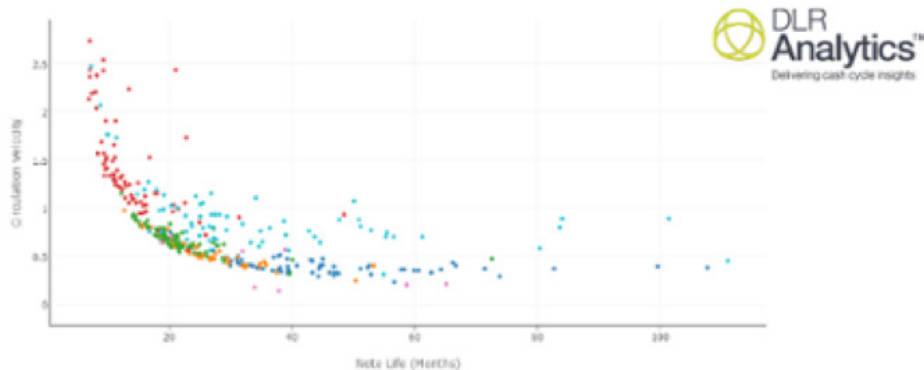


What's the best way to balance note life and circulation velocity?



DLR Analytics™ can help you make strategic decisions about note life and circulation velocity to ensure your notes are working as hard as possible – but no harder.

Circulation velocity is key when you're looking at cash cycle dynamics. It's a measure of how often on average a banknote returns to the central bank to be sorted in a year. For more centralised cash cycles, this can be usefully plotted against note life values to give insight into what's happening in your cash cycle.

Points in the graph top left:

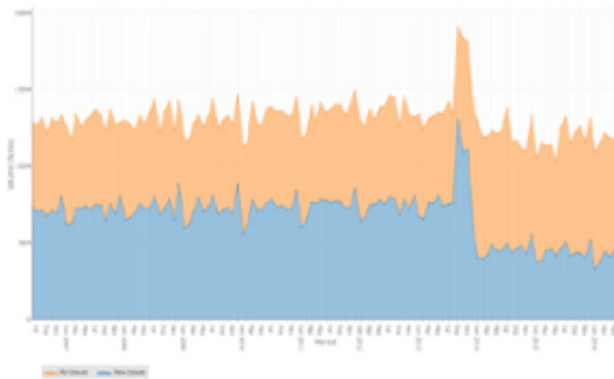
- Points in the top left indicate notes that have a shorter banknote lifetime and are returning to the central bank more often. For notes that return often, the central bank has a good chance of removing them from circulation when their circulating quality falls below their fitness standards, therefore it becomes easier to maintain a circulating fitness standard.
- These notes will be going through sorting machines more frequently, which means it's especially important that your sorting machine has been set up to align with your fitness standard pass/fail rate. Poorly performing or poorly calibrated machines can lead to notes being unnecessarily destroyed.
- In this example, the circulation velocity is typically 0.5 to 3, which is fine. We see some instances where circulation velocity is upwards of 10. A banknote which lasted for 24 months would be sorted 20 times in its lifetime, which could indicate that your sorting machines are running a lot. You could with points in the top lefts by working with commercial banks to limit the notes you get back or potentially even adopting some sort of sampling policy.

Points in the graph bottom right:

- Points in the bottom right indicate the opposite: banknotes that aren't coming back to the central bank to get sorted very often. If these notes are a storage of wealth notes then this makes sense and if you don't have concerns about the quality of notes in circulation then there's no problem.
- However, if you are concerned about the quality of notes in circulation then there are things you can do to increase the circulation velocity. We typically see that the following things can help in this situation:
 - distributing the banknotes via ATMs
 - finding other ways to increase the volume of banknotes in circulation
 - introducing policies to return those banknotes to the central bank

Ideally, you want to be in the 'sweet spot' at the bottom left, where your notes are circulating frequently enough that you can remove them from circulation when they are no longer fit for purpose, but you aren't processing them too often. And that's where DLR Analytics™ can help.

What's affecting your banknote issuance demand?



Discover what impacts demand for new banknotes and see how your approach compares with methods other central banks are using.

DLR Analytics™ aims to give you insightful charts which help you make decisions and understand the results of your actions. The demand proportion charts above offers a clear view of the ratio of new and re-issued notes required to meet the monthly demand.

