futureagenda

Future of Currency – Insights from Global Future Agenda Discussions

A Future Agenda Paper on behalf of Six Capital

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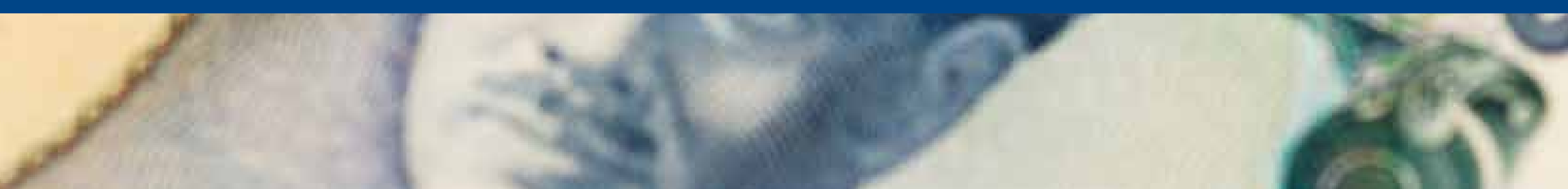
SIX CAPITAL



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Executive Summary

As the science fiction novelist William Gibson is famous for saying 'the future is already here, it is just unevenly distributed.' This is clearly true for the future of currency. The mega-trends of globalization, digitization and more efficient systems are all in play around the world. Over the next decade, these will continue to evolve and enhance the overall landscape within which currency operates. Equally the signals of other sources of potential change are also becoming more visible. For example, as highlighted in this report:

- Increased turbulence in the currency markets as the dominance of the US dollar starts to wane - caused by geopolitics, the rebalancing of power and trade from West to East and the increased influence on currency of mega-scale multinational banks, companies and organisations;
- Growing importance and influence of China's Renminbi, which from October 2016 will be included in the IMF's Special Drawing Rights basket, effectively recognizing it as a global reserve currency, alongside the Dollar, Euro, Pound Sterling and Yen. The RMB will have a greater weighting than both the Yen and the Pound;
- A critical role for the US (both Government and Federal Reserve) and IMF in maintaining trust as the global monetary system remains "unreformed, unstable and possibly unsustainable";
- Continuation in the unraveling of currency unions and currency pegs around the globe, which are inherently unstable in the long term;
- Increased speed, ease, flow and transparency of currency trade and payment driven by ever improving and pervasive digital technology. Specific drivers include the development of multi-currency trading platforms, improved security (e.g. biometrics), the development of the Internet of Things, the growth of data analytics and the use of artificial intelligence. With transaction speed critical, whether or not this increased transparent multi-tiered, data rich currency system will lead to more responsible trading or just increased liquidity remains uncertain;
- The gradual emergence and proliferation of non traditional local and crypto currencies, payments systems and peer-to-peer currency exchange and remittance firms, the most important of these would appear to be the arrival of the distributed ledger or blockchain technology, operating without national borders and outside the influence and control of central banks;
- The emergence of new digital currencies, while not without risk, does open the door in the longer term to increased transparency and stability as risk starts to move from centralised systems, organisations and institutions to distributed diversified networks – and from trust imbued in central banks to trust emerging as an explicit mathematical model impacted by the crowd's behaviour;
- Enabled by ever more pervasive connectivity, cash continues to be gradually replaced by digital money, providing consumers with more convenience and choice – and organisations with lower cost transactions;
- Challenged by the speed of technological change regulation has to allow innovation, competition and change while restricting malpractice, crime and terrorism. The current global institutions may not currently be fit to deliver this and will have to make significant changes or step aside to allow an alternative approach;
- Technology offers individuals the opportunity to trade themselves. This in turn has democratised currency trading, increasing the number of participants and crowd power and consequently reducing the market power of large-scale investors;

How these varied changes play out and interact is the big question. Will they be orchestrated together as part of a smooth transition to a more unified, global currency, monetary and trading system? Or will they develop and evolve piecemeal, with different organisations and nations pushing their own interests and seeking to take advantages of the opportunities that provide them individually with greatest benefit? We cannot predict. We can however anticipate and prepare ourselves for both journeys. The end point of a more efficient, interconnected, open, transparent and networked system of global currency is clear. How we get there directly, or indirectly, is still up for debate.

Context

In order to explore the future of currency Six Capital hosted a series of expert discussions around the world as part of the global Future Agenda programme. Events were held in 2015 in Jakarta, Singapore and London. These brought together over 60 informed individuals with views on the areas that are influencing currency and how its role is changing both regionally and globally. This report is a synthesis of the insights gained from these discussions and lays out the core drivers of change as seen by the experts who participated in the events. It is an independent view of the future and focuses in particular on the probable changes over the next ten years. It covers nine key areas:

Changing Role of Currency explores how the use of currency has evolved. We can already see some shifts taking place: For example, those from currencies being backed by gold to being based on trust in the economy of the issuer; from being unique to individual nations to being pegged and becoming part of regional baskets and/or monetary unions; and from being controlled by central banks to being influenced by the hands of a few multinational banks/organisations. This chapter sets the scene to explore a time where macro change is highly probable.

Shifting Power and Influence looks at the global view of how economic power is changing, which countries and regions, such as Asia and in particular China, are on the rise, and which, such as Europe, are on the descent. Within the wider geopolitical flux it also considers the pivotal role of the US and how emerging markets are seeking to react to its changing position as global arbiter, reconsider the benefits of the dollar peg and reposition themselves in a fast changing ecosystem.

Technology Shifts reviews some of the key technological catalysts for change. Covering issues such as high frequency trading, increased automation, data analysis and the use of artificial intelligence, together with digital platforms and marketplaces as well as the associated greater openness and transparency, it looks at how far technology is likely to influence change over the next decade, what will be possible and what is plausible.

The Impact of Digital Money looks at how the digitisation of money itself will impact currency. From Block-chain and Bitcoin to moves by central banks to create digital versions of fiat currencies, it explores how these will change the landscape; allow new entrants to disrupt the status quo and what maybe some of the reactions by governments and large multinational organisations treasury departments.

Currencies of Meaning has a focus on alternative currencies that are emerging to better facilitate transactions, trade, authentication and validation. As money as a means of exchange is complemented by new systems to which we attach increasing significance, it questions how this will lead to a proliferation of new currencies: Although people will increasingly use multiple forms of currency in different contexts: alongside national legal tender, will we see more local and crypto-currencies – many decoupled from existing systems?

Risk and Trust analyses some of the underlying trends that are having an impact on who and what we trust and how this changes attitudes to risk. From the implicit trust in a national economy to the alternative belief in the network, as occurs with some emerging platforms, it both looks at how crowd empowerment and greater financial inclusion may change the nature of trust. On the risk side it considers the potential areas of corruption in the future.

Supportive Regulation suggests how different parts of the world see changes in global and local regulation having impact. This looks at the growing preference of regional and bilateral agreements over global pacts and also explores some of the opportunities afforded by digitisation to change how governments apply taxation. It questions whether regulation is reactive or proactive in different regions, looks at the changing attitudes within the IMF and questions how we may see a shift in political influence around some currencies in the future.

Access to Capital considers both financial capital flows between the world's banks to governments as well as the human capital challenge around qualified currency traders and looks at some of the reactions taking place. Sharing emerging views from low value payments as well as major inter-governmental transactions it reviews the nature of money flow and how and where the traders and others involved in money can maybe gain better knowledge and potential certification.

System Efficiency brings together a number of views on how the overall effectiveness of global trade, capital flows and currency exchange is likely to be improved over the next decade. From the adoption of increasingly open platforms to enhancing the efficiency of the legacy systems. As we recognise a need to change the way we manage money, it also looks at potential new exchange and distribution models.

Method

The Future Agenda is the world's largest open foresight initiative which looks at key issues facing society over the next ten years. The output is based on an initial point of view, written by an expert which is then debated and enhanced via discussions and workshops with further experts and informed individuals from around the world. In order to ensure a frank and open dialogue all conversations were held under Chatham House Rules which means that any comments made are non attributable. At a time when important decisions need to be made across many areas, the programme aims to provide a distinctive perspective to stimulate ideas and action.

The Future of Currency discussions took place in Jakarta, Singapore and London brought together over 60 people with views on how the role of currency is changing both regionally and globally. This report is a synthesis of the insights gained from these discussions and lays out the core drivers of change as seen by the experts who participated in the events. It is an independent view of the future and focuses in particular on the probable changes over the next ten years.

This report does not seek to answer every question raised in the discussions. Rather it aims to play back the insights we heard from the three expert workshops so that all can understand more about the priority concerns and opportunities.

Changing Role of Currency

Currencies based on sustained trust and supported by a few pivotal multinational organisations predominate over monetary unions. Many central banks lose relative influence as the IMF reserve basket and alternative currency platforms create new bundles.

Money and currency are not the same. Money is anything that people are willing to use in order to represent systematically the value of other things for the purpose of exchanging goods and services. Money is an imaginary but important concept; it enables individuals, corporations or countries to compare quickly and easily the value of different commodities, to easily exchange one thing for another, and to store wealth conveniently. Money's real value is derived from the faith we have in it.

Currency, on the other hand, is the tangible concept which allows money to function and provides the basis for trade. Before coins and banknotes, different cultures chose objects or materials to represent value: shells, cattle, skins, salt, grain and cloth. These days it is a generally accepted that money, including coins and paper notes, which are, typically issued by a government and circulated within an economy, is the global currency of trade. Currencies are a medium of exchange, a unit of account, are portable, durable, divisible and fungible. Trading currency effectively measures a nation's credibility and helps to stimulate growth and stability in the global market place. But the opposite is also true.

While the concept of money has remained stable, the nature of what comprises a currency has evolved over time. For around 4,000 years Cowry shells were used as money across much of Africa, South and East Asia and Oceania; indeed taxes could still be paid in cowry shells in British Uganda in the early twentieth century[1].The first standardised State minted coins, or Lydian coins, were created by King Alyattes, in Lydia (Western Turkey) in c. 640 BC. These had a standardised weight of gold or silver and an identification mark identifying the authority that issued the coin. Almost all cash, coins and banknotes in use today are descendants of these. Jumping ahead the markets of today have been influenced by three major changes:

Change 1: A shift from currencies being backed by gold and fixed exchange rates to being based on trust in the economy of the issuer – and principally the US Dollar.

