What is Zero Balance Cash Pooling?

Zero Balance Cash Pooling (often abbreviated as ZBA) is a technique offered by several banks whereby multiple bank accounts are periodically and automatically (usually on a daily basis) either:

- The **positive balances** of those connected bank accounts are transferred to a central bank account

or

- The **negative balances** of connected bank accounts are cleared from a central bank account.

The end goal is to have the balance of all connected accounts brought zero; **hence the name 'Zero Balance' Cash Pooling**.

The mechanism of Zero Balance Cash Pool systems are often 'started' at the end of the day after all transactions have taken place during the day and the end-of-day balance is calculated by the cash management bank. As a result, each connected bank account will start the next day with a zero balance and effectively the money of all connected bank accounts is sitting in the central bank account. As a common rule, the central bank account belongs to either the Treasury or the Holding.

A commonly heard comment from participating subsidiaries is that their money in affiliated bank accounts is gone (taken away by the corporate). Especially in an environment where subsidiaries have a certain degree of independence, AND generally have (a lot of) money in the account, this can be sensitive. Of course, the money from the subsidiary is not gone because it sits now in the central account within the Treasury or Holding.

However, the holder of that central account now has a debt position to the owners of the bank accounts that ended the day with a positive bank balance. Vice versa, the owners of the bank accounts that ended the day with a negative bank balance have now a debt position to the holder of the central bank account.

I sometimes compare this mechanism to a process where you look at your personal current bank account balance at the end of the day. If there is a positive balance, you transfer this balance to a savings account that you hold at another bank. But if you see your current account balance is negative, then you transfer an amount from your savings account at the other bank to replenish your current account balance.

So what is achieved with a Zero Balance Cash Pool?

1. There is no more fragmentation of funds of the company. After all, all funds from the affiliated bank accounts are sitting daily in the central bank account.

2. Active cash management is minimized as this mechanism inherently has automatic funding for those accounts that have an end-of-day overdrawn balance.

What are the important points to consider in a Zero Balance Cash Pool?

1. ZBA structure works most optimally when all affiliated bank accounts are with the same bank. The larger international banks generally offer this service also cross-border. Zero Balance Cash Pooling with multiple banks is technically possible through so-called MT101 agreements between the cash pool bank and the other banks. Such an agreement then states that the other bank sends a daily MT940 electronic statement to the cash pool bank. The latter in turn acts on the end-of-day balance by either generating a transaction from the central bank account to the third bank account to clear a negative balance or sending an MT101 payment instruction to the third bank to transfer the positive end-of-day balance to

the central bank account. The disadvantage of this construction is that both types of transactions are not executed until the next business day. As a result, a third bank account is always one day behind in the Zero Balance Cash Pool balance.

2. In the multi-bank cash pooling situation, generally, a third bank will want to set up something of a credit facility to cover the 'overnight' overdraft, despite the fact that the next day the central cash pool mechanism clears this negative balance. After all, this third bank is not committed by the central cash pool bank that a negative balance will be cleared.

3. Such a credit limit is also applied mutatis mutandis by the central cash pool bank, but for a slightly different reason and in a different form, and generally not hedged by a formal credit facility. See also point (4) below.

4. Because a ZBA structure is an inherently an automatic funding mechanism, in principle a single bank account can drain the entire cash pool by having daily (large) overdrawn balances. Cash pool banks generally deal with this by means of setting an intraday limit (a so-called day-light overdraft facility) per bank account. In consultation with the cash pool master, the normal payment traffic pattern of the connected bank accounts is analyzed by the cash management bank. Based on this analyses each connected bank accounts gets an individual intraday limit. The connected bank accounts are then allowed to carry out transactions during the day up to the maximum of this day-light overdraft. If during day-light more cash comes than goes out, there is no problem and the positive balance is transferred (swiped) to the central account at the end of the day. However, if more money is attempted to spent from an account than the actual balance in the account, only payments can be made up to the daily limit. If transactions are still generated above this daily limit, the bank will pause the transactions. The cash pool holder is then notified by the bank of this event and will be asked whether or not they should carry out these excessive transactions.

What are the different flavors of the Zero Balance Cash Pool?

- Actually, a Zero Balance Cash Pool is a special form of Target Balance Cash Pooling.

