



**Platinum Asia
Investments Limited
Quarterly Investment
Manager's Report**

31 December 2017



Platinum[®]

ASIA INVESTMENTS LIMITED

ABN 13 606 647 358

Portfolio Update

by Joseph Lai, Portfolio Manager

Performance

(compound pa to 31 December 2017)

| | QUARTER | 1 YEAR | 2 YRS | SINCE INCEPTION |
|-------------------------------|---------|--------|-------|--------------------|
| Platinum Asia Investments Ltd | 9.8% | 36.1% | 18.0% | 14.8% |
| MSCI AC Asia ex Japan Index | 8.6% | 31.2% | 17.9% | 15.4% |

Net of accrued fees and costs. Portfolio inception date: 16 September 2015.
Refer to note 1, back cover.

Source: Platinum Investment Management Limited, RIMES Technologies.
Historical performance is not a reliable indicator of future performance.

Net Tangible Assets

The following net tangible asset backing per share (NTA) figures of Platinum Asia Investments Limited (PAI) are, respectively, before and after provision for tax on both realised and unrealised income and gains.

| | PRE-TAX NTA | POST-TAX NTA |
|-------------------|-------------|--------------|
| 30 September 2017 | \$1.1685 | \$1.1281 |
| 31 October 2017 | \$1.2599 | \$1.1962 |
| 30 November 2017 | \$1.2746 | \$1.2101 |
| 31 December 2017 | \$1.2594 | \$1.2091 |

Source: Platinum Investment Management Limited.

Portfolio Disposition

| REGION | 31 DEC 2017 | 30 SEP 2017 |
|-------------|-------------|-------------|
| China ^ | 53% | 57% |
| Hong Kong | 3% | 3% |
| Taiwan | 2% | 2% |
| Korea | 12% | 10% |
| India | 11% | 11% |
| Thailand | 5% | 4% |
| Philippines | 3% | 5% |
| Vietnam | 1% | 1% |
| Indonesia | 1% | 1% |
| Singapore | 1% | 1% |
| Malaysia | <1% | 1% |
| Cash | 8% | 4% |

^ Inclusive of all China-based companies, both those listed on exchanges within China and those listed on exchanges outside of China.

Refer to note 2, back cover.

Source: Platinum Investment Management Limited.

PAI's portfolio rose 9.8% over the quarter and 36.1% over the year. The MSCI Asia ex-Japan Index (in AUD) returned 8.6% and 31.2% over the same respective periods.

Markets across Asia took a slight breather to digest the gains from the last few quarters, nonetheless, still delivering positive performance. The Hong Kong market was up 6% (in local currency) and the domestic Chinese A share market was up 5%, as the market gradually starts to appreciate China's reform efforts. The Indian market rose 9% for the quarter (in local currency), as economic activity continues to pick up.

Our Chinese holdings made a significant contribution to performance. Strong companies positioned to service the burgeoning Chinese middle class consumers fared well, with China Merchants Bank (a premier retail bank) up 13% (H-share), Tencent up 21%, Jiangsu Yanghe (Chinese liquor producer) up 13%, and Midea (home appliance maker) up 25%. Healthcare stocks also performed well, with 3SBio (biologics company) up 22% and Shanghai Fosun Pharmaceutical Group (healthcare conglomerate) up 55% (H-share). Other strong performers include Tingyi (instant noodle maker) up 29%, BAIC (large auto maker with joint ventures with Mercedes and Hyundai, among others) up 37%,

Top 10 Holdings

| STOCK | COUNTRY | INDUSTRY | WEIGHT |
|----------------------------|----------|------------------|--------|
| Alibaba Group | China | IT | 3.3% |
| Ping An Insurance Group | China | Financials | 3.3% |
| Axis Bank Ltd | India | Financials | 3.2% |
| Kasikornbank PCL | Thailand | Financials | 3.1% |
| China Merchants Bank | China | Financials | 3.0% |
| Tencent Holdings | China | IT | 2.9% |
| Samsung Electronics | Korea | IT | 2.8% |
| China Overseas Land & Invt | China | Real Estate | 2.6% |
| Jiangsu Yanghe Brewery | China | Consumer Staples | 2.5% |
| CNOOC Ltd | China | Energy | 2.4% |

As at 31 December 2017. Refer to note 3, back cover.

Source: Platinum Investment Management Limited.

For further details of PAI's invested positions, including country and industry breakdowns and currency exposure, updated monthly, please visit <https://www.platinum.com.au/Investing-with-Us/Investment-Updates>.

and Ping An Insurance up 36% (H-share). Elsewhere, banks across the Asian region are starting to pick up steam as economic recovery takes hold in India, Thailand and Korea.

