

## CAPTURING TIME IN FINANCIAL STATEMENTS

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The Dodd-Frank Wall Street Reform and Consumer Protection Act<sup>1</sup> applies a number of heightened standards to bank holding companies with consolidated assets of \$50 billion or more and to nonbank financial companies that have been subjected to supervision by the Board of Governors because of their systemic importance. Among these standards are new liquidity and capital requirements (the “Liquidity Standard”)<sup>2</sup> and a new requirement (the “Resolution Plan Requirement”) to prepare and maintain a resolution plan that articulates how the relevant company could best be dismembered if it represented a threat to the financial stability of the United States.<sup>3</sup> One of the, perhaps unintended, effects of these new standards may be to provide an additional reason for rethinking the form and purpose of financial statements prepared by financial institutions.

The recent financial crisis and the resulting increase in the recognition of how important capital and liquidity requirements are for financial institutions have already exposed some of the ways in which financial statements in their current form are inadequate for complex financial institutions.<sup>4</sup> The usual way of dealing with this

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<sup>1</sup> Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act), Pub. L. No. 111-203, 124 Stat. 1376 (2010).

<sup>2</sup> Enhanced Prudential Standards and Early Remediation Requirements for Covered Companies, 77 Fed. Reg. 594, 604 (proposed Jan. 5, 2012) [hereinafter Liquidity Release].

<sup>3</sup> Resolution Plans Required, 76 Fed. Reg. 67,323 (proposed Nov.1, 2011) [hereinafter Resolution Release].

<sup>4</sup> For example, discussions of when or if asset values are to be marked to market, difficulties in valuing asset-backed securities, the relative lack of information about a company’s liquidity and collateral position, and the opacity of balance sheets with regard to the nature (other than arithmetic) of shareholders’ equity all reveal a need for having more information than that provided in ordinary financial statements. For a discussion of some of these data issues, see Dimitrios Bisias et. al., *A Survey of Systemic Risk Analytics* 38–39, (Office of Financial Research, Working Paper No. 0001, Jan. 5, 2012) [hereinafter Risk Analytics], available at [http://www.treasury.gov/initiatives/wsr/ofr/Documents/OFRwp0001\\_BisiasFloodLoValavanis\\_ASurvey](http://www.treasury.gov/initiatives/wsr/ofr/Documents/OFRwp0001_BisiasFloodLoValavanis_ASurvey)

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inadequacy is to require the institutions to provide supplementary information, rather than to rethink the nature of the basic financial statements.<sup>5</sup> Having the supplemental information is helpful and is often sufficient to re- or deconstruct the standard financial statements, and making the financial statements of certain companies look completely different from those of others does, after all, have disadvantages.

The Liquidity Standard and the Resolution Plan Requirement are examples of how extensive these demands for supplemental information can become. The core requirement of the new liquidity standards is the imposition of periodic stress-testing coupled with liquidity and corporate governance standards.<sup>6</sup> Other portions of the Liquidity Release elaborate on the precise types of information and testing required, establish new capital and leverage requirements and introduce new limits on credit exposures to counterparties.<sup>7</sup>

The Resolution Release requires covered companies to provide resolution plans that extensively articulate how they could be liquidated with minimal harm to the financial system.<sup>8</sup> The provisions of the Resolution Plan Requirement that set forth the precise details are lengthy, and relate to entity structure, investment strategy, documentation of practices and extensive financial data.<sup>9</sup>

### **The Temporal Dimensions of Capital and Liquidity**

Although the requirements spelled out in the Liquidity Release, on the one hand, and the requirement to prepare resolution plans, on the other, nominally relate to different aspects of a financial company's business, the intense focus on and interlinks between capital, liquidity and liabilities suggests a deeper relationship. The possibility of such a relationship makes it worthwhile to consider the ways in which capital, liquidity and liabilities are related and how these relationships could affect the structure of financial statements for financial institutions.

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“[L]egacy supervisory accounting systems sometimes fail to convey adequately the risk exposures from new complex contingent contracts, and from lightly regulated markets with little or no reporting requirements. In fact, supervisors do not even have consistent and regularly updated data on some of the most basic facts about the industry, such as the relative sizes of all significant market segments.”

