Funds Transfer Pricing
A survey to assess the state of European banks’ practises
Introduction and Context

Funds Transfer Pricing ("FTP") is both a regulatory requirement and an important tool in the management of a firm’s balance sheet structure and in the measurement of risk adjusted profitability taking into account liquidity risk, maturity transformation and interest rate risk.

Firms should ensure that all costs, benefits and risks identified are explicitly and clearly attributed to business lines (ideally to product levels) and are understood by business line management. FTP and Liquidity FTP are transfer mechanisms of costs from central treasury functions to the products and lines of business originating those costs and related risks. Not having a complete FTP creates the potential for a sub-optimal product mix. In addition, by attributing the cost, benefits and risks of liquidity to business lines within a firm, the FTP process strongly influences the volume and terms upon which business lines trade in the market and promotes a more resilient, sustainable business model. Conversely, failure to adequately apply FTP processes results in the misallocation of liquidity resources within the firm.

Prior to the global financial crisis of 2007-2009, term wholesale funding costs were low and liquidity was taken for granted. Firms typically made no recharge to the business units for wholesale funding costs and incorporated a simple recharge for the cost of the liquid asset buffer. Some of the more advanced firms may have incorporated some modest term liquidity premia; however, this typically applied only to specific asset classes. The global financial crisis forced firms to reassess their transfer pricing policies in light of increased costs of funding and illiquidity in the market. Regulators now expect firms to accurately quantify the liquidity costs, benefits and risks in relation to all business activities and incorporate them into their product pricing, performance measurement and approval process for new products. Banks with large trading businesses should apply sufficient haircuts to many of the traded assets they hold, in order to estimate the likelihood of a market disruption, and the extent to which market liquidity could evaporate. A severe drop in market prices can lead to calls on margin positions and places severe pressure on banks’ abilities to meet funding requirements. These banks need to price the liquidity costs of potential margin calls. So even if historically the FTP was born as a tool for the measurement of the ex-post performance of the commercial network, today FTP is changing especially in relation to the role it has acquired in the management of liquidity risk.

After the crisis, a number of regulatory developments has been introduced, having a direct impact also on FTP that has risen up the corporate agenda, requiring a greater response from financial institutions.

In 2010 the Basel Committee introduced liquidity standards as part of the Basel 3 capital regime, including the Liquidity Coverage Ratio ("LCR") and the Net Stable funding ratio ("NSFR"). The intent was to increase firms’ short and long term resilience. The LCR addresses whether firms
have adequate high quality assets to survive stressed liquidity conditions over a 30 day period whilst the NSFR guides firms to adopt a more stable source of funding over the long-term. In addition to these two ratios, monitoring tools to track the diversification of funding sources, encumbrance on assets and to alter disclosure to supervisors were also introduced.

The Basel Committee on Banking Supervision (“BCBS”) introduced 17 principles for managing and supervising liquidity risk which are also reflected in the European Union’s Capital Requirements Directive IV (“CRD IV”) highlighting the importance of governance structure, measurement and management and public disclosure of liquidity risk; the European Banking Authority (“EBA”), has also discussed the role of an effective allocation mechanism for liquidity costs, benefits and risks. More recently, in 2012 the Commission de Surveillance du Secteur Financier (CSSF) published a series of guidelines concerning central administration, internal governance and risk management: these included a specific section on transfer pricing practices.

Overall, prudent FTP practices combined with changes in liquidity regulation will ensure that banks charge more for illiquid and correlated assets, use more stable sources of funding to meet the demands of their business activities, and carry an appropriately sized liquidity cushion to withstand unexpected idiosyncratic and/or market-wide disruptions. Ultimately, liquidity is scarce and therefore it needs to be managed prudently.
Executive Summary

The survey conducted by the Deloitte EMEA Finance & Risk Working Group has focused on several key dimensions of banks’ FTP practices and it paints a picture where larger banks typically display more advanced and integrated FTP systems.

A robust FTP model should enable optimal product pricing and profitability management whilst addressing the impact of liquidity and interest rate risk on a firm’s balance sheet.

The survey has involved 15 financial institutions from UK, France, Germany, Italy, the Netherlands and Greece and whose functions (such as Treasury, ALM, Risk Management, Performance Management) were asked to answer 26 questions concerning Methodology, Processes and Systems. Data were collected on a questionnaire (multiple choice) and answered by treasury or finance professionals.

Figure 1: Overall survey results in terms of processes /systems integration and methodologies evolution.
Source – Deloitte, 2014
Figure 1 plots, for each respondent, the synthetic score for the methodology evolution and for the processes / systems integration on the axes\(^1\). The size of the bubbles represents the size of the bank. Larger banks tend to cluster in the upper-right corner of the graph, displaying more advanced methodologies and more integrated processes and systems. Smaller banks are found in the bottom left corner, with typically limited methodologies and a low level of integration.

Main findings can be summarized as it follows:

**Methodology:**

- Many banks are still far from meeting the regulatory requirements on Liquidity Transfer Pricing (LTP), especially for what concerns contingent liquidity risk; this generates a potentially dangerous incentive to accumulate too many off-balance sheet items which pose this kind of risk.

- The introduction of the Basel III requirements has prompted banks to revise their methodologies for the calculation of the liquidity premium component, introducing a component to take into account the cost of carrying a Liquidity Asset Buffer. However, most banks in our sample did not estimate this component in their FTP frameworks, and as such they are lagging behind the compliance of regulators’ recommendations.