Commentary

China

All eyes were on the Chinese National Congress during the quarter, which takes place once every five years. As per usual, Western press coverage focused on the consolidation of power and leadership succession plans (or, in this particular instance, the apparent lack thereof). While political intrigue may be of interest to some, what we are more interested in, as investors, is China's economic goal and the path it decides to adopt in order to reach it.

China's per capita GDP has grown from US\$200 almost 40 years ago to US\$8,500 today.¹ The "Reform and Opening-up" of its economy, coupled with the entrepreneurialism of its people, has already lifted hundreds of millions of people out of poverty. Deng Xiaoping's initial goal for the country in the 1980s was to grow the economy and ensure enough food and clothing for all. That goal was achieved within 10 years! His longer term goal was to achieve the level of prosperity of moderately developed countries by 2050.

In contrast, China's current leader, President Xi Jinping, appears more ambitious. He aims for China to become a "moderately prosperous society" by 2020 and a "modern socialist country" by 2035. The path which he laid out for China's development focuses on managing key risks, fighting poverty and pollution, and investing in technological innovation. We are pleased to find the portfolio's China exposure broadly in sync with the direction the country is taking, with the major themes being consumption upgrade, robotics, fintech, healthcare and the emergence of industry champions.

You may find our upbeat pitch at odds with much of what you have read and heard in the media about the 19th National Congress. Some suggested that President Xi wants to steer the country back to the old (and failed) planned economy. We find this unduly pessimistic. Given Xi's aspirations for the country and the fact that the country's prosperity today is indisputably the result of market-oriented reforms, why would he want to backtrack?

Speculations that economic activity would drastically slow down post the Congress also proved to be ill-founded. Rather, we are seeing construction activity rebounding, with new construction starts measured by floor area growing by nearly

19% in November from a year ago, after falling 4.3% in October.² (Remember, as we have written in previous reports, China's property demand in fact outweighs supply.) Building machinery and equipment sales were very robust, with November's excavator and truck crane sales jumping more than 100% year-on-year.³ This is not to suggest that we expect a dramatic pick-up in activity, but rather, that investors should not let their judgment be clouded by exaggerated fear and bias so as to lose sight of the real opportunities on offer.

Vietnam & Thailand

Several members of our investment team took a field trip to Thailand and Vietnam in November, visiting a number of companies.

Vietnam's economic growth has been picking up pace, with its GDP running at more than 6% p.a. and income growing at more than 5% p.a.⁴ The reality is perhaps more nuanced than these headline numbers reveal. Vietnam can be thought of as a dual-economy. There is an uncompetitive domestic economy which still employs many people and runs a trade deficit. The more interesting part is a very competitive, fast-growing export economy that has no debt and is generating a sizeable trade surplus with very high profitability. This is the result of improving infrastructure, cheap labour, and foreign investment from countries like South Korea and China where labour costs are higher and continue to rise. Samsung Electronics, for instances, accounts for some 25% of Vietnam's exports which grew close to 20% in the first nine months of 2017 from a year earlier while foreign direct investment rose more than 13%.⁵

We were able to identify several fast-growing, well-managed companies in Vietnam which have healthy balance sheets and are trading at attractive valuations. Vietnam's ongoing privatisation is not dissimilar to what some other Asian countries have undergone in the past where outside returns were available to stock pickers who were willing to perform diligent investigation.

Coming to the second leg of our trip, the valuations of most Thai stocks are reasonable, but their growth prospects are understandably less exciting than those in less-developed Vietnam. This is also why Thai companies have been looking for foreign opportunities to grow and expand, mostly in the Indochina region (Vietnam, Laos and Cambodia). For example, ThaiBev recently paid US\$5 billion to acquire a

1 Gross domestic product per capita, current prices (US\$). Source: IMF, World Bank, The Guardian.

2 Source: Reuters.

3 Source: CICC Research; Citigroup.

4 Source: World Bank.

5 Source: Bloomberg.

majority stake in Vietnam's largest brewer, outbidding Anheuser-Busch InBev and Kirin.

There has been little investment in infrastructure in Thailand since former Prime Minister Thaksin Shinawatra was ousted in 2006, owing in no small part to the fact that subsequent governments struggled to stay in power for more than two years and that they favoured populist shotgun policies that focused on boosting consumption. However, the current military government does seem to have a genuine interest in reform.

Investors are sceptical of whether the government's promised investments will materialise, but from our meetings with Thai companies we did see signs of change:

- We learned from