Summary

“Suitability of the STOXX® GC Pooling EUR Deferred Funding Rate as an alternative benchmark for the money market”

An abridged version of a thesis by Jennifer Ertel (June 17,2014)

Sperrvermerk

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Introduction

The international derivatives exchange Eurex will introduce a money market futures contract on the STOXX® GC Pooling EUR Deferred Funding Rate as a supplement to EONIA and EURIBOR futures in November 2014. The rate appears on Bloomberg's BTMM page and is already used by several banks as a reference; another interest rate of the same index family replaced the EURIBOR in the Swiss newspaper "Neue Zürcher Zeitung" in September 2013. Why was the EURIBOR replaced in Switzerland and will the move be followed by others? What is this new money market index on which a future will be launched?

Reference rates are important for financial markets and the real economy. They serve as the basis for derivative financial instruments and as a guide for variable and fixed-income investments and loans. In addition, reference rates are used to assess money market conditions, transmission process and serve as a basis for monetary policy operations. Unreliable benchmarks include risks, negatively impact confidence and threaten financial stability. All market participants and central banks are interested in robust and meaningful money market interest rates. As seen recently, manipulated LIBOR interest rates displayed a distorted picture of credit conditions in the interbank market and caused damage in the financial sector and real economy. This led to a loss of confidence in participating institutions and the worldwide financial system. Regulators and market participants are looking for reliable indicators for the interbank market.

In order to be accepted by the market, a benchmark must meet certain criteria. The present work deals specifically with benchmarks for the money market in the Eurozone. To define money market-specific requirements for a benchmark, a detailed analysis of the underlying markets is essential. Furthermore, the focus is to provide alternative and robust benchmarks for the money market that in turn restore confidence in the financial system, promote financial stability and act as a reliable basis for monetary policy operations. In particular, the STOXX® GC Pooling EUR Deferred Funding Rate is investigated for its suitability as an alternative and trustworthy benchmark for the money market in the Euro area.

The money market

Short-term financial transactions with a maturity up to one year are associated with the money market. The money market is seen as an important link between central banks and the real economy. It facilitates an efficient distribution of liquidity between banks and the central bank. In the Eurozone, the money market is mainly a pure interbank market in which commercial banks grant short-term loans to each other. Financial institutions can ensure their short-term liquidity needs via the money market and, thus, provide funding for the real economy. Additionally, the interbank market is one of the most important links between central banks and the real economy as it transmits monetary policy impulses and gives central banks control over short-term interest rates. Therefore, an efficient money market is essential for an economy.

Companies that do not belong to the financial sector do not have access to central bank money and have to be supplied by banks with commercial bank money. Interest rates, which are negotiated in the interbank market, therefore have an impact on the real economy. They function as reference rates and serve as the basis for many financial instruments. Hence, a transparent representation of interest rates in the interbank money market is essential for the transmission mechanism of interest rates between the central bank and the real economy. An intact interbank market is indispensable for the implementation of monetary policy. It ensures that interest rates in the real economy are linked closely to the market for central bank liquidity.

The interbank money market can be divided into a secured and an unsecured interbank market.

The unsecured money market

The unsecured money market differs from the secured money market because lending takes place without posting of collateral. Individual internal credit limits are the basis for unsecured lending. If the borrowing bank (cash taker) is not able to repay the loan, the lending bank (cash provider) suffers a credit loss. The credit risk of the cash provider in the unsecured money market depends therefore on the individual default risk of the cash taker. It is essential for the cash provider to assess the counterparty risk of each cash taker subjectively. That is why the unsecured money market is primarily an OTC market, in which credit institutions negotiate contract terms bilaterally and in a decentralized manner. In times of high credit risk, as seen in the financial crisis or the sovereign debt crisis, loans are not granted even if excess liquidity is available. A standstill in the unsecured interbank money market can therefore occur in times of heightened risk aversion. The unsecured money market was the main funding channel for banks before the financial crisis. In those days, counterparty risk was neglected in the interbank market. This risk assessment has changed significantly since 2008. With the start of the financial crisis, the volume of the unsecured money market has declined sharply. Due to information asymmetries and increased systemic risk, there was a crisis of confidence among banks. Since 2010, the sovereign debt crisis also has had a negative impact on the banking sector. Again, high uncertainty and a renewed rise in risk aversion occurred in the markets. The unsecured interbank market has become illiquid and inefficient due to its drastically reduced trading volumes; and a recovery cannot be expected in near future.