*Id.* at 9.

<sup>5</sup> This can be seen by reviewing the periodic reports of public bank holding companies.

<sup>6</sup> Liquidity Release, *supra* note 2, at 599.

<sup>7</sup> A counterparty can actually consist of a number of related individuals or entities.

<sup>8</sup> See *generally* Resolution Release, *supra* note 3, at 67,323.

<sup>9</sup> See *generally* Informational content of a resolution plan, 12 C.F.R. § 381.4 (2012).

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*Time and Capital*

Capital can be considered either as the number that results from subtracting the value of a company's liabilities from the value of its assets or as the amounts that have been contributed as consideration for certain kinds of financial instruments, such as common or preferred stock or deeply subordinated, long-term debt.<sup>10</sup> These values can differ, but each purports to represent the ability of a company to withstand losses and continue in business.

In the context of insolvency, capital expressed as the excess of assets over liabilities isolates the point in time where society has determined that it is unfair for a company to continue in business, in the sense that the certainty of loss justifies some notion of structured sharing. On the other hand, capital expressed as consideration received highlights the extent to which the capital remains available over time, with common capital generally never having to be returned while deeply subordinated debt must eventually be repaid. This focus emphasizes the relative usefulness of different kinds of capital, especially the relative ineffectiveness of subordinated debt if repayment roughly coincides with severe financial stress or insolvency. If capital must be repaid at a particular point in time, then to some extent it is not quite (regulatory) capital, at least if capital is considered to be assets over which no one has any claims except shareholders (or their equivalent).

These differences in repayability also introduce a temporal factor into the nature of capital that is typically obscured by the standard company balance sheet. Time is furthermore implicit in the notion that capital must be available as a buffer to intermittent shocks and as a way of accommodating creditors at insolvency, meaning that capital must be reliably available over a range of times. While the standard balance sheet presumes by its structure that capital will be available at insolvency, in reality—at least for financial institutions—the time prior to insolvency or prior to a potential insolvency is perhaps even more crucial, because insolvency can be unpredictable<sup>11</sup> and because the time frames during which creditors and investors (and, in all likelihood, managers) believe they must act become increasingly abbreviated when insolvency appears likely.

*Time and Liquidity*

The concept of liquidity further expands the role of time in the presentation of a company's financial position. If liquidity is thought of as the ability to obtain funds in the market, then planning for liquidity requires consideration of both the times at which funds might be needed as well as their likely availability. Similarly, if liquidity is thought

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<sup>10</sup> These two perspectives are implicit throughout the structure of balance sheets, corporation law definition of capital and surplus and regulatory releases regarding risk-based capital, such as those found in the appendices to Regulation Y of the Federal Reserve Board. 12 C.F.R. pt. 225 app. A–G (2012).

<sup>11</sup> This is due to uncertainties such as asset prices, the availability of funding, forbearance, customer and market reactions, and regulatory decisions.

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of as a store of assets that will be readily accepted as means of payment, then calculating the available level of liquidity requires keeping track of when inflows from investments and transactions are expected to occur. Amounts in deposit accounts and in the form of Treasury securities can in effect be treated as inflows that can occur at any time.

Deposits and Treasuries also represent a third aspect of the way time plays a role in the nature of capital and liquidity. In calculating the extent to which a company's assets exceed the claims of its creditors and the extent to which the sale of assets can generate liquidity, the ability of assets to retain their value over time is crucial. The closer an asset is to being treated as if it were money, the greater its ability to fulfill at any given time the role to be played by liquidity or capital. This is particularly true for systemically important financial institutions (whether they are bank holding companies or not). Preventing the collapse of the financial system or reducing the risk of such a collapse depends in part on the availability of sufficient funds and fund-like assets to repay the counterparties of the insolvent company and to convince other participants that the system will not freeze up or collapse. The inability (or perceived inability) to obtain such funds in turn signals the possibility of failure (or, equivalently, exclusion from the financial system).

