



DeLaRue

What's happening to
the volume and value
of Cash in Circulation

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Industry Insights | **Issue 1**

Introduction

When De La Rue launched DLR Analytics™ last year, we did so because we were hearing the same questions time and time again from our customers and realised that there was an opportunity to build a collective understanding and provide better answers through a standardised and joined up approach.

I write this, having recently been part of the team that had 29 central bankers from 16 central banks join us in the UK for a **Cash Cycle Partnership Seminar**. We shared back the first major review of the global and regional aggregated and anonymised data.

This is the first of many reports from that event that we hope will be of interest and use to you as an industry. A longer version of each report, containing additional analysis and graphs, will be made available to **DLR Analytics users**. All supporting data is also available to DLR Analytics users upon request (please email nikki.strickland@delarue.com).

This initial report focusses on what is happening to the volume and value of cash in circulation. It provides the foundations for the future report in this series. It also helps set the context for some of the discussions around forecasting and why simply projecting based on historical patterns doesn't always make sense. It's quite a simple report but we hope it kick starts some thinking and some good discussions.

I hope you find the series both useful and insightful.

Dr Nikki Strickland
Product Marketing Manager – Analytics

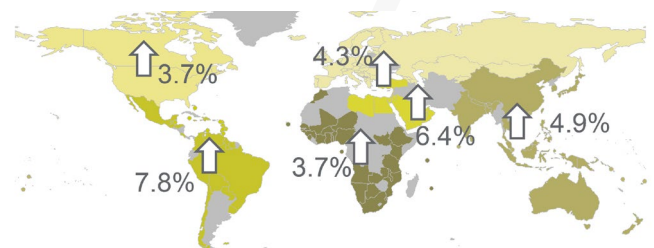
What's happening to the volume and value of cash in circulation?

How many banknotes are there in the world? What's the combined value of all the cash in circulation? What are the global and regional trends?

These are some of the questions which we wanted to answer using DLR Analytics data, banknote statistics and publically available data to look at CAGR (compound annual growth rate) for the value and volume of cash in circulation (CIC).

How many banknotes are there in the world?

While there's variation around the world, we typically see growth in the 3-5 % range and the 2012-2016 volume CIC CAGR was broadly consistent with this trend, with some specific countries bringing up the regional average.



There are just under 600 billion banknotes in circulation across the world. And the volume of cash in circulation has grown dramatically: back in 2004 it was just over 200 billion. The vast majority of this substantial growth has been in Asia, with large countries such as China and India driving much of this growth in CIC volume.

Denomination breakdowns

But what's happening beneath the surface? Thanks to DLR Analytics data, we can break these volumes down and examine how the mix of denominations changes.

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Industry Insights | Issue 1

We typically see that, over time, higher denomination banknotes begin to make up an increasing proportion of the volume of cash in circulation. This trend is borne out in data from Africa, Asia, the Caribbean, Latin America and the Middle East.

This is consistent with expectations – for economies running with some level of inflation, the purchasing powers of a single denominational value banknote decreases gradually over time. Eventually, people can buy less and less with the lower value banknote denominations and they increasingly need higher denomination notes for transactions, as well as to store wealth.

What's the world's cash worth?

Value of Cash in Circulation

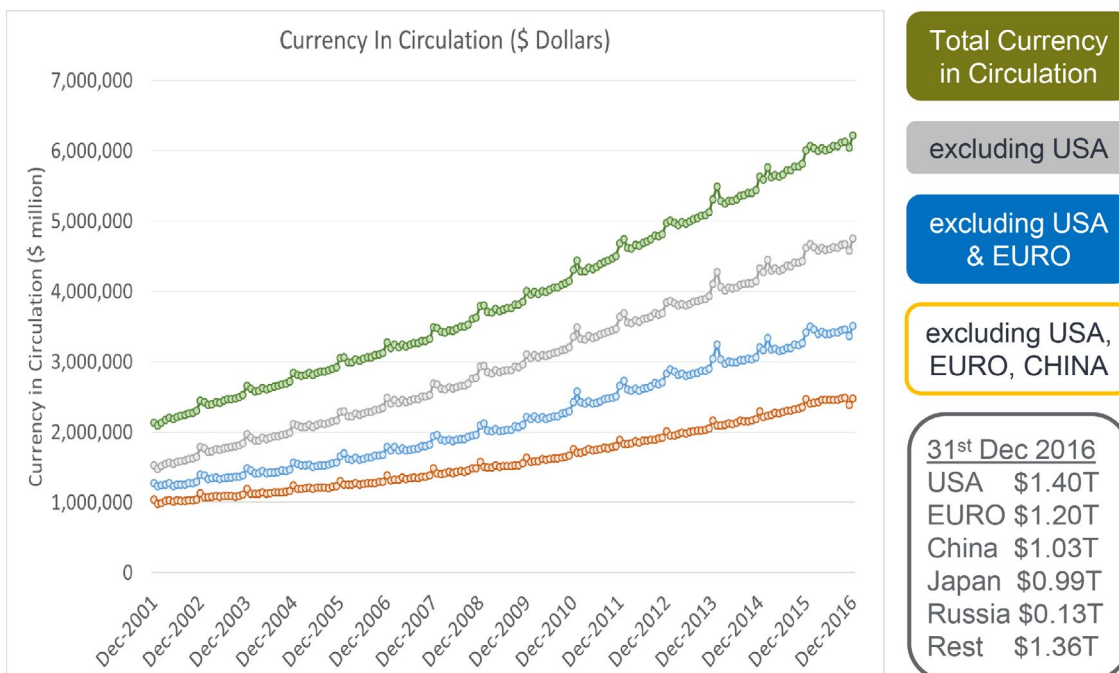
Converting the reported values of cash in circulation into USD using the IMF's conversion rate gives us an idea of the value of all the cash in circulation around the world.