- Finally, only the biggest players adopt behavioural adjustments imported from interest rate risk and liquidity risk models, reflecting the behavioural characteristics of the various instruments in addition to the contractual profiles of the transactions.

**Processes / Systems Integration:**

- On processes side, many banks are still lacking independent validation of their FTP models: as many as 40\% of respondents do not have it carried out by risk area (asked instead by the regulator).

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\(^1\) The synthetic indicators were calculated as a weighted average of scores obtained from each answer that banks gave to the survey in the methodology and processes/systems areas (e.g. if a bank reported estimating a higher number of components, it received a higher score in the methodology indicator); additionally, a bank received a higher score if it priced each component separately, in order to re-use these estimates for successive measurements and different purposes.
• Banks are however increasingly choosing to adopt a centralized solution, and have also highlighted a preference for simple and flexible systems, with a reduction and/or rationalization of the exceptions to the standard methodology.

• Larger players also tend to have a more integrated view of their FTP systems: in fact, they typically link their FTP frameworks to their pricing activities, and also to the overall commercial strategy of the bank by employing management adjustments to steer their balance sheets in the direction of the strategic decisions taken by the management in terms of products and business lines.

• At the same time, however, the survey pointed out several weaknesses in banks’ FTP infrastructure, such as manual processes, limited granularity of single components and a poor integration with banks’ other systems.

• The banks that displayed more advanced IT systems in fact may have already started a Finance & Risk (F&R) transformation programme, which has become quite popular in recent years: having an advanced FTP system is often a result of a bigger bank-wide change of the IT landscape that banks tend to invest in. Indeed, many players have already invested in initiatives to improve and integrate their IT systems and are thus in a privileged position to exploit fully the benefits that an integrated FTP system yields.

**Background**

**What is FTP?**

FTP is the internal system by which the central Treasury\(^2\) of a bank rewards liability balances and charges asset balances. In so doing the Treasury charges a price, known as the transfer rate, to the users of funds, and credits accordingly the fund providers.

The final FTP rate is made up by several components, which are represented here below. For a full breakdown of the components see Annex.

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\(^2\) Actually, the main actor involved will depend on the organizational nature of the bank. However, FTP should normally sit in the finance area and liquidity FTP should be managed by the Treasury (as its focus is more on the short-term).
Figure 2: Components of the FTP.

Its main features, as shown in Figure 2, are:

1. Base Rate;
2. Liquidity Risk (consisting of Maturity Premium/Term Funding and Liquidity Asset Buffer);
3. Behavioural Adjustments (taking into account the fact that for many items the statistical maturity is different from the contractual maturity);
4. Other Adjustments.

Only analysing in detail its most important components, we are able to completely comprehend what FTP is. Among these, we have:

I. **The Interest Rate Component** (see *Base Rate* in figure above): this component includes, in the breakdown by components mentioned above, the base rate as well as the impact of the behavioural adjustments related to it (as these determine the statistical repricing behaviour on the basis of which the base rate is assigned);

II. **The Term Funding Component** (see *Maturity Premium*): this refers to the maturity premium for liquidity mentioned above as well as the behavioural adjustments, for the same reason explained above;

III. **The Liquid Asset Buffer Component** (see *Liquidity Buffer*): this refers to the Liquid Asset Buffer Component in the breakdown above.

### I. Base (Interest) Rate Component

A firm is required to model the interest rate risk re-pricing behaviour for both banking products and other on-/off- balance sheet items such as committed lines. These behavioural life profiles are then used by Treasury in pricing the Interest Rate Transfer Price (IRTP)\(^3\) component of FTP, but also as the risk transfer into Treasury where the net position is managed into the market using interest rate swaps.

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3 Interest Rate Transfer Price
What is important here is the use of behavioural modelling when the use of contractual characteristics (i.e. contractual life) demonstrates to generate less accurate results. Products need to be hedged based on their behavioural life rather than their contractual life. Firms then need to have the ability to understand how actual customer behaviour compares to expected behaviour. Typical products that are modelled in this way are loans (to account for early repayment) and sight items (which have no defined maturity).

However, this modelling effort has to be adequately managed and structured in order to provide effective and tangible benefits in FTP calculations:

- first of all, it is of paramount importance, in order to correctly model the behavioural life of products, to have appropriate historical data by product (which are also needed to engage in asset characterisation and pricing on the basis of the aforementioned behavioural profiles);
- secondly it’s also very crucial to have regular dialogue with product teams as it may be that for certain products the future repricing behaviour will be materially different to that of the past.

IRTP can be especially useful if the interest rate risk in the whole balance sheet is transferred into a Treasury cost centre. This can allow Treasury to better understand the net interest rate position to be managed. If the risk appetite is low and the risk is all managed out into the market using interest rate swaps and the P&L for this cost centre is approximately zero, then this provides a good indicator that the interest rate risk transfer process is working.

II. Term Funding Component

For term funding, the key is to understand the firm’s appetite for behavioural maturity transformation. In other words, for a 5 year maturity asset, what proportion should be funded with 5 year liabilities and what proportion with short-dated liabilities? A firm should consider whether, given the current liquid asset buffer, the existing behavioural maturity transformation is consistent with the Board’s risk appetite for liquidity.

If a firm has limited access to the wholesale markets and therefore relies predominantly on retail deposits then it will need to construct a retail unsecured curve. However, for small firms, building such a curve could prove quite difficult as the term structure built through this methodology could show several anomalies.