- In a Target Balance Cash pool, action is taken by the cash pool bank only when the balance (the Target) of the participating bank accounts reaches a certain level. In a Zero Balance Cash Pool, that target is infinite (basically all balances).

- A Target Balance Cash Pool can also be set to a predetermined action the cash pool bank should take when the target is reached: should the entire balance of the bank account be swiped to the central account? Or only the excess of balances above the target. In the latter case, a minimum balance is always left in the participating bank account. Again, the Zero Balance Cash Pool is the special variant: the target is infinite and the action for the cash pool bank is always sweep to zero.

Setting up a Target Balance Cash Pool where a predetermined balance is always left behind is often used in cross-bank cash pooling. Especially when no credit facility has been set up at the other bank. Thus, the participating bank account at that other bank will operationally have 'sufficient' balances to carry out daily payment transactions. Only significant credit balances (above the target) will then be skimmed off to Treasury.

Difference between Zero Balance and Notional Cash Pooling

To put it very simple and straight forward, whereas a Zero Balance Cash Pools is physically settling end of day balances to a central bank account by means of “physical” transactions, a Notional Cash Pool leaves the original bank balances of the participating bank accounts at end of day untouched.
However, with a Notional Cash Pool the bank will at the end of day virtually aggregate all participating bank balances into one virtual balance. Hence, a Notional Cash Pool is a mechanism whereby the original bank balances are not being touched, but the bank “simply pretends” as if it did happen anyway but by means of a “spreadsheet”.
Again, this is putting it very simple and straight forward to explain the main difference.

What is the end result when using a Notional Cash Pool?

a) In a sensitive business environment where the central Treasury has difficulties touching the money from the participating bank accounts, Treasury has a back door (the Notional Cash Pool) to make use of all the cash sitting in his company.
b) Because a Notional Cash Pool doesn’t make use of physical Cash Pool transactions (the “sweeps”), there are no daily physical transactions from and to the central Treasury. Therefore, there will be no requirement for daily assets and liabilities recording, which are inherent to a Zero Balance Cash Pool.
c) The Notional Cash Pool can also be used to exclusively optimize the interest yield. After all, when bank balances are virtually aggregated, debit balances will be compensated by credit balances. Without a Notional Cash Pool, the consolidated interest for credit balances will most likely hardly cover for consolidated debit interest. Simply because current account debit interest is significantly higher than current account credit interest. With a Notional Cash Pool, the central Treasurer will see at consolidated level a much more favorable interest amount as the bank will apply interest to the cash balance on aggregated level (from the Notional Cash Pool).
d) Whereas a Zero Balance Cash Pool by definition will cash pool only bank accounts denominated in the same currency, a Notional Cash Pool can be Multi-Currency. After all, aggregating the participating bank balances is a virtual aggregation (by means of a “spreadsheet”); in this virtual process various currency balances can easily be converted to a central currency without touching the physical bank balances.

What are the most important points of attention for a Notional Cash Pool?

a) Because de central Treasury can physically use the virtually aggregated balances from the Notional Cash Pool by means of overdrawing the master account of the Notional Cash Pool, the Cash Pool bank runs a risk that one of the underlying subsidiaries in the Notional Cash Pool goes bankrupt with an overdrawn bank account. To protect banks for this risk there is a legal obligation for banks to demand a right of setoff for all participating bank accounts. With the right of setoff, to put it simple, the bank has the right ro pull money from any random bank account participating in the Notional Cash Pool to cover for the loss of a bankrupted overdraw bank account. Regardless the fact that all participating subsidiaries have been signing off for the Notional Cash Pool documentation, including the bank’s right of setoff, most companies do not recognize the implications of the right of setoff …… till the example of the bankruptcy of a subsidiary with an overdrawn bank account accentually happens.
b) With a Notional Cash Pool the central Treasury will continue to keep the daily necessary extended cash management tasks for working capital financing.

Advantages of Zero Balance Cash Pooling

One of the biggest advantages of Zero Balance Cash Pooling is the high level of clarity what the cash positions are of participating subsidiaries, as well as where the money is. Afterall, the cash of participating bank accounts sits physically in the central account of Treasury (or the Holding). This is clear, straight forward and clean. Next to that it is clear what the intercompany balance sheet positions of the participating subsidiaries are, as the central Treasury maintains a ledger of In-House Bank balances where all the sweeps are being recorded.

