

# Cash Pooling: Finding a Cost Efficient Equilibrium

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*External drivers like IFRS and Basel II will impact the cost and effectiveness of cash pooling therefore organizations should review whether the business case for cash pooling is still viable. This article describes methods for calculating the cost/benefit of cash pooling and suggests alternative cash management strategies for cases where cash pooling may no longer be an option.*

Cash pooling is probably the most popular cash management product available. However, external drivers like IFRS and Basel II will impact the cost and effectiveness of cash pooling sooner rather than later. Organizations, therefore, might want to review to what extent the business case for cash pooling is still viable. In support of such a review this article describes methods for calculating the cost/benefit of cash pooling and includes suggestions for alternative cash management strategies for cases where cash pooling is (no longer) a sensible option.

Banks and companies often rave about cash pooling being the low hanging fruit of cash management. No foundation level course is complete without time devoted to the technique of notional and physical cash pooling. No major conference can resist a presentation on the benefits of yet the latest variation on cross border, cross currency, intraday cash pooling. And no international cash management proposal is presented without fairly complex cash pooling structures included. The benefit seems so obvious that no time is devoted to question whether cash pooling really does make sense and when it doesn't.

Obviously there is no such thing as a free lunch. Banks do charge for their services, as do tax consultants, lawyers and treasury consultants for their advice. Cash pooling also requires treasury to track the result and distribute the benefit properly. The full internal and external cost of implementing and operating cash pooling can be substantial.

Basel II, IFRS and new tax and legal issues add to the cost or else erode the benefit of existing and new cash pool structures. Banks would seek compensation for the additional equity and tighter procedures they have to put in place for complying with Basel II. IFRS will make it more difficult to implement efficient notional cash pooling structures (see also Marc Peelen's article '[Impact of IFRS on Notional Pooling in the Netherlands](#)').

Cash pooling is clearly a product that requires continued attention from treasury. However, with the balance between cost and benefit shifting unfavorably, one might want to review existing structures and determine if they still make economic sense. This article will help you to understand how to estimate the break even point of cash pooling.

## Cash Pooling

Despite many different names there are two types of cash pooling: cash concentration (or zero balancing) and notional cash pooling. All cash pooling products available in the market, including cross currency, cross country and intraday pooling and for example target balancing, are mere variations.

With cash concentration, banks physically transfer balances in and out of an account. By doing so cash concentration creates (intercompany) deposits and loans between the sub account holder and the master account holder. Cash concentration can trigger tax issues and does require intercompany loan documentation.

With notional cash pooling no funds are transferred. Individual account balances are added up daily for interest calculations over the net balance. Banks however require all participants in notional cash pooling structures to sign an act of joint and several liabilities for overdraft positions on any participating bank account.

## **External Cost of Pooling**

The external cost of a cash pool structure is more than bank charges for implementation, account maintenance and reporting only. Thin capitalization rules and withholding tax issues have always eroded the benefit and effectiveness of zero balance cash pooling and will continue to do so, among others, because it requires frequent advice from tax and legal consultants but also because companies might want to err on the safe side and maintain more capital than otherwise necessary in entities governed by thin capitalization rules. However, the conditions required for participation of German subsidiaries in cash concentration schemes, as stated in a recent verdict by the German High Court, provide a new dimension to the issue and might make it difficult, if not impossible, to include German entities in an international zero balance cash pool structure.

When tying in bank accounts abroad or bank accounts held at partner banks, cash concentration structures will also require substantial overdraft facilities. Even if the funds are available on the master account with same day value, there might be a timing difference between the investment decision and the actual balancing of the pool. To compensate for this inefficiency the master account would need substantial (daylight) overdraft facilities. In addition to that, sub-accounts would also need (daylight) overdraft facilities to accommodate any periodical peak in cash outflow. Basel II will require banks to allocate equity to overdraft limits. Most certainly banks will seek compensation from their clients for the increase in equity allocated to cash pooling.

Fees for cross currency cash pools are already substantial, especially if one considers the bid/ask spread of the (synthetic) currency swaps. Basel II will make cross currency cash pooling even more expensive. It will force banks to reserve a minimum positive balance or allocated equity to cover potential losses resulting from a liquidation of the cross currency cash pool.

The economic value of notional cash pooling has already been eroded by the implementation of IAS 32. It is no longer possible to present notional cash pools as net balances on financial statements. This could have a negative impact on key financial and funding ratios<sup>1</sup>.