However, regardless of the estimation methodology, this premium is allocated to assets that are not instantly liquid whilst also rewarding business units for raising term funding. The use of this
premium in product pricing should promote good behaviour: in other words, it should ensure that there is appropriate focus on the liability side of the balance sheet.

The term funding component of FTP can help encourage good product pricing and performance measurement by introducing a liquidity premium into FTP and by increasing this liquidity premium as a function of the term of the product.

III. The Liquid Asset Buffer Component (LAB)

Liquid assets are held to support the activity of the business units in the events of stress, both firm specific and market-wide. It is therefore appropriate that the costs of holding liquid assets are allocated to the products or portfolios of products that generate this requirement. The actual allocation level can vary depending on the business model of the bank: typically investment banks / broker dealers allocate the cost to deal level, but many retail banks opt to allocate the cost to homogenous portfolios level (i.e., they identify portfolios of products with similar characteristics and attribute the cost to the level of these portfolios). Universal banks tend instead to have a mix of both – where possible they attribute the cost to deal level, and in the other cases they attribute it to portfolio level. Business units are involved in this process albeit in different ways across the industry:

- BU leaders may decide how the cost of liquidity is charged among products. However, due to strategic subsidies applied to certain products to encourage their generation, some products will carry disproportionally higher cost than others;
- In order to accommodate the cost of liquidity, the Business Unit may decide to reduce its margins;
- Or alternatively the BU may decide to pass on the cost of liquidity to customers, by charging more for the same products. This approach is to be preferred, as it transfers the cost of liquidity to the risk originators.

The LAB component is relevant to FTP because it is an element of cost allocation that drives overall business unit performance reporting. To be effective, internal liquidity transfer prices need to be applied to all major on- and off-balance sheets items that are sources and consumers of liquidity, to ensure that no artificial subsidy is given to any of these items. The allocation on the asset and liability side will however follow different logics: whereas on the liability side the costs need to be allocated to the products generating this cost (e.g. committed credit lines), on the asset side the allocation is based on the liquidity value of the product (the less liquid the item, the higher the cost attributed to it). In practice, the adjustment is assigned to products according to
the expected cash inflows and outflows they generate (or they may generate, for items with contingent liquidity risk): assets or liabilities which present a high outflow (or low inflow) factor will tend to lower the bank’s liquidity and hence will be assigned a higher liquidity premium, and vice versa.

The allocation approach can be performed in a number of ways:
- Based on the relative size of the business units’ balance sheets; or
- By considering the stressed deposit outflows and off-balance sheet commitments for the business units; or
- Considering the drivers of the Liquidity Coverage Ratio (“LCR”).

Banks need to make sure that they consider the cost of business-as-usual liquidity as well as the cost of Contingent Liquidity in their day-to-day business decisions.

**Why is FTP useful?**

Introducing a robust FTP model should enable optimal product pricing and profitability management whilst addressing the impact of liquidity and interest rate risk on a firm’s balance sheet. However, in order to accomplish these goals the FTP framework should be **coherent with the overall performance management system of the bank**. In fact, FTP should be perceived as a tool to enable better bank steering, since it provides a means not only of monitoring the performance of products and business units, but also of implementing policies that **directly affect the NII of the bank**. Indeed, effective FTP processes serve to align the risk-taking incentives of individual business lines, taking into account the various risks that their activities create for the firm as a whole.

**Figure 3: FTP expected benefits & best practice**

- **Profitability Management**: Centralised control over net interest margins and managing the cost of funds are critical to maintaining a stable NII.
- **Liquidity Management**: The ability to pool funds and fund short-term liquidity mismatches at an optimal cost is crucial.
- **Pricing**: FTP will not be complete unless the cost of liquidity and the cost of managing interest rate risk are built into the FTP mechanism.

**Balance Sheet Management**: The efficient management of the structural liquidity mismatch. (i.e. borrowing short-term to lend long-term) is at the heart of a good business model.
Expected Benefits

Given the wide array of functions that FTP performs in modern banks, it is considered to be fundamental in the evaluation of the profitability of deposits and loans. A good FTP system can:

- **[For assets]** Ensure that assets bear the full costs of the balance sheet that has funded them. This funding cost will, amongst other items, reflect the risk appetite that the Board has for maturity transformation i.e. that behavioural assets will be longer than behavioural liabilities.
- **[For liabilities]** Create a level playing field enabling the firm to understand the real profit contribution from each deposit portfolio. The reward rate should reflect the stability of the deposit portfolio, the direct cost of liquid assets and the behavioural interest rate risk.
- **[For trading, derivatives and off-balance sheet items]** Ensure that all the risks created by these instruments are appropriately reflected in the transfer rates, in order to create the correct incentives for the generation of these products.

It is important to stress that, in order to accomplish fully its goals and for the bank to realise its benefits, the FTP framework should be well integrated within a bank’s overall organisational model, since the transfer prices sit at the heart of the relationships between different bank units.

Solutions / Best practices

These are several best practices and provided solutions associated with each of the functions mentioned above.

Profitability Management:
- Control cost of funds centrally;
- Set specific targets for interest income and fee-based income;
- Successfully identify profits/loss drivers to support strategic decisions;
- Be conducted at business and business unit level;
- Include tax planning among business units (i.e. subsidiaries).

Product Pricing:
- Incorporate an ex-ante risk-return-based product pricing framework, with feedback loop ex post;
- Price products on the basis of market benchmarks;
- Be used as basis for differential product pricing.
Liquidity Management:

- Measure net liquidity across business units;
- Fund liquidity mismatches at an optimal cost;
- Centralize the deployment of surplus liquidity;
- Centralise the management of risk appetite and assessment, allowing the possibility of applying business strategic adjustments on the product margin.

