1,009,796	$ 936,763	$ 957,771	$ 915,935	$ 889,703

Cash Forecast

2/8/2010	2/15/2010	2/22/2010	3/1/2010	(partial) Mar-10	Apr-10	May-10
$ 889,703	$ 875,600	$ 793,600	$ 799,565	$ 816,665	$ 816,133	$ 778,883
				$ 36,937		$ 174,525
	$ 12,965			$ 48,521		$ 28,775
			$ 25,400		$ 129,000	
			$ 31,000	$ 53,000		
			$ 8,700		$ 18,500	$ 14,500
				$ 22,500	$ 16,250	$ 16,250
					$ 25,000	$ 25,000
$ 2,897				$ 18,510		
$ 2,897	$ —	$ 12,965	$ 65,100	$ 179,468	$ 188,750	$ 259,050
	$ 68,000			$ 142,000	$ 138,000	$ 138,000
	$ 7,000			$ 7,000	$ 8,000	$ 9,000
			$ 18,000		$ 18,000	$ 18,000
			$ 20,000		$ 20,000	$ 22,000
$ 10,000				$ 10,000	$ 10,000	$ 10,000
$ 7,000	$ 7,000	$ 7,000	$ 10,000	$ 21,000	$ 32,000	$ 32,000
$ 17,000	$ 82,000	$ 7,000	$ 48,000	$ 180,000	$ 226,000	$ 229,000
$ (14,103)	$ (82,000)	$ 5,965	$ 17,100	$ (532)	$ (37,250)	$ 30,050
$ 875,600	$ 793,600	$ 799,565	$ 816,665	$ 816,133	$ 778,883	$ 808,933

The cash forecast in the exhibit lists all cash activity on a weekly basis for the next nine weeks, which is approximately two months. These are followed by a partial month, which is needed in case the month that falls after the first nine weeks is also contained within the nine weeks. In the exhibit, the first week of March is listed, so the remaining three weeks of that month are described within a partial month column. There are also two more full months listed in the last two columns. By using this columnar format, the reader can see the expected cash flows for the next one-third of a year. The final two months listed in the forecast will tend to be much less accurate than the first two, but are still useful for making estimates about likely cash positions. This format can easily be extended to cover any number of additional months.

The top row of the report lists the date when the cash report was last updated. This is crucial information, for some companies will update this report every day, and the management team does not want to confuse itself with information on old reports. The next row contains the beginning cash balance. The leftmost cell in the row is encircled by heavy lines, indicating that the person responsible for the report should update this cell with the actual cash balance as of the first day of the report. The remaining cells in the row are updated from the ending cash balance for each period that is listed at the bottom of the preceding column. The next block of rows contains the expected receipt dates for sales that have not yet occurred. It is useful to break these down by specific customer and type of sale, rather than summarizing it into a single row, so that it can more easily be reviewed. The sales staff should review this information regularly to see if the timing and amount of each expected cash receipt is correct.

The next block of rows in the exhibit show the specific weeks within which accounts receivable are expected to be collected. This section can become quite large and difficult to maintain if there are many accounts receivable, so it is better to list only the largest items by customer, and then lump all others into a minor invoices row, as is the case in the exhibit. The input of the collections staff should be sought when updating these rows, since they will have the best insights into collection problems. The sum of all the rows thus far described is then listed in the "Total Cash In" row.

The next block of rows in the exhibit shows the various uses for cash. A service company is being used in this forecast, so the largest single use of cash is payroll, rather than the cost of goods sold, as would be the case in a manufacturing company. Other key cash outflows, such as monthly insurance, commission and rental payments, and capital purchases, are shown in the following rows. Being a service business, there are few other expenses, so they are lumped together in an "Other Expenses" row. In this case, cash payments have a slight tendency to be toward the beginning of the month, so the cash flows are adjusted accordingly. If the cost of goods sold had been a major component of the forecast, then it would have been listed either in aggregate and based on a percentage of total sales, or else split into a dif-

ferent cash outflow for each product line. The latter case is more useful when the gross margin is significantly different for each product line and when the sales by product line vary considerably over time.

The bottom of the exhibit summarizes the end-of-period cash position, which rolls forward into the beginning cash balance for the next reporting period.

There are a few other rows that could be added to the model, depending on the type of payments that a company makes. For example, there could be an annual dividend payment, quarterly income tax payment, or monthly principal and interest payments to lenders. These and other items can be added to enhance the basic model, if needed. However, the model requires considerable effort to update, so carefully consider the extra work load needed before adding more information requirements to it.

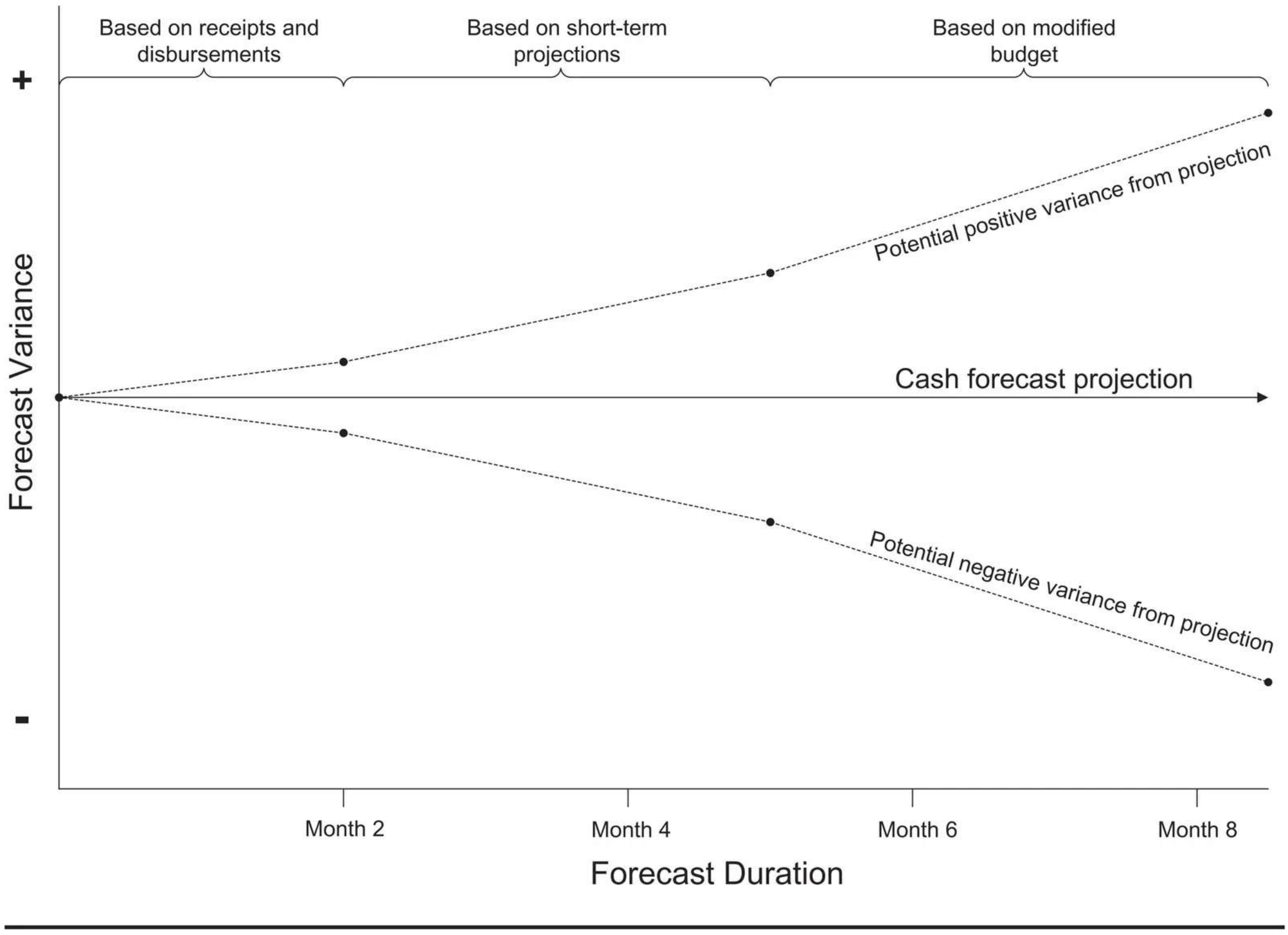
The cash forecast shown in Exhibit 3.1 relies on anticipated cash receipts and disbursements for the first month, but then gradually transitions into a greater reliance on sales forecasts and expense trend lines. To extend the forecast even further into the future, the treasurer must rely to a greater extent on the annual budget, as modified for the company's actual experience subsequent to finalization of the budget. Thus, a long-duration cash forecast draws on input from three sources—receipts and disbursements, then short-term projections, and then the budget. Since each of these sources of information is progressively less accurate, the forecasted results will be correspondingly less reliable. The impact of different sources of information on the reliability of the cash forecast is shown in Exhibit 3.2.