The distribution across time of collateral provided by or to a financial institution is another instance in which the timing of the potential uses of financial instruments or devices can be as significant as their aggregate amount. For example, the aggregate amount of all collateral made available by a financial institution in connection with its borrowings might appear adequate while at the same time actually failing to be so because of an insufficiency of collateral for financings that might need to be re-collateralized in two days or two months. Similarly, a review of the collateral posted to cover various obligations might show that the collateral preferred for certain kinds of obligations, such as repurchase agreements, might be losing value and require supplementation (or replacement) at a rate or in a manner that differs from the behavior of collateral posted for other purposes. This could signal the arrival of financial difficulties at a particular time more clearly than a look at aggregate collateral.

In addition to playing an important role in understanding a company's financial circumstances in the ordinary case, time becomes increasingly important whenever insolvency is, or appears to be, imminent. Typically, understanding the aggregate cash inflows and outflows over a modestly long period of time (e.g., a quarter or a year) might suffice for understanding the nature and risks of a particular company. In the zone of insolvency or at a time of generalized financial crisis, however, not only the aggregate flows of a one-day period but also even their relative order can be crucial.<sup>12</sup>

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<sup>12</sup> For example, whether sufficient funds are available will depend on whether large inflows or outflows occur early or late in the day, and whether closing out all transactions occurs periodically or all at once.

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## Restructuring the Financial Statement

### *Shortcomings of the Standard Balance Sheet*

The basic form of a balance sheet largely obscures all of the ways in which time plays a role in the state of a company's finances. The principal reflection of the role that time plays is found in categorizations such as "current assets," "current liabilities" and "long-term debt." Other information that is relevant to time is found, among other places, in notes to the financials, in the discussion that accompanies the financial statements in reports filed with the Securities and Exchange Commission by publicly-traded bank holding companies or in the specialized reports filed by regulated institutions with their regulators, such as the call reports that are available from the Federal Deposit Insurance Corporation. Information of that kind needs to be combined in some way with the balance sheet and income statement in order to render those statements useful. That still leaves the question of what a balance sheet, even if so supplemented, is supposed to represent. Even though in some sense a balance sheet represents what would happen if a company were liquidated on the date as of which the balance sheet speaks, it does not generally reflect the values that could actually be realized in such circumstances, principally because the valuation conventions on which the balance sheet is based reflect a going-concern assumption, an assumption that obviously plays no further role once an insolvency actually arises.

Given these different ways in which time constitutes an essential part of a company's financial structure—even for balance-sheet purposes, and not just in the sense that revenues are measured over time—finding a way of representing directly what might be called the time structure of the balance sheet might more adequately model the state of a financial institution than do balance sheets in their current form. Any such representation should allow the various relationships between capital and liquidity to appear and should be capable of natural contraction and expansion in order to reveal the different degrees of detail that are relevant in times of crisis and non-crisis. One possible way of accomplishing such a task may be to create a model of a company's financial situation that can be viewed at either a level of minute detail or at other levels of aggregation.

### *Building in Extensible Time Frames*

This might be done by converting the basic "vertical" distinction of a standard balance sheet (the separation of assets from liabilities) into a "horizontal" distinction of time frames,<sup>13</sup> thereby creating the ability to separately represent the dynamics over time of different classes of assets and their associated liabilities. For example, a liability to be

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<sup>13</sup> For something similar in terms of a more purely cash-flow analysis, see Liquidity Release, *supra* note 2, at 607 n. 66.

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paid on June 1 would be grouped together with an asset that is intended to be used to satisfy the liability and is liquid or capable of being liquidated.<sup>14</sup> In many ways, this would amount to building some of the notes to the financial statements directly into the statements themselves. There are surely other ways. The purpose of the following discussion is to conduct a thought experiment and consider the usefulness and consequences of the experimental model, particularly with respect to the regulatory goal of understanding, and perhaps partially taming, systemic risk.