Balance Sheet Management:

- Transfer interest rate and liquidity risk to a central unit;
- Re-allocate capital based on risk-weighted performance parameters

The survey structure and context

Period
The survey was conducted by Deloitte EMEA Finance & Risk Working Group between Summer and Autumn 2013. The results have been compiled, analysed and summarized during the first quarter of 2014.

Participating banks
The survey has involved 15 financial institutions from United Kingdom, France, Germany, Italy, the Netherlands and Greece. Participating institutions are either universal banks with a diversified mix of businesses (retail, wholesale funding, CIB, leasing, etc.) or commercial banks specialized in the granting of loans to retail or corporate customers.
Figure 1: Geographical regions of participating institutions

Figure 2: Participants by Balance sheet size

- More than 300 billion: €
- From 100 to 300 billion: €
- From 30 to 100 billion: €

Figure 4: Sample Survey Overview
Survey structure

Aim of the survey was to cover all the topics related to FTP from behavioural models to more operational ones such as organizational processes or IT systems.

More precisely, the survey has been divided into three parts:

<table>
<thead>
<tr>
<th>Part 1: Methodology</th>
<th>16 questions</th>
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<tbody>
<tr>
<td>The models used by the bank for determining FTP. The different questions are related to:</td>
<td></td>
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<tr>
<td>✓ The scope / type of products covered by FTP models;</td>
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<tr>
<td>✓ The granularity for the application the models (by contract, by type of product, etc);</td>
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<tr>
<td>✓ The items taken into account for calibrating the model (maturity, currency, issue date, etc);</td>
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<tr>
<td>✓ The type of model used (single pool funding method, multiple pool funding method, maturity match method);</td>
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<tr>
<td>✓ The components of the model (liquidity, interest rate, strategic, etc).</td>
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<tr>
<th>Part 2: Processes</th>
<th>3 questions</th>
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<tbody>
<tr>
<td>Addresses the following topics:</td>
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<tr>
<td>✓ The definition of roles and responsibilities for FTPs’ calculation and control;</td>
<td></td>
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<tr>
<td>✓ The qualification (manual vs automated) of each FTP sub-process (new products mapping, curve quotation, FTP attribution to products, etc);</td>
<td></td>
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<tr>
<td>✓ The way “non-standard” FTP (sight deposits, etc) are managed.</td>
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<tr>
<th>Part 3: Systems</th>
<th>7 questions</th>
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<tbody>
<tr>
<td>IT architecture characteristics for FTP calculation:</td>
<td></td>
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<tr>
<td>✓ General characteristics of the FTP system: scope covered, third vendor or in house solutions, use of single or multiple systems, etc;</td>
<td></td>
</tr>
<tr>
<td>✓ Functionalities of the FTP system: mapping by product, curve quotation, sensibilities analysis by FTP component, Margin reports, etc.;</td>
<td></td>
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<tr>
<td>✓ Characteristics of the FTP data storage;</td>
<td></td>
</tr>
<tr>
<td>✓ Performance of the tool (raw data availability, time of calculation, etc.);</td>
<td></td>
</tr>
<tr>
<td>✓ Main improvement areas of the tool(s) and developments planned at short term.</td>
<td></td>
</tr>
</tbody>
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Main findings and highlights on areas of improvement
The survey highlighted that banks are aware of the challenges related to their FTP systems, but that are still some lagging behind in the achievement of certain improvements, especially related to the correct attribution of contingent liquidity risk and to the obsolescence of their current IT systems. This section will present the survey results on three different but complementary aspects of banks’ FTP frameworks: methodology, processes and systems.

### Methodology

**FTP is a key input for broader management and pricing processes**

As presented in Section I, FTP serves multiple purposes within a modern bank, the most important being profitability management, balance sheet management, liquidity management and product pricing. Figure 5 shows evidence for all of these purposes.

![FTP Model objectives and functionalities](image)

**Figure 5: FTP Model objectives and functionalities**

79% of the banks of the sample state that their FTP Models directly provide the opportunity to carry out the analyses necessary for the performance and profitability measurement process, confirming the strict link between the FTP rates and their usage in profitability analysis.

We can also see how the majority of banks stated that their FTP systems allow them to automatically transmit FTP data to other systems and databases: among these systems we find ALM (Assets and Liability Management) which is the natural environment for liquidity management and balance sheet management. Moreover, this point goes to show also that FTP
data are extremely useful for pricing purposes and hence it should be expected that FTP data are disseminated to units / functions which have the need to undertake pricing analysis.

**Focus on Liquidity: most banks have not implemented yet regulators’ recommendations on contingent liquidity risk**

As mentioned in Section I, liquidity risk and the way it is managed in modern banks has attracted significant attention recently and has come under the radar of financial regulators. However, the survey results clearly show that some banks are lagging behind in the implementation of the regulators’ recommendations. This can be seen, for instance, from the answers that banks gave when asked to report the product coverage of their FTP frameworks, as shown in Figure 2 below:

**Figure 6: Products coverage and applied models**

As we can see, all of the respondents included in their models both sight items (those that do not present a defined maturity) as well as items with a defined maturity, both on the asset and the liability side of the balance sheet; in many of these cases, banks also modelled the behavioural and repricing profile of these items. However, for other types of items, such as assets held in the Trading Book and non-performing loans, the proportion of banks that do not cover such items goes up sharply; there are even certain items that are only priced by a minority of players (for example, Capital and Committed Lines). With regard to liquidity risk, it is important to note that 67% of participants responded that they did not cover committed lines in their FTP framework, which implies that many banks are still far from meeting the regulatory requirements on Liquidity Transfer Pricing (LTP), which explicitly require banks to recognize and price appropriately the
contingent liquidity risk embedded in off-balance sheet items such as committed credit lines\textsuperscript{4}. These banks are not appropriately charging these liabilities for the unexpected cash outflows they may generate, and do not attribute the cost of carrying a liquidity buffer (in place exactly to cover unexpected short-term liquidity shortfalls) correctly, thereby generating a potentially dangerous incentive to accumulate too many off-balance sheet items which pose contingent liquidity risk.