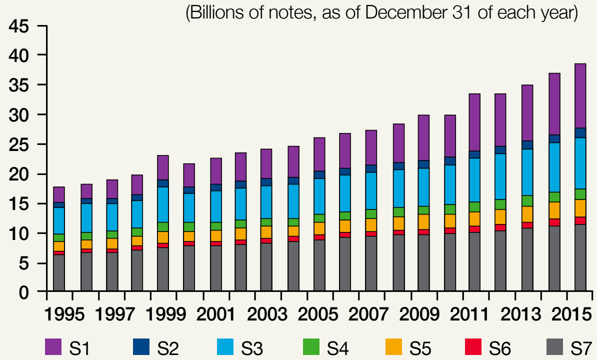
For much of history, state-issued currency has been backed by an underlying asset (i.e. exchangeable for a tangible commodity of value) - such as gold. This link between currency and asset was further enshrined into the international monetary and financial order created at Bretton Woods in 1944. The then newly established International Monetary Fund pegged exchange rates to the Dollar, which was in turn backed by gold.

As US global economic dominance and hegemony grew, so too did the stock of US Dollars held by central banks and others outside the US, causing a precipitous decline in the available US gold stock. Such was the scale of the problem that by 1971 President Nixon was forced to break the "gold-standard" link, and establish the US Dollar as a fiat currency (i.e. a government declared legal tender that is not backed by physical commodity). For a fiat currency, it is the market and the relationship between the supply and demand for the currency, which establishes its value. Put another way, the market value reflects market trust in the issuer and its economy.

The Dollar has remained firmly established as the world's reserve currency for over 80 years. It is this "exorbitant privilege[2]" – as French statesman Valéry Giscard d'Estaing once sourly observed – that has been the bedrock of America's post-war hegemony. Notwithstanding Bretton Woods, the US Dollar has remained dominant for 3 major reasons. First, the scale and depth of markets in dollar-denominated debt securities ensures the dollar is the most convenient currency in which to do business for corporations, central banks and governments alike. Second, the liquidity and relative stability of dollar instruments, even in moments of crisis, ensures that it continues to be the world's safe haven. Lastly, there is a lack of a credible large volume alternative.

Since the turn of the century, the Dollar's grip on global markets has increased even as the US trade footprint has shrunk. 85% of foreign-exchange transactions worldwide are trades of other currencies for dollars. The Organization of Petroleum Exporting Countries sets the price of oil in dollars. The dollar is the currency of denomination of half of all international debt securities. More than 60% of the foreign reserves of central banks and governments are in dollars.[3]

Volume of Currency in Circulation
(Billions of notes, as of December 31 of each year)



Includes Federal Reserve notes. U.S. notes, and currency no longer issued
Excludes the volum of denomniations larger than $100 note

SOURCE: http://www.federalreserve.gov/paymentsystems/coin_data.htm#volume

[1] Sapiens, A Brief History of Humankind, Yuval Harari

[2] https://en.wikipedia.org/wiki/Exorbitant_privilege

[3] http://www.wsj.com/articles/SB10001424052748703313304576132170181013248

As the Economist explains[4]: "The Federal Reserve is the reluctant master of this, its position cemented by the policies put in place to fight the 2007-08 financial crisis. When the Fed changes course, trillions of dollars follow it around the world. America's indifference towards the IMF and World Bank, institutions it created to govern the system and over which it has vetoes, reflects power through neglect.

The position of the dollar, widely seen as a pillar of soft power, has strengthened. Foreign demand for dollars allows America's government to borrow more cheaply that it otherwise could, and the country earns seigniorage from issuing bank notes around the world. America's firms can trade abroad with less currency risk, and its people can spend more than they save with greater impunity than anyone else. Even when a global crisis starts in America it is the safe haven to which investors rush, and foreigners accumulate dollars as a safety buffer.

Since the attacks of September 11th 2001, America has emphatically asserted control over the dollar payment system at the heart of global trade and finance. Hostile states, companies or people can be cut off from it, as Iran, Burmese tycoons, Russian politicians and FIFA's football buffoons have found to their cost. The threat of this sanction has given America an enhanced extraterritorial reach."

Change 2: A shift from being unique to individual nations to being pegged and becoming part of regional baskets and/or monetary unions

As the post-war Bretton Woods system of fixed exchange rates collapsed in the latter years of the 20th century, it was replaced by a freewheeling system of floating currencies and mobile capital. A new consensus emerged, that countries should let their currency float so that it would act as a market driven adjustment mechanism to changes in economic flows, supported by seeking to control inflation and deepening local markets.

As Milton Friedman writes[5]: "Post the ending of the Bretton Woods system in 1973, most countries allowed their currencies to float, but this situation soon changed. Generally, small countries with relatively large trade sectors disliked floating rates. They wanted to avoid the often transitory but sometimes large changes in prices and costs arising in the foreign exchange market. Many of the smaller Asian economies, along with countries in Central America and the Caribbean, fixed their exchange rates to the U.S. dollar. Countries such as the Netherlands and Austria, both of which traded heavily with West Germany, soon fixed their exchange rates to the Deutschemark. These countries ceased conducting independent central bank policy, so that when the Bundesbank or the U.S. Federal Reserve changed interest rates, countries that fixed their exchange rate to the mark or the dollar changed their interest rates as well."

A country on a fixed exchange rate sacrifices independent monetary policy. In some cases this may be a necessary sacrifice, because a small country that is open to external trade has little scope for independent monetary policy. It cannot influence most of the prices at which its citizens buy and sell. If its central bank or government inflates, its currency depreciates to bring its domestic prices back to equivalent world market levels. Even a large country cannot maintain an independent monetary policy if its exchange rate is fixed and its capital market remains open to inflows and outflows. Given the reduced reliance on capital controls, many countries abandoned fixed exchange rates in the 1980s as a means of preserving some power over domestic monetary policy. This trend reversed somewhat toward the end of the 20th century.

Large economies such as those of the United States, Japan, and Great Britain continued to float their currencies, as did Switzerland and Canada—both relatively small economies that have preferred to retain some influence over domestic monetary conditions. Hong Kong made the opposite choice. Although it was a British colony at the time and later a part of China, it chose to fix its exchange rate to the U.S. dollar. The method it revived was a 19th-century system known as a currency board. In such a case there is no central bank and the exchange rate is fixed. Local banks increase the number of Hong Kong dollars only when they receive additional U.S. dollars, and they reduce the stock of Hong Kong dollars when U.S. dollar holdings decline. Hong Kong's experience with its currency board encouraged a few, mainly small countries to follow its lead. Some stepped even further away from autonomous policy by adopting the U.S. dollar as their domestic currency. Interestingly however the most notable change of this procedure was not in dollars rather it was the decision by most of the continental European countries to surrender their local currencies in exchange for a new common currency, the Euro.

Given the reduced reliance on capital controls, many countries abandoned fixed exchange rates in the 1980s as a means of preserving some power over domestic monetary policy. This trend reversed somewhat toward the end of the 20th century.

Change 3: A shift from being controlled by central banks to being influenced by the hands of a few multinational banks/organisations

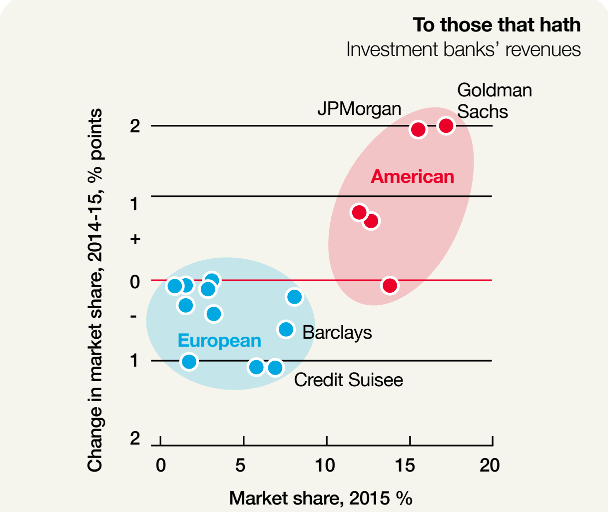
Bretton Woods envisioned that the institutions of The World Bank and the IMF, together with national central banks would control the global financial system. What was not seen at the time was the concentration of power that would end up in the hands of America and it's leading business – thus giving them a huge advantage. As the Economist puts it[6]: "The global market share of Wall Street investment

[4] http://www.economist.com/econ2015

[5] http://www.britannica.com/topic/money

[6] http://www.economist.com/econ2015

banks has increased to 50% as European firms have shrunk and Asian aspirants have trodden water. American fund managers run 55% of the world's assets under management, up from 44% a decade ago, reflecting the growth of shadow banking and new investment vehicles such as exchange-traded funds. Global capital flows, larger than at any time in history, move in rhythm with the VIX, a measure of volatility on America's stock market." More recently, the emergence of mega-corporations, with enormous balance sheet power and spending capacity or with embedded payment systems (e.g. Tencent, Alibaba), have also started to have some influence, although these claims are arguably overblown.[7]



SOURCE: Morgan Stanley

What is clear is that in today's global market places companies, like individuals, require stability and continuity and to achieve this many will increasingly choose to use a basket of different options for trading dependent on their needs.

Although unstable at present it is entirely possible to foresee a day when China is in a position to challenge US dominance but given the complexity and risk involved in remaking the global order it is likely that there will be widespread support for the current incumbents to keep things on an even keel. In addition it is possible, that as alternative currencies gain traction we may see the emergence of a parallel global digital currency platform that operates without national borders - and outside the influence of the central banks.

So where does that leave us? Today's currency context is arguably far more messy than that of the second half of the twentieth century[8]. Influenced by social, economic and political change, it is hardly surprising that all around the world currencies are in a state of flux. We rely on a vastly bigger edifice of global trade, capital flows and financial contracts that require continuity. At the same time technology has transformed the speed and complexity of money transfers, large and small; this surpasses anything the world has ever seen before and means that the nature of economic activity has changed, shifting towards intangible, globalised services (such as cloud computing and computerised financial trading). In addition local issues also raise concern. In Europe the collapse of the Euro is a real possibility; the ASEAN markets, fearful of making similar mistakes, are backing away from their flirtation with a collective currency unit; in China, the ambition to extend economic influence and desire that the Yuan is recognized as an alternative reserve currency is being tempered by a financial slowdown; in the US there is growing uncertainty about whether the dollar will maintain its status as the primary unit of global currency – particularly at this time of pre election jitters. From a currency perspective this is further complicated by the occasionally inclement relationship between China and America - they are, after all, not the allies that Britain and America were in the post Bretton Woods transition. Finally, instability in the Middle East and the dramatic fall in oil prices have all combined to make the currency markets increasingly volatile.