INFORMATION SOURCES FOR THE CASH FORECAST

The cash forecast shown in the preceding exhibit primarily includes *scheduled items*, which are specific cash inflows and outflows that can be predicted with a reasonable degree of accuracy. Examples of scheduled items are specific accounts receivable and scheduled payroll payments. If the treasurer wants an accurate cash forecast, then as much of it as possible should be comprised of scheduled items.

It is not always possible to include all of the scheduled items in the cash forecast; a company of reasonable size may have several thousand scheduled items to include in the forecast. In such cases, it is necessary to summarize many of the smaller items using the *distribution method*. Under this method, the treasurer examines historical cash flows to create an estimate of the timing and amounts of future cash flows. In the cash flow exhibit, the "Cash, Minor Invoices" and "Other Expenses" line items were generated using the distribution method. There are too many smaller incoming invoice payments to list individually, so instead we estimate the approximate arrival dates and amounts based on their occurrence in the past, possibly using the company's historical days sales outstanding. Small expenses are also quite predictable.

Exhibit 3.2 Progressive Decline in Cash Forecast Accuracy



An experienced compiler of cash forecasts will consider a number of variables when constructing a forecast. For example, employee expense reports tend to arrive at the end of the month, and so will be paid during the first week of the following month. Also, the accounts payable departments of many companies operate with reduced staffing near major holidays, and are less likely to issue payments on their usual schedules; this is a particular problem during the Christmas holidays. Similarly, payroll payments will be shifted forward in time if a company holiday is scheduled for what would otherwise have been a payroll day. For these reasons, cash forecasting requires a considerable amount of experience.

MEASURING CASH FORECAST ACCURACY

A cash forecast is useless unless it can be relied upon to yield accurate cash flow information for some distance into the future. There are a number of ways to improve the forecast, all involving the continuing comparison of past forecasts to actual results and correcting the system to ensure that better information is provided for future forecasts.

A key area in which the cash forecast can be wildly incorrect is in receipts from sales forecasts. A detailed review of this area will reveal that some salespersons do not want to forecast any sales because then they will be held accountable for their predictions. This problem requires constant feedback with the sales staff to correct, and may require reinforcement by including the sales forecasting function in the annual review and compensation plan for them.

Another problem is in the accounts payable area, where actual cash outflows will typically exceed forecast cash outflows. This imbalance is caused by a faulty accounts payable data entry process, where invoices are initially mailed by suppliers to people outside of the accounts payable department, or because invoices are sent out for approval before they are logged into the accounting system, thereby resulting in their late appearance in the forecast, usually just before they need to be paid. These problems can be solved by asking suppliers to send invoices straight to the accounting department, and by entering all invoices into the accounting system before sending them out for approval. It is also possible to review open purchase orders to see if there are any missing invoices that are supposed to be currently payable, thereby proactively starting a search for the missing invoices.

A major cash flow variance will arise if a fixed asset is suddenly purchased that was not included in the cash forecast. This problem is best resolved by giving the treasury staff complete access to the capital budgeting process, so that it can tell what capital requests are in queue for approval, and when they are likely to require cash payments.

In short, the accuracy of the cash forecast requires great attention to processes that provide its source data. The treasury staff should regularly compare forecasted to actual results, and work its way back through the underlying systems to determine what issues caused the error—and then correct them.

CASH FORECASTING AUTOMATION

The steps just noted to create a cash forecast can be quite cumbersome, especially if there are multiple departments or subsidiaries spread out across many locations. When the cash forecast is generated on a regular basis, the required workload can be extraordinarily high. Automation can be used to avoid some of the most time-consuming steps.

Many off-the-shelf accounting software packages contain standard reports that itemize the daily or weekly time buckets in which payments are scheduled to be made, based on each supplier invoice date and the number of days before they are due for payment, including any requirements for early payment in order to take advantage of early payment discounts. The

cash flow information provided by this report is quite reliable, but tends to be less accurate for the time period several weeks into the future, because of delays in the entry of supplier invoice information into the accounting system. This delay is usually caused by the divergence of incoming invoices to managers for approval. By first entering the invoice information and *then* sending the invoices out for approval, this time delay can be avoided, thereby improving the accuracy of the automated accounts payable payment timing report.

If there is a well-managed purchase order system in place that is stored in a purchasing database, then the accounts payable report format can be stretched further into the future with some accuracy. Since purchase orders may be issued for some months into the future, and involve specific delivery dates, this information can be compiled into a report that reveals when the payments to suppliers based on these purchase orders will be sent out. It is also useful for the purchase of fixed assets, since these orders are so large that suppliers will not normally process an order in the absence of a signed purchase order. However, a large asset purchase may require an up-front payment that will not become apparent until the purchase order is entered into the accounting system, which will result in the sudden appearance of a large cash requirement on the report in the near future.

There are some instances where invoice payments can be predicted well into the future, even in the absence of a purchase order. These are typically recurring payments in a constant amount, such as facility lease payments or maintenance payments that are prespecified under a long-term contract. If these payments are listed in the accounts payable system as recurring invoices, then it is a simple matter to extract them for use in the cash forecast.

The same report is available in many accounting software packages for accounts receivable, itemizing the day or week buckets in which invoice payments are scheduled to be received, based on their original issuance dates and the number of days before customers are required to pay for them. However, this report tends to be much less accurate, for any overdue invoice payments are scheduled for immediate payment in the current period, when in fact there may be collection problems that will delay receipt for quite some time. Also, the report does not account for the average delay in payments that varies by each customer, in accordance with each one's timeliness in making payments. Consequently, this report should be manually modified, especially for the largest outstanding invoices, to reflect the collection staff's best estimates of when payments will actually be received.

In a few cases, software packages will also extend current payroll payments into the future, by assuming that the existing salaries for current employees will continue at the same rates, and that hourly employees will be paid for a regular workweek for all future reporting periods. This is not

a viable option for those companies that outsource their payroll, since the in-house software will not have any way to predict cash flows if it does not contain any information about payroll.

The preceding discussion shows that there are numerous ways in which *elements* of the cash forecast can be automated. However, there are so many variables, such as uncertain receipt dates for accounts receivable, changes in payroll levels, and the sudden purchase of fixed assets, that any automatically generated reports should be adjusted by the accounting staff's knowledge of special situations that will throw off the results of the reports. Also, the basis for automated reports is primarily very short-term accounts receivable and payable information that will rapidly become inaccurate for periods much greater than a month, so manual adjustments to the cash forecast that are derived from short-term forecasts or the budget will become increasingly necessary for later time periods.

BULLWHIP EFFECT

It is usually possible to create reasonably accurate estimates of the amounts and timing of incoming payments from customers and outgoing ones to suppliers. However, the inventory component of the forecast can be downright befuddling. Inventory levels may rise or fall so sporadically that it appears impossible to forecast accurate payables.

One element of inventory forecasting that causes so much heartburn is the *bullwhip effect*. This is when a company runs into a materials or capacity shortage and informs its customers that they are being put on an allocation basis. The customers immediately ramp up their order quantities so they can lock in a greater proportion of the company's output over a longer time horizon, which forces the company to increase its capacity to meet the unexpected demand; once the company starts meeting the larger orders and eliminates its shipment allocations, customers promptly shrink their planning horizons, find that they now have plenty of inventory for their immediate needs, and rescind most outstanding orders. The company has just been the victim of the bullwhip effect. The cash forecast has also been bullwhipped, as the payables line item alternatively skyrockets and dives. How can one avoid this problem?

The treasurer should monitor the issuance of any order allocation notices to customers and see if there is a sudden order increase that occurs subsequent to the notice. If so, the treasurer should work with the materials manager to estimate "real" order volumes based on the historical order volumes of each customer, adjusted for any seasonal effects. Inventory planning should incorporate these historical values, rather than the incremental jump in orders, until such time as the allocation notice is rescinded and order volumes return to their normal levels. This kind of proactive planning will result in a much more accurate cash forecast, and will also keep a

company from suffering through the inventory and production gyrations of the bullwhip effect.

BUSINESS CYCLE FORECASTING

The cash forecasting period is generally quite short—anywhere from one to six months. The level of accuracy of this forecast declines markedly if it projects multiple months into the future. However, it is possible to incorporate longer-range business cycle forecasting into the cash forecast in order to introduce a higher degree of accuracy into the more distant parts of the cash forecast. Here are some possible actions to take to obtain, analyze, and report on business cycle forecasts. They are listed in ascending order of difficulty:

- *Report on published forecasts.* There are forecasts published by nearly every major business magazine for the economy at large. Several key advantages are that the information is fairly accurate for the entire economy, it is prepared by professional forecasters, and it is essentially free. The problem is that each company operates in a smaller industry within the national economy, and as such is subject to "mini" business cycles that may not move in lockstep with that of the national economy. For this reason, the reported information may be only generally relevant to a company's specific situation.

- *Subscribe to a forecasting service.* A company can pay a significant fee, probably in the five- to six-figure range, to a forecasting service for more specific reports that relate to the industry in which it operates. This is a good approach for those organizations that do not have the resources to gather, summarize, and interpret economic data by themselves. However, some industries are too small to be serviced by a specialized forecasting service, or the fee charged is too high in comparison to the value of the information received.