This is partially confirmed by the survey results concerning the FTP components estimated by banks in their models\textsuperscript{5}:

\textbf{Figure 7: FTP Components}

As explained in Section I, the two main components that take into account liquidity in the computation of FTP are the Term Funding component (labelled here in the graph as “Liquidity Spread”) and the Liquidity Asset Buffer component.

The survey results show that all participating banks already take the Term Funding component into account, a signal that banks have recognised that liquidity is important and has a cost which should be reflected when determining the FTP rates. However, from this graph it also emerges

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{4} CEBS – Guidelines on liquidity cost benefit allocation – Oct. 2010: “Committed lines should incur a charge to reflect the cost of liquid funds that must be available to meet the funding requirement of a client if the facility is drawn”
\item \textsuperscript{5} For a description of each adjustment listed in the graph, please refer to the Annex
\end{itemize}
\end{footnotesize}
clearly that the Liquidity Asset Buffer component is estimated only by a handful of participants: while none of the small / medium sized banks currently price the cost of carrying a liquidity buffer in their FTP, even only 29% of large banks included this item in their FTP models.

**Determining the base rate: different methodologies and options**

Banks, when they estimate the base rate to price the interest rate risk associated to the repricing profile of the transaction, have to choose first of all how to estimate this rate, i.e. which reference curve to use to determine it. The most common method is, as previously mentioned, to pick a reference curve from those available on the markets, such as EURIBOR or LIBOR. However, there are also other possibilities as evidenced in Figure 4 below:

![Figure 8: Base Rate Calculation Method](image)

We can see that 20% of the banks in the sample decided not to rely on available curves, opting instead to estimate the base rate through the discounted cash flow method: this methodology determines the rate to be applied starting from the cash flows. The identified rate is the yield that sets the discounted cash flows to par, discounting on the basis of the related zero-coupon rate curve.

However, the large majority of banks (73% in our sample) choose to opt for the traditional methodology of relying on market curves, which still leaves open the question of which rate to choose. As a general principle, the curve should reflect and price appropriately the interest rate risk associated to the repricing profile of the product. Obvious candidates are the EURIBOR and LIBOR curves for their simplicity and wide usage, but the rates used may differ according to the characteristics of the product being transfer priced. For short-term positions, the rate typically being used is the available market rate, for both floating rate and fixed rate items. For long-term positions, with maturities of usually over 1 year, the base rate is generally inferred from the market swap rate, with the rate to be applied determined by taking into account the cash flow profile of the transaction and not only the maturity.
Processes

Survey results show that many banks are still lacking independent validation of their FTP models

The banks were also asked questions related to the responsibilities that different functions have in the overall FTP process. The results here are less clear-cut, but it is possible to infer some general trends from Figure 5 below:

![Responsibility and Governance Assigned Within FTP - Related Processes](image)

From this graph it is evident that, as a general guideline, there are three different actors that are involved in the process of integrated performance measurement:

- The **Treasury & ALM Department** is generally charged with the responsibility to define the FTP model and to carry out the FTP attribution to single transactions;

- The **Risk Management** area is typically involved in the validation of the model and in the controls;

- The **Planning and Control** department typically acts as a user of the FTPs generated by Treasury and validated by Risk Management, in order to perform the performance measurement process. However, in some cases, P&C is actively involved in the controls operated on the model and even in the definition of the FTP model.

Of course the detailed activities of each function will depend on the organisational model of the bank (as mentioned in the introduction, FTP should be coherent with the bank’s overall structure), but still a trend is identifiable in the data taken from the survey.

It is also worth noting that as many as 40% of respondents do not have an independent validation carried out by the risk area (the validation is carried out by the Treasury department itself). This runs counter to explicit requirements by the regulator, asking banks to have the FTP
model validated by an independent unit. Risk Management also seems as the ideal unit to carry out the validation and control process as it is completely independent and often has very specific skills needed for validation (typically quantitative and statistical skills).

**Systems**

**Banks’ current systems differ significantly in terms of their characteristics**

Finally, the third set of questions of the survey focused on banks’ IT systems and their characteristics. For banks that need to process millions of transactions, having a proper IT system to support the FTP analysis is crucial. In fact, IT systems effectively determine the level of detail that the bank can achieve in their FTP framework: if a bank opts for a very sophisticated methodology it should also have IT tools that are powerful enough to support this increased sophistication. One common choice faced by banks is whether to have multiple FTP systems or just a unique centralized system. As evidenced in Figure 6 here below, most banks opt for a centralized solution:

![Figure 10: FTP System Concentration](image)

6 CEBS – Guidelines on liquidity cost benefit allocation – Oct. 2010: “The liquidity cost benefit allocation mechanism should be controlled and monitored by an independent unit e.g. risk control or financial control in a transparent way. These independent controls and monitoring are important because the internal prices affect the measurement of product margins as well as results for the business units.”