An incoming sweep at the central Treasury is a debit entry on the balance sheet of the central Treasury (cash in the bank account) and a credit entry on the balance sheet of the subsidiary (cash out of the bank account). But at the same time this incoming sweep is a liability of the central Treasury to a subsidiary; this liability is a credit entry on the balance sheet of the Treasury and a debit entry on the balance sheet of the participating subsidiary (by means of an In-House Bank account, or an intercompany current account loan).

Vice versa, an outgoing sweep from the central Treasury is a credit entry on the balance sheet of the central Treasury (cash out of the bank account) and a debit entry on the balance sheet of the subsidiary (cash in the bank account). But at the same time this outgoing sweep is an asset from the Central Treasury to the subsidiary; this asset is a debit entry on the balance sheet of the central Treasury and a subsidiary's liability to the treasury is a credit entry on the balance sheet of a subsidiary (by means of an In-House Bank account, or an intercompany current account loan). For fiscal booking purposes the In-House Bank accounts are not recorded as "In-House bank accounts", but as intercompany current account loans.

If a Notional Cash Pool would have been applied, it would have been less clear what the exact balance sheet position is of each participating subsidiary because of the bank's right of setoff. Admittedly, in a Notional Cash Pool it is clear what the external bank balances are (as they are not touched when using a Notional Cash Pool). But how do you record a right of setup on the balance sheet when the cash pool bank can pull money from any random participating bank account to cover for losses when a subsidiary goes bankrupt with a overdraw bank account in the Notional Cash Pool?

The control and management of the Assets & Liabilities ledger in a Zero Balance Cash Pool and the way a central Treasury integrates this ledger in the corporate financing philosophy can be defined as the internal bank function; in other words, the In-House Bank. After all, attracting money from companies with excess cash and lending this money out to companies that need financing is the core function of every commercial bank. The differential between de credit interest and debit interest is the revenue model for every commercial bank. At the In-House Bank the Zero Balance Cash Pool mechanism takes care of an automated way of attracting excess cash from participating subsidiaries, and automated funding for participating with debit balances. In this respect it is noted explicitly that a Zero Balance Cash Pool is operating at current account level and therefore is considered working capital based.

As mentioned before, the sweeps from the Zero Balance Cash Pool mechanism and the associated ledger at the In-House Bank is represented at the balance sheet as daily current account intercompany loans.

Due to the fact that a Zero Balance Cash Pool is requiring an In-House Bank function, the In-House Bank can be thé most appropriate tool to integrate with the external funding at group level. When repeating the analogy with a commercial bank, the sweeps from the Zero Balance Cash Pool are one way of attracting funds for the In-House Bank; excess cash investments and applying external financing at group level (e.g. syndicated senior financing) are just other means of an In-House Bank to attract funds. With these funds available the central Treasury can lend out money to subsidiaries in line with the company's (or Treasury's) internal financing policies. This can be by means of the daily sweeps to

overdrawn bank accounts in the Zero Balance Cash Pool, but can also be by means of Intercompany Term Loans.

Implementation challenges

Setting up a Zero Balance Cash Pool at the cash management bank involves mainly lots of bank documentation and setting technical parameters. But at the company side there are many other challenges to face.

- The cash pool bank offering the service will require from every participating bank account a duly signed approval from the account holder that the relevant bank accounts are going to participate in the Zero Balance Cash Pool. In a small pool of bank accounts, the challenge will be limited. But a large pool of participating subsidiaries will require significant logistic challenges to get all required documents distributed, signed and returned to the cash pool bank.
- The cash pool bank will need to agree with Treasury which account will serve as the "cash pool master" bank account where all the sweeps (both debit and credit) will be settled daily. If central Treasury has its own bank accounts, it is logical to ise those bank account sa the "cash pool master" accounts.
- Because a Zero Balance Cash Pool requires a ledger to register the sweeps as "assets & liabilities", this ledger will need to be set up and arranged for. In the most simplest form this can be done by means of a spreadsheet where the daily sweeps are being registered. In a more sophisticated set up the ledger is managed either by the ERP or by the Treasury Management System. in case the ledger is managed from the ERP a separate company code in the ERP is required for the purpose of registering all the sweeps to the Treasury (or Holding). The bookkeeping will need to be aligned as well when you set up a Zero Balance Cash Pool (with an In-House Bank), since the administration of all the daily sweeps will be at individual participating bank account level. Each external participating bank account will be directly linked to a unique In-House Bank account.