Basel II also erodes the economic value of notional pooling. It will force banks to formalize overdrafts on individual accounts. These credit lines will require an allocation of equity for which they will seek compensation from their client. In case they are not obliged to do so, they need to reinforce their testing methods for proving that their documentation is perfect and the credit standing of the client is good. Either way Basel II will increase the cost base of the bank for which it will also seek compensation from the client<sup>2</sup>.

With the changing landscape for cash pooling, consultancy fees from tax, treasury and legal advisors have become recurring costs. Not only do consultants have to review the (potential) impact of changes in the legal structure, but also the impact of Basel II, IFRS and changes in local tax regulations.

Last but not least, companies need applications to monitor their cash pooling structures. Changes in the cash pool structure will trigger reconfiguration or the implementation of new treasury software. Especially companies that decide to switch from notional pooling to cash concentration will need to find methods to calculate and settle interest internally.

## **Internal Cost of Pooling**

Cash pooling (notional or physical) does make day-to-day cash management an easier job. This general statement does not automatically imply that cash pooling will unlock FTEs for other treasury tasks. The more complex cash pooling structures get the more maintenance they require and the closer they need to be monitored.

One would frequently like to validate if what the interest banks have calculated and distributed is done properly. In the case of cash concentration, the cash manager will need to prepare interest statements for all participants. Furthermore balances and (accrued) interest need to be calculated. In case of cross currency cash pooling the validation can become fairly complex and rather time consuming.

Treasury applications can automate some of these processes. For many different reasons, however, these applications might not pick up codes properly. Therefore, processing bank statements and

updating cash pool reports need close attention from treasury. Cross currency cash pools are often validated in home grown spreadsheets, because no treasury application can do this very well. Cash pool documentation will need to be maintained and kept up to date.

## Benefits of Cash Pooling

The benefit of cash pooling can be grouped in three different categories - offsetting interest, economies of scale and reduced volatility in balances.

### 1. Offsetting interest

The best documented benefit of cash pooling (and often the prime reason for its implementation) is the saving of interest spread when offsetting debit and credit balances. The saving can be calculated as the interest spread over the daily minimum of the overdraft and credit balance on the accounts within the proposed pool.

This benefit of cash pooling does not unlock liquidity. At most, it provides an automatic mechanism to fund overdraft positions with surplus cash available at other participants.

Next to the interest savings, offsetting debit and credit balances will shorten the (consolidated) balance sheet, thus improving financial ratios. The implementation of IAS 32, however, has eroded this positive side effect of this benefit for notional cash pooling structures.

With Basel II becoming operational in 2006, this benefit might be eroded even further due to the fact that banks will only be able to create a 0 per cent credit conversion factor weighting under certain conditions. Banks will adjust the price of cash pooling in order to compensate for the cost of equity they have to allocate.

The benefit of offsetting interest could be calculated as follows:

$$S_1 = \sum_{accounts} \text{Min}(b_{dt}, b_{cr})_{daily} * \text{Spread}_{dt/ct} - / - \text{Avg}(b_{dt}) * E_{all} * R_{req}$$

With S = Savings

b = Bank account balance (debit and credit)

E<sub>all</sub> = Equity allocated by the bank

R<sub>req</sub> = Required return on equity (by the bank)

This category's benefits is of particular interest to organizations that pool bank accounts running offsetting and volatile positive and negative balances. Volatile balances that do not offset each other will not create this benefit.

### 2. Economies of scale

A second category of benefits stems from the economies of scale that cash pooling can bring. With a cash pool structure in place, the cash manager does not need to monitor and manage multiple balances and can use one summary transaction only. The benefits include the lower transaction cost and the lower interest margin negotiated for the summary transaction. This category of benefit can be calculated as:

$$S_2 = \Delta \text{Txncost} + \text{Avg}(b_{net}) * \Delta \text{margin}$$

Related to the benefits from economies of scale it has been argued that cash pooling provides a parachute effect for forecasting error. The argument is derived from the portfolio theory; forecast errors on individual cashflows within the cash pool structure will level each other out and make the cashflow for the cash pool more predictable without the need for detailed forecasting reports. A more predictable cashflow implies that the corporate cash manager needs less liquidity or an 'insurance balance' for compensating forecast inaccuracies<sup>3</sup>. The corporate cash manager could release cash from

working capital permanently without the need for a more accurate and time consuming forecast. The consequence of this argument would be that the less accurate cashflows can be predicted, the larger benefit can be derived from cash pooling!