CSSF – Central Administration, internal governance and risk management – 2012: “The pricing mechanism shall be approved by the authorized management and supervised by the risk control function.”
The graph above shows that 64% of banks in the survey reported having a centralized FTP system, which has been empirically found to be associated with better FTP practices. In fact, a 2011 survey conducted by the Australian Prudential Regulation Authority identified that “banks with decentralized funding structure (…) were more susceptible to poor LTP practices.” However, a consistent minority of respondents still use a decentralized system, which are often quite old and obsolescent.

Another finding that emerges from the graph is that the majority of players (64%) adopt an internal bespoke software solution (especially large banks tend to adopt a flexible and personalised solution), whereas 36% of players, typically smaller banks, rely on external packages available on the market.

Another important finding from the survey is that the systems’ functionalities differ greatly between small and large banks, as depicted in Figure 7 below:

**Figure 11: FTP System Macro Functionalities**

Typically large banks have more developed FTP systems: in fact, whereas all large banks in the sample had systems which featured the possibility of automatically collecting input data from other systems, only 25% of small and medium banks did; also, 83% of large banks’ systems allowed the direct and automatic calculation of the various components of FTP (base rate, behavioural adjustments, liquidity components,…), whereas only 50% of the systems owned by small and medium sized banks presented this feature. Of course some of these increased functionalities stem directly from the fact that larger banks typically adopt more advanced methodologies: for example, as shown in the previous section, large banks usually employ more complex FTP models with a larger number of adjustments, which are more conveniently

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7 J. Grant, Australian Prudential Regulation Authority, “Liquidity Transfer Pricing: a guide to better practice” (2011)
calculated within a proper IT system. However, other features appear to be unrelated to the methodology used (e.g. automatic collection of input data).

One point worth stressing is that 25% of the small / medium sized banks interviewed had systems that did not allow the attribution of FTP to a single deal: this finding is hard to reconcile with the previously mentioned result that all of the banks stated using a matched maturity approach, which requires that each single transaction is assigned a transfer rate.

**F&R transformation programs are potential solution to systems’ obsolescence and as a way to achieve banks’ top desiderata**

Given the importance that IT systems assume for the effectiveness of FTP frameworks, banks were also asked which were their top desiderata in terms of the functionalities and characteristics of the systems in place for the implementation of FTP models. The results are shown in **Figure 8** below:

![Figure 12: Top Desiderata of banks’ system](image)

The top priority identified across all the sample is the consistency of FTP data through all the systems and users (requested by 35% of large banks and 27% of medium / small banks), meaning the alignment and homogeneity of upstream / downstream data flows, especially when more subsidiaries and/or different Legal Entities are involved in the exchange of FTP data. A second priority clearly identified by the banks in the sample is the ability of improving FTP components’ granularity (27% for large banks and 18% for medium / small banks), in order to attribute as much as possible the adjustments to single transactions. Medium and small banks were more likely to identify among their top priorities issues related to data availability (18% for
small banks versus 8% for large banks) and data accessibility and usability (14% for small banks versus 8% for large banks): these points suggest that typically smaller banks have less developed and less integrated IT systems than their large counterparts, and that as a consequence in these cases FTP data are not available on F/O, pricing systems and/or the ALM environment.

These are important issues to be addressed both in order to comply with recent regulatory requirements, and to improve the existing practices in the banks’ own interest, especially in terms of improved business steering associated to better FTP practices and decreased complexity given by the harmonization of the banks’ different IT systems.
Conclusions

Funds Transfer Pricing (FTP) is of paramount importance in modern banks, given the multiple roles it fulfils within a bank in terms of product pricing, liquidity management, performance measurement and balance sheet steering. Given its importance, it is appropriate to monitor the changes that FTP practices undergo at the heart of major financial institutions. In this respect, Deloitte’s survey offers a snapshot of the current state of the European banks’ FTP frameworks from different angles addressing the main aspects: methodology, processes and systems.

**Methodology**: the survey highlighted that large banks typically employ quite sophisticated methodologies, including several different components in the final FTP rate. However, there is one aspect in which both large banks and small banks are lagging behind the regulators’ recommendations: the estimation of the liquidity buffer component of FTP. Most banks are still unable to calculate the adjustment needed to price contingent liquidity risk and to attribute the cost of a liquidity buffer to the assets / liabilities that generate the need to carry it. This, apart from breaching the regulators’ guidelines, also exposes banks to the risk of not having enough incentives in place to deter units from generating items with contingent liquidity risk.

**Processes**: three main actors seem to be involved in the FTP framework, with the responsibilities varying according to the organisational model of the bank: the Treasury, the Planning and the Risk area. The survey highlighted that a significant minority of banks still lack a process of independent validation of their FTP models: the regulators explicitly require banks to have the models validated by an independent unit, and therefore banks should strive to reach compliance with this request. The unit best suited to this purpose should be the Risk area, for reasons of independence and specific competences.