We calculate that all the cash in circulation across the world adds up to just over 6 trillion USD, with significant contributions from the USA, Euro countries and China. To put this in context, the CIA Factbook estimates that broad money¹ (according to their definition²), is just over \$80 trillion USD. The annual spikes we see show seasonality driven by the year end, New Year celebrations and Christmas, with the vast majority of countries around the world exhibiting some type of seasonality.

What happens to the Value of CIC over time?

There are three types of behaviours we see when analysing the IMF data³:

1. The value of CIC increases over time (representative of the majority of countries around the world)
2. It increases over time, in spite of a shock event
3. It plateaus or decreases with time (representative of a very small number of countries around the world)



¹ <https://www.cia.gov/library/publications/the-world-factbook/rankorder/2215rank.html>

³ IMF world economic outlook database

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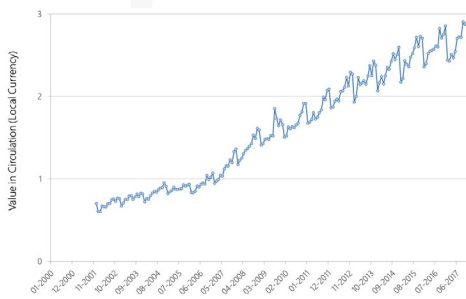


Industry Insights | Issue 1

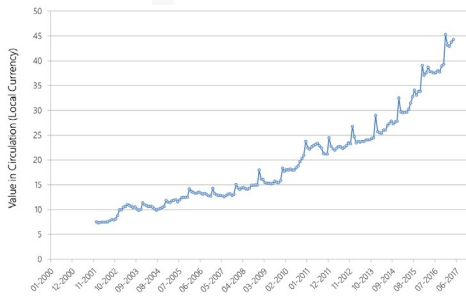
Value of CIC increases over time

In many countries we see the value of CIC increase over time (often CIC correlates with GDP or with inflationary measures such as PCPIE). These examples all show growth, with some slight acceleration since around 2008.

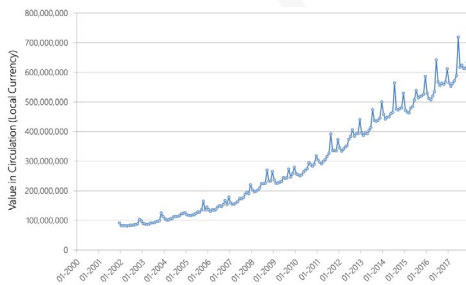
Botswana (Billions)



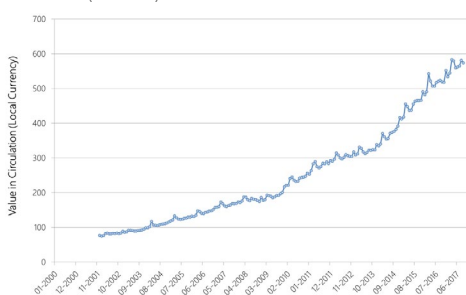
Haiti (Millions)



Indonesia (Millions)



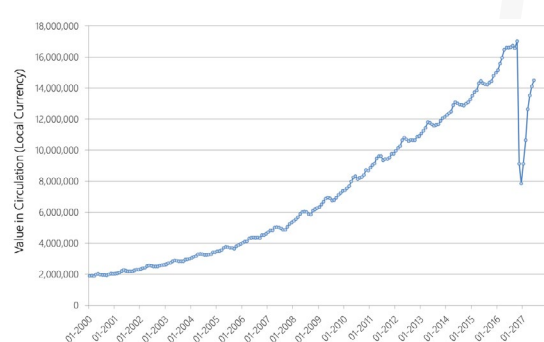
Sri Lanka (Billions)



The story in India: growth in spite of a shock event

India has seen a huge drop in the value of cash in circulation due to the withdrawal of certain banknote denominations in 2016. But in spite of this massive shock to the economy, the value of CIC is starting to recover and it looks like it is on track to return to its original trajectory. We see a similar recovery after a shock event in Kazakhstan and Kyrgyzstan and this gives us an idea of the amount of resilience in the value of CIC for most countries. Understanding the expectations around future value of CIC can help central banks optimise the denominational mix to best meet that future demand.

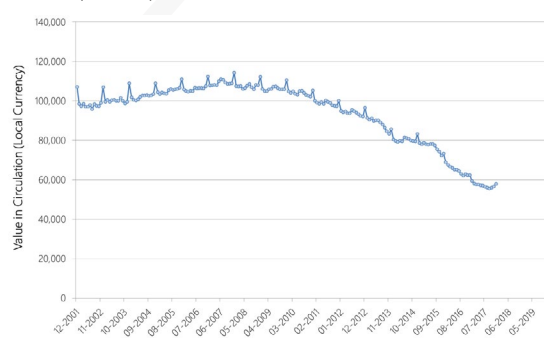
India (Millions)



The story in Sweden: the value of CIC decreases

Here, Sweden stands out as an outlier among all countries because the value of CIC is decreasing due to various local factors. There has been significant commentary on this in various press articles and will be discussed further in future reports.

Sweden (Millions)



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Industry Insights | **Issue 1**

Conclusions

- In the vast majority of countries, the volume and value of CIC is growing
- The proportion of higher denomination banknotes typically increases over time
- In the vast majority of countries the value of CIC remains correlated to either economic factors such as GDP or PCPIE measures.
- When shock events happen, the CIC may be temporarily impacted but returns back to its original trajectory
- In the vast majority of countries we see seasonality for due to annual events

For more information (or if you are a DLR Analytics user and would like the full report and supporting data) please email DLRAnalytics@delarue.com

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