

# The Value of EFX Bank Streams

## Introduction

Mainstream and industry press have written widely on the gradual withdrawal of banks—the traditional primary liquidity providers—from the spot FX markets over the past few years. The typical narrative is that reduced appetite for risk, controls on capital at banks, as well as juniorization of dealer staff have all contributed to this withdrawal<sup>1</sup>. Some reports have pointed to the rise of non-bank liquidity providers, with two entering the Euromoney 10 for the first time in 2016, and increased fragility of the FX markets as results of this bank pull-back. The general consensus seems to be that (a) liquidity is getting more expensive, and (b) while spreads are narrow in times of normal volatility, in times of market stress dealers effectively pull away from the markets, contributing to extreme volatility and events like flash crashes. On the other hand, the BIS survey shows that banks still account for 43% of spot turnover in USD in 2016—down from 53% in 2004, but still the lion’s share and holding steady around 40-45% of the market since 2007.

In this research note, we aim to contribute to this discussion by

<sup>1</sup> Bank for International Settlements, “Foreign Exchange Liquidity in the Americas,” BIS Papers No. 90, March 2017.

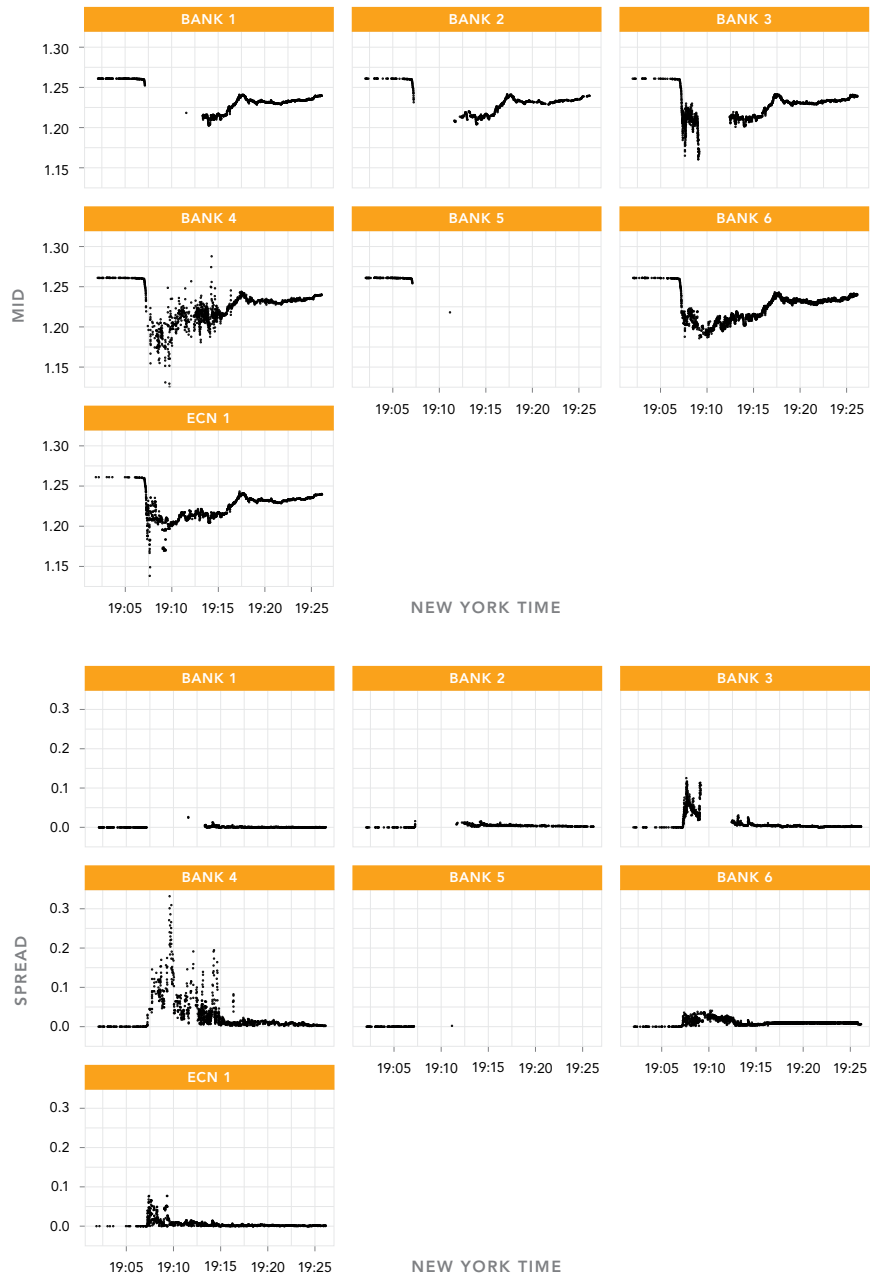


FIGURE 1 Mid and spread of GBPUSD during the flash crash on October 6, 2016

reporting data on how often banks actually “step back” from providing meaningful liquidity to the FX markets—individually and (more importantly) as a group. **We find that events in which banks actually stop providing liquidity are exceedingly rare.** Our conclusions are drawn on a proprietary dataset of quotes from a sample of 7 major banks, of which 6 are in the 2016 top 10 Euromoney rankings<sup>2</sup> and 3 in the top 5. Over the past two years, we could identify only 3 events when banks stopped quoting altogether. During customary trading hours (i.e. excluding the period from 4 to 6pm NY time when markets are quiet and many banks recycle their trading systems), we found on average about 3 minutes per day when banks effectively withdraw from the market by widening their spreads to larger than those on the primary ECN, with the period following the Swiss Franc depegging being the only notable exception.