- *Develop an in-house forecasting model.* In cases where either a company wants to run its own forecasting model or there are no forecasting services available that can provide the information, it is time to try some in-house forecasting. This effort can range from a minimalist approach to a comprehensive one, with each level of effort yielding better results. The first step is to find the right kinds of data to accumulate, followed by implementing a data-gathering method that yields reliable data in a timely manner. Then arrive at a methodology for translating the underlying data into a forecast. This forecast should include the underlying assumptions and data used to arrive at the forecast, so that any changes in the assumptions are

clearly laid out. Finally, there should be a methodology for comparing the results against actual data and adjusting the forecasting methodology based on that information. Though this approach is a time-consuming one, it can yield the best results if a carefully developed forecasting system is used.

Example

The treasurer of a sport rack company has elected to use the last of the preceding options for creating forecasting information. Sport racks is a very small niche market that creates and sells racks for skis, snowboards, bicycles, and kayaks that can be attached to the tops of most kinds of automobiles. The treasurer wants to derive a forecasting system that will give management an estimate of the amount by which projected sales can be expected to vary. She decides to subdivide the market into four categories, one each for skis, snowboards, bicycles, and kayaks. Based on a historical analysis, she finds that 25 percent of ski purchasers, 35 percent of snowboard purchasers, 75 percent of bicycle purchasers, and 30 percent of kayak purchasers will purchase a car-top rack system to hold their new equipment. The typical delay in these purchases from the time when they bought their sports equipment to the time they bought sport racks was six months. The treasurer finds that she can obtain new sports equipment sales data from industry trade groups every three months. Given the lag time before users purchase car-top racks, this means that she can accumulate the underlying data that predict sport rack sales and disseminate it to management with three months to go before the resulting sport rack sales will occur. Thus, she concludes that these are usable data.

The next task is to determine the company's share of the sport rack market, which is readily obtainable from the industry trade group for sport racks, though this information is at least one year old. Given the stability of sales within the industry, she feels that this information is still accurate. She then prepares the report shown in the following table. It shows total sports equipment sales for the last quarter, uses historical percentages to arrive at the amount of resulting sport rack sales, and then factors in the company's market share percentage to determine the forecasted sales of each type of sport rack. By comparing this information to the previously forecasted sales information, the report reveals that the company should significantly ramp up its production of snowboard sport racks as soon as possible.

Description	Sports Equipment Unit Sales	% Buying Sport Racks	Company Market Share	Forecasted Company Unit Sales	Original Company Forecast	Variance
Ski	3,200,000	25	40%	320,000	300,000	+20,000
Snowboard	2,700,000	35	40%	378,000	300,000	+78,000
Bicycle	2,500,000	75	30%	562,500	550,000	+16,500
Kayak	450,000	30	30%	40,500	45,000	–4,500

The example used was for an extremely limited niche market, but it does point out that a modest amount of forecasting work can yield excellent results that are much more company specific than would be the case if a company relied solely on the forecasts of experts who were concerned only with general national trends. For most companies, there will be a number of additional underlying indicators that should be factored into the forecasting model; however, the work associated with tracking these added data must be compared to the benefit of more accurate results, so that a manager arrives at a reasonable cost-benefit compromise.

Business cycle forecasting is useful for a cash flow forecast only if the forecast extends a considerable distance into the future. Such information will have a minimal impact on a cash forecast having a duration of three months or less, but can be quite useful for more extended periods.

CASH FORECASTING CONTROLS

The daily cash forecast usually is assembled quickly, using the preceding day's forecast as a template, and with only minor updates. A less frequent forecast may be assembled "from scratch," without attempting to roll forward the old forecast; this increases the risk of errors. Also, the person who prepares a cash forecast on an infrequent basis is less familiar with the process, and so is more likely to make a mistake. These characteristics allow the treasurer to mandate a reduced set of controls for a daily cash forecast and a more comprehensive one for less frequent forecasts.

If a forecast is issued on a daily basis, then the treasurer should focus controls on the incremental daily changes in the forecast. This can be achieved with the following two controls:

1. *Investigate significant variances from the preceding day's forecast.* This is a side-by-side comparison of the current day's forecast and the immediately preceding day's forecast. If there are significant changes, the preparer should verify that the changes are reasonable.

2. *Obtain the approval of a knowledgeable person.* Another person should *briefly* review the forecast, initial it, and retain a copy. The reviewer may not necessarily be the preparer's supervisor; it may make more sense to have someone else with significant and recent cash forecasting expertise review it. Alternatively, the reviewer could be someone with considerable knowledge of the information feeding into the forecast, such as the person responsible for collections, payables, payroll, or capital expenditures.

If a forecast is generated less frequently, the controls should include the preceding two controls (with some modifications), as well as additional controls. They are:

- *Match latest forecast against preceding forecasts.* It is useful to compare the new forecast against several preceding forecasts. In particular, compare the predicted ending cash balance for each time period to the same time period in the earlier forecasts. If there are significant differences in the ending balance for a specific time period as it moves closer to the present, it is likely that the forecast model needs to be changed for the periods farther in the future.

- *Match forecast against standard forecast checklist.* When a forecast is being prepared on an infrequent basis, there is an increased risk that some line items in the forecast will be inadvertently left out. It is extremely difficult to spot a missing item, so a reviewer should match the forecast against a standard checklist of forecast contents. This control is more useful when reviewing a forecast prepared by an inexperienced person who is not familiar with the company's business processes.

- *Obtain approvals.* The less frequently a forecast is prepared, the more approvals it needs, since the company is going to rely on it for a longer period of time. This may call for reviews by all of the people having provided input into the forecast, such as the managers of collections, payables, payroll, and capital expenditures. At a minimum, at least one person with extensive knowledge of the company's cash flows should review and initial the forecast, and retain a copy.

- *Retain a copy.* The best way to investigate the accuracy of a cash forecast is to compare it to the forecasts from prior periods, so retain a copy of every forecast. If the forecast is compiled on a spreadsheet, then save each forecast on a separate tab of the spreadsheet, and label each tab with the date of the forecast. It may also be useful to lock the spreadsheet, so that earlier versions are not inadvertently altered.

Finally, if the forecast is created using an electronic spreadsheet, then the departmental year-end procedure book should include a requirement to verify *every* formula in the most recent cash forecast. Any tinkering with the forecast model during the year could have caused a calculation error that no longer properly rolls up the cash forecast. This formula review should *not* be conducted by the person who prepares the cash forecast; instead, use someone who does not use the spreadsheet. This third party will be more likely to painstakingly work through all of the formulas and how they work, whereas someone who is excessively familiar with the spreadsheet is more likely to assume that it works correctly.

CASH FORECASTING POLICIES

The treasurer should implement policies that will assist in the management of two aspects of cash forecasting, which are the issuance frequency and review frequency of the forecasts. Sample policies include the following:

- *Cash forecasts shall be issued on a [daily/weekly/monthly] basis.* This policy ensures that cash forecasts are issued with sufficient frequency to match the periodic updating of a company's debt and investments. A larger company with significant transaction volume may need daily cash forecasts, while a smaller one may only require a monthly issuance.

- *Cash forecasts shall be structurally updated at least once a [month/quarter/year].* A cash forecast may gradually become less accurate over time, due to changes in the business that are not reflected in the cash forecast model. This policy requires the treasurer to engage in a periodic updating that "fine-tunes" the forecast to make it more accurately reflect actual cash flows.

These policies should be integrated into the treasury's policies and procedures manual, and can also be integrated into the job descriptions of those responsible for the cash forecast.

CASH FORECASTING PROCEDURE

A formal cash forecasting procedure is least likely to be used if an experienced person prepares a forecast every day, but can be quite useful for more infrequent forecasting intervals or for training purposes, where there is less certainty about the various components of the forecast. The cash forecasting procedure is shown in Exhibit 3.3, and assumes the use of an electronic spreadsheet for preparation of the forecast.

The key steps in the procedure are noted in the flowchart in Exhibit 3.4. In addition, the small black diamonds on the flowchart indicate the location of key control points in the process, with descriptions next to the diamonds.

SUMMARY

Cash forecasting is an important task that deserves the utmost attention from the treasurer, since a cash shortfall can bring a company's operations to an abrupt halt in short order, or at least require the use of expensive short-term debt. The cash forecasting process is based on multiple sources

of information that can yield quite inaccurate results just a few months in the future. To improve forecasting accuracy, the treasury staff should regularly compare the forecast to actual results in order to locate and root out problems. A number of controls and a rigidly followed forecasting procedure can also help improve forecasting accuracy. Only by improving forecast accuracy can a company take proper steps to mitigate its borrowing needs, as well as place excess funds in the proper types of investments.

Exhibit 3.3 Cash Forecasting Procedure

Procedure Statement Retrieval No.: TREASURY-01

Subject: Cash Forecast

1. PURPOSE AND SCOPE

This procedure is used by the treasury staff to create a periodic cash forecast.