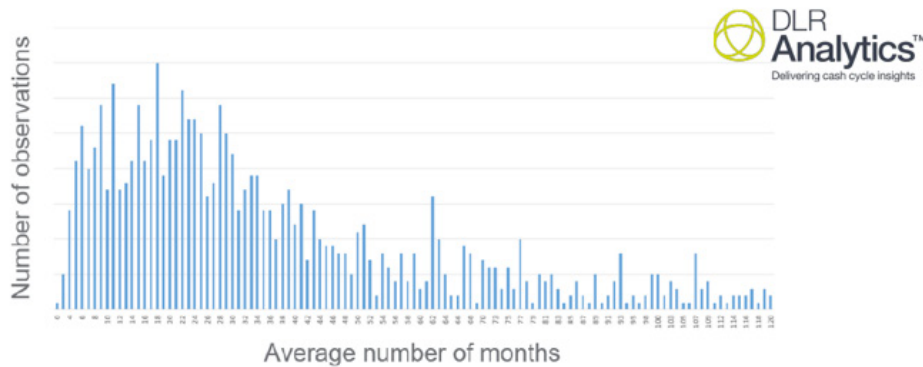
The ratio of new issues to re-issues is affected by the denominations usage in the cash cycle, the issuance policies and the market demand for new notes. Our analysis using global DLR Analytics™ data revealed the following trends in the demand proportion chart:

- Issuance patterns for lower value denomination notes generally show that demand is met with new notes, whereas for higher value denominations, more re-issued notes are used to meet demand.

- Issuance patterns of new notes can either be regular, event-driven or sporadic.
- Regular issuance is characterised by predictable monthly activity
- Event driven issuance is seen when there are large increases in new issues for special calendar events
- Sporadic issuance is not tied to a schedule event or activity

The demand proportion chart can also clearly display the impact of any changes you have made, for example the switch from paper to polymer. In DLR Analytic user data we've seen that this kind of change can result in a reduction in new issues being used to meet demand.

How can aggregated global and regional data help?



See your data in its global context to help you ask the right questions.

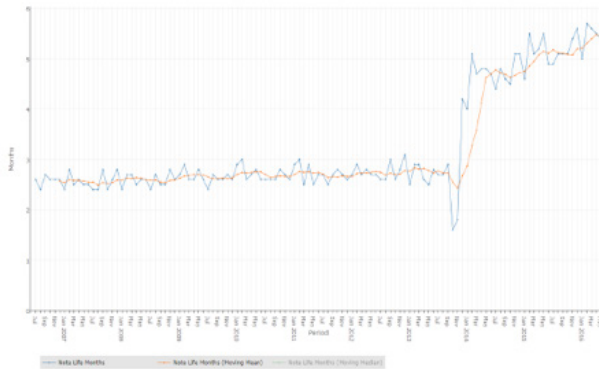
Using data is important if you're looking to make informed decisions. As a member of our Cash Cycle Partnership, you would have access to aggregated and anonymised data which has been analysed to uncover global and regional trends. You can then start to understand your banknote performance in its global context to help you identify if you should make any changes.

Within the analysis, we've pulled out trends for factors including substrate, circulation velocity and denomination usage. While the banknotes which make up this analysis

have experienced different circulating environments, have different specifications and have been subjected to different fitness standards and clean note policies, as well as going through different sorters, we can still see some insightful trends emerging.

You can find some of these trends in our [Industry Insight Papers](#) and we also explore them in our annual [Cash Cycle Partnership](#) seminar

What factors affect note life?



Understand the life of your notes and how it will respond to changes.

Being able to understand the note life of your banknotes will put you in the best position to plan your banknote demand.

Note life is a measure of how long your banknotes are circulating for before they are assessed as no longer fit for circulation and removed from circulation.

The chart above shows how this country's decision to introduce a new banknote substrate impacted the note life of one denomination. You can see a transition period where the note life peaks, due to a combination of the more durable specification and a higher proportion of new notes

in circulation, then stabilises. The timescale for a transition period can vary according to a number of factors including the banknote demand, the launch policy and circulation velocity.

Other charts within DLR Analytics™ allow you to make even more detailed investigations of note life by using distributions and segmentation.