We are currently experiencing a fragile global financial system with the real possibility of further financial crises. The currency markets are therefore chaotic and they are likely to become even more so over the next ten years as nations reshuffle their positions. While few are suggesting the imminent demise of the existing currency order, key questions stand out. What will be the real role of currency in the next ten years? How will regulation adapt? Given all the disruptions, how best can we stabilize the marketplace? How can currency markets organize themselves more effectively? In ten years' time will the focus remain on national currencies or will alternative currencies, such as Bitcoin, Amazon Coins or BerkShares take a more prominent role?

Adjacent to these questions are other intriguing possibilities. Will (all) currencies of today still exist? Is there an appetite for a system that bypasses the US clearing banks? To what extent will there be a return to using the gold standard as an alternative? Will a "reserve currency basket" emerge, with central banks storing wealth in a mix of Dollars, Yuan, Rupee, Reals and Roubles, as well as precious metals. Will some kind of synthetic bundle of the world's leading currencies be developed, with emphasis placed, after years of western domination, on assets backed by commodities and other tangibles from other markets? To what extent will Central Banks issue digital money or include cyber-currencies in their reserves?

[7] http://ftalphaville.ft.com/2015/01/28/2103622/if-apple-were-a-country/

[8] http://www.economist.com/econ2015

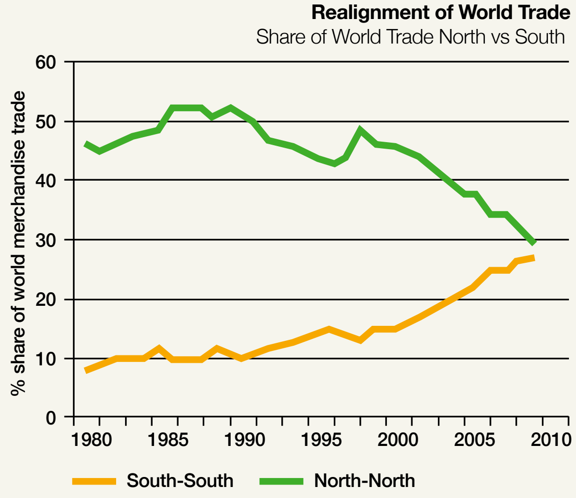
Shifting Power and Influence

The centre of gravity of economic power continues shifting eastwards, back to where it was 200 years ago. Recent superpowers seek to moderate the pace of change but the realities of population and resource locations are immoveable.

Currencies are influenced by social, economic and political change, so it is little surprise that all around the world they are in a state of flux. In this chapter we will first explore the potential global dynamics before discussing the potential implications that this will have on currency.

Are we are witnessing the end of an era in globalization and international trade? Many argue that with lacklustre support from the US and others, the economic structures set up in the wake of the WW2 may no longer be fit for purpose. Western markets are weakening, the US appetite to act as overall arbiter and keeper of the peace appears to be diminishing and Europe is facing its own constitutional challenges. Asian countries, which have in the main benefitted from a youthful workforce and rising middle class, are beginning not only to influence world trade but also to play a greater role on the diplomatic stage. Africa and South America have yet to make a significant impact, but with a wealth of natural resources at their disposal, the next ten years should begin to change this.

Whether or not this is the Asian century as some predict, the next decade will see the post-war routes gradually being eclipsed by the power of the Indian Ocean region. South-south trade doubled in the decade from 2000 to 2010, and is likely to account for over a third of global trade by 2025.



SOURCE: http://growthcrossings.economist.com/theme/trade-flows-2020/

After centuries of growth, Europe's moment in the economic sunshine is, many think, in relative decline. Some suggest the Euro experiment has had its day and the Europeans will have to spend the next decade dealing with the repercussions of this failure. Others believe the region will muddle through. There are three possible options: the Euro will be split in two, probably on a North and South divide; second, a couple of major former currencies such as the Deutschmark and the Lira will be reintroduced, or third, there will be a complete re-fragmentation of the euro zone into individual national currencies and hence economic interests. Germany is likely to remain the primary power within the EU over the next ten years, but overall Europe's influence will be eroded by its internal problems, such as the fall out from the UK's "Brexit" vote.

Bridging Europe and Asia, but some way yet from being an economic superpower, lies Turkey. In India, discussions with leading bankers saw Turkey as Europe's China: Since the establishment of a Customs Union with the EU in 1996, Turkey's exports accounted for nearly $70 billion, or 43.5% of total exports, in 2014. Whether the former description of Turkey as 'the world's most progressive Muslim state' will still hold in 2025, its influence on the regional and global economy seems set to grow as does, given its geopolitical location, its sway on global trade.

Things, though, are challenging in Russia. It faces a declining population, reduced access to secure water and food supplies that were previously supplied by former Soviet Union neighbours and an economy dominated by quasi-state firms . GDP growth averaged 2.4% from 2011 to 2014 despite high oil prices and renewed access to credit markets. Most economists forecast that it will have a less rosy future over the next decade with less focus on increasing its global financial interaction. Andras Horvai, World Bank Country Director for the Russian Federation said, "Russia's longer-term growth path will depend on the strength of its structural reforms. Economic reforms designed to bolster investor confidence could greatly enhance it's long-term growth prospects. Administrative barriers to doing business, high transportation and logistics costs, and the perception of an uneven playing field all discourage investment, particularly in the non-resource sectors.".

Wherever you go in the Middle East there are some elements of commonality but also many areas of difference – especially concerning competition and conflict between Sunni and Shia, the financing of ISIS, the changes afoot in Saudi Arabia and the much discussed future ambitions of Iran. The US's influence is declining, for economic and political reasons. Many OPEC economies need to increase diversification away from oil revenues; not only is there the climate change challenge, but the potential to act as a growing, pivotal gateway for China and India, not just to the Middle East but significantly (in the long-term) to Africa.

Few doubt the scale of the African continent (a land mass greater than India, China, the US and Europe combined, its workforce the world's largest by 2040) and its resources. With a collective GDP of $2.6 trillion by 2020 and $1.4 trillion of consumer-spending, many anticipate the impact of around 500m new middle class consumers. The question here is one of timescale; will there be significant change in the next decade or, like India, a longer period of transition?

India's perfect population pyramid, a massive domestic market, a growing middle class, more successful home-based multinational private companies, little interest in military expansion to secure resources, and world class expertise in IT and process innovation, all add up to the potential for India to be a top 3 economy. With a highly connected diaspora and a number of very progressive business leaders, many see India as a certain long-term bet; but, for others, it is still a tricky place to do business, with a sagging infrastructure and endemic corruption presenting huge obstacles. The government aims to double India's exports of goods to $900 billion a year by 2020 and improve India's share of global trade from 2% to 3.5% by 2020. The World Bank, EIU, IMF and UN all expect between 6 and 7% GDP growth for the next decade. But progress on reform has been slow.

Also in Asia, Singapore will continue to be a major global trade hub, and be the leader in GDP per capita; Indonesia will grow steadily via more progressive government polices and a strong base of raw material exports. But it is China that dominates. IMF figures show over the past decade it has averaged over 25% of the world's GDP growth. Some are questioning the long-term sustainability of the Chinese economy, especially with the burden of unbalanced demographics stemming from the impact of the One Child policy. However if China uses more of its economic might and soft diplomacy to reshape the world order, and if the Renmimbi usurps the dollar as the world's reserve currency, then China could dominate world trade.

The fortunes of the other BRIC nation, Brazil, reflect China's curtailment of the commodity boom; future growth for the next decade is projected to be under 3%. Other Latin America countries, Chile, Peru and Mexico, will benefit from being in the TPP. By contrast the more 'inward looking' Argentina is generally seen to be stumbling from one crisis to another.

North lies the United States. Whereas China has 20% of the world's population and generates around one seventh of global GDP, the US has 6% of the world's population but produced between 20 and 25% of its GDP.[9] Increasingly as it is self-supporting both in trade and energy, will the US remain as the world's naval policeman and 'guarantee' to keep global trade routes open? It may be several decades before there is a significant decline in US foreign policy and economic influence.

The world's centre of economic gravity has changed over past centuries. Since the mid-1980s, the pace of that shift, from the West toward Asia, has been increasing dramatically, at a speed of 140 kilometres a year - faster than ever before in human history. Having spent the first 1,000 years in Iraq and then gradually reached its westernmost point just off the Newfoundland coast in the 1950s, a McKinsey model[10] sees that by 2025, with the growing impact of India and Africa, it will be near to the Russian border with China and Mongolia. Changes are on the cards.

So, what impact will these shifts in the centre of economic gravity have on currency?

A critical lesson that Europe has taught Asia is that combining currencies doesn't work. Over the long term neither, it seems, do currency pegs and over the next decade many expect to see an unravelling of both models. In many ways a single currency across a group of countries is simply an extreme version of a peg and in times of crisis its inflexibility imposes unnecessary constraints on national governments, limiting options and reducing their ability to respond to market conditions. This can have a huge impact on the local population. For example in Greece, a Euro member struggling under the weight of national debt, incomes have fallen by nearly 30% since 2007 while almost 26% of the workforce is unemployed. In truth, Europe's single currency, created to foster unity and ease trade, has become the source of significant issues for many member states. As the challenges for the continent continue to increase many commentators expect that the next decade will see fundamental change, including a possible devaluation of multiple currencies in order for the smaller nation states to be able to compete globally. There are already major indications that this is taking place, including the Swiss National Bank's decision to unpeg the Swiss franc and the European Central Bank (ECB) programme of quantitative easing.