Aggregating cash flows (including anticipated borrowings, purchases, interest and dividend payments and receipts) over designated time frames would directly represent anticipated liquidity conditions. The trustworthiness of any such representation would naturally decrease out into the future. It should be noted, however, that conventional financial statements also contain estimates of various future values. Practices could be established to standardize estimates of future payments and receipts. In addition, as future payments change in their status from reasonably anticipated to contractual and from contractual to essentially certain, the way in which the changes take place will be visible as movements in the entries in the “balance sheet,” for example from a column indicating anticipated payments or receipts to one indicating a contractually agreed payment or receipt. Changes of this kind might prove indicative of various kinds of potential success or difficulty.

Different “kinds” of capital could be stratified in terms of their ability to be liquidated within particular time frames and in connection with the satisfaction of particular kinds of liabilities. For example, large investments in corporate real estate would put a company in a different capital position than would small or modest investments of that sort, as would large holdings in certain investment funds as opposed to large holdings of Treasuries. Highly liquid assets would be treated as available at any time to cover any required outflow (i.e., they would be treated in effect as if they were an offsetting cash inflow at the desired point in time), while real property, for example, could be classified as available to cover only obligations that might mature only in the more distant or indefinite future. Collateral supporting the obligations of the financial institution could be similarly stratified, since the distribution of the collateral over time<sup>15</sup> and the changes in the amount and nature of the collateral deployed relates closely to liquidity needs and uses.

A convention would have to be developed for what would constitute the “balance sheet” for a given day, such as the last day of a given reporting period. One possibility might be a summary four-quarter look into the future, with all inflows and outflows after that date either ignored or aggregated as if they took place simultaneously. There might not need to be a separate line for, say, common stock, since the relevant fact is the lack of any constraint forcing a payment at a particular time, although there could, of course,

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<sup>14</sup> For example, by placing it above or below the liability on parallel, horizontal lines.

<sup>15</sup> That is, the time at which it could be called upon for payment purposes.

automatically be such a line because the very lack of such constraints might compel or strongly suggest a particular graphic or structural positioning of that information. On the other hand, a “capital” security with required payments could show up in a horizontal line that represents the spread of the required payments over time. Asset valuation adjustments that now are distinguished from one another by either showing up in the income statement or as an adjustment on the balance sheet could now all be represented in different ways on the balance sheet, based on the ways in which they affect actual or projected inflows and outflows. For example, the likely future value of assets that are currently illiquid and perhaps impaired could be shown as having a value at some future date, resulting in the categorization as unavailable for current payments but still ultimately convertible into cash, and any payments currently being made on such assets could be shown as expected receipts at the appropriate times. This would fit with the intuitive notion that an amount that is uncollectable is collected in the extremely distant future, at infinity.

Such a representation of a financial company’s transactions over specified time frames essentially makes the statement that a financial company simply is a financial company because it continuously engages in liquidity transactions. The failure of such liquidity transactions in effect opens a time gap, another way in which time plays a role in the structure of financial statements and financial activity. The existence of an unclosable or unbridgeable time gap constitutes insolvency, regardless of whether the gap arises from the inability to liquidate otherwise unencumbered assets or from the lack of assets.

A crude approximation of a remodeled balance sheet might have the following structure:

	Date 1	Date 2	Date 3	Date 4	All Future Dates	Totals
Liabilities	100	150	200	175	1,500	<b>2,125</b>
Liquid Assets	100	100	100	50	200	<b>550</b>
Other Available Assets		25	30	200	900	<b>1,155</b>
Illiquid Assets					500	<b>500</b>
Agreed Financings		25			500	<b>525</b>
Expected Receipts	50	50	50	25		<b>175</b>
<b>Balance</b>	<b>50</b>	<b>50</b>	<b>-20</b>	<b>100</b>	<b>600</b>	<b>780</b>

### *Benefits of Time Frames*

A representation of a company’s financial situation in this form would appear to

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be useful both in managing liquidity in an ongoing business and in planning for a resolution in the event of an insolvency or similar crisis. The relationships between certain kinds of assets and liabilities would be represented directly. All levels of detail would be directly accessible and capable of either aggregation or magnification. All time frames would be immediately accessible, so that planning could be carried out for different time frames, including minute-by-minute (maybe) in a crisis.