## Data

While institutional trading of spot FX was traditionally conducted via voice, today electronic channels account for roughly 80% of spot turnover. At banks, the bulk of this turnover is mediated by eFX systems which automatically generate prices and distribute them both through bilateral channels, in response to RFQs and RFSs, and onto anonymous platforms—ECNs. In the present dataset, we examine both direct bilateral streams provided by banks via API to institutional FX customers trading algorithmically on those streams, and liquidity available on major ECNs, which represents the aggregation of liquidity provided by banks and other market participants.

Our data set includes the streams of seven banks, as well as data from EBS and Reuters over the two-year period from January 2015 to December 2016. For brevity we examine the liquidity supplied by banks in the seven most liquid pairs—GBPUSD, EURUSD, USDJPY, USDCHF, AUDUSD, NZDUSD, USDCAD.

Although bilateral dealer quotes are subject to last look, our data shows that—at least for institutional clients trading systematically and algorithmically—acceptance rates are close to 100%. Thus the data streams we are looking at in this note are a reasonable representation of liquidity provided by banks.

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2 The 2016 Euromoney FX rankings of market share in descending order are: Citi, JPMorgan, UBS, Deutsche Bank, Bank of America Merrill Lynch, Barclays, Goldman Sachs, HSBC, XTX Markets, and Morgan Stanley.

## Vanishing Liquidity

We begin by looking at how often banks withdraw from the market altogether, as indicated by a gap in the stream of prices they provide to customers trading bilaterally. In particular, for all ECNs and bank quotes, we search for gaps in tick data when a bank stops streaming quotes. Whereas we may start with a fairly large number of candidates, the vast majority are due to operational and technical issues that do not reflect an intentional withdrawal of liquidity. It is remarkable that we could find just three events over the two-year study period when multiple banks stopped quoting during a period of high volatility—an indication that banks are withdrawing liquidity from the market. The first is the de-pegging of the Swiss Franc in January of 2015. The second is in NZD on August 24, 2015, which may be related to the equities flash crash around the New York open. The third is the British Pound flash crash in October 2016.