The secured money market

The secured interbank market differs from the unsecured market as lending only takes place with the posting of accepted collateral. This collateralized lending in the interbank market is called sale and repurchase agreement, abbreviated “repo”. A repo is a trade in which the cash taker sells a security to the cash provider and simultaneously commits to buy back a security of the same kind and amount at a certain point in the future at a fixed price. The repurchase price equals the selling price plus interest, the so-called “repo rate”. From the perspective of the cash provider, which lends money and receives securities as collateral, it is a reverse sales and repurchase agreement or short “reverse repo”.

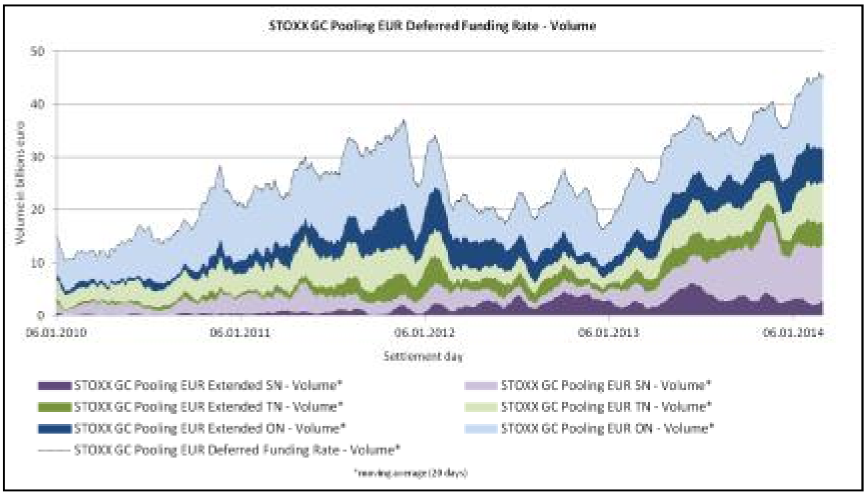
The secured interbank market also did not escape from the crises unscathed; however, the impact on liquidity was significantly less severe compared to the unsecured money market. During the financial crisis, the secured money market experienced an overall positive development. Comparing the development of both money markets, a partial shift from the unsecured to the secured money market is noticeable. Because of the positive development of the secured money market during the crises, as it is a liquid and crisis-stable market, it can be used as the basis for a money market benchmark.

The GC Pooling market of Eurex Repo

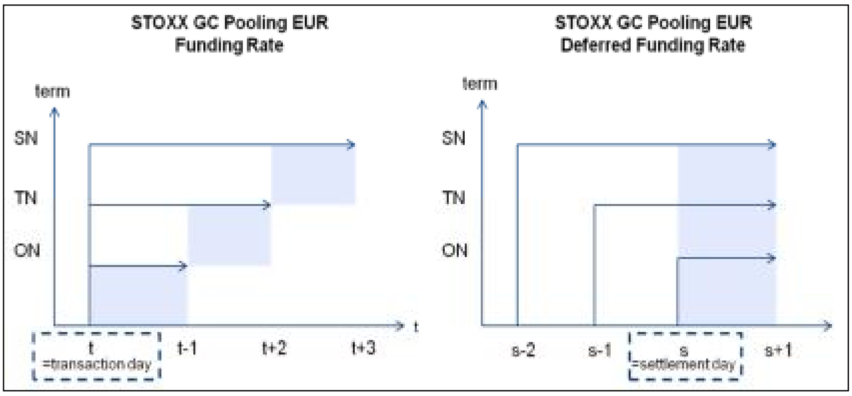
Eurex Repo is a market leader for international financing transactions in the secured money market via integrated and electronic trading. It provides liquid marketplaces for repo and securities transactions in which electronic trading is combined with secured and efficient clearing, settlement and collateral management. The GC Pooling market of Eurex Repo is the basis of the STOXX® GC Pooling index family and was introduced in cooperation with Eurex Clearing AG and Clearstream Banking AG in 2005. The GC Pooling market is a regulated, electronic, centrally cleared and anonymous marketplace for general collateral repo transactions in euro and U.S. dollar. 115 Participants from 14 countries can choose between the standard baskets: GC Pooling ECB Basket, GC Pooling ECB EXTended Basket, GC Pooling INT MXQ Basket and GC Pooling Equity Basket. The GC Pooling ECB Basket contains more than 7,500 ECB-eligible securities with a minimum rating of A-/A3. The broader GC Pooling ECB EXTended Basket includes more than 21,000 ECB-eligible securities with a minimum rating of BBB/Baa3. The open quote book of the trading system displays all entered quotations, which are legally binding, in full market depth. This leads to transparent trading prices.