In some respects, a representation and analysis in this manner of a company's capital and liquidity resembles the ways in which stress testing affects (or potentially affects) our understanding of the company's financial condition. Testing of that sort forces consideration of time frames of varying lengths and of the ways in which affected financial exposures can be dealt with and has become a standard regulatory device, at least in connection with the supervision of large financial institutions.<sup>16</sup> Something like this is precisely what the matching of inflows and outflows into the future represents and accomplishes. A stress test requires consideration of the ways in which the size and relative timing of the projected or contracted inflows and outflows might be affected, and how to plan for and alleviate the consequences.<sup>17</sup> A modified "balance sheet" with a "horizontal" time component accommodates such variation, testing and planning quite easily and, furthermore, suggests in a fairly direct way what the relevant factors are and what the consequences of changing their values might be. In other words, developing a modified balance sheet for at least certain financial institutions would simplify the conduct of stress-testing and would, in fact, provide a factual and conceptual framework for articulating what a stress test does.

The single counterparty exposure limits contained in the Liquidity Release also reflect an awareness of flows, and not just a static conception of liability, in the following way: An exposure can be reduced by obtaining a guarantee or other form of credit support; however, even though the one exposure is reduced, another exposure is created, namely to the guarantor. The networking of exposures models, implicitly, the potential direction and timing of flows.

The ways in which the treatment of capital and liquidity in the Basel III Framework relate to the modified "balance sheet" described above are slightly more indirect. The discussion of capital in the Basel III Framework emphasizes the kinds of capital that are completely or largely free of any provision that would compel or provide an incentive for payment or repayment. In the discussions on adjustments (e.g., with regard to deferred tax benefits and good will) the emphasis is understandably on the extent to which the value assigned to the capital indicates the availability of real means to

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<sup>16</sup> For a condensed description, see BASEL COMMITTEE ON BANKING SUPERVISION, BASEL III: A GLOBAL REGULATORY FRAMEWORK FOR MORE RESILIENT BANKS AND BANKING SYSTEMS 46–47, (June 2011) available at <http://www.bis.org/publ/bcbs189.pdf>. The Liquidity Release requires ongoing stress-testing, conducted in a prescribed manner. See Liquidity Release, *supra* note 2.

<sup>17</sup> See Risk Analytics, *supra* note 4, at 100; Liquidity Release, *supra* note 2.

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make payments. Any requirements that capital be repaid or redeemed, that payments, whether in the form of interest or dividends, be made with respect to capital, or that some kinds of capital, upon the occurrence of certain events, become less restricted and more available for the payment of creditors in general<sup>18</sup> obviously link the idea of kinds or qualities of capital to the idea of time. The availability of capital that is not subject to requirements that it be returned remains a rather general notion except at insolvency, since the fact that it is unrestricted does not mean that capital is currently available. It could, for example, be locked up in illiquid investments.

The liquidity requirements established as part of the Basel III efforts attempt to overcome somewhat that (potential) lack of availability in several ways.<sup>19</sup> A Liquidity Coverage Ratio mandates that the “stock of high-quality liquid assets” must equal or exceed the “total net cash outflows over the next 30 calendar days.”<sup>20</sup> “High quality liquid assets” are identified by reference to both “fundamental characteristics,” such as low credit risk and ease of valuation, and “market-related characteristics,” such as the size of the relevant market and the diversity of buyers and sellers in that market.<sup>21</sup> “Total net cash outflows” include outflows that are likely to occur under conditions of market stress.<sup>22</sup> The liquid assets that count toward the satisfaction of this ratio must be unencumbered and may not serve as hedges or as collateral.<sup>23</sup> Net cash outflows are calculated by subtracting a portion of the expected cash inflows from the expected outflows in the stress scenario.<sup>24</sup>

In addition, a “Net Stable Funding Ratio” must be met, which requires that the “available amount of stable funding” must always exceed the “required amount of stable funding.”<sup>25</sup> “Stable funding” is characterized as “the portion of those types and amounts of equity and liability funding expected to be reliable sources of funds over a one-year time horizon under conditions of extended stress. The amount of such funding *required* of a specific institution is a function of the liquidity characteristics of the various types of assets held, [off-balance-sheet] contingent exposures incurred and/or the activities pursued by the institution.”<sup>26</sup> Note, however, that what counts as stable funding does not have to be liquid at any time prior to the time at which it is needed to cover payment requirements. For example, amounts that constitute common capital might at any given

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<sup>18</sup> In other words, various kinds of conditional capital.