In Figure 1 we provide a graphical example. This example is centered on the British pound flash crash. In the top panel we provide the prices for GBP at the primary ECN and in the bank streams in our sample<sup>3</sup>. In the bottom panel, we show the \$1m spread. Some banks, during the event, stopped providing liquidity to the market and withdrew completely, shown by a gap in the figures. Venues that didn't stop quoting completely widened their spreads significantly, as we see in the bottom panel.

Overall it is very rare that more than one bank would stop quoting except for technical reasons. Banks continue to provide liquidity even in very volatile periods and only in a few extreme events do they withdraw from the market.

## Widening Spreads

Banks very rarely withdraw from the market outright. However, they can still effectively withdraw from the market by making their quotes uncompetitive. We quantify such behavior by comparison with prices available on ECNs. In principle, when neither the client nor the bank is engaged in predatory behavior, the best avenue for trading should be bilateral, where the bank can provide the most competitive quotes to a customer without fear that customer will pick it off

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3 One bank routinely stopped quoting after 4PM for operational reasons around this date period, so we have data for only 6 banks.

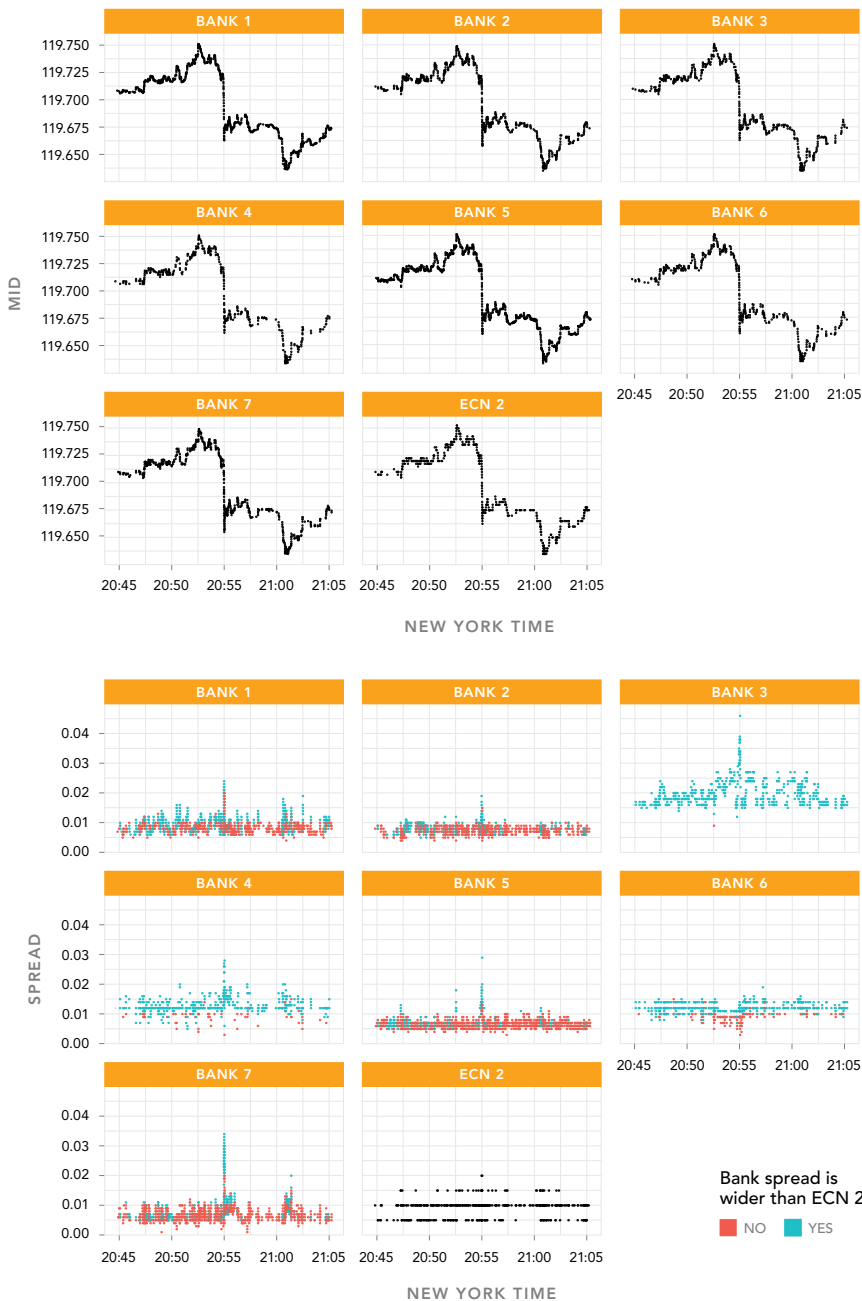


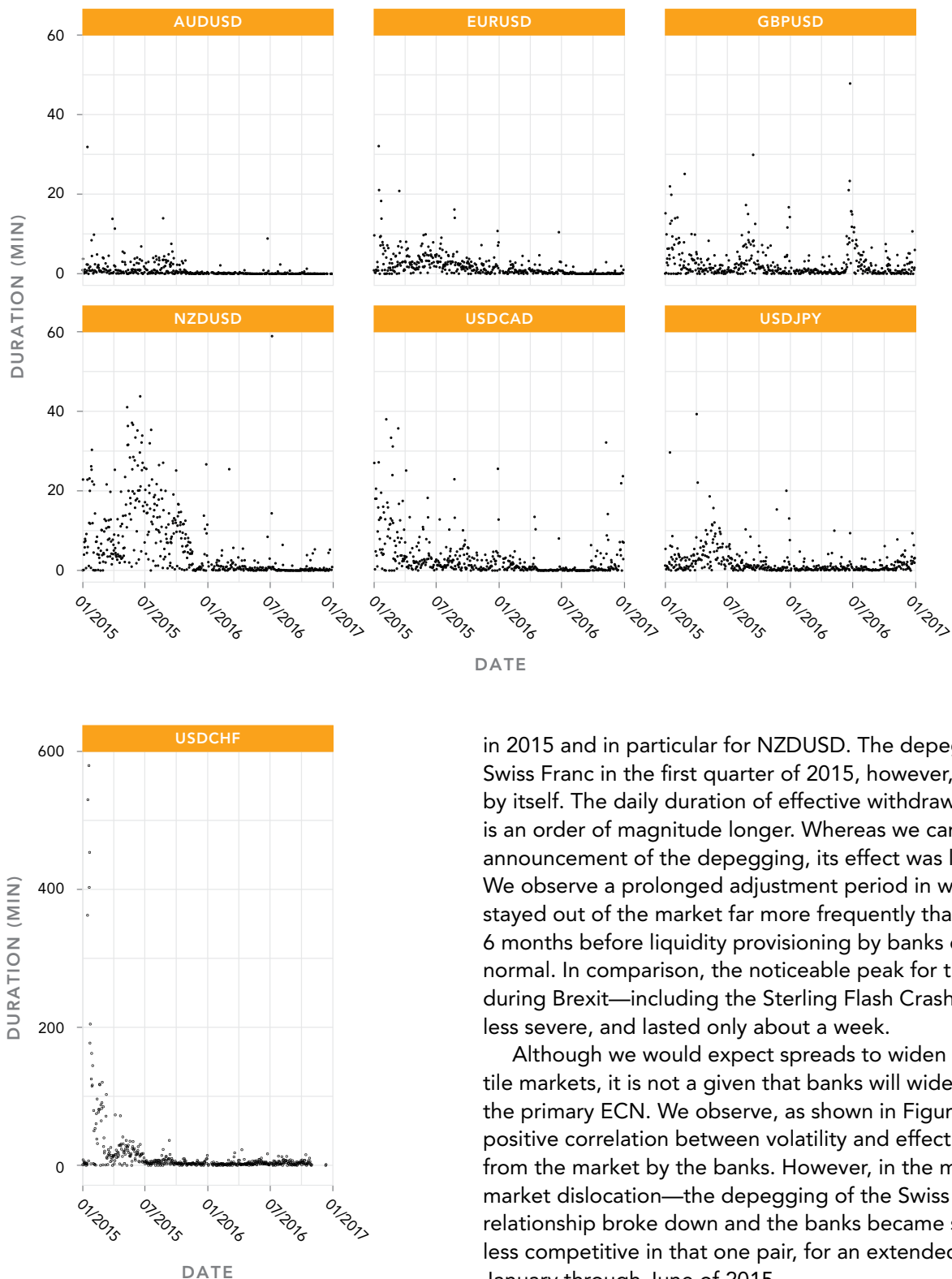
FIGURE 2 Mid and spread of USDJPY example on April 2, 2015.