**Systems**: the survey pointed out several weaknesses in banks’ FTP infrastructure, such as manual processes, limited granularity and poor integration. In order to overcome these shortcomings banks need to invest significantly, possibly embarking on a F&R transformation program that would yield benefits in terms of unified taxonomies, more granular data and increased system integration.
Solutions / Recommendations

In order to incorporate desiderata into their existing systems, banks need to invest significantly in IT. One option that banks may choose to pursue is to carry out a F&R transformation program, which would help in turning some of these desiderata into concrete realities. In fact, common features of F&R transformation programs include:

- The creation of a **unified taxonomy and data structure** across multiple systems and users: identified as a top priority by several banks in the sample, this feature would allow the FTP system to interact more naturally with other engines and systems that the banks uses for different purposes, especially for what concerns the pricing systems and the performance measurement systems, which as mentioned early in this section are the most connected to FTP;

- An increased ability by the bank’s systems to attain a **higher level of granularity**, which would be beneficial in terms of being able to assign FTP components to the desired granularity level (identified as priority #2 by the banks in the sample). This would also help banks in implementing the methodologies required by the regulator, such as the attribution to specific transactions of the liquidity buffer cost mentioned earlier in this section;

- An **increased integration** among different systems, often with automated data feeding: this would be beneficial in terms of tackling issues of data availability and accessibility, identified as a priority especially by smaller banks, reducing at the same time the operational risks associated to manual processes for the exchange of data among different systems.

IT investments play a pivotal role in determining the banks’ ability to live up to the challenges posed by regulators and to overcome the obsolescence of current systems, and as such banks should not underestimate this aspect when thinking about how to improve their FTP frameworks.
Annex – FTP components’ description

The final FTP rate is the result of the algebraic sum of the base rate and a series of adjustments that can reflect the behavioural profile of the items being transfer priced, or the liquidity risk associated to these items, amongst others. Here below we report a non-exhaustive list of the adjustments that can be applied to the base rate to obtain the final transfer rate:

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base Rate</td>
<td>Also known as the <em>Interest Rate</em>, this is usually the rate, or combinations of rates, for the transaction’s maturity or repricing behaviour (in case of floating rates), which is usually taken from cash and swap market curves, as the yield curve, and depends on the product time bucket (Sight, Short Term, M/L Term) and on the rate typology (fixed vs floating).</td>
</tr>
<tr>
<td>Maturity Premium / Term Funding</td>
<td>It is the premium displayed by the bank’s cost of funding curve over the reference rate for a specific contractual maturity. For the subset of banks that have good access to the wholesale market, the bank’s marginal cost of funding is often taken from bank-specific senior curves, which reflect the medium / long-term risk of the bank as perceived by the wholesale public cash market. For many other banks other funding curves have to be derived.</td>
</tr>
<tr>
<td>Liquidity Buffer</td>
<td>It is the premium assigned to reflect the cost of carrying a liquidity buffer as a safeguard against unexpected short-term cash outflows. The premium is assigned to products, such as committed credit lines, that generate the need to carry such buffer (i.e., those products that generate contingent liquidity risk). On this side, the key design feature is what funding benchmark should use for pricing the cost arising from the detention of the liquidity buffer.</td>
</tr>
<tr>
<td>Sight Stickiness</td>
<td>This adjustment is introduced to take into account the behavioural profile of sight liabilities and assets: statistically, these items exhibit a “sticky” behaviour, as they typically have effective maturities longer than their original terms, as a portion of the customers rolls over once the term expires</td>
</tr>
<tr>
<td>Loan Prepayment</td>
<td>This adjustment is a behavioural adjustment reflecting the possibility of loan prepayment, which effectively reduces the statistical maturity of the</td>
</tr>
<tr>
<td>Adjustment</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Eligible Assets Adjustment</td>
<td>Funding cost adjustment connected to the treatment of eligible assets (e.g. ABACO products, etc).</td>
</tr>
<tr>
<td>Country Risk Premium</td>
<td>The Country Risk Premium represents the compensation against the risk of counterparty default not due to specific factors related to the performance/trends in the institutional business, but rather to macro-events of a political nature (nationalization, impossibility of conversion, violence). It is proportional to the premium of the Credit Default Swaps related to the specific country on the expiry/maturity of the transactions.</td>
</tr>
<tr>
<td>Interest rate risk premium</td>
<td>Premium that applies to contracts that embed a financial option (such as a cap or a floor), whose estimation is based on the market price of similar options. The FTP rate is then adjusted upwards or downwards according to whether the option cost/income sold to the customer.</td>
</tr>
<tr>
<td>Replicating Portfolio Premium</td>
<td>Premium/cost over Euribor of the replicating portfolio structured to match the behavioural characteristics of the core part of sight items. This adjustment is introduced in order to reflect the need of the bank to hedge, via a replicating portfolio,</td>
</tr>
<tr>
<td>Management Adjustments</td>
<td>This adjustment is purposefully introduced in the FTP framework in order to support balance sheet steering: by increasing / decreasing the transfer rate associated to specific products, the management can deter / incentivise the generation of such products in a way that is coherent with the strategy pursued by the bank. These adjustments are decided at Group level and they affect the Corporate Center's P&amp;L</td>
</tr>
<tr>
<td>Commercial Adjustments</td>
<td>This adjustment is purposefully introduced in the transfer rate in order to incentivise or deter the generation of specific products that are considered to satisfy marketing and global commercial targets. This adjustment is decided by the SBA (Commercial Network) and it affects the Business Units’ P&amp;L (SBAs).</td>
</tr>
</tbody>
</table>
Contacts

Coordinators of this publication

Italy
Luigi Mastrangelo
Director
FSI Consulting
+39 06 4780 5630
lmastrangelo@deloitte.it

Contributors
This white paper includes contributions and insight by the following financial service professionals from Deloitte Touche Tohmatsu Ltd.