  Practically, this register of assets & liabilities will become a structure of internal bank accounts. Afterall, a sweep from the external participating bank account (= outflow) to the central Treasury bank account (= inflow) will need to be accounted for by central Treasury as an increase of a liability to the participating account holder; and by the participating account holder as an increase of an asset from the central Treasury. Vice versa, a sweep from the central Treasury bank account (= outflow) to the external participating bank account (= inflow) will need to be accounted for by central Treasury as an increase from the asset from the participating account holder; and by the participating account holder as an increase of the liability to the central Treasury.

Fysical sweeps			IHB Ledger			Participating acc holder ledger	
Treasury acc	**Subsid acc**		**Asset**	**Liability**		**Asset**	**Liability**
inflow	Outflow			Increase		Increase	
outflow	inflow		increase				Increase

- One of the main reasons to register the sweeps in a separate ledger is that this In-House Bank register is the basis for calculating and settling internal interest between central Treasury and the participating account holders. After all, from Transfer Pricing regulations perspective all daily cash pool sweeps are considered daily intercompany loans and there for are subject to arm's length pricing. In other words, internal interest.
- The previous two bullet points can be the reason to set up a full-fledged In-House Bank function. In conjunction with Transfer Pricing regulations the In-House Bank (IHB) will need to develop a philosophy and strategy which transactions are going to be "IHB transactions".

In general, this will be the:

- current account debit and credit sweeps from the Zero Balance Cash Pool,
- intercompany Term loans provided by the IHB to subsidiaries
- intercompany deposits (aka intercompany Term loans from the subsidiary to the IHB

From Transfer Pricing regulations these transactions will need to be separately priced. These pricings will need to be "translated" into a well-founded philosophy for internal interest rates. A few decades ago, you could see that the philosophy was kept simple and standard; debit and credit balances got a margin of 50 basis points on top of an IBOR (Inter Bank Offering Rate). In general, tax authorities were okay with that as they were not really sufficiently educated to understand what a Zero Balance Cash Pool with an IHB structure was all about. However, these days there is an increased focus on domestic tax base erosions and profit shiftings (= BEPS), which relates to tax planning strategies that multinational enterprises use to exploit loopholes in tax rules to artificially shift profits to low or no-tax locations as a way to avoid paying tax. Due to that tax authorities have become much more educated in various pooling techniques and other transactional activities that an IHB can (or is) initiate(ing). Therefore, tax authorities these days are much more aware what the set up and implications are of a Zero Balance Cash Pool with an IHB structure. Hence, guide by Transfer Pricing regulations as developed by the OECD (Organization for Economic Co-operation and Development) tax authorities are scrutinizing Cash Pool solutions with an IHB structure as they review those set ups much more critically than several decades ago. This may relate to countries with less developed tax systems; but even in countries with well-developed tax systems, authorities are scrutinizing those setups because of international pressure to adhere to BEPS regulations. Samples are Starbucks in the UK being nailed to the public pillory because of paying less income tax due to profit shifting to low tax countries, and US president Obama calling The Netherlands a "tax heaven or tax paradise" because of the favorite tax rulings for Treasury centers in The Netherlands.

In this view it is noted that tax authorities are also reviewing whether subsidiaries with a bad balance sheet are getting the same favorable interest rates as a subsidiary with an "investment grade" balance sheet. In the commercial banking world, a company with a bad balance sheet (high risk) will get less favorable interest rates then a company with a high value balance sheet (low risk). An IHB who applies the same interest rate across the board may be considered to be subject to domestic tax base erosions and profit shifting.

- When setting up a full-fledged In-House Bank, the IHB will need to value its customers based on the balance sheet, the historic development of the balance sheet and the forecast of it. After all, a commercial bank will assess the balance sheet of a company prior to any form of commitment to lending. A commercial bank will apply different margins depending on the balance sheet and the forecast of it.