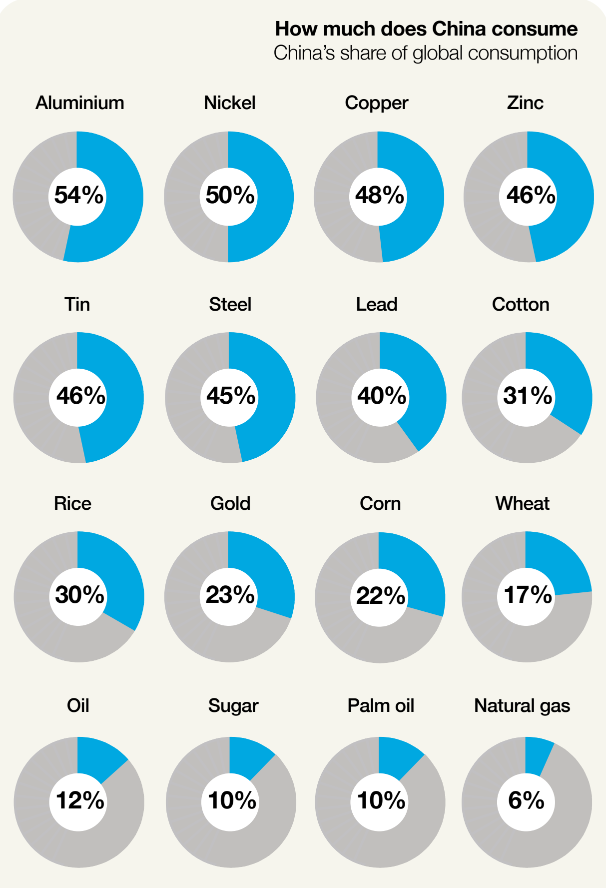
Over in the US, the situation is in as much flux, but for different reasons. It has been the primary trading nation of the 20th century and is no slouch in the 21st, accounting for 23% of global GDP and 12% of merchandise trade. This has allowed the dollar to dominate the markets. This is, of course, good news for America as it has paved the way for US fund managers to run about 55% of the world's assets. About 60% of the world's output is in one way or another influenced by the dollar, either because currencies

[9] ww.lse.ac.uk/IDEAS/pdf/COX-Waltz.pdf

[10] http://www.mckinsey.com/insights/urbanization/urban_world_cities_and_the_rise_of_the_consuming_class

are pegged or because they move in relation to it. It's easy to see the advantages from a US perspective but not for everyone else, particularly because the current system does not include a guaranteed lender of last resort. Many countries have built up enormous safety buffers of dollar reserves to counter this but that means that they are obliged to mimic US policy. The result is that a rise in US interest rates or even the threat of it has knock on consequences across the world, particularly in emerging markets.

For many, the cost of the dollar's dominance is beginning to outweigh its benefits. Many countries would ideally let their currencies float so that they can more easily adjust to changing market conditions. Despite all this, the reality today is that the dollar still dominates global trade, with even China's trade into Africa being contracted in dollars. The question however remains: is this sensible or indeed sustainable?



SOURCE: https://www.weforum.org/agenda/2015/09/china-king-of-commodity-consumption/

As the US draws back China's influence is extending. Currently its share of world GDP is similar to the US, at 16% and 17% respectively[11] but all the expectations are that China will continue to grow. Even if it decreases, the Chinese economy will provide the big geo-political issue of the next decade. Increasing international use of the Yuan is the result of the Chinese Central Banks efforts to slowly loosen the restrictions on cross border capital flows and to free up the country's financial system. China is opening up and wants the natural privileges a vast economy might expect: a big say over global rules of finance and trade and a widely used currency. Special Drawing Rights (SDRs), gained at the end of 2015, are a start as they effectively mean official recognition by the IMF that the Yuan is acting as a reserve currency, despite China's extensive capital controls. The inclusion of the Renminbi into the SDR basket alongside the Dollar, Euro, Pound Sterling and Yen, illustrates that at a supranational level China is earning a more influential position on the global economic stage. The most significant direct and immediate effect from the RMB's inclusion into the SDR basket has been the re-calibration of multilateral institutions currency holdings[12].

China's government is trying to prepare the way forward. It is treading a difficult balance between market and state control but the next ten years many see that its financial markets will continue down the path of liberalization, helping to cement its place on the world stage. Granted, these are still immature so no one expects an easy ride, the fall in global markets at the beginning of the year and government jitters around market forces shows just how volatile they are, but the direction of travel is still clear.

The share of China's trade with the world conducted in Yuan is still less that 10%, and the proportion of Yuan payments over the SWIFT system used by global banks is only 1%. As a reserve asset the Yuan is peripheral, both for countries and for the private sector. This is expected to change. The BRIC Development Bank, ratified in 2015 and the creation of China's new development bank, the Asian Infrastructure Investment Bank (AIIB), which opened for business in January 2016, are both significant developments. The United Nations has addressed the launch of AIIB as having potential for "scaling up financing for sustainable development"[13] for the concern of global economic governance.[14]

[11] measured at PPP

[12] Financial Times: Multilateral institutions set to re-calibrate their currency holdings http://www.ft.com/cms/s/2/88afa422-8f7b-11e5-8be4-3506bf20cc2b.html#slide1

[13] World Economic Situation and Prospects 2015" (PDF).United Nations. http://www.un.org/en/development/desa/policy/wesp/wesp archive/2015wesp-ch3-en.pdf

[14] United Nations Financing for Development Office. "Global Economic Governance". http://www.un.org/esa/ffd/economicgovernance/

The capital of the bank is $100 billion, equivalent to 2⁄3 of the capital of the Asian Development Bank and about half that of the World Bank. So while China is on course to be a giant in trade and direct investment, it is likely to remain a mid-sized power in finance, currencies and financial markets in the next decade[15], albeit with growing importance and influence.

In summary, as the Euro experiment unwinds, the Dollar is expected to continue to dominate for the next decade, but it faces a real and growing challenge from the emerging economies, particularly China.

Technology Shifts

Technology advancement is enabling the development of a truly interlinked global economy and is further increasing the speed and flow of currency trade. Millions of people are enfranchised, influencing markets and challenging institutional power.

Communications technology is democratizing the financial sector because it enables resources to be scaled like never before. Huge numbers of small investors can now easily collaborate influencing value and challenging the status quo. In the not too distant future anyone will be able to trade, immediately knowing the amount they are paying in the currency of their choice. Many believe the sheer number of participants will drive the market rather than single, large-scale investors. When under threat, for example, it is theoretically possible for thousands of individual investors to work together to stabilise currency value. This sort of crowd intervention would be both revolutionary and rare but it is entirely possible. If, for example 100 million people could be persuaded to all make the same $100 investment the combined impact of each transaction would dwarf the power of the most established hedge funds.

The digitisation of transactions has also become a great facilitator of transparency, making known what was previously unknown and unknowable. Data can now be collected, analysed and then provided to traders in a way that allows multiple variables to be compared in real time. This makes it easier for them to trade different currencies in multiple ways. The impact of this is hugely significant as it makes fundamental disruption is entirely possible, for example by challenging the dollar's current market monopoly. The Wall Street Journal[16] points out, "Not so long ago, there may have been room in the world for only one true international currency. Given the difficulty of comparing prices in different currencies, it made sense for exporters, importers and bond issuers all to quote their prices and invoice their transactions in dollars, if only to avoid confusing their customers. Now, however, nearly everyone carries hand-held devices that can be used to compare prices in different currencies in real time. Just as we have learned that in a world of open networks there is room for more than one operating system for personal computers, there is room in the global economic and financial system for more than one international currency."

Technology innovation means that pretty soon we will all have a clearer picture of how and where capital flows. The next step is for multiple variables to be compared in real-time, producing an even more rounded, three-dimensional

[15] http://www.economist.com/news/special-report/21668719-china shakes-worldbut-not-way-it-hoped-longer-march

[16] Wall Street Journal: Why the Dollars Reign is Near and End http://www.wsj.com/articles/SB10001424052748703313304576132170181013248

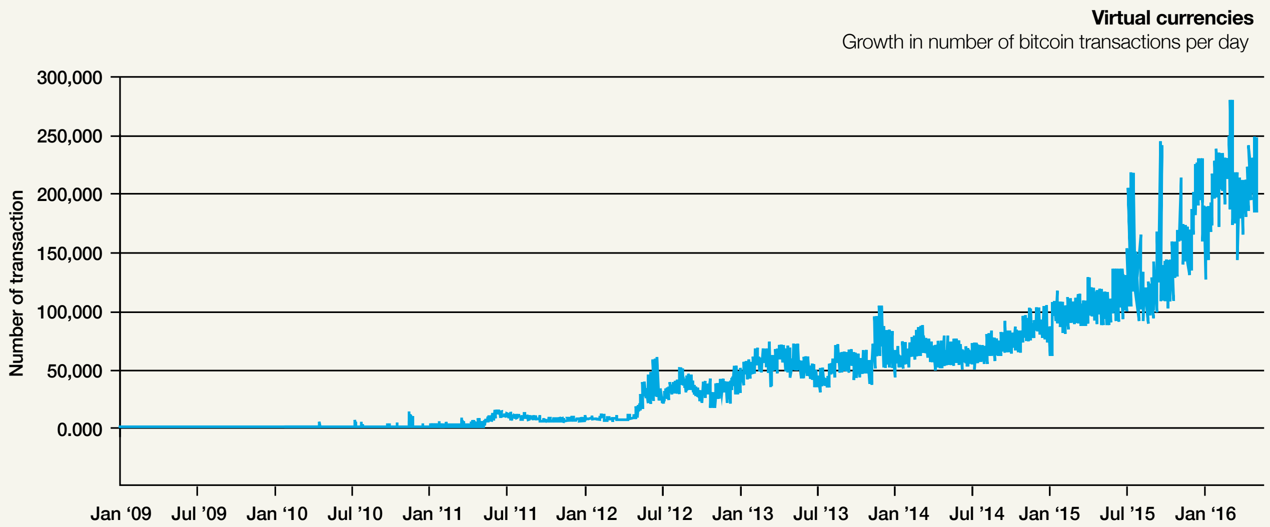
view. Expect the growth of more multi-currency platforms for all stock and commodity trading so that we can see the real-time value of an Australian share in a currency of our choice, for example, the Yuan. In the next ten-years data analytics will become even more sophisticated creating opportunities for some to identify emerging issues almost before they happen.

It's not all good news. With increased high frequency trading, greater automation and the fast growth in Artificial Intelligence, transactions which can increasingly take place at the speed of light, mean that it is all too easy for traders to sacrifice consideration and due diligence for a quick deal. With profit as the motivator and with deal speed at a premium, currency traders are rarely able to pause to consider what the impact of their action could be on a wider society. Currencies change in nanoseconds. And yet it can take nations years to recover from a fall. Governments and regulators need to step up to the mark to address this, working together to create a new order that can help stabilise the global marketplace and deliver appropriate returns.

settlement and clearing. Since this had traditionally been a large part of a bank's raison d'etre most believe this will be a genuine disruptor.

Block-chain acts as a system of consensus by distributed co-operation. Unlike a bank ledger which can be altered by its owner or a government it cannot be changed without simultaneously over writing all of the thousands of copies which are distributed in a vast number of computers or "miners" which authenticate the transactions. The definitive versions of the blockchain is whatever a majority of the participating computers accepts, none of which is connected to any centralised organisation. To overwhelm the system someone would need to control 51% of the computing capacity of the 10,0000 or so miners.