<sup>19</sup> See generally BASEL COMMITTEE ON BANKING SUPERVISION, BASEL III: INTERNATIONAL FRAMEWORK FOR LIQUIDITY RISK MEASUREMENT, STANDARDS AND MONITORING, (Dec. 2010) [hereinafter BASEL III LIQUIDITY FRAMEWORK], available at <http://www.bis.org/publ/bcbs188.pdf>.

<sup>20</sup> *Id.* at 3.

<sup>21</sup> *Id.* at 4–5.

<sup>22</sup> *Id.* at 4.

<sup>23</sup> *Id.* at 6.

<sup>24</sup> *Id.* at 12.

<sup>25</sup> *Id.* at 25.

<sup>26</sup> *Id.* at 25–26.

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point in time be invested in assets that are not currently available for liquidation. As a consequence, “stable funding” must be understood to mean something like “capable of being liquidated without too much trouble and without conflicting with liabilities associated with such sources of funding.” In other words, stable funding consists of access to assets that are not constrained or are loosely constrained by any commitments that can, hopefully, be sold to cover cash needs with respect to assets that cannot otherwise be easily monetized. In this respect, the manner in which required stable funding is calculated resembles the calculation of one-year’s worth of liquid risk-based capital. It is somewhat unclear whether values characterized as equity and equity-like will necessarily be available as sources of funding just because they are nominally not subject to payment constraints. To some extent, the various monitoring procedures proposed by the Basel III Liquidity Framework may provide information that could at least partially overcome the lack of any necessary connection between equity and liquidity.

It is fairly clear how a balance sheet that is “stretched out” horizontally to reflect timing could accommodate both liquidity coverage ratios and net stable funding ratios. It would do so by allocating various assets to the payment of either stressed or expected payouts over the required time periods. Using such a remodeled balance sheet would make the intended function of both ratios graphically apparent. The remodeled balance sheet would, however, in all likelihood require more precise decisions to be made about (i) which of the assets whose value might be encompassed by the number representing equity capital are actually reasonably capable of monetization in the time frames required, and (ii) which times are the relevant times at which monetization must occur. Changes in the values represented by the remodeled balance sheet would appear not just as aggregates but as sub-aggregates allocated to specific times or time periods, potentially creating a (near) continuum of changes over projected time. By disaggregating much of the information represented by the Liquidity Coverage Ratio and the Net Stable Funding Ratio, a remodeled balance sheet potentially enables insights into the ways that the distribution of flows across time (including the different distributions of inflows and outflows and the distribution of the differences or net values), rather than just the aggregate values on a calculation date, might affect or predict the financial well-being of a large, active financial institution.

In addition to time, the practicalities of dealing with a potential crisis and with the proposed requirements for living wills compel the incorporation of at least one more dimension, namely “space,” in any remodeled balance sheet. Information must be available regarding not only the times and amounts of inflows and outflows, but also about the persons to and from whom flows are owed or expected.<sup>27</sup> For example, all swaps between an insolvent financial company being resolved by the FDIC and the same counterparty must, if transferred, be transferred to the same replacement for the insolvent company, whether the transferee is an existing market participant or a new bridge

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<sup>27</sup> See the remarks *supra* regarding counterparty exposure limits.

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institution.<sup>28</sup> Any determination of possible setoffs obviously requires an awareness of all transactions between the insolvent institution and each particular customer, client or counterparty. Part of being alert for potentially risky situations consists in monitoring the behavior, creditworthiness and asset concentrations of each other company with which a significant financial company does business. The kind of “space” involved is the position of the significant financial company in the total network of other financial institutions that constitutes the financial system, although this “space” can in all likelihood be determined only for the nearest neighbors of the significant financial company (i.e., those with which it directly engages in transactions).