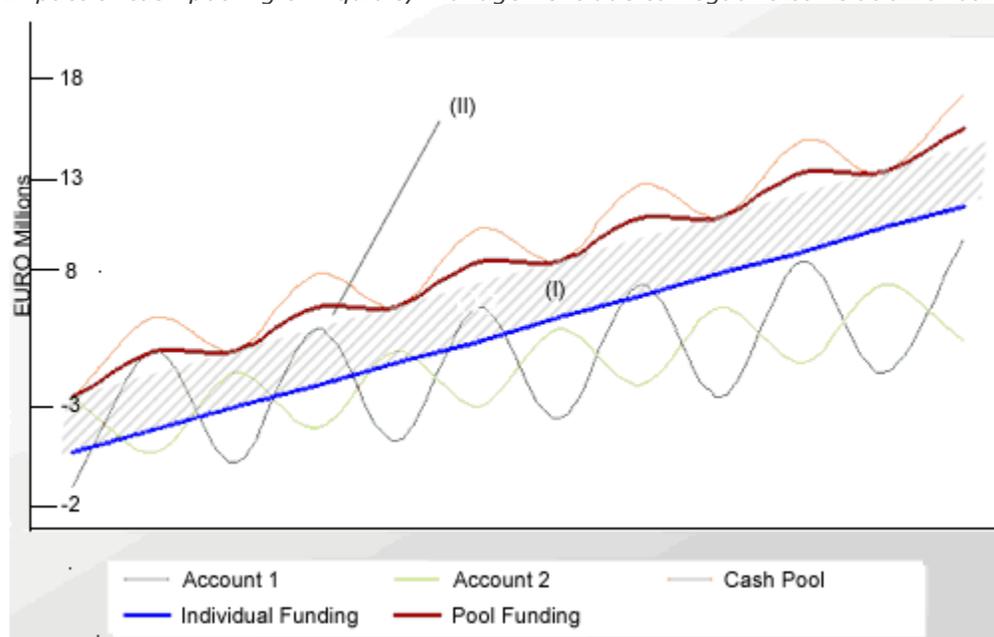
It is difficult to see how organizations would unlock liquidity this way. If cash pooling is not tied in with a forecasting discipline, the corporate cash manager will not know what the pool balance might be in the (near) future. Therefore he will invest mainly in overnight instruments and might not benefit from steeper than normal yield curves. Furthermore this line of thinking is based on the assumption that the individual cashflows are randomly distributed over time, which of course they seldom are.

### 3. Reduced volatility in balances

Whereas the benefits described so far relate to reducing margins and spreads on existing balances, the third category of benefits does allow companies to release liquidity permanently, irrespective of whether there are offsetting balances on the pooled accounts. When compared to the individual account balances, cash pooling reduces volatility in overall cash balances managed within the structure.

Figure 1 below illustrates the case of two bank accounts with fluctuating positive balances (green lines). The orange line indicates the balance for the cash pool. The blue line indicates the surplus liquidity no longer required for avoiding an overdraft on any of the two individual bank accounts. The brown line indicates the surplus liquidity no longer required for avoiding overdraft on the pooled accounts. The pool requires less liquidity to avoid overdraft, an indication that in this case €2.5m in liquidity can be released permanently from working capital.

Figure 1: Impact of cash pooling on liquidity management due to negative correlation of bank balances



The benefit of reduced volatility results from the fact that the two account balances are negatively correlated. Negative correlation between accounts allows companies to unlock cash trapped in working capital for two reasons:

- Minimum balance in the cash pool will be permanently higher than the combined minimum balance of the individual accounts. In the simplified example of Figure 1 this permanent effect releases €2.5m (Figure 1, I).
- The standard deviation of the cash pool balance will be smaller than the sum of the standard deviation of the individual accounts. In the example of Figure 1 this effect releases an additional €450,000 on average (Figure 1, II).

Simple probability theory shows that:

$$\sigma(\text{pool}) = \sqrt{\sum_{i=1}^n \sigma_i^2 + 2\text{cor}\left(\sum_{i=1}^n \sum_{j=i+1}^n \sigma_i, \sigma_j\right)}$$

'i' and 'j' represent the bank accounts in the pool.