Bitcoin is still the largest currency using distributed ledger technology, but both Central Banks and global banking institutions are taking the potential advantages, increased transparency and the easing of money flows, very seriously, with initiatives such as SETL, Ripple, Uphold and Circle already in play. Nine major banks have already signed up to the Open Ledger Partnership (Barclays,



SOURCE: https://blockchain.info/charts/n-transactions?timespan=all&showDataPoints=false&daysAverageString=1&show_header=true&scale=0&address=

Elsewhere others are deliberately looking for new mediums of exchange, as traditional currencies are challenged by the growth of non-traditional payments systems and peer-to-peer currency exchange and remittance firms. The most important of these is the distributed ledger or block-chain technology. Block-chain is to trade and currency what email was for the postal service. It is allowing direct trade without recourse to a trusted third party and at a fraction of the cost. This can be used to transact anything of value without requiring a trusted third party, with proven ownership and timestamps of transaction enabling instant

BBVA, Commonwealth Bank of Australia, Credit Suisse, JPMorgan, State Street, Royal Bank of Scotland, and UBS), a partnership to draw up industry standards and protocols for using the block-chain in banking, initiated by R3 and overseen by the not-for-profit Linux Foundation. For example, JPMorgan Chase is already testing the use of distributed ledger technology to move US dollars between London and Tokyo, working with about 2200 clients on the trial ahead of possible live transactions later in 2016[17].

[17] https://www.finextra.com/newsarticle/28508/jpmorgan-tests-blockchain for-dollar-transfers-sets-out-digital-progress

Non-traditional currencies, credit scores, loyalty rewards and points systems (e.g. airmiles) and the like, have been around for a while now and have been able to run concurrently with the established systems. In recent years others have begun to emerge which may present more of a challenge to the status quo, most notably in the domain of authentication, validation reputation and trust. Examples here include eBay seller ratings, TripAdvisor reputation scores, LinkedIn or Quora knowledge ratings – as well as the emergence of trust aggregators such as Digi.me.

Two final stresses adding to the pressure on traditional currencies as a means of exchange are also worth mentioning. The first is the growth of peer-to-peer currency exchange and remittance firms (e.g. TransferWise; Western Union). The second is the rapid growth of non-traditional payments systems (e.g. Paypal, AliPay, ApplePay, Mpesa). In the case of AliPay (Alibaba's equivalent of PayPal), it is worth noting that success has been not only due to its distribution via the Alibaba platform but also on the back of Chinese distrust of US based or influenced payment schemes such as Visa and MasterCard.

So where does this leave us looking forward? No doubt there will be a proliferation of currencies. Alongside national legal tender, we will see more local and crypto-currencies – some of which will be decoupled from existing systems - and a more transparent multi-tiered, data rich currency system. Banks, companies, and communities will want and will provide different currency options which users will pick and mix from to suit their needs. Technology will democratise the trading process as individuals are empowered to trade on the markets without the cost of inconvenience of the formal banking structures. However, the digital, open source, IP sharing economy plays by different rules and agreements to traditional banking so there are challenges ahead. The rise of global communications, of our reliance on cyberspace, of behemoth technology-enabled corporations and of "big data" raises difficult questions about privacy, national security, the ability to tax and, more broadly about the relationship between governments, corporations and individuals.[18 19]

Impact of Digital Money

Cash continues to be gradually replaced by digital money, providing consumers with more convenience and choice – and organisations with lower cost transactions. Wider adoption enables new offers to proliferate – including in the black economy.

The sum total of money (M2) in the world is about $60 trillion of which c. 1/10th is held as coins or bank notes[20]. The remaining 90% is held as digital money on computers servers; the vast majority of transactions by value are executed by moving electronic data from one computer file to another without any exchange of physical cash.

The ongoing adoption of digital money has been driven by three factors[21]. The first factor is that digital money is cheaper than cash to handle, cash costs society as much as 1.5% of GDP. Savings arise from reduced administration costs (governments can save up to 75% with electronic payment programs), reduced security costs and loss of funds from theft (75-80% of the $22 billion in benefits of shifting India's government payments to electronic would come from reducing leakage of funds in government transfer schemes ending up in the wrong hands) and reduced costs from saving time or transportation.

The second factor is the ability for people and systems to connect digitally, enabled by the growth of mobile and fixed line networks, and underpinned by maturing technology standards and protocols (e.g. credit and debit card payment schemes; SEPA – the Single Euro Payments Area). Increased connectivity is also at the core of efforts to increase financial inclusion through digital money, where a lack of bank and cash infrastructure and ability of individuals to authenticate their credentials is traditionally cited as an underlying challenge. Safaricom's m-Pesa solution in Kenya demonstrates how connectivity can assist in leapfrogging traditional cash-based infrastructure.

The final factor driving adoption is mobility. People, devices and transaction locations are literally moving and consumers are seeking more convenient ways to pay. Consumers can and want to shop from their own home, send a payment from an app on their mobile, wave a contactless card to use mass transit or pay for their Uber ride automatically. And as people have migrated, so too has boomed the digital money of International remittances.[22]

On a twin track to the three underlying drivers comes innovation and competition. As banks and payment schemes struggle to cope with legacy technology and stifling regulation, new entrants have arrived. AliPay and ApplePay seek to offer more convenience to consumers

[18] The Guardian: Apple v the FBI: what's the beef, how did we get here and what's at stake?

[19] BBC: Apple asks court to reverse FBI iPhone order http://www.bbc co.uk/news/business-35664904

[20] The Ascent of Money, Niall Ferguson

[21] BetterThanCash.org http://betterthancash.org/why-e-payments/cost savings

[22] World Bank http://www.worldbank.org/en/news/press-release/2015/04/13/remittances-growth-to-slow-sharply-in-2015-as-europe-and-russia-stay-weak-pick-up-expected-next-year

whilst increasing the firm's share of the financial transaction. In the case of Square, Paypal and Stripe, the competition is aiming to reduce the cost of accepting digital money or making digital payments. These new entrants in the main seek to digitise and substitute previous cash-based payment.

Alongside the commercial innovation sits moves by both governments and central banks to accelerate the move towards digital money[23]. While reduced costs form part of the logic to do this, so too does the inherent ability of digital money to carry a negative interest rate, something which it is not possible to do with cash. In Denmark, the Government has gone further, announcing in 2015 that selected retailers will be able to refuse cash, paving the way for a truly cashless society. Supporters say that not only will this enable banking systems to become more productive but that it will also ensure that taxes will be paid and only legal transactions will take place, putting pressure on both the informal and black economy.

One downside of the shift to digital money has been the enormous growth in fraud. According to Nielsen, the cost of global payment card fraud reached $16Bn in 2014[24]. The theft of $450m from MT. Gox, the world's leading Bitcoin exchange, in 2013[25] provided another example of the downside potential of digital money.

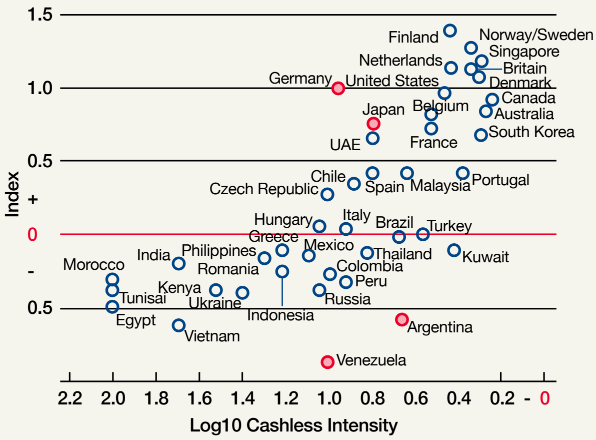
But while many have hailed the "end of cash", its death appears premature. Physical money has been with us for thousands of years for a reason. Cash is essentially untraceable, it's easy to carry, it's widely accepted and it's reliable, even if the power goes out. There is, arguably, simply no alternative system of payment that is as convenient, reliable and anonymous. Libertarians are at pains to point out the benefits of retaining economic privacy, not having digital money transactions surveilled or giving government the ability to block payments or central banks more power. The result, as can be seen in the US, is that the absolute value and volume of cash in circulation has continued to grow[26].

Looking ahead will see the existing payments and banking chain spreading out and fragmenting, leading to further growth in non-traditional financial institutions seeking to control the payments interface and developing their own financial services (e.g. Amazon Payments, Amazon Lending Programme), retail offers (e.g. Alibaba, Google Shopping, Starbucks payment app). Corporate currency issuance may grow either as as companies seek to accelerate and extend conversion and influence along the value chain (e.g. Toyota benefitting from a weaker Yen) or as large corporations seek to make use of their trusted relationships, trust networks and cash position (e.g. Apple, Facebook).[27]

To enable this, there is also likely to be further collaboration between organisations (e.g. device manufacturers, telecoms players, associations, banks e.g. Google Wallet). There will also be growth in alternative currencies and money networks, and the first state issued flat digital currencies.

Cash curve

The digital money readiness index



SOURCE: City Analysis

Consumers will continue to adopt digital or contactless payment over cash and digital wallets will start to eclipse the physical wallet. Checkouts will move from place to device as payments continue to shift from an active to a passive process (e.g. as exists today in exiting your Uber ride). To combat fraud, and keep transactions simple and safe, multi-factor authentication will become the norm (e.g. growth in real time geo-tagging, biometrics and tokenization), with more appropriately authenticated transactions taking place. More digital money will also bring about increased socio-economic mobility, increase the ability for itinerant workers to live and work in a new country, and will enable 1Bn more people to be financially included within 10 years.

Overall, workshop attendees were clear that in the next decade there would be a material rise in the use of digital currency. The shift *from* centrally issued currency, and bank driven money creation (97% of money as bank deposits created by banks[28]) and widespread use of cash to a proliferation of decentralised crypto currencies +/or state issued digital currencies. This proliferation

[23] Bank of England, Speech by Andrew Haldane, http://www bankofengland.co.uk/publications/Pages/speeches/2015/840.aspx

[24] http://www.pymnts.com/news/2015/global-card-fraud-damages-reach-16b/

[25] https://en.wikipedia.org/wiki/Mt._Gox

[26] US Federal Reserve http://www.federalreserve.gov/paymentsystems coin_data.htm

[27] https://www.linkedin.com/pulse/fintech-future-its-burgers-bitcoins-chris gledhill

[28] Positive Money - How Banks Create Money https://positivemoney.org how-money-works/how-banks-create-money/

[29] https://en.wikipedia.org/wiki/Demurrage_(currency)

alongside fiat currency will be driven by a desire to reduce cost, increase traceability (or retain anonymity in the case of e.g. Bitcoin) as well as the increased control and opportunity for monetary policy interventions (e.g. scope for negative interest rates, bail-ins, demurrage[29]). Other benefits include near instant settlement and transaction times and improved financial inclusion. Adoption of these alternatives will come either from pioneering countries (e.g. Bank of England researching issuance of digital cash - which would allow individuals to hold accounts at the Bank of England; and already in 2016, the central banks of the Eurozone, China, Japan and Australia have announced they are looking into block-chain technology to explore how it might improve or hamper the infrastructure the region uses to settle securities and payments) or from more challenged markets as citizens seek more stable and / or less corrupt alternatives (e.g. Argentina, Russia, Zimbabwe, Turkey, Venezuela).