During the financial crises since 2008, the GC Pooling market has experienced continuous growth and provided banks with liquidity even during times of stress. Due to the inclusion of Eurex Clearing as a central counterparty, the counterparty risk has been reduced significantly. Furthermore, collateral requirements were managed efficiently by the collateral management system of Clearstream and the option to pledge received collateral to the ECB via a re-use functionality ensured confidence among cash providers at all times. The GC Pooling market has developed a reputation as a proven liquid and crisis-stable secured money market, which acted as a stabilizer during the recent years of crisis.

The STOXX® GC Pooling EUR Deferred Funding Rate



STOXX® publishes two funding rates within the STOXX® GC Pooling index family: the STOXX® GC Pooling EUR Funding Rate and the STOXX® GC Pooling EUR Deferred Funding Rate. Both represent new, transparent and rules-based benchmarks for interbank overnight interest rates in euro. The indices show either the volume weighted average interest rate or the total volume of all euro ON, TN and SN transactions of one-day traded in the GC Pooling ECB Basket and the GC Pooling ECB EXTended Basket.



The difference between the two funding rates is that the STOXX® GC Pooling EUR Funding Rate aggregates transactions with the same transaction date while the STOXX® GC Pooling EUR Deferred Funding Rate summarizes all transactions with the same settlement day.

The focus of the present work is the STOXX® GC Pooling EUR Deferred Funding Rate because it takes into account all transactions which have the same settlement or value date and thus it is comparable to the reference rate for overnight transactions of the unsecured interbank market – the EONIA. Only actual transactions of the GC Pooling ECB Basket and GC Pooling ECB EXTended Baskets are considered in the calculation of the STOXX® GC Pooling EUR Deferred Funding Rate. Non-binding quotes or unsecured transactions are excluded.

In a next step, different benchmark indices including EONIA, EUREPO, RepoFunds Rate Indices and the STOXX® GCP DF have been compared.

Attributes of a benchmark for the money market

The following attributes, which a benchmark of the money market should meet, have been worked out through the analysis of the functioning, development and indices of the secured and the unsecured interbank money market. The aim is to restore the confidence of market participants in reference rates by a meaningful benchmark, which fulfills all requirements. Priorities and points were allocated to the attributes as follows:

Attribute	Priority	Points
1 Transparent representation of the money market	2	4
2 Representation of a liquid interbank market	1	6
3 Representation of a crisis-stable interbank market	1	6
4 Transaction-based data	2	4
5 Liquidity driven interest rates	2	4
6 Representative number of market participants	3	2
7 Representative number of collaterals	4	1
	Total:	**27**

Fulfilment of the attributes

EONIA - Index of the unsecured money market
EONIA (**Euro OverNight Index Average**) is an effective overnight interest rate in the Eurozone computed as a weighted average of all overnight unsecured lending transactions in the interbank market.

Attribute	fulfilled	Reason	Points
1 Transparent representation of the money market	-	No transparent representation of an OTC market	0
2 Representation of a liquid interbank market	-	Representation of an illiquid and inefficient unsecured interbank market	0
3 Representation of a crisis-stable interbank market	-	Collapse of the unsecured interbank money market caused by the crisis	0
4 Transaction-based data	**ü**	Transactions of panel banks	4
5 Liquidity driven interest rates	**ü**	Price of money is reflected	4
6 Representative number of market participants	-	Only 35 panel banks, some other banks already resigned from the panel	0
7 Representative number of collaterals	-	No collaterals	0
Total:	**2**		**8**

EUREPO - Index of the secured money market
EUREPO is the rate at which one prime bank offers funds in euro to another prime bank if in exchange the former receives from the latter EUREPO GC as collateral

Attribute		fulfilled	Reason	Points
1	Transparent representation of the money market	-	No transparent representation of an OTC market	0
2	Representation of a liquid interbank market	ü	Representation of a liquid secured interbank market	6
3	Representation of a crisis-stable interbank market	ü	Representation of the secured interbank money market which mainly stayed stable during the crisis	6
4	Transaction-based data	-	Non-binding quotations	0
5	Liquidity driven interest rates	ü	Consideration of GC Repo rates	4
6	Representative number of market participants	-	Only 11 panel banks in 6 countries	0
7	Representative number of collaterals	ü	European government bonds	1
Total:		**4**		**17**

RepoFunds Rate Indices - Indices of the secured money market
RepoFunds Rate represents the effective cost of funding for the majority of one-day repo trades in each of the relevant sovereign bond markets, and includes both general collateral and specific collateral trades.