France
Frederic Bujoc
Partner
ERS, Risk Advisory
+33 (1) 55 61 23 83
fbujoc@deloitte.fr

Michel Guidoux
Senior Manager
ERS, Risk Advisory
+33 (1) 55 61 66 90
mguidoux@deloitte.fr

Greece
Alexandra Kostara
Partner
FSI Audit
+30 (210) 678 1152
akostara@deloitte.gr

Christos Mantopoulos
Manager
FSI Audit
+30 (210) 678 1100
cmantopoulos@deloitte.gr

United Kingdom
Ian Tyler
Director
Audit
+44 20 7007 7551
ityler@deloitte.co.uk

Zoltan Biro
Senior Manager
Audit
+44 20 7303 8334
zbiro@deloitte.co.uk

Nehal Saghir
Senior Manager
Audit
+44 20 7303 6969
nsaghir@deloitte.co.uk

Louise McCulloch
Senior Manager
Audit
+44 20 7007 7732
lmcculloch@deloitte.co.uk

Italy
Modestina Papaleo
Manager
FSI XBS
+39 02 8332 3755
mpapaleo@deloitte.it

Andrea Fondi
Senior Consultant
FSI Consulting
+39 02 8332 3210
afondi@deloitte.it

Luxembourg
Marco Lichtfous
Partner
Enterprise Risk Services
+352451454876
mlichtfous@deloitte.lu

The Netherlands
Hugo van den Wall Bake
Manager
Audit
+31 882882976
hwallbake@deloitte.nl
DTTL Member firms contacts

Austria
Dominik Damm
Partner
Deloitte Financial Advisory GmbH
+43 1 537 00 5400
ddamm@deloitte.at

Belgium
Bart Dewael
Partner
Deloitte Audit & ERS
+ 32 2 800 21 42
badewael@deloitte.com

Central Europe
Adam Kolaczyk
Partner
Deloitte, ERS FSI Leader
+48 (22) 511 04 16
akolaczyk@deloittece.com

Denmark
Per Rolf Larssen
Partner
Deloitte Audit FSI
+45 51 51 47 56
ptrarssen@deloitte.dk

East Africa
Julie Nyang’aya
Partner
Deloitte ERS
+254 20 423 0234
jnyangaya@deloitte.co.ke

Finland
Petri Heinonen
Partner
Deloitte FSI
+358 40 560 7908
petri.heinonen@deloitte.fi

France
Marc Van Caeneghem
Partner, EMEA Basel leader
Deloitte Conseil
+33 1 55 61 65 88
mvancaeneghem@deloitte.fr

Germany
Jörg Engels
Partner, Financial Risk Solutions
Deloitte & Touche GmbH
Wirtschaftsprüfungsgesellschaft
+49 211 8772 2376
jengels@deloitte.de

Greece
Alexandra Kostara
Partner
Deloitte Audit FSI
+30 210 67 81 149
akostara@deloitte.gr

Ireland
John McCaroll
Partner
Deloitte & Touche
+353 1 417 2533
jmccarroll@deloitte.ie

Israel
Avi Keisar
Partner
Deloitte Audit FSI
+972 3 608 5558
akeisar@deloitte.co.il

Italy
Paolo Gianturco
Partner
Deloitte Consulting S.r.l.
+39 02 83323131
pgianturco@deloitte.it

Luxembourg
Martin Flaunet
Partner
Deloitte
+352 451 452 334
mflaunet@deloitte.lu

Middle East
Aejaz Ahmed
Partner
Deloitte
+966-546407650
aeahmed@deloitte.com

Norway
Henrik Woxholt
Partner
Deloitte FSI
+358 40 560 7908
petri.heinonen@deloitte.fi

Portugal
Miguel Filipe Morais
Partner
Deloitte FSI
+35 12 1042 2511
mmorais@deloitte.pt

The Netherlands
Eelco Schnezler
Director
Deloitte, Financial Risk Management
+31 61 234 5158
eschnezler@deloitte.nl

The Netherlands
Michael Cluse
Director, Financial Risk Solutions
Deloitte & Touche GmbH
Wirtschaftsprüfungsgesellschaft
+49 211 8772 2464
mcluse@deloitte.de

The Netherlands
John McCaroll
Partner
Deloitte & Touche
+353 1 417 2533
jmccarroll@deloitte.ie

The Netherlands
Michael Cluse
Director, Financial Risk Solutions
Deloitte & Touche GmbH
Wirtschaftsprüfungsgesellschaft
+49 211 8772 2464
mcluse@deloitte.de
South Africa
Wayne Savage
Partner
Deloitte & Touche
+27 11 209 2782
dsavage@deloitte.co.za

Spain
Fernando Foncea
Partner
Deloitte S.L.
+34 93 230 4826
fefoncea@deloitte.es

Sweden
Patrick Honeth
Partner
Deloitte Audit
+46 75 246 3048
phoneth@deloitte.se

Switzerland
Tom Spellman
Partner
Deloitte AG Switzerland
+41 58 279 7334
thospelman@deloitte.ch

Turkey
Tuba İnci
Partner
Deloitte Turkey
+90 212 366 60 47
tinci@deloitte.com

United Kingdom
Vishal Vedi
Partner
EMEA FSI Risk & Capital Management leader
Deloitte LLP
+44 20 7303 6737
vvedi@deloitte.co.uk

Zeshan Choudhry
Partner
Deloitte LLP
+44 20 7303 8572
zchoudhry@deloitte.co.uk

West and central Africa
Joseph Olofinsola
Partner
Deloitte Consulting FSI
+234 805 541 7712
jolofinsola@deloitte.com

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