Currencies of Meaning

New trusted currencies of exchange emerge to better facilitate transactions, trade, authentication and validation. Money as a means of exchange is complemented by new systems to which we attach increasing significance

In the past things were relatively straightforward. People were known in a local community. If they moved to a new location, state issued papers or passports would verify their identity. The provenance of goods or an object was known and if it was falsified, the identification of the perpetrator was simple. Truth and trust was easy.

Globalisation and digitization has changed this. People move and interact with each other more. Supply chains and webs are longer or more complex. As we move further into the Fourth Industrial Revolution[30], “characterized by a fusion of technologies that is blurring the lines between the physical, digital, and biological spheres”, issues of truth and trust will become ever more important. As the World Economic Forum states, “the breadth and depth of these changes herald the transformation of entire systems of production, management, and governance”. Moreover, “the possibilities of billions of people connected by mobile devices, with unprecedented processing power, storage capacity, and access to knowledge, are unlimited. And these possibilities will be multiplied by emerging technology breakthroughs in fields such as artificial intelligence, robotics, the Internet of Things, autonomous vehicles, 3-D printing, nanotechnology, biotechnology, materials science, energy storage, and quantum computing”.

In this new world, the breadth, frequency and volume of reputation data will grow exponentially. For every action we take, every movement we make, every trade we make, every like or comment we leave or friend we tag, we leave a reputation trail of “how well we can, and can’t, be trusted … how well we behave, or misbehave”[31]. The reputation, of people, organisations and objects will become the dominant currency of meaning.

Today, we are already familiar with a number of reputation mechanisms that have developed in the last decade. Think of the trusted reviews of hotels and restaurants available on TripAdvisor or of rooms and hosts on Airbnb[32]. Or the seller rating’s available on eBay[33] or Amazon[34]. This information allows people to make more informed choices and transact with confidence.

It has also made things easier. We inherently trust HTTPS secure websites to transact securely. Facebook Connect, allows us to port one login credential and data exchanges into a new organization. More disruptively, digital trails have enabled new trust mechanisms to be developed think for example of Block-chain. Indeed, such is the influence of the rising data swirl that “truth” may well become what the online crowds agree, a world where ‘crowd truth verification’ is prioritised over search and media. The debates over individual Wikipedia entries veracity illustrate this well[35].

Organisations too have also been enabled to make better choices and keep their brands, products and users safe. Think of the credit performance data available to banks and businesses from credit bureaux (e.g. Experian[36]) or the increased confidence in identification and secure authentication available using biometrics in passports of payment tokens such as Apple Pay[37]. It is no surprise then that many of the world’s leading organisations now employ a Chief Reputation Officer.

[29] https://en.wikipedia.org/wiki/Demurrage_(currency)

[30] World Economic Forum, Klaus Schwab http://www.weforum.org agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and how-to-respond

[31] TED talk, Rachel Botsman – The currency of the new economy is trust http://www.ted.com/talks/rachel_botsman_the_currency_of_the_new_economy_is_trust

[32] https://www.airbnb.co.uk/help/article/13/how-do-reviews-work

[33] http://pages.ebay.co.uk/help/feedback/detailed-seller-ratings.html

[34] http://www.amazon.co.uk/gp/help/customer/display html?ie=UTF8&nodeId=201010240

[35] http://www.huffingtonpost.com/claire-gordon/the-truth-according-to wi_b_819247.html

[36] http://www.experian.co.uk/consumer/experian-credit-score.html

[37] https://support.apple.com/en-us/HT203027

Beyond consumption, individuals are starting to value and protect their data and its interpretation and meaning. From skills and endorsements on LinkedIn or Stack Overflow for the developer community, reputation matters; individuals, their peers, organisations, and society recognize that "the reputation they generate in one place has value beyond the environments from which it was built."[38] (e.g. Super Rabbits on TaskRabbit becoming more confident, more in control of their economic activity and more employable elsewhere[39]). This recognition is leading to the emergence of online personal reputation start-ups who are figuring out how individuals can aggregate, monitor, protect and use their online reputation (e.g. Digit.me[40], TrustCloud[41] or Legit[42] - now part of Facebook).

The dark side of the emergence of new currencies of meaning may be further discrimination between the haves and the have-nots. For example, certain data indicators (sociological, biological, economic) may predict, restrict or grant access (e.g. medical care denied because your DNA is not in a national database; lack of data participation limits financial access or access to education, economic participation, employment). Not only are data inequalities a concern but also the means to act on the data could create even greater disparities in health, wealth and quality of life. This may therefore require governments to regulate in order to preserve and promote both access and opportunity.

More generally, and as revealed in Edelman's 2016 Global Trust Barometer[43], inequality of trust and the flipping of traditional trust hierarchies have significant implications for both business and government. Moving forward it seems that digital trust networks, and the reputational capital they generate, have the potential to reinvent the way we think about wealth, markets, power and personal identity. This may shift who has power trust and influence.

Increasingly it will be the combination and intelligent application of data and its meaning from different sources that is creating new sources of value. For example, we can already see the use of mobile location, traffic and accident data to assist town planners in the location of new cycle routes. Equally we use Apple's health app[44] data to determine anticipatory actions to improve an individual's wellbeing.

The new currencies of meaning will have value and as such data marketplaces will likely develop, to price and manage the flow of data. Multi-layered ecosystems for those trading data will emerge consisting of buyers, sellers, creators, analysts, aggregators, governments and policy makers. New exchange and distribution models, sensitive to individual and cultural differences, will likely emerge, often local in nature. This will see an expansion in the potential for more relevant and target offers and solutions and a reduction in waste.

Risk and Trust

Most currencies are no longer backed by assets like gold but by a belief in the economy and an imagined reality. This places a huge reliance on trust, or alternatively, a huge risk in the system.

At the extreme, near-universally-accepted currencies can be as vital to world peace as it is to world prosperity. As the disputed quote goes[45]: "When goods do not cross borders, soldiers will." As was seen during the 2007-08 crisis, American politicians, ultimately, agreed to bail out global banks headquartered in America and have continued to support the Fed extending loans to foreign financial firms and central banks. But with the US in retreat, and with the Fed remaining strongly monetarily engaged (e.g. quantitative easing), some believe that the current abundance of US Dollars in the world means that the currency could collapse. There is potentially a "global paranoia about the lack of a lender of last resort"[46] – and the very real danger that the dollar's safe-haven status will be lost[47].

More broadly, and as the Economist puts it: "The global monetary system is unreformed, unstable and possibly unsustainable. What is needed is an engineer to design smart ways to tame capital flows, a policemen to stop beggar-thy-neighbour policies, a nurse to provide a safety net if things go wrong and a judge to run the global payments system impartially."[48]

[38] http://www.ted.com/talks/rachel_botsman_the_currency_of_the_new economy_is_trust

[39] http://www.buzzfeed.com/carolineodonovan/meet-the-on-demand workers-who-say-theyre-living-the-sharing#.qsDQ7yAavd

[40] https://digi.me/

[41] https://trustcloud.com/

[42] http://www.legit.co/

[43] http://www.edelman.com/insights/intellectual-property/2016-edelman trust-barometer/executive-summary/

[44] http://www.cheatsheet.com/technology/the-best-new-apps-that-use apples-healthkit.html

[45] http://fee.org/resources/if-goods-dont-cross-borders/

[45] http://fee.org/resources/if-goods-dont-cross-borders/

[47] Dr. Eichengreen is the George C. Pardee and Helen N. Pardee professor of economics and political science at the University of California, Berkeley - Exorbitant Privilege: The Rise and Fall of the Dollar and the Future of the International Monetary System http:/www.amazon.com/ Exorbitant-Privilege-Dollar-International-Monetarydp/0199931097

[48] Economist: http://www.economist.com/news/special-report/21668717 america centre-global-monetary-disorder-thrills-and-spills

Trust index
The digital money readiness index

2015	
GLOBAL	55
UAE	84
India	79
Indonesia	78
China	75
Singapore	65
Netherlands	64
Brazil	59
Mexico	59
Malaysia	56
Canada	53
Australia	52
France	52
U.S.	52
Germany	50
Italy	48
S.Africa	48
Hong Kong	47
S.Korea	47
U.K.	46
Argentina	45
Poland	45
Russia	45
Spain	45
Sweden	45
Turkey	40
Ireland	37
Japan	37

TRUSTERS from 30% to 22% in 2015

DISTRUSTERS from 33% to 48% in 2015

SOURCE: http://www.edelman.com/post/clouds-gather-tech-trust-horizon/

One potential risk to the Dollar is the absolute size of the offshore dollar market (e.g. Eurodollar), which is now about half the size of America's domestic banking industry, compared with 10% in the 1970's – and the fact that this offshore system is increasingly transacted through large global banks such as JP Morgan and HSBC, as many seek to avoid direct with America and its legal enforcement reach. The lesson of the 2007-08 crisis was that a run in the offshore dollar can bring down the entire financial system and that the system needs a lender of last resort. The offshore dollar market is already twice as large as it was in 2007, and some forecast that the offshore dollar market could reach $20-40 trillion by 2030. The costs of a rescue would grow commensurately.

Another, related risk, is America's future political and global stance. The Federal Reserve provided liquidity to the world, and with a gun to its head Congress stumped up the cash to rescue American financial firms. But since then America's political system has flirted with sovereign default, refused to reform or fund the IMF, obstructed China's efforts to set up its own international institutions, imposed dramatic fines on foreign banks and excluded a growing list of foreigners from the dollar system". If America fails to live up to expectations, what will that mean for the rest of the world? Currently Chinese competence has come into question as a result of its recent economic troubles but even so America cannot expect effortlessly to dominate global finance and technology, despite what the presidential candidates would have us believe. As its share of world trade and GDP declines could well become increasingly inward-looking.

While the causes of these threats to the dollar as a reserve currency are arguably the policies of the Fed itself[49], there is also a rising realization by the rest of the world that the US has weakened the dollar through its ZIRP and QE programs. Consequently, other countries are more aware that they may need to seek a better means of settling world trade accounts than using the US dollar. One factor that has helped the dollar retain its reserve currency demand in the short run, despite the Fed's inflationist policies, is that the other currencies (e.g. Japan, European Central Bank, China) have been inflated, too.