2. PROCEDURES

2.1 Create Cash Forecast (Treasury Staff)

1. Create a new worksheet within the forecast spreadsheet.
2. Copy the forecast model forward from the most recent worksheet into the new worksheet.
3. Label the tab of the new version with the issuance date of the cash forecast.
4. Lock the most recent completed worksheet.
5. In the new worksheet, clear all numbers from the forecast model.
6. Enter the beginning cash balance from the daily bank reconciliation.
7. Obtain from the collections manager the best estimate of receipt dates for receivables exceeding $_____. For smaller receivables, estimate the distribution of receipts based on the historical days sales outstanding metric. Enter this information in the forecast.
8. Obtain from the payroll manager the estimated timing and amounts of scheduled wage and commission payments. Enter this information in the forecast.
9. Obtain from the payables system the timing and amounts of scheduled payables. Enter this information in the forecast.
10. Obtain from the financial analyst the timing and amounts of scheduled capital expenditures. Enter this information in the forecast.
11. Obtain from the sales manager the short-term sales forecast, and estimate cash receipts from these sales based on the historical days sales outstanding.

12. Incorporate expenses into the short-term sales forecast period, based on recurring expenses and historical percentages of the cost of goods sold and administrative expenses.
13. Obtain from the financial analyst the receipts and expenditures based on the modified budget for the period beyond the short-term sales forecast. Enter this information in the forecast.
14. Review the preliminary cash forecast for reasonableness.
15. Forward the forecast to the assistant treasurer for review.

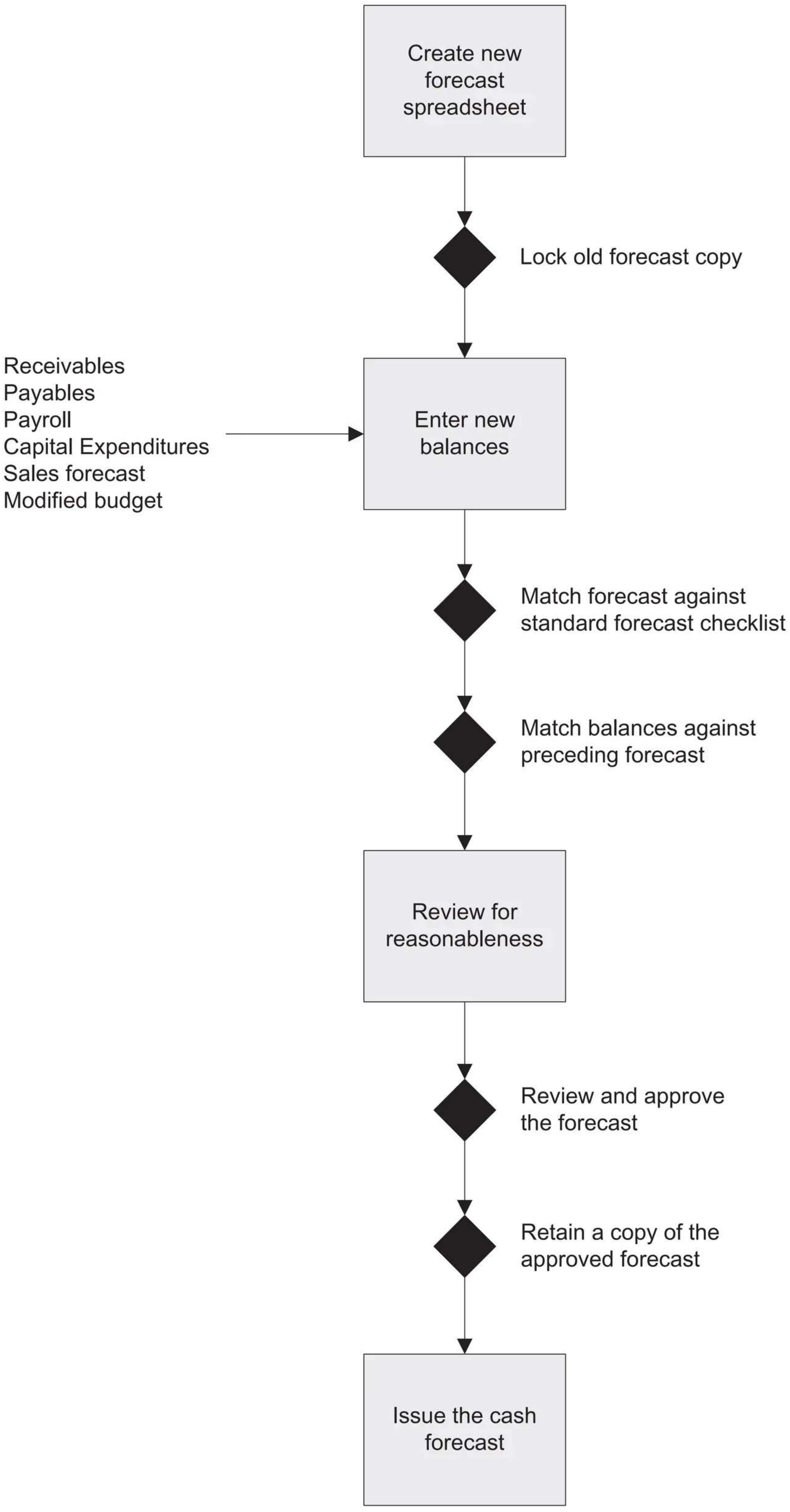
2.2 Review Cash Forecast (Assistant Treasurer)

1. Review and approve the cash forecast. This may include matching the timing and amounts of the projected collection, payables, and capital expenditures listed in the forecast to other reports, or asking for additional reviews by the managers of those functions.
2. Print two copies of the cash forecast.
3. Initial both copies to indicate approval, return one to the forecast preparer, and retain the other copy in a binder, stored by date.

2.3 Issue Cash Forecast (Treasury Staff)

1. Upon receipt of the approved forecast, issue the forecast to the treasurer, assistant treasurer, controller, and chief financial officer.

Exhibit 3.4 Procedural and Control Steps for the Cash Forecast



4

Cash Concentration

Larger companies with many subsidiaries, especially those with operations in multiple countries, maintain a significant number of bank accounts. This is an inefficient arrangement from the perspective of cash management, since the treasury staff must track all of the individual account balances. With such highly fragmented cash balances, it is extremely difficult to repurpose the funds for either centralized payments, debt paydown, or investments. An excellent solution is *cash concentration*, where the cash in multiple accounts is pooled. Pooling can be achieved either through *physical sweeping* (where cash is actually moved into a *concentration account* or *master account*) or *notional pooling* (where funds are not actually transferred, but balance information is reported as though physical sweeping had occurred). This chapter describes the various cash concentration strategies, the mechanics of pooling, and supporting policies, procedures, and controls.

BENEFITS OF CASH CONCENTRATION

The typical company has a number of bank accounts, each containing either a credit balance or a debit balance that is being covered by a bank overdraft. At a small-company level, and in the absence of a formal treasurer position, these balances are probably monitored by an assistant controller, with occasional cash transfers to cover debit balances. Interest income is probably minimal.

As the company becomes larger and the number of its bank accounts expands, the total volume of idle cash balances becomes too great to ignore. At this stage, the company hires a treasurer to manage the cash. The treasurer will likely advance the following list of benefits related to aggregating the cash in all of those bank accounts:

- *Elimination of idle cash.* The treasurer's best argument will be that cash idling in a multitude of accounts can be aggregated into interest-earning investments.
- *Improved investment returns.* If the company's cash can be aggregated, then it is easier to allocate the cash into short-term, low-yield investments and higher-yield, longer-term investments. The overall results should be an improved return on investment.
- *More cost-effective oversight of accounts.* When an automated sweeping arrangement is used to concentrate cash, there is no need to manually review subsidiary account balances. This can yield a significant reduction in labor costs.
- *Internal funding of debit balances.* Where a company is grappling with ongoing debit balance problems in multiple accounts, the avoidance of high-cost bank overdraft charges alone may be a sufficient incentive to use cash concentration. An example of the change in costs is shown in Exhibit 4.1. In the first part of the exhibit, ABC Company has bank accounts at four of its subsidiaries. Each of the accounts earns the same 3 percent interest rate on credit balances, while the banks all charge the same 8 percent rate on debit balances (overdrafts). In the second part of the exhibit, ABC shifts all of its funds into a cash concentration account, thereby avoiding the 8 percent overdraft charge, and realizing a significant improvement in its interest income.

Exhibit 4.1 Change in Interest Income from Cash Concentration Banking

Scenario without Cash Concentration

	Overdraft Interest Rate	Credit Balance Interest Rate	Cash Balance in Account	Annual Interest
Subsidiary 1	8%	3%	$100,000	$3,000
Subsidiary 2	8%	3%	(50,000)	(4,000)
Subsidiary 3	8%	3%	(35,000)	(2,800)
Subsidiary 4	8%	3%	75,000	2,250
		Totals	$90,000	$(1,550)

Scenario with Cash Concentration

	Overdraft Interest Rate	Credit Balance Interest Rate	Cash Balance in Account	Annual Interest
Subsidiary 1	8%	3%	—	—
Subsidiary 2	8%	3%	—	—
Subsidiary 3	8%	3%	—	—
Subsidiary 4	8%	3%	—	—
		Total	$90,000	$2,700

In the exhibit, interest income improves by $4,250, which makes cash concentration cost-effective as long as the sweeping fee charged by the bank is less than that amount.

CASH CONCENTRATION STRATEGIES

A company having multiple locations can pursue a variety of cash concentration strategies, which tend to bring larger benefits with greater centralization. The strategies are:

- *Complete decentralization.* Every subsidiary or branch office with its own bank account manages its own cash position. This is fine if balances are small, so that there is little synergy to be gained by concentrating cash in a single account. However, if large cash balances are languishing in some accounts, or other accounts are incurring overdraft charges, then a more centralized approach is called for. A more advanced version of this strategy is to centralize accounts in the country of currency (e.g., dollars are kept in the United States, and yen are kept in Japan). This alternative is transactionally efficient, but does not sufficiently centralize cash for investment purposes.
- *Centralized payments, decentralized liquidity management.* A company can implement a centralized payment factory that handles all payables for all company subsidiaries but issues payments from local accounts. This improves the overall planning for cash outflows but does not improve the management of excess cash balances, for which local managers are still responsible. Also, if investments are managed at the local level, there is a greater risk that the corporate investment policy will not be followed.
- *Centralized liquidity management, decentralized payments.* The treasury staff centralizes cash into a concentration account (either through sweeps or notional pooling) and has responsibility for investments. However, local managers are still responsible for disbursements.
- *All functions centralized.* The treasury staff pools all cash into a concentration account, invests it, and manages disbursements. This is an excellent structure for optimizing investment income and gives the treasurer considerable control over the accounts payable portion of the company's working capital. Larger companies usually follow this strategy, but may not carry it through to cross-border centralization. Instead, they may centrally manage key currencies, such as euros and dollars, while allowing regional control over other currencies.

In cases where cash is invested from a central location and multiple currencies are involved, it may be necessary for the treasury staff to invest funds locally (i.e., in the home country of the currency), because of legal or foreign exchange restrictions.

The final (and most centralized) of these strategies is the most efficient approach for cash concentration, but it may not be the most cost-effective. If a company has relatively few subsidiaries with low account balances, then creating a central treasury staff to manage the cash may add more overhead than will be offset by increased interest income or reduced interest expense.

POOLING CONCEPTS

Cash concentration requires that a company create a *cash pool*. This comprises a cluster of subsidiary bank accounts and a concentration account. Funds physically flow from the subsidiary accounts into the concentration account under a *physical sweeping* method. Alternatively, cash balances in the subsidiary accounts can be concentrated in the master account only within the bank's records, with the cash remaining in the subsidiary accounts. This later method is called *notional pooling*.

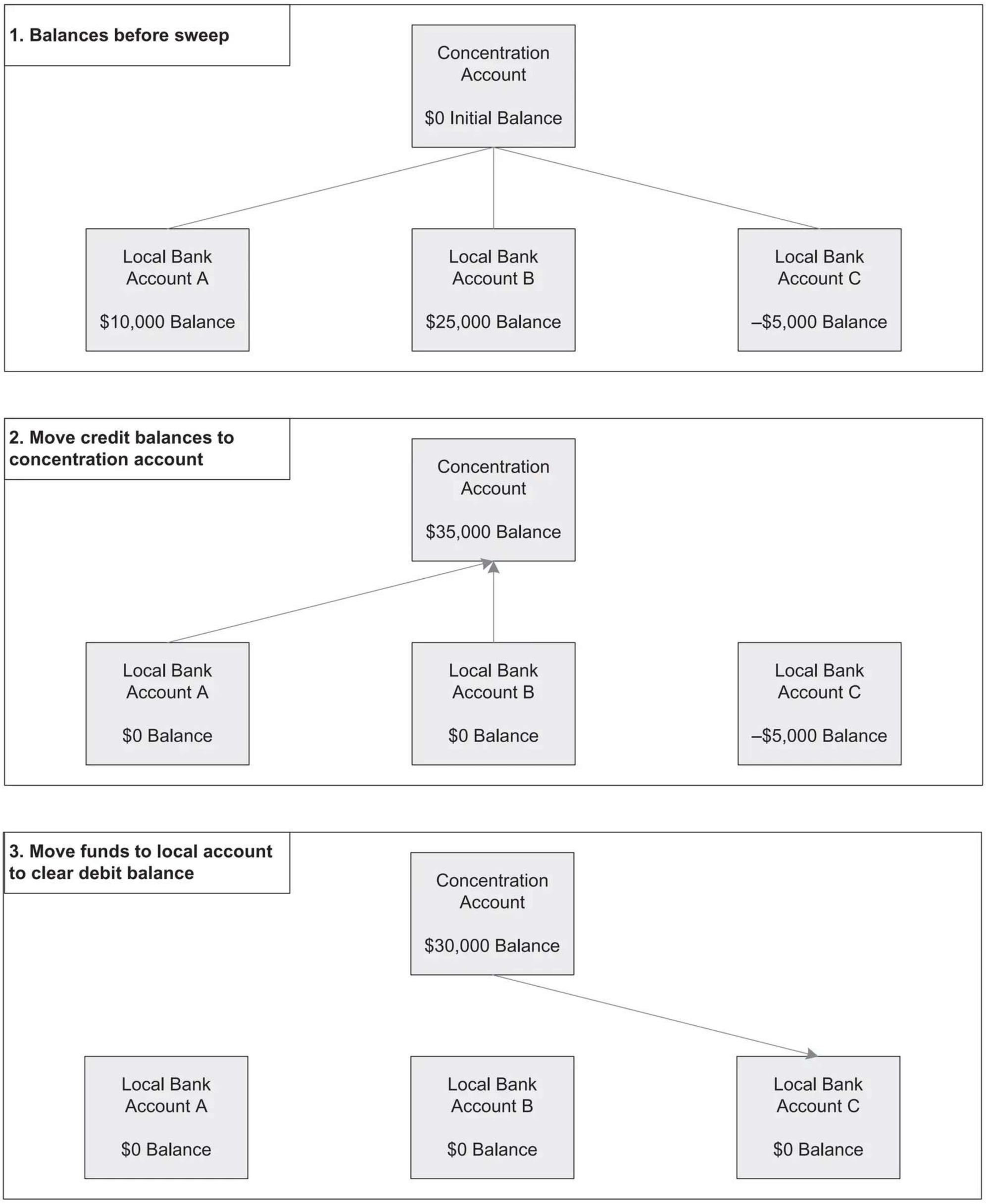
If a pooling arrangement includes accounts located in more than one country, this is known as a *cross-border cash pool*. A company may elect to pool cash within the home country of each currency (e.g., U.S. dollars are pooled in the United States), which is known as the *single-currency-center* model. If a company pools all of its foreign currency accounts in a single location, this is a *multicurrency-center* arrangement. Multicurrency centers are generally easier to manage, but transactions are more expensive than under the single-currency-center model.

PHYSICAL SWEEPING

When a company sets up a *zero-balance account*, its bank automatically moves cash from that account into a concentration account, usually within the same bank. The cash balance in the zero-balance account (as the name implies) is reduced to zero whenever a sweep occurs. If the account has a debit balance at the time of the sweep, then money is shifted from the concentration account back into the account having the debit balance. An example is shown in Exhibit 4.2.

In the example, two of three subsidiary accounts initially contain credit (positive) balances, and Account C contains a debit (negative) balance. In the first stage of the sweep transaction, the cash in the two accounts having credit balances are swept into the concentration account. In the next stage of the sweep, sufficient funds are transferred from the concentration account

Exhibit 4.2 Zero-Balance Sweep Transaction



to offset the debit balance in Account C. At the end of the sweep, then, there are no credit or debit balances in the zero-balance accounts.

It is also possible to use *constant balancing* to maintain a predetermined minimum balance in a subsidiary account, which involves sweeping only those cash levels above the minimum balance, and reverse sweeping cash into the subsidiary account if the balance drops below the minimum balance.

Daily sweeping may not be necessary outside of a company's designated core currencies. This is especially likely when noncore currency account balances are relatively low. If so, it may be more cost-effective to sweep them less frequently, or to implement *trigger balances*. A trigger balance is an account balance level above which excess funds are swept out of the account.

Some concentration banks can also monitor a company's account balances at third-party banks using SWIFT (Society for Worldwide Interbank Financial Telecommunication) messages, and create transfer requests to move excess cash to the concentration bank. The key point with account sweeping is to fully automate it—the effort involved in manually tracking account balances and shifting funds on a daily basis is not only expensive, but also likely to cause errors.

In most sweeping transactions, the sweeps occur on an *intraday* basis, which means that balances are transferred to the concentration account before the end of the day. Consequently, some cash may be left behind in subsidiary accounts, rather than being centralized. This occurs when cash arrives in an account after execution of the daily sweep. The cash will remain in the subsidiary account overnight and be included in the following day's sweep. If a bank can accomplish true *end-of-day* sweeps, then no cash will be left behind in local accounts. If a company is not dealing with such a bank, then a proactive approach to depositing checks before cutoff times is the best way to avoid unused cash.

There may be a need to track the amounts of cash swept from each zero-balance account into the concentration account; if so, the company records an intercompany loan from the subsidiary to the corporate parent in the amount of the cash transferred through the cash concentration process. There are several reasons for doing so:

- *Subsidiary-level financial reporting requirements.* A subsidiary may have an outstanding loan, for which a bank requires the periodic production of a balance sheet. Since account sweeping shifts cash away from a subsidiary's balance sheet, detailed sweep tracking is needed to put the cash back on the subsidiary's balance sheet for reporting purposes. This can be done by recording an intercompany loan from the subsidiary to the corporate parent in exchange for any swept cash, which can then be reversed to place the cash back on the subsidiary's balance sheet.

- *Interest income allocation.* A company may elect to allocate the interest earned at the concentration account level back to the subsidiaries whose accounts contributed cash to the concentration account. Some countries require that this interest allocation be done to keep a company from locating the concentration account in a low-tax jurisdiction, where the tax on interest income is minimized. Thus, the

amounts of cash swept into and out of a subsidiary account must be tracked in order to properly allocate the correct proportion of interest income to that account.

- *Interest expense allocation.* Some tax jurisdictions may require the parent company to record interest expense on intercompany loans associated with the transfer of cash in a physical sweeping arrangement. If so, the company must track the intercompany loan balances outstanding per day, which is then used as the principal for the calculation of interest expense. The interest rate used for these calculations should be the market rate; any other rate can be construed by local tax authorities to be transfer pricing designed to shift income into low-tax regions.
- *Central bank reporting.* Some central banks require that they be sent reports on transfers between resident and nonresident accounts. This may be handled by the company's bank but can still increase the administrative burden associated with the sweep.

Some banks have the capability to track the amount of balance sweeps from each subsidiary account on an ongoing basis, which a company can use as its record of intercompany loans.

NOTIONAL POOLING

Notional pooling is a mechanism for calculating interest on the combined credit and debit balances of accounts that a corporate parent chooses to cluster together without actually transferring any funds. This approach allows each subsidiary company to take advantage of a single, centralized liquidity position, while still retaining daily cash management privileges. Also, since it avoids the use of cash transfers to a central pooling account, there is no need to create or monitor intercompany loans, nor are there any bank fees related to cash transfers (since there are no transfers). In addition, it largely eliminates the need to arrange overdraft lines with local banks. Further, interest earnings tend to be higher than if investments were made separately for the smaller individual accounts. Also, it offers a solution for partially owned subsidiaries whose other owners may balk at the prospect of physically transferring funds to an account controlled by another entity. And finally, the use of notional pooling is not a long-term commitment; on the contrary, it is relatively easy to back out of the arrangement.

Where global notional pooling is offered (usually where all participating accounts are held within a single bank), the pool offsets credit and debit balances on a multicurrency basis without the need to engage in any foreign exchange transactions. An additional benefit of global notional pooling lies in the area of intercompany cash flows; for example, if there are charges

for administrative services, the transaction can be accomplished with no net movement of cash.

Once a company earns interest on the funds in a notional account, interest income is usually allocated back to each of the accounts making up the pool. For tax management reasons, it may be useful for the corporate parent to charge the subsidiaries participating in the pool for some cash concentration administration expenses related to management of the pool. This scenario works best if the corporate subsidiaries are located in high-tax regions, where reduced reportable income will result in reduced taxes.

The main downside of notional pooling is that it is not allowed in some countries, especially in portions of Africa, Asia, and Latin America (though it is very common in Europe). In these excluded areas, physical cash sweeping is the most common alternative. Also, the precise form of the notional pooling arrangement will vary according to local laws, so that some countries allow cross-border pooling, while others do not.

In addition to the prohibition against notional pooling in some countries, it is difficult to find anything but a large multinational bank that offers cross-currency notional pooling. Instead, it is most common to have a separate notional cash pool for each currency area.

COMPARISON OF ACCOUNT SWEEPING AND NOTIONAL POOLING

Where there is a choice between account sweeping and notional pooling, notional pooling is usually the better alternative. Under notional pooling, cash does not physically leave the bank accounts of each subsidiary, which greatly reduces the amount of intercompany loans that would otherwise have to be recorded. This eliminates the treasury overhead cost that would otherwise be associated with tracking and recording the intercompany loans.

Similarly, if the parent company allocates interest earned to its various subsidiaries based on their cash balances, this requires significant accounting resources to calculate the interest income allocation based on intercompany loans and deposits. In multicurrency situations, this also involves revaluing the interest income into different currencies. However, in a notional pooling environment, the bank may be able to automate the calculation of interest, with a physical transfer of funds at month-end to pay out the interest income to each subsidiary.

Also, if the intent is to pool funds denominated in multiple currencies, account sweeps require the use of foreign exchange transactions and possibly hedging. Notional pooling eliminates these activities, since funds are not shifted from one currency to another.

When account sweeping moves cash from one entity to another, this can have adverse tax consequences in some countries. Conversely, because

notional pooling requires no physical transfer of funds between legal entities, no tax problems are triggered.

Notional pooling is more likely to be supported by the managers of local subsidiaries, since it means that they retain control over their cash balances. Indeed, they may not even realize that a notional pooling arrangement has been created!

However, a major disadvantage of notional pooling is that it is illegal in some countries. Thus, notional pooling should be taken advantage of where it is offered. When not available, physical sweeping is a very acceptable alternative to conducting no cash concentration activities at all.

NONPOOLING SITUATIONS

A company may need to use a local bank that cannot be linked into its corporate account sweeping or notional pooling structures. If so, the company's account balances within that bank must be managed manually. A key focus of this activity is to prevent overdrafts, since their cost usually greatly exceeds the interest income to be earned on the same account; thus, it is cost-effective to maintain excess balances in such accounts, rather than incurring overdraft fees.

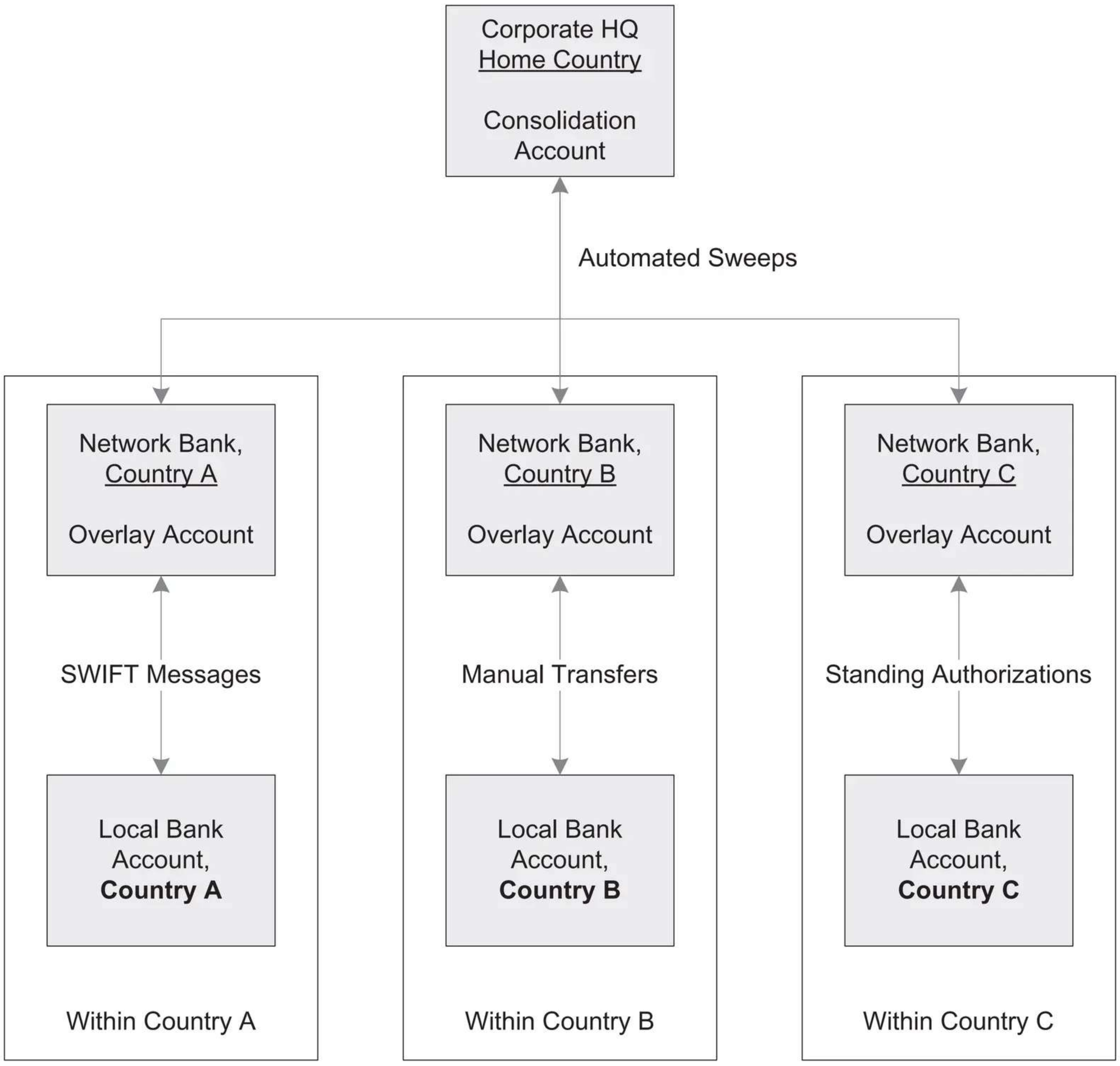
If there are to be cash transfers out of such accounts, they tend to be infrequent, since the parent company will prefer to maintain excess cash balances in order to avoid overdrafts, and so will only siphon off cash when there is a clear excess balance. Also, because account management is manual, it is more cost-effective from a labor perspective to limit the number of transfers into or out of these accounts.

BANK OVERLAY STRUCTURE

Companies operating on an international scale frequently have trouble reconciling the need for efficient cash concentration operations with the use of local banking partners with whom they may have long-standing relationships and valuable business contacts. The solution is the *bank overlay structure*.

A bank overlay structure consists of two layers. The lower layer is comprised of all in-country banks that are used for local cash transaction requirements. The higher layer is a group of networked regional banks, or even a single global bank, that maintains a separate bank account for each country or legal entity of the corporate structure. Cash balances in the lower layer of banks are zero-balanced into the corresponding accounts in the higher layer of banks on a daily basis (where possible, subject to cash flow restrictions). These sweeps are accomplished either with manual transfers, SWIFT

Exhibit 4.3 Multicountry Physical Sweeping with Bank Overlay Structure



messages from the networked banks to the local banks, or with standing authorizations to the local banks. The concept is shown in Exhibit 4.3. This approach allows funds to be consolidated on either a regional or global basis for centralized cash management.

CASH CONCENTRATION CONTROLS

There is a strong argument that having a physical sweep cash concentration system in place *is* a control, since it pushes all cash balances into a single location for easier monitoring. Otherwise, the treasury staff would be faced with a large jumble of accounts, over which it might exercise little control.

Nonetheless, the following controls can improve on the inherent control of a physical sweep system:

- *Review target balances.* If a subsidiary account is allowed a target cash balance, then periodically review account usage to see if the target balance is appropriate.
- *Review excluded accounts.* Some subsidiary accounts may have been excluded from the sweep on the grounds that there are local currency restrictions, or that minimal transaction activity does not justify a periodic sweep. These factors may change over time, so schedule an annual analysis of excluded accounts.
- *Compare intercompany loan rates to market rates.* If the company uses nonmarket interest rates when calculating intercompany charges, it may run afoul of transfer pricing rules in some tax jurisdictions. Thus, create a tracking procedure to periodically compare market rates to the intercompany loan rates.
- *Verify the allocation of interest income to subsidiaries.* Depending on the circumstances, it may be necessary to allocate interest earned back to the subsidiaries. If so, verify that the calculation is consistently applied across all subsidiaries.
- *Verify the calculation of intercompany loan balances.* A company using physical sweeping may need to record intercompany loan balances to reflect the shifts in cash to the corporate consolidation account. If so, have the internal audit staff periodically verify the calculation of these balances. This review can impact the amount of interest expense or income allocated to subsidiaries.

A notional pooling system does not create an inherent control over physical cash balances, as was the case with a physical sweep, since cash is still sitting in what may be a large number of accounts in multiple locations. Thus, all controls normally exercised over a bank account would be in effect in this situation. The primary change with notional pooling is the presence of interest income distributions back to the originating bank accounts. This calls for a repetition of a preceding control, which is:

- *Verify the allocation of interest income to subsidiaries.* Depending on the circumstances, it may be necessary to allocate interest earned back to the subsidiaries. If so, verify that the calculation is consistently applied across all subsidiaries.

The receipt and disbursement of cash involve intricate controls, which are beyond the scope of this book. For detailed cash controls, refer to the author's *Accounting Control Best Practices*, 2nd edition (Wiley, 2009). The controls noted here were specific just to the cash concentration function.

CASH CONCENTRATION POLICIES

There is one key policy required for cash concentration, which is one that places responsibility for cash concentration on a specific group within the company. Otherwise, it can be extremely difficult to exert central control over far-flung accounts that are normally under the control of the managers of local subsidiaries. The policy follows:

- *All cash concentration activities shall be managed by the corporate treasury department.* This can be a surprisingly important policy in a larger firm where divisional managers may attempt to retain control over their bank accounts. The policy clearly places responsibility for cash concentration in the hands of the *corporate* treasury department.

Of course, a deliberate decentralization policy could revise the preceding policy to state that cash concentration activities are limited to a lower level within the company, such as at the division level.

It is also possible, though not necessary, to state the company's cash concentration strategy with a policy statement. Doing so certainly clarifies the company's direction in this area, but also requires a subsequent policy change if the treasurer wants to turn in a different direction. Strategies for both small and large companies are noted in the following two policies:

1. *Small-company policy.* The company shall engage in cash concentration with a "physical sweeping" strategy. All subsidiary accounts shall be designated as zero-balance, and shall sweep into a concentration account, which in turn shall also be used as a central disbursement account. The treasurer may exclude accounts from this strategy if sweeping is not cost-effective. This policy works well for smaller entities using a single currency, in locations where notional pooling is not available.

2. *Large-company policy.* The company shall engage in cash concentration with a "cross-currency notional pooling" strategy. All subsidiaries are restricted to accounts with a bank designated by the treasurer. In areas where notional pooling is not available, the treasurer may opt for physical sweeping, or no sweeping if it is not cost-effective. This policy assumes that notional pooling will be organized under a single global bank, and provides for the inevitable exceptions that will arise in some jurisdictions.

It is not necessary at the policy level to define any greater level of detail regarding cash concentration, such as the allowable methods of cash transfer for physical sweeping—these are tactical issues over which the treasury staff should have discretion.

CASH CONCENTRATION PROCEDURES

Once a cash concentration system is set up, the system should be fully automated, with cash balances either shifting to a concentration account with physical sweeping or appearing in a notional account with a notional pooling arrangement. Thus, there is no need for a procedure to conduct the cash concentration. However, procedures *are* needed to track intercompany loans and related interest expense allocations (if physical sweeping is used), as well as to allocate interest income back to the subsidiaries. These procedures are noted in Exhibits 4.4 and 4.5.

Exhibit 4.4 Intercompany Loan Tracking Procedure

Procedure Statement Retrieval No.: TREASURY-02

Subject: Tracking of Intercompany Loans and Allocation of Related Interest Expense Caused by Physical Sweeping

1. PURPOSE AND SCOPE

This procedure is used by the treasury staff to determine the amount of intercompany loans caused by the sweeping of cash from subsidiary accounts into the corporate cash concentration account, as well as the amount of internal interest charges related to these loans.

2. PROCEDURES

2.1 Record Intercompany Loans (Treasury Staff)

1. At the end of each month, access the company's bank statements and calculate the amount of intercompany loans outstanding from each subsidiary to the corporate entity that was caused by physical sweeps into the corporate cash concentration account. Add to this amount the balance of any intercompany loans that were outstanding at the beginning of the month.
2. Subtract from the revised intercompany loan balances the amount of any expenditures related to each subsidiary for disbursements from the corporate shared services centers for payroll and disbursements.
3. Subtract from the remaining intercompany loan balances the amount of any cash flows from corporate to the subsidiaries for other purposes, such as debit balance replenishment.
4. Calculate the incremental change in intercompany loan balances, and create a journal entry to reflect the change. If there is an increase in a subsidiary's loan to corporate, then this is a debit to their notes receivable account and a credit to corporate loans payable. If there is a decrease in a subsidiary's loan to corporate, then this entry is reversed.

5. Also calculate the average loan balance outstanding during the month, which is calculated [*on a daily basis / by adding the beginning and ending balances and dividing by two*], which shall be used for subsequent allocations of interest income or expense.
6. Retain a copy of the calculations for use during the next month's calculations.
7. Forward the intercompany loan calculations to the treasurer for approval.
8. Forward the approved calculations and journal entry to the general ledger accountant for entry into the accounting system.

2.2 Allocate Interest Expense (Treasury Staff)

1. Determine the market interest rate on debt, which is the monthly interest rate charged to the company on its primary line of credit.
2. Calculate the intercompany interest expense to be charged to corporate for use of the subsidiary's funds, and credited to the subsidiaries, based on the market interest rate multiplied by their average intercompany loans outstanding during the month.
3. Create a journal entry to reflect the interest expense, which is a debit to the corporate interest expense account, and a credit to the subsidiary's interest income accounts. If there is a net flow of cash *to* a subsidiary, then this entry is reversed.
4. Retain a copy of the calculations.
5. Forward the interest expense calculations and journal entry to the treasurer for approval.
6. Forward the approved calculation and journal entry to the general ledger accountant for entry into the accounting system.

Exhibit 4.5 Interest Income Allocation from Cash Concentration Account

Procedure Statement Retrieval No.: TREASURY-03

Subject: Calculation and Recording of Interest Income from Cash Concentration Account

1. PURPOSE AND SCOPE

This procedure is used by the treasury staff to calculate the interest income earned from the investment of cash concentration activities, less administrative charges.

2. PROCEDURES

2.1 Calculate Allocable Interest Income (Treasury Staff)

1. Summarize interest income earned for the month, as reported on investment statements.

2. Record the interest income as corporate income, with a debit to cash and credit to the interest income account. Have the entry approved by the treasurer, and forward to the general ledger accountant for entry into the accounting system.
3. Calculate the amount of administrative expense that is associated with the administration of cash concentration and subsequent investment activities. This should include bank pooling fees and loaded labor expenses. Compare this expense to the amount for previous months to establish the reasonableness of the amount.
4. Subtract the administrative expense from the total interest earned.
5. Allocate the remaining interest earned to the subsidiaries, based on the proportional average amount of intercompany loans they had outstanding to the parent company during the month. This is a debit to the corporate interest income account, and a credit to the interest income accounts of the subsidiaries.
6. Combine the interest allocation, administrative fee calculation, and copies of investment statements into a package, and retain a copy for backup purposes.
7. Forward the originals of the package to the treasurer for approval.
8. Forward the approved package to the general ledger accountant for entry into the accounting system.

SUMMARY

A company must determine if it makes sense to engage in cash concentration activities. For it to be cost-effective, the company should have large, ongoing balances in multiple accounts that are not being efficiently invested. Further, the incremental reduction in overdraft fees and increase in interest income should outweigh the incremental increase in pooling fees and administrative costs. There is also the intangible factor of whether the managers of local subsidiaries will accept corporate-level interference in their bank accounts. If this analysis is favorable, then a company should engage in cash concentration activities. While notional pooling is theoretically to be preferred over physical sweeping, either method is significantly better than having no pooling at all. Also, manual sweeping is not recommended; it involves a large volume of manually initiated transactions to transfer funds between accounts.The level of automation associated with these services mandates the use of a large bank with a broad range of automated services; a small local bank simply cannot assist a multilocation company with a cash concentration strategy.

5

Working Capital Management

When a company requires additional funding, the treasurer usually turns to either debt or an equity issuance. However, if the cost of these traditional funding sources is too high, the treasurer should take a hard look at unlocking cash that is trapped in working capital. While working capital management calls for a considerable amount of tactical work on an ongoing basis, it can be a rewarding exercise if the result is a significant source of cash. The following example shows how much cash can potentially be extracted from a company's working capital.

The following sections note how working capital tends to vary with changes in corporate sales volume, and then describe the key management aspects of each component of working capital that can impact the level of funds invested in working capital.

WORKING CAPITAL VARIABILITY

Working capital is defined as a company's current assets minus its current liabilities. While there are a number of minor asset and liability categories that can be included in this definition, the primary components of working capital are cash, accounts receivable, inventory, and accounts payable. All of these components tend to vary in proportion to the level of sales, but not at the same time. For example, if a company experiences high seasonal sales in its fourth quarter, then inventories and accounts payable will likely rise in advance of the prime selling season, while accounts receivable will increase during the fourth quarter and remain high through the early part of the first quarter of the following year. Cash will decline before the key sales season in order to pay for inventories, and will increase as receivables are collected, so that cash levels are maximized after the prime selling season is over. If a company is not profitable, the cash levels will not recover at the end of the prime selling season, but will instead remain low.

Example

Carstensz Corporation is conducting due diligence on its possible purchase of the Hamilton Furniture Company. The acquisitions manager, Mr. Harrer, is interested in the possibility of reducing the amount of Hamilton's working capital, which can then be used to pay down the purchase price. Mr. Harrer uncovers the following information about Hamilton:

	Balances	Days Outstanding*	Industry Standard	Variance	Value of Variance
Annual revenues	$52,000,000	—	—	—	—
Annual cost of goods	26,000,000	—	—	—	—
Annual purchases	18,000,000	—	—	—	—
Average receivables	13,000,000	91	62	29	$4,143,000
Average payables	2,250,000	45	45	0	0
Average inventory	10,000,000	140	100	40	2,857,000
				Total	**$7,000,000**

The analysis shows that, if Carstensz were to buy Hamilton and reduce its receivable and inventory balances down to their industry averages, this would extract $7 million from working capital. Mr. Harrer is aware that the extended receivables may be caused by longer-term payment agreements with key customers, while it may take a considerable amount of time to reduce Hamilton's inventory levels, especially if it is comprised of slow-moving items. Nonetheless, it appears that careful management may unlock a considerable amount of cash.

*The formulas used in the table to calculate days outstanding are provided later in the Working Capital Metrics section of this chapter.

That example assumes that there is a sales peak during one part of a year, so that there is a natural ebb and flow to the amount of working capital needed. In that scenario, the treasurer can obtain a line of credit from a local bank, which should be sufficient to handle seasonal cash needs, and which can reliably be paid off once the peak period ends.

An alternative scenario is when a company's sales continue to increase over time, which occurs in an expanding market or as a company acquires market share from other entities. In this case, both inventory and receivable levels continually increase, while the corresponding increase in accounts payable will not be sufficient to hold down the overall level of working capital investment. All available cash will be used to pay for working capital, so that

the cash balance is essentially zero, and new funds are continually needed as sales continue to increase. This is a demanding environment for the treasurer, who must look for long-term loans or equity infusions to help pay for the additional working capital.

A final scenario is when a company's sales are declining. As inventories are sold off and receivables are collected, cash may increase substantially, since there is less ongoing working capital to fund. This is the easiest scenario for the treasurer to deal with, since it is the only case where working capital becomes a net source of cash, which can then be applied to other company requirements.

The treasurer should also be aware of unusually high proportions of any one component of working capital, since this may be caused by improper management practices. For example, if the investment in inventory is usually high, this may correspond to an ongoing practice of purchasing in bulk in order to save per-unit costs. Similarly, a very high receivables balance may be caused by the use of special deals to boost sales over the short term or because revenues are being accrued but have not yet been billed. In such cases, the expanded working capital level is not related to sales, but rather to company policy. If funding sources are in short supply, the treasurer may be able to lobby for a policy change that eliminates the need for more cash.

The following five sections describe the various management practices that cause changes in working capital, and note actions the treasurer may take to control or at least monitor them.

CASH MANAGEMENT

Cash is a key component of working capital, and is thoroughly covered in Chapter 4. That chapter reveals how to concentrate cash through various pooling methods, so that the balances scattered in a multitude of bank accounts can be centrally marshaled for use by the treasurer.

CREDIT MANAGEMENT

There are no receivables unless a company elects to extend credit to its customers through a credit policy. Thus, proper credit management is key to the amount of funds that a company must invest in its accounts receivable.

A *loose credit policy* is common in companies having a certain mix of characteristics. For example, they may have high product margins, such as in the software industry, and so have little to lose if a customer defaults on payment. Also, they may be intent on gaining market share, and so will "buy" sales with a loose credit policy, which essentially means they give liberal credit to everyone. Another variation is that a company may be

eliminating a product line or exiting an industry, and so is willing to take some losses on credit defaults in exchange for selling off its inventory as expeditiously as possible. In all of these cases, a company has a specific reason for extending an inordinate amount of credit, even though it knows there will be above-average credit defaults.

A *tight credit policy* is common in the reverse circumstances; product margins are small, or the industry is an old one with little room to gain market share. Also, a recessionary environment may require a firm to restrict its credit policy, on the assumption that customers will have less money available to make timely payments.

Any change in a company's credit policy can have a profound effect on the funding requirements that a treasurer must deal with. For example, if a $48 million (revenues) company has receivables with an average age of 30 days, and its wants to enact a looser credit policy that will increase the average receivable days to 45 days, then the company's investment in receivables is going to increase by 50 percent, from $4 million to $6 million. Consequently, the treasurer must be prepared to find $2 million to fund this increase in working capital.

In many companies, the treasurer has direct control over the credit policy and, indeed, over the entire credit granting function. This is a wise placement of responsibility, since the treasurer can now see both sides of the credit policy—both the resulting change in sales and the offsetting change in required working capital funds.

The treasurer can set up a considerable number of credit controls to reduce the probability of default by customers. Here are some possibilities:

- *Issue credit based on credit scoring.* There are several credit-monitoring services, such as Experian and Dun & Bradstreet, which provide online credit scores on most larger businesses. The treasury staff can create a credit-granting model that is based on a mix of the credit scores of these services, the company's history with each customer, and the amount of credit requested.

- *Alter payment terms.* If a customer requests an inordinate amount of credit, it may be possible to alter the payment terms to accommodate the customer while still reducing the level of credit risk. For example, one-half of a sale can be made with 15-day payment terms, with the remainder of the order to be shipped upon receipt of payment for the first half of the order. This results in payment of the total order in 30 days, but with half the risk.

- *Offer financing by a third party.* If the treasury department is unwilling to extend credit, then perhaps a third party is willing to do so. This can be a leasing company or perhaps even a distributor with a loose credit policy.