Attribute		fulfilled	Reason	Points
1	Transparent representation of the money market	ü	CCP increases market transparency Transparent trade prices	4
2	Representation of a liquid interbank market	ü	Representation of a liquid secured interbank market with high trading volume	6
3	Representation of a crisis-stable interbank market	ü	Representation of the secured interbank money market which mainly stayed stable during the crisis	6
4	Transaction-based data	ü	Transactions traded via BrokerTec or MTS	4
5	Liquidity driven interest rates	-	Consideration of Special Repo rates and GC Repo rates	0
6	Representative number of market participants	ü	Average Trades per day: 7,128	2
7	Representative number of collaterals	-	Only government bonds from Germany, France, Italy	0
Total:		**5**		**22**

STOXX® GC Pooling EUR Deferred Funding Rate - Index of GC Pooling Market
The STOXX® GC Pooling EUR Deferred Funding Rate takes into account all transactions which have the same settlement or value date.

Attribute		fulfilled	Reason	Points
1	Transparent representation of the money market	ü	CCP increases market transparency Transparent trade prices	4
2	Representation of a liquid interbank market	ü	Representation of the secured GC Pooling market with high trading volume	6
3	Representation of a crisis-stable interbank market	ü	• Crisis stable market • In particular, grown in times of crisis	6
4	Transaction-based data	ü	Transactions traded via the Eurex Repo trading system	4
5	Liquidity driven interest rates	ü	Consideration of GC Repo rates	4
6	Representative number of market participants	ü	115 participations in 14 countries	2
7	Representative number of collaterals	ü	More than 21,000 ECB-eligible securities	1
Total:		**7**		**27**

EONIA, with eight out of 27 possible points, scored the lowest, followed by EUREPO with 17 points and the RepoFunds Rate Indexes with 22 points. The STOXX® GC Pooling EUR Deferred Funding Rate achieved the highest and the maximum achievable score.

Conclusion

In particular, the financial crisis in 2007/2008 and the sovereign debt crisis in 2010 led to uncertainty and a loss of confidence among banks. That is why banks tended to grant loans only if a security has been pledged as collateral. This led to a shift of revenue into the secured money market and a collapse in the unsecured market. As a result, an index of the unsecured money market does not meet the two most important requirements for a benchmark because the base is neither resistant to crises nor liquid. The change in the interbank money market has an impact to the significance of benchmarks of the unsecured money market, including EONIA.

However, a reference rate is essential for the financial and real economy as well as for the monetary policy. EUREPO was excluded as an alternative to EONIA because it did not score enough points; in particular, because it is based on non-binding quotes. As the "LIBOR scandal" showed, indices that are not based on transactions are subject to manipulation. Possible alternatives in the overnight field could be the RepoFunds Rate Indices or the STOXX® GC Pooling EUR Deferred Funding Rate. In comparison with the RepoFunds Rate Indices, the STOXX® GC Pooling EUR Deferred Funding Rate presents a better alternative to EONIA. The main reason is that RepoFunds Rate Indices consider up to 98% of special repo rates, which reflect the value of the collateral. The aim of a benchmark of the money market is to reflect liquidity driven interest rates, which means that the value of money should be in focus.

The STOXX® GC Pooling EUR Deferred Funding Rate meets all defined requirements and is therefore suitable as a benchmark for the money market. It is calculated transparently and according to strict rules by an independent index provider and reflects a liquid and crisis-stable interbank market by using transaction-based and cash driven repo interest rates. The transactions used are conducted by several international market participants and secured by wide range of collaterals of the Eurozone. Therefore, the STOXX® GC Pooling EUR Deferred Funding Rate can be used as an alternative to the EONIA.

This article reflects the author´s opinion.

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