The forward role of the US Federal Reserve and the IMF will however continue to be central to establishing and maintaining trust, but questions remain: Will America issue more bonds and invest the surplus abroad or find other ways to create safe assets as availability of US treasuries declines with increased foreign investment into them (it already stands at 60% of the total available)? Will the IMF issue more Special Drawing Right's?

There are also other concerns. Although virtual currencies offer many potential benefits, including greater speed and efficiency in making payments and transfers - they also pose considerable risks. Firstly the nature of trust is different, from the implicit trust in a national economy to the alternative belief in the network, its rules and its operation. Secondly, and as with any emerging financial technology, they can be considered as potential vehicles for money laundering, terrorist financing, tax evasion and fraud - as was discovered at MT Gox, the now infamous Bitcoin exchange. While threats to the conduct of monetary policy seem less likely to arise at this stage given the very small scale of virtual currencies, risks to financial stability may eventually emerge as the new technologies become more widely used. As was suggested in one workshop, the bank robbers of tomorrow will be a new genre, as currencies become increasingly digital, virtual and unsupported by the state, and therefore potentially more vulnerable to attack.

More positively, the potential for distributed and crowd power, the availability of more transparent, timely and traceable data, and the increase in financial inclusion will not only enable more scrutiny but also arguably more stability as risk starts to move from centralised systems, organisations and institutions to diversified networks – and from trust imbued in central banks to trust emerging as an explicit mathematical model impacted by the crowd's behaviour.

[49] https://mises.org/library/why-it-matters-if-dollar-reserve-currency

Supportive Regulation

Successful regulation has to battle the speed of technology, allow innovation, competition and change while restricting malpractice, crime and terrorism. These are dynamic choices and as a consequence are increasingly unstable.

Regulation is key as, properly designed, it provides a basis for stability, security and confidence in the system. The global monetary system today faces three challenges. First, how to solve current-account imbalances between countries in a way that does not damage world economic growth. Second, how to manage the magnitude of gross capital flows around the world, that greatly exceed current account imbalances, causing increased turbulence in the currency markets. Thirdly, what to do about the dollar which accounts for around 60% of the world's population and GDP, and comprises the US, the countries whose currencies float with the dollar and those with dollar pegs.

The three pillars of the world's economic architecture which were designed to address this are the IMF, the World Bank and the World Trade Organisation. They are all in bad repair. A widely agreed international economic framework, while not a panacea, is worth having, with the US and other countries looking beyond narrow self-interest to support a global set of rules. In the next ten years there seems little appetite to ensure they return to good health.

The emergence of a global solution will not be easy. "Finance and technology are already a battleground for sovereignty, as Europe's pursuit of Google through antitrust cases has shown. So for America to lay a claim to running the world economy's central nervous system even though it is no longer its dominant economic power would be the ultimate expression of its exceptionalism. The country would need to show an extraordinarily deft touch. It would have to act, and to be seen as acting, in the collective interest".[50] Further, some of the emerging technologies, such as virtual currencies are inherently hard to define and regulate, due to their international reach and decentralized nature that does not fit easily within traditional regulatory models. The development of effective regulatory responses is still at an early stage. As the IMF stated in its recent paper[51] recommending the creation of regulatory frameworks for virtual currencies at both the domestic and international levels there is a need "to guard against risks without suffocating innovation".

If neither the US nor the IMF is willing to act as a lender of last resort to the system, could the greenback pass into global ownership? Could foreign central banks guarantee the offshore dollar system and create a dollar payments system that bypasses America entirely.

Thus the challenges posed to the global financial order by the rise of China could hardly be more fundamental. As the FT says[52]: "For several decades, the arbiters of the world's monetary system have been developed, western democracies with fully convertible currencies and open capital markets that are governed by the rule of law. But China is different in every aspect; a developing nation ruled by a Communist party that has striven to limit the convertibility of its currency and shelter its domestic capital markets from foreign capital and influence. Thus, the International Monetary Fund's [induction of the Renminbi] into its elite basket of reserve currencies represents a potentially pivotal moment … It represents an important step in the Renminbi's ascendancy to the status of a global reserve currency, and will have gradual but significant repercussions in global currency markets and on international capital flows." The Head of Global Emerging Market FX research at HSBC is quoted as saying "that not only should SDR membership provide comfort over the Renminbi's stability and liquidity, it will also encourage Beijing to keep opening its domestic capital markets to foreign participation. If this happens, it will go some way toward addressing the current imbalance in international finance, under which less than 1 per cent of global central bank reserves are held in Renminbi in spite of the fact that China comprises 13 per cent the global economy and more than 15 per cent of world trade. Given that China is the biggest trade partner for 120 countries, it is reasonable to expect their central banks will be keen to boost holdings of Renminbi."

With the World Trade Organisation struggling to reach any comprehensive agreement, the need for rules to govern trade can be partly dealt with by a patchwork of regional trade deals, of which there are 450 in development. One of the largest, RCEP[53], due to be completed in 2016 takes in China, India and 14 other Asian countries that between them generate 30% of world GDP.

In this evolving world, many in our discussions felt that there will be increased political influence on currency reflecting a confluence of business, trade and political interests and a desire for control. Indeed states will seek to re-assert their power over currency as they seek to retain power over taxation, wealth and privacy. There will likely be the emergence of regions defined by currency as much as geography as economics trumps politics (e.g. West and Central African CFA, potentially removing currency peg with the Euro and guarantee by the French treasury).

[50] The Economist – The sticky superpower http://www.economist.com econ2015

[51] IMF: Virtual Currencies and Beyond http://www.scribd.com/doc/296087195/Virtual-Currencies-and-Beyond-Initial-Considerations

[52] Financial Times: Pivotal moment for the renminbi and China http://www.ft.com/cms/s/2/12abb02e-7f02-11e5-98fb-5a6d4728f74e html#slide0

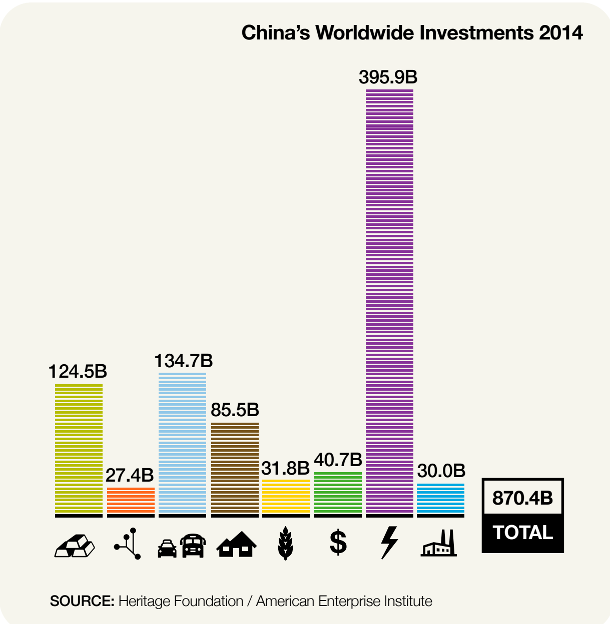
[53] Financial Times: Pivotal moment for the renminbi and China http:/www.ft.com/cms/s/2/12abb02e-7f02-11e5-98fb-5a6d4728f74e html#slide0
https://en.wikipedia.org/wiki/Regional_Comprehensive_Economic_Partnership

Access to Capital

China continues to dominate investment in infrastructure in emerging economies but sovereign wealth funds, new bottom-up solutions from Africa, India or Latin America and peer-to-peer initiatives may help to overcome the continued constraints on banks post the financial crisis.

The last ten years has seen huge investment in infrastructure and its associated trade in a number of emerging economies. A major new railroad across South America is being proposed, as is a new canal through Nicaragua to complement and compete with the Panama Canal. In addition, there is an upgrade of railway infrastructures between Europe and the Pacific as well as new lines and improvements in Africa. This level of international investment in infrastructure has not occurred before in such a concentrated period and in part has been enabled by the US Federal Reserves quantitative easing progamme. However now that the Fed has brought QE to an end companies in emerging markets from Brazil to China are finding it increasingly hard to repay their loans. Corporate debt in emerging markets has increased five-fold in the decade to 2014, and now stands at $18 trillion, or over 70% of GDP. Some say the QE policies by the Fed and other central banks have left a legacy of oversupply from which it will take years to recover.

What is particularly notable however is that the vast majority of the funding is coming from one country – China. With an estimated $4 trillion of foreign reserves in its various sovereign wealth funds, China has plenty of cash. Chinese investment overseas has grown eightfold over the past decade peaking at $140bn in 2013. With access to resources the primary driver, energy, transport and metals have been the three largest areas of focus, followed by property, finance and agriculture. Companies such as Nexen, Rio Tinto, Adaz, Repsol, Smithfields Foods and Glencore have been the focus of over $55bn of investment from the likes of CNOOC, Chinalco and Sinopec. Looking forward, although short-term concerns about the Chinese economy are widely shared, few expect this longer-term trajectory of spend to change course significantly.



One particularly significant new infrastructure initiative is the $40bn 'One Belt, One Road' (OBOR) initiative to re-open ancient commercial trade routes with the West. An estimated $8 trillion of funding is required and, according to the WEF, Beijing itself is rumoured to be allocating up to $300bn. The China Development Bank, one of the country's main policy banks, has calculated that some 900 OBOR projects worth a total of $890bn are currently under way or planned. The lion's share of the funding — both in renminbi and other currencies — is likely to come from Chinese policy banks such as the CDB and the China Ex-Im Bank, supported by the Asia Infrastructure Investment Bank, a new China-led development institution with 57 founding governments, and the Silk Road Fund, a state-owned investment fund, as well as Chinese banks.

Alongside China, other capital sources worth mentioning, include the growing importance of the Sovereign Wealth Funds, which now hold over $6Tn of assets under management[54]; the opportunity for bottom up solutions from Africa, India or Latin America and peer-to-peer initiatives which may help to overcome the continued constraints on banks post the financial crisis. Certainly the demand for better SME lending may well see yet more, smoother regulation and a more flexible approach to accessing capital.

Technology innovations not withstanding, banks and the banking sector have an important role in the movement of money, providing access to finance and managing risk for business large and small. International trade exposes exporters and importers to substantial risks, especially when the trading partner is far away or in a country where contracts are hard to enforce. Firms can mitigate these risks through specialized trade finance products offered by the banking sector. Banks do not simply lend out money deposited by savers rather they create deposits when they make loans and therefore expand the money supply. In so doing, some would argue, they create most of the money in circulation[55] and are key to the free flowing of the global economy.