or run it over. If a customer engages in such behavior over time, the dealer can widen its quotes accordingly. On an ECN, liquidity providers are exposed to adverse selection from more informed traders, but can never hold its anonymous counterparty accountable, and must demand a premium through wider quotes, to compensate for that adverse selection. With this background, we characterize effective withdrawal from the market by a bank when the spread on its bilateral stream is wider than the spread on the primary ECN.

In contrast to total halt of streaming prices, this definition identifies many instances in which an individual bank is considered to be effectively withdrawn from the market. However, a client may not always be able to negotiate the best tier of quotes from every bank. In Figure 2, we show an example of a sudden but relatively mild price change in USDJPY. We see spreads widen everywhere at the moment of the price change. It was also during a period of time when several banks were generally less competitive than the primary.

A more reliable metric to address the question of how often the banks are uncompetitive is to examine the banks as a group. That is, although an individual bank may be markedly less competitive in a given currency pair than others, as a group the bank streams should be extremely competitive.

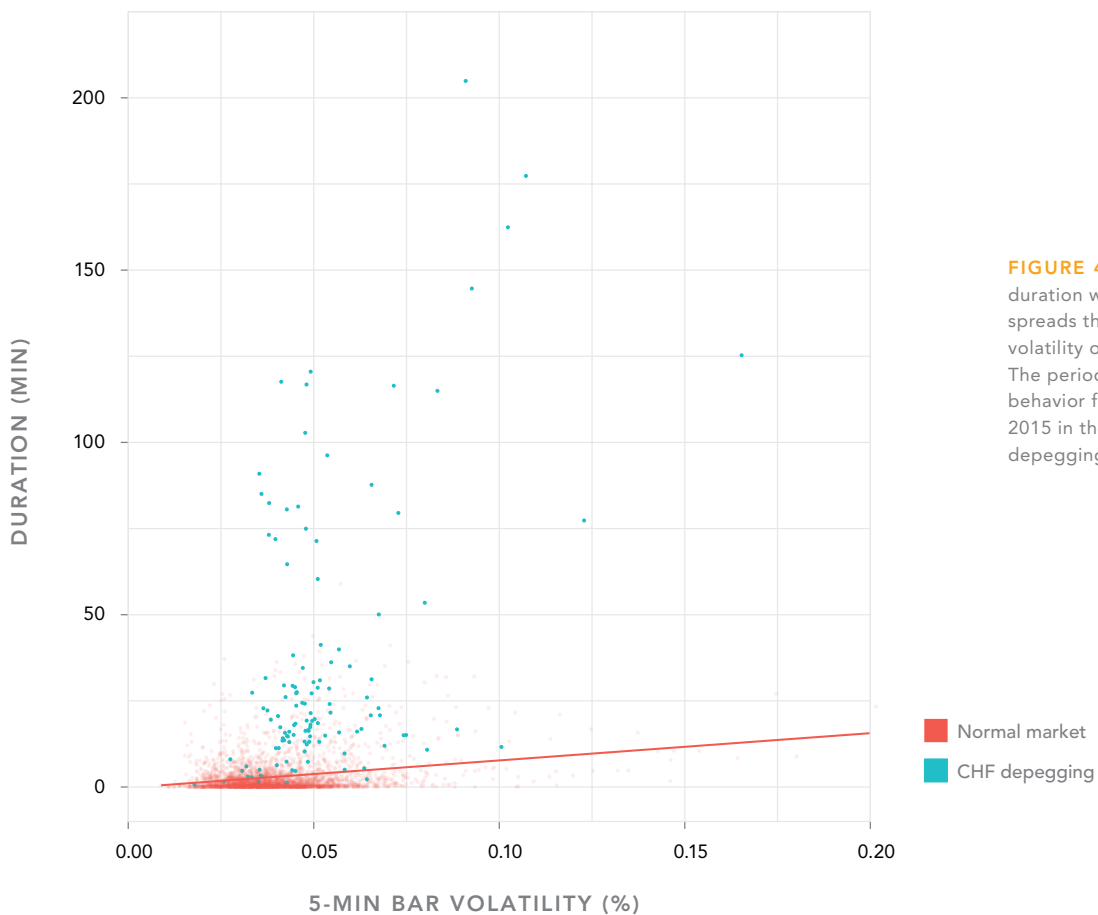
In Figure 3, we plot for seven of the most liquid currency pairs the number of minutes each day when all banks in our data set simultaneously become less competitive than the primary ECN. Typically, it is on the order of a few minutes a day. We observe much longer durations for all the currency pairs