  Mutatis mutanda, an IHB will need to apply similar philosophy to prevent local tax authorities judge the IHB interest rate setup as being in conflict with OESD BEPS regulations. Penalties may be applied in several local tax jurisdictions.

  In the following article from this series on the relationship between In-House Banking and Zero Balance Cash Pools we will provide an example how to mitigate this for an IHB.
- Although local tax authorities may scrutinize IHB setups and their interest rate philosophy, local tax authorities will also recognize that an IHB does have a different risk profile than a commercial bank. Key in this is to understand the general relationship between reference rate versus current account interest margin and Term loan/deposit interest margin. The margin distance between debit and credit for an IHB is much lower than a commercial bank, simply because the margin philosophy from a commercial bank is their business model; for an IHB

the margin philosophy is a sophisticated cash management tool (mainly to adhere to OESD BEPS regulations).

Best implementation practices

- As mentioned in the previous article, setting up a Zero Balance Cash Pool at the cash management bank involves mainly lots of bank documentation (and setting technical parameters). All documentation will require that every participating bank account is duly signed by the account holder approving that the relevant bank accounts are going to participate in the Zero Balance Cash Pool. The bigger the pool of participating account holders, the bigger the logistic challenge to collect all signatures within reasonable time.
  To overcome this, a good suggestion is to have all account holders to sign off on a Power of Attorney for the Treasurer (or the Treasury project leader) to sign all bank documentation on behalf the account holders. This will significantly improve the logistics of the Zero Balance Cash Pool implementation project.
- The location of the In-House Bank and the Zero Balance Cash Pool is one of the first topics that need to be resolved before establishing an IHB structure. Most large International Cash Management Banks offer multiple locations to host the Cash Pool Master accounts. Your legal and fiscal structure will need to give guidance to you where you want/need to build your In-House Bank structure. Hence, your tax advisor will play an important (if not leading) role in this decision. Also, a number of countries require a certain substance and professionalism of the people managing and operating the In-House Bank. You can not have your IHB management outsourced to a third party and have the janitor and the cleaning lady registered as the management of the IHB. Based on fiscal regulations in some countries (e.g. The Netherlands and the UK) your staff operating and managing the IHB are required to be matter experts and financially trained. Also, some countries require the executive management of the IHB to be "independent" and require a certain quota of domestic statutory directors.
  There is no requirement to have the location of the IHB structure to coincide with the country where the treasury staff managing and operating the IHB are based. You can have e.g. your IHB legally sitting in the UK, while your treasury staff is based out of The Netherlands.
- As part of the of a Zero Balance Cash Pool implementation project it is advised to put at the beginning of the project a topic to build a philosophy on the structure of the internal interest renumeration.
  In previous articles from this series, I have been discussing how an interest structure from a commercial bank is set up and how that translates to an interest structure for an In-House Bank. Key in this is to understand the general relationship between reference rate versus current account interest margin and Term loan interest margin. But also, that the margin distance between debit and credit for an IHB is less "competitive" than the margin distance at a commercial bank.
  Parts to include in the internal interest rate philosophy are:
  1. *The Reference rate*.
     For a company that is significantly financed externally it makes sense to use the average interest rate coming from the syndicated financing. A company that is not significantly financed externally it makes sense to use an Overnight-IBOR (Inter Bank Offering Rate) for the relevant currency cash pool, as well as the relevant IBOR for intercompany Term loans (e.g. a 6-months Euribor for a 6-months intercompany EUR Term loan.
     Any other reference rate that can by satisfactory justified can also be applied. Key is that it can be justified to any local tax authority.
  2. *The margin applied*.

The debit (surcharge) margin and credit (deduction) margin will need to be aligned with the type of transaction. Sweeps from a Zero Balance Cash Pool are considered current account transactions. Therefore, the margin should have a current account profile. This means that the credit margin as applied in the "assets & liabilities" ledger of the IHB is lower than the credit margin as applied to intercompany deposits. Also, the debit margin as applied in the "assets & liabilities" ledger of the IHB is *significantly* higher than the debit margin as applied to intercompany Term loans
Below *sample table* is based on a EUR reference rate from October 2024. The margins are illustrative but show clearly what the general relationship is between reference rate versus current account interest margin and Term loan/deposit interest margin.