[54] https://www.preqin.com/docs/reports/2015-Preqin-Sovereign-Wealth\ Fund-Review-Exclusive-Extract-June-2015.pdf

[55] http://www.bankofengland.co.uk/research/Documents workingpapers/2015/wp529.pdf

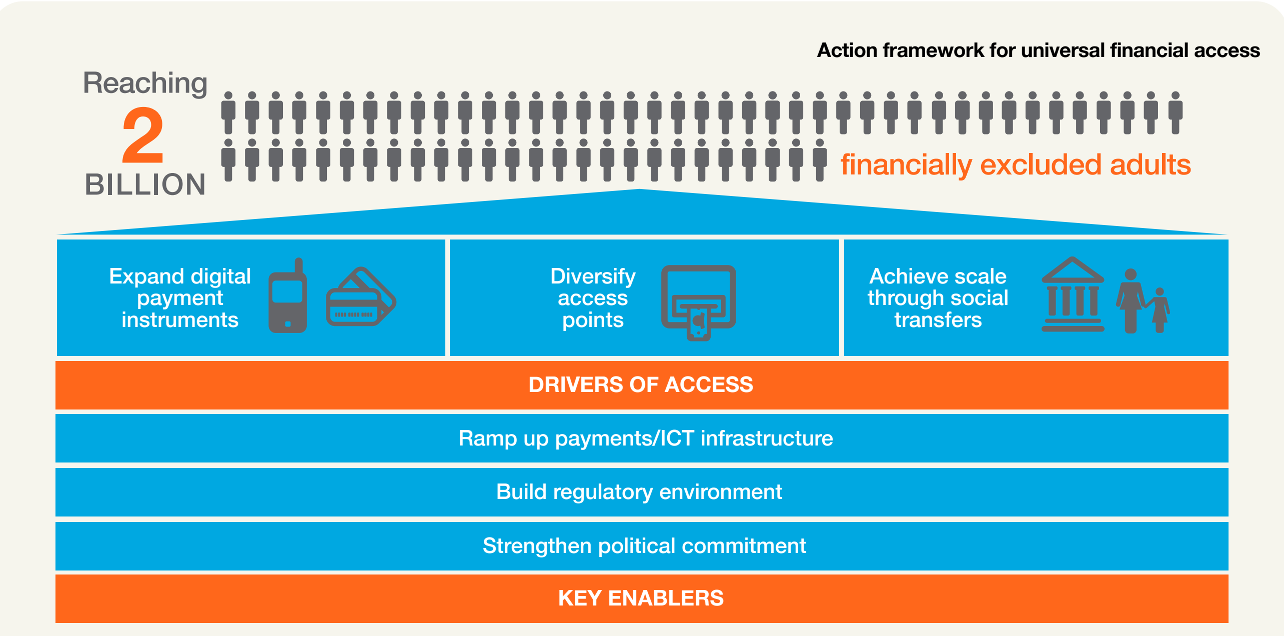
System Efficiency

The key driver of increased efficiency over the next 10 years will be the continued march of connected digital technology, including improved availability of data, its analysis and the rollout of the Internet of Things ambition.

Over the next decade, as currency continues to evolve, many see significant improvements occurring in the overall efficiency of the system. At both global and regional levels, there will be enhancements that reduce waste, improve transparency and smooth trade. Some of these can be directly linked to the shift to digital, improved access to funding and more appropriate regulation (all covered in other chapters), but many also apply to the movement of money and currency.

Digitial money itself provides multiple benefits compared to hard cash, not least it is cheap to handle. Many estimates suggest the management of cash currently costs society as much as 1.5% of GDP; digital money has low administration costs, reduced security costs and is traceable thus reducing the risk of loss of funds from corruption (e.g. according to a recent McKinsey report, it is estimated that 75-80 percent of the $22 billion in benefits of shifting India's government payments to electronic would come from reducing leakage of funds in government transfer schemes ending up in the wrong hands). Supporters say that not only will this enable banking systems to become more productive but that it will also ensure that taxes will be paid and only legal transactions will take place, putting pressure on both the informal and black economy. As the Financial Times puts it: "Electronic money also permits innovations to reward law-abiding businesses. Value added tax, for example, could be automatically levied — and reimbursed — in real time on transactions between liable bank accounts. Countries that struggle with tax collection could go a long way in solving their problems by restricting the use of cash. Greece, in particular, could make lemonade out of lemons, using the current capital controls to push the country's cash culture into new habits."[56] Digital money also has the inherent potential to carry a negative interest rate, something which it is not possible to do with cash.

Another arena for significant efficiency gain are provided by distributed ledgers, which have the potential to improve finance by reducing costs and allowing for deeper financial inclusion in the long run, improving system efficiency. As Christine Lagarde, the Head of the IMF, recently concluded[57]: "Virtual currencies and their underlying technologies can provide faster and cheaper financial services, and can become a powerful tool for deepening financial inclusion in the developing world". Indeed, Ripple, a leading distributed ledger network,



SOURCE: http://www.worldbank.org/en/topic/financialinclusion/brief/achieving-universal-financial-access-by-2020

[56] Financial Times http://www.ft.com/cms/s/0/159b17ca-47f3-11e5-b3b2 1672f710807b.html#axzz3xi8f4W6u

[57] IMF http://www.scribd.com/doc/296087195/Virtual-Currencies-and Beyond-Initial-Considerations

has claimed that its network and native currency could save banks up to 60% on costs associated with global interbank settlements.[58]

A final area where many participants thought there would be significant transformation was in the efficiency of low value payments (typically sub $10 transactions), everyday, high-frequency purchases for which make-up the bulk of cash transactions today. A great example is provided by the Starbuck's App which in 2015 already accounted for over 16% of all transactions.[59]

It is worth noting that there are scenarios and areas that could cause efficiency to worsen. For example, a chaotic transition from the Dollar would be an obvious case. Without a currency accepted widely in the world, international trade would likely slow down and become more expensive. Alternatively, a patchwork of medium sized trade deals may prove not only harder to create, adopt and enforce that a few near universal deals.

Conclusion

From our expert workshops and subsequent discussions across the nine areas addressed here, it is clear that the world of currency is in transition:

Changing Nature of Currency

Currencies based on sustained trust and supported by a few pivotal multinational organisations predominate over monetary unions. Many central banks lose relative influence as the IMF reserve basket and alternative currency platforms create new bundles.

Shifting Power and Influence

The centre of gravity of economic power continues shifting eastwards, back to where it was 200 years ago. Recent superpowers seek to moderate the pace of change but the realities of population and resource locations are immoveable.

Technology Shifts

Technology advancement is enabling the development of a truly interlinked global economy and is further increasing the speed and flow of currency trade. Millions of people are enfranchised, influencing markets and challenging institutional power.

Impact of Digital Money

Cash continues to be gradually replaced by digital money, providing consumers with more convenience and choice – and organisations with lower cost transactions. Wider adoption enables new offers to proliferate – including in the black economy.

Currencies of Meaning

New trusted currencies of exchange emerge to better facilitate transactions, trade, authentication and validation. Money as a means of exchange is complemented by new systems to which we attach increasing significance.

Risk and Trust

Most currencies are no longer backed by assets like gold but by a belief in the economy and an imagined reality. This places a huge reliance on trust, or alternatively, a huge risk in the system.

Supportive Regulation

Successful regulation has to battle the speed of technology, allow innovation, competition and change while restricting malpractice, crime and terrorism. These are dynamic choices and as a consequence are increasingly unstable.

Access to Capital

China continues to dominates investment in infrastructure in emerging economies but sovereign wealth funds, new bottom-up solutions from Africa, India or Latin America and peer-to-peer initiatives may help to overcome the continued constraints on banks post the financial crisis.

System Efficiency

The key driver of increased efficiency over the next 10 years will be the continued march of connected digital technology, including improved availability of data, its analysis and the rollout of the Internet of Things ambition.

Looking ahead we will see economic, political and social change. Many believe that technology is driving this at a speed and scale which has never before been experienced. Regulation and business will have to work hard to keep up and adapt to the evolving landscape. During this time, the role of currencies as a trustworthy medium of exchange and store of value will remain a priority but, as the internet opens markets to all, quite who retains overall control is increasingly unclear. Looking ahead many expect an overall equalising of control between East and West as global trade turns to new markets. Assuming this continues, some say that the days of dollar dominance are in decline. The impact that this will have and the identification of what will replace it will shape the markets for the next decade and beyond.

[58] https://ripple.com/files/xrp_cost_model_paper.pdf

[59] http://www.fastcompany.com/3041353/fast-feed/starbucks-mobile-app payments-now-represent-16-of-all-starbucks-transactions

The Future Agenda programme is the world's largest global open foresight programme and is based on the idea that by engaging with others from different cultures, disciplines and industries we can collectively create a more informed understanding of the world in which we live. This makes it easier to shape a strategy that will help to address the major challenges we face. Our aim is to identify ways in which systems could function, consumers behave and governments regulate over the next decade and give all organisations, large or small, access to insights that we hope, will help them to develop their future strategy.

The first Future Agenda programme ran in 2010 and brought together views on the future from multiple organisations. Building on expert perspectives that addressed everything from the future of health to the future of money, over 1500 organizations debated the big issues and emerging challenges for the next decade. Sponsored globally by Vodafone Group, the programme looked out ten years to the world in 2020 and connected CEOs and mayors with academics and students across 25 countries. Additional online interaction connected over 50,000 people from more than 145 countries who added their views to the mix.

The results from the first programme, published both online and in print, have been widely shared and have been used around the world by individuals and organizations looking to be more informed. TV programmes, talks, workshops and additional discussions have followed as people have explored the potential implications and opportunities in their sector or market.

The second programme, Future Agenda 2.0, ran throughout 2015 looking at key changes in the world by 2025. Following a broadly similar approach, it added extra features, such as providing more workshops in more countries to gain an even wider input and enable regional differences to be explored. All in all 25 topics were explored in 120 workshops hosted by 50 different organisations across 45 locations. There was a specific focus on the next generation, including collaborating with schools, universities and other educational organizations. There was also a more refined use of social networks to share insights and earlier link-ups with global media organizations to ensure wider engagement on the pivotal topics. In addition, rather than having a single global sponsor, this time multiple hosts supported workshops on specific topics either globally or in their regions of interest.

To get in touch with Future Agenda please contact us by email, twitter or post:

info@futureagenda.org
@futureagenda
84 Brook Street, London W1K 5EH

futureagenda