Depending on the cashflow patterns on the pooled bank accounts, the correlation will be a number between -1 and 1. Therefore the standard deviation of the pool will always be smaller than the sum of the standard deviations of the individual accounts, except in the case where the correlation is 1. The closer the correlation gets to -1, the more liquidity can be released permanently from the cash pool. However, this does not imply that the larger a cash pool will be the more cash can be released. This is because the more bank accounts are pooled, the more difficult it will be to maintain a negative or zero correlation. Therefore the larger and more complex a pooling structure becomes, not only will the cost increase, it will also become more difficult to unlock liquidity.

It should be noted that the correlation between the pooled accounts might change over time and thus will not always create the same kind of benefit. This fluctuating correlation might be explained by seasonal patterns but also by changes in operations. The total benefit of a cash pool is the sum of the above mentioned cost elements and the three benefit categories. The net benefit is a function of the complexity of the pool, the volume and volatility of cashflows managed on the pooled accounts. The conclusion should be that cash pools might only make economic sense if the following conditions apply:

- large cashflows processed over;
- a limited number of accounts; and
- within simple cash pooling structures.

### **Alternative Cash Management Strategies**

With cash pooling becoming less economical in some cases, alternative strategies should be assessed for maximizing the benefit of cash management. A combination of the following suggestions might create a cost efficient alternative cash management strategy to cash pooling.

First of all, companies could negotiate decent interest margins on the pool master account. The closer the interest earned or paid is to that of alternative money market products, the less need for buying these instruments. This strategy will reduce the need for more expensive (intraday) overdraft limits and thus economize the overall cost of the cash pool structure.

Secondly, organizations could manage individual bank accounts depending on their net borrowing position either as surplus or overdraft balances. This could be done, for example, by setting upper and lower boundaries and triggering (automatic) cash transfers if the boundaries are broken. Most treasury management applications nowadays are able to initiate such cash transfers. These cash transfers generated internally are flexible tools for creating intercompany loans and deposits. Unlike standing instructions to banks, they can easily be changed if operations or market conditions require so.

Maintaining several independent positive or negative current account balances might seem expensive, but if competitive interest margins are negotiated it might be less costly than implementing and operating a cash pool structure. Furthermore this strategy might be highly cost effective within a multi-bank cash management structure.

A third strategy aims at simplifying the bank account structure. If fewer bank accounts are used for processing cashflows, the cashflow in the remaining bank accounts will increase, become more stable and easier to manage. Reducing bank accounts also simplifies treasury administration as well as

reducing bank charges.

In this respect one could no longer discriminate between disbursement and collection accounts and banks. Reduced cost of multi-bank connectivity (e.g. with SWIFTnet and MA-CUGs), the viability of highly automated payment and collection factories has increased and will continue doing so.

A fourth strategy aims at reducing the volatility in daily cashflow. This could be achieved in three ways:

1. **Using external bank accounts only for those transactions that cannot be settled outside the banking community.** Cashless settlement of intercompany netting or advanced forms of internal current account structures used for settlement of IC liabilities, funding and hedge transactions, can reduce peaks in daily net cashflows. This will reduce the need for overdraft limits to secure that sufficient liquidity is available at any time.
2. **Making use of 'payment on behalf'.** Especially in a multi-currency environment the implementation of a payment factory with routines that treasury or affiliates make their bank accounts available for routing transaction does not only simplify the bank account structure. It also reduces the need for external settlement on internal contracts to make currency available to individual entities.
3. **Proactive working capital management.** By managing payments closer and more consistently to their due date, daily volatility in net cashflow on a bank account could drop significantly.

These alternative cash management strategies can generate benefits unrelated to pooling cash. Payment factories and in-house banks can facilitate process efficiencies and improved compliance with internal policies and procedures while simplifying the organization's bank account structure.

Although cash pooling often seems to be a 'no brainer', it will not always be the most cost efficient cash management strategy. IFRS and Basel II will impact the cost efficiency of cash pooling negatively. The good news is that there are some simple alternative and highly efficient strategies available that erode the need for cash pooling.

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<sup>1</sup> Local GAAP in some countries, including the Netherlands and UK, did allow for offsetting cash balances within a notional cash pool structure. The conditions as set under IFRS do no longer allow the offset of liability without an enforceable legal right and a clear demonstration of the intention to settle.

<sup>2</sup> See also IBOS's article on gtnews: [Impact of Basel II on Notional Pooling](#), 6 September 2004.

<sup>3</sup> Laurent de Beco, 'The parachute effect in cash pooling', TMI, July/August 2003, pages 18-24.