**FIGURE 3** Total duration in minutes day by day when banks have wider quotes than the primary ECN. USDCHF is plotted separately on a different scale due to its much longer duration in the first part of 2015.

in 2015 and in particular for NZDUSD. The depegging of the Swiss Franc in the first quarter of 2015, however, is in a class by itself. The daily duration of effective withdrawal by banks is an order of magnitude longer. Whereas we can pinpoint the announcement of the depegging, its effect was long lasting. We observe a prolonged adjustment period in which the banks stayed out of the market far more frequently than usual. It took 6 months before liquidity provisioning by banks came back to normal. In comparison, the noticeable peak for the Sterling during Brexit—including the Sterling Flash Crash—was much less severe, and lasted only about a week.

Although we would expect spreads to widen in more volatile markets, it is not a given that banks will widen more than the primary ECN. We observe, as shown in Figure 4, a general positive correlation between volatility and effective withdrawal from the market by the banks. However, in the more severe market dislocation—the depegging of the Swiss franc—this relationship broke down and the banks became significantly less competitive in that one pair, for an extended period from January through June of 2015.



**FIGURE 4** Regression of daily duration when banks have wider spreads than the primary ECN on volatility of 5-minute bar returns. The period of markedly different behavior from January to June 2015 in the aftermath of its depegging is shown separately.

## Conclusion

In this note we attempt to get a better understanding of banks' quoting behavior as a group in order to learn whether the mainstream narrative is based on fact or perception. In theory, the spread on the primary ECN represents fair compensation for the risks a liquidity provider takes of being met by an anonymous and potentially informed counterparty—albeit constrained by the venue's tick size. One would expect banks' quotes to a known, well-behaved counterparty would normally allow a narrower spread. While higher volatility will increase quoted spreads, this should apply equally to ECNs and direct bilateral quotes.

We looked directly at how often each day 7 banks, aggregated as a group, provide a spread that's tighter than the primary ECN's. As expected, we find that bank group's direct bilateral streams are generally tighter for all but a few minutes each day. In periods of higher volatility, that number tended to go up a bit, but only rarely exceeded 10 to 20 minutes per day, except for USDCHF after the Swiss depeg in January 2015.

In summary, direct bank streams—aggregated as a group—provide an extremely competitive liquidity pool through the vast majority of market conditions. However, and not unexpectedly, the Swiss event shows that certain events can still shake this formidable group.

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