IHB Transaction type	Margin	Applied interest
Current account debit ZBA sweep	4,25%	3,25% + 4,25% = **7,50%**
Intercompany Term loan	2,00%	3,25% + 2,00% = **5,25%**
Reference rate	3,25%	
Intercompany Deposit	0,75%	3,25% - 0,75% = **2,50%**
Current account credit ZBA sweep	2,00%	3,25% - 2,00% = **1,25%**

Verifying the table against margins as applied by commercial banks, you will find out that the margins at commercial banks have a much bigger distance from the reference rate; in particular current account margins at commercial banks are significant bigger (e.g. credit margin is usually minus 3% and debit margin is usually in the range of plus 14%). As mentioned before in the previous article, the margin philosophy of a commercial bank is their business model; for an IHB the margin philosophy is a sophisticated cash management tool (mainly to adhere to OESD BEPS regulations).

3. *The subsidiary's balance sheet impacting the level of the applied margin*.
   Similar to a commercial bank, the treasury will need to do a risk assessment of the balance sheet of all participants in the Zero Balance Cash Pool to ensure interest rates are aligned with OESD BEPS regulations. A practical suggestion is to define a limited number of balance sheet classifications (such as A = "investment grade", B = "normal grade", C = "on the watch grade" and D = "junk grade"). Each balance sheet classifications will generate a small uplift or reduction to the applied standard matrix of interest rates for IHB transactions. The rationale behind this is that a subsidiary with a risky balance sheet will need to pay more for any kind of lending, and vice versa a subsidiary with an "investment grade" balance sheet will pay less. The small uplift or reduction to the applied standard matrix can be in the range 5 to 10 basis points.
   Periodically (e.g. once a year) Treasury together with Tax and Controlling run a risk review of the balance sheet of every subsidiary. Based on the risk review each subsidiary will be labeled as per the balance sheet classifications, and will receive an interest rate margin uplift or reduction as per the applied classification. The classification (and the applied margin uplift or reduction) will remain till next review period.

- Managing an extended and complex Zero Balance Cash Pool with an In-House Bank function will benefit when being supported by a Treasury Management System (TMS). Most of contemporary TMS's support in their own way the In-House Bank function that comes with a Zero Balance Cash Pool, the internal financing philosophy en the applied interest rate philosophy. Furthermore, an TMS will give insight in the total daily cash position, both for the Cash Pool as for non-Cash Pool participants bank accounts. In addition, a number of

professional TMS's have extended functionality to centrally execute operational payments. This will give the Treasurer more control over the cash in the company.

Not relevant for this article, but worth to mention is that professional TMS's have comprehensive functionalities to manage the intercompany loan portfolio and to manage the FX portfolio.

- An important topic that gets undeserved low attention when setting up an In-House Bank with a Zero Balance Cash Pool is the so-called Cash Management Agreement. With an agreement like that the Treasury establishes the services and pricing that is being offered by Treasury to every individual participating subsidiary. Local tax authorities will also value the importance of such agreements as it will enable them to test compliance with Transfer Pricing regulations. Afterall, similar to a commercial bank the In-House Bank will need to agree on various services and pricings the IHB is offering to the participating subsidiaries. The Cash Management Agreement(s) is an integral part of the set up of the In-House Bank and its applied philosophy. Not having such an agreement with the participating subsidiaries will trigger local tax authorities to scrutinize an IHB with a Cash Pool Structure (with potentially financial consequence as a result).

  It is advised to use special and dedicated legal advice to draft such a Cash Management Agreement, tailored to the specific In-House Bank with the individual Cash Pool structure.
- Once an In-House Bank has been set u, additional services can be added to the IHB concept. It is worth looking into the way intercompany transactions are being settled. In stead of settling intercompany payments thru the external bank accounts, of settling thru an intercompany netting system, you can set up an IHB as an additional bank in the bank master database of your ERP. This will require a one-time technical set up to your ERP to build a direct link between the ERP and the IHB (by means of the TMS). This will allow any intercompany payment to be settle directly on the IHB, debiting the paying subsidiary's IHB account and crediting the receiving subsidiary's IHB account. The settlement is globally instant without any external banking fees.

  Other additional service can be Payments On Behalf Of (POBO) or Receivables On Behalf Of (ROBO).

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