In principle, the ways in which a significant financial company’s exposures (cash inflows and outflows, collateral) relate to other financial companies can be indicated in a remodeled balance sheet by typographical convention. For example, at each point in, or for each period of, time, the portion of each number displayed horizontally in the remodeled balance sheet that relates to another financial company can be displayed separately in a vertical column. This would allow separate (i) disaggregations of relationships with a given financial company at each point in time; (ii) aggregations of all exposures to a given financial company at each point in time; and (iii) analyses of the development over time of both the disaggregated and the aggregated exposures.

Remodeling balance sheets of large financial institutions to reflect both the temporal and spatial aspects of the institutions’ activities would display directly the way assets, inflows and outflows vary over time and shift (in terms of the other parties involved) over space. A joint representation of inflows and outflows over both space and time should provide, at a fairly basic level, some direct indication of what financial company’s systemic position is and how it is constituted. Representations of systemic importance are uncommon and controversial. One virtue of a spatially and temporally remodeled balance sheet might be its potential ability to resolve some of this controversy. By its very nature, a remodeled balance sheet would also permit the rapid adaptation of plans as trends change, for example, as relevant time periods close to the present increase in importance.

Any indication of an individual financial company’s systemic position would need to be complemented by similar information regarding the other large financial companies with which any given financial company is linked. Whether such information would in theory be available in all relevant cases would in all likelihood depend on whether all the relevant financial companies are regulated and whether their regulators impose similar reporting standards. If it were practical to collect remodeled balance sheets, prepared on a consistent basis, from most or all of the significant financial companies, not only the systemic importance of each institution but the fundamental behavior of the system as a whole might be more easily observed.

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<sup>28</sup> Dodd-Frank Act, *supra* note 1, § 210(c)(9).

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Even a collection of remodeled balance sheets of all financial companies in the U.S. or world financial system would presumably be incapable of revealing the potential existence of a dangerous exogenous shock, such as a housing crisis—simply because it is exogenous. Nevertheless, it seems possible that the appearance in remodeled balance sheets of certain kinds of data will be suggestive of a coming exogenous shock, which could be further studied and perhaps verified using other kinds of data. In addition, remodeled balance sheets may show more clearly than ordinary balance sheets how a shock might propagate, both from institution to institution and from some aspects of the financial system to others.

It might be argued that value-at-risk models that are continuously updated already take into account the temporal aspects of balance sheets (or of the overall financial situation of a company). While models of that kind do in fact consider future exposures by calculating their present value, they essentially erase the distribution of exposures with respect to one another because the results are numerical aggregations. This has two effects. First, the focus of the calculations amounts to a generalized insolvency test which neither relates to the potential results of an actual insolvency on the date of calculation nor provides a direct indication of the timing of the potential difficulties. Rather, it reflects what might be called the likely results of a controlled run-off of a liquidating trust for the company in question. This is not to deny that the results of making the necessary calculations can serve a usual early warning function. Second, given a proper distribution of values and times, the results of calculating value-at-risk can conceivably obscure the existence of periods of significant risk for a company if those risks arise from mismatches in the availability of funds in comparison to the temporal distribution of liabilities. A remodeled balance sheet provides the necessary temporal distributions without interfering with any calculations of value at risk. By providing these distributions in detail, however, such a balance sheet potentially raises the question of whether such calculations are necessary, or, phrased differently, whether the information such calculations provide useful information in addition to that provided by the balance sheet. To take a simple mathematical analogy, calculating value-at-risk might be like integrating (or trying to integrate) certain expressions when what we really want to find out is whether the curves represented by the expressions are discontinuous at any points (where, by analogy, the discontinuities represent liquidity or solvency problems). The answer might be that it provides redundant information that is nevertheless useful for quick or more tractable evaluations or evaluations by outsiders who are not entitled to all of the information in an extensive, remodeled balance sheet.

In this regard, it is interesting to consider the information that a remodeled balance sheet would provide in connection with certain more specific requirements of the Liquidity Regulation and the Resolution Regulation.

Under the Liquidity Regulation it will be necessary, among other things, to keep track of which assets are unencumbered, what the credit exposures are to counterparties,

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and how financial companies are to control their liquidity and capital needs and exposures by corporate governance mechanisms. Which assets are unencumbered (in the sense of being subject to a lien) and which have not already been allocated to serve as a hedge or source of future payment would already be indicated (or be capable of being indicated) by the kind of modified balance sheet described earlier, as would credit exposures to any combination of counterparties. The fact that information of this kind, as well as more standard information about flows and projected flows, would in effect constitute the balance sheet would provide any corporate governance arrangement that might be implemented with a very large portion of the information the governing persons and bodies might need, and do so in an accessible, replicable and stress-testable form. Much of the information necessary for capital planning would also be available “free” as a result of the modified balance sheet.

As far as the informational requirements of the Resolution Requirement are concerned, a remodeled balance sheet would appear to supply directly, even without explicit consideration of an insolvency, almost all of the required information. In addition, given the interrelationships that such a balance sheet would display, many of the plans and strategies seem likely to be easier to articulate, since they could be linked directly to the financial interrelationships. In all likelihood, a substantial number would not need to be articulated at all, except in a trivial sense, since they would reveal themselves on the face of a detailed version of the balance sheet. A remodeled balance sheet would also provide a significant amount of the information required for the credit exposure reports that may also ultimately be implemented in connection with the Resolution Regulation, once the counterparty credit limits have been finalized.<sup>29</sup> Roughly speaking, the Resolution Regulation seems in essence to require the financial picture of an organization that would be given by a remodeled balance sheet plus some names and addresses that would make finding the right people, machines and documents easier in a crisis.

## Conclusion

The important roles accorded to liquidity and resolution plans in Dodd-Frank and the centrality of liquidity in any understanding of large financial institutions as they are structured today and, more importantly, as they interact with other financial institutions, all suggest that something like a modified balance sheet should not just be a response to these regulatory demands but should instead be a candidate for itself being the central regulatory demand, around which other demands could be organized and take shape.

A recent report<sup>30</sup> by the Federal Deposit Insurance Corporation on how it would

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<sup>29</sup> Resolution Release, *supra* note 3, at 67,327.

<sup>30</sup> *The Orderly Liquidation of Lehman Brothers Holdings Inc. under the Dodd-Frank Act*, 5(2) FDIC Q. 31 (2011), available at [http://www.fdic.gov/bank/analytical/quarterly/2011\\_vol5\\_2/FDIC\\_Quarterly\\_Vol5No2\\_entire\\_v4.pdf](http://www.fdic.gov/bank/analytical/quarterly/2011_vol5_2/FDIC_Quarterly_Vol5No2_entire_v4.pdf).

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have resolved Lehman Brothers Holdings if the resolutions provisions of Title II of Dodd-Frank had been in effect at the time provides an interesting, indirect and somewhat ironic—given the content of the Resolution Regulation—confirmation of this conclusion. The report describes the principal advantages of Title II over bankruptcy proceedings: the availability (i) of dedicated sources of liquidity to prevent relevant markets from seizing up and (ii) of bridge institutions for holding derivatives and thereby preventing their termination while holding other activities that should be preserved or maintained. These advantages purportedly follow from an understanding of the unique ways in which the insolvencies of certain kinds of financial institutions might affect certain markets or even the larger economy.<sup>31</sup> These effects are considered to be significantly different from the effects of the insolvencies of large industrial companies. The nature of the new possibilities created by Title II makes it immediately clear what kinds of information and planning are necessary to benefit from them.<sup>32</sup> This kind of information and planning can be derived directly from modified balance sheets, as described above, without starting from any supposed special requirements of resolution plans and, unlike the requirements set out in the Resolution Regulation, without any particular reference to the way a financial company would be resolved under the Bankruptcy Code.

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<sup>31</sup> These effects are considered to be significantly different from the effects of the insolvencies of large industrial companies due to the unique nature of financial businesses, the tightness and complexity of their interrelations, and the manner in which markets can freeze when the value of a whole class of assets becomes suspect.

<sup>32</sup> This includes comprehensive information regarding capital and liquidity needs, asset and liability classes and the respective counterparties and collateral, as well as the computational power and general financial databases necessary to keep track of, evaluate and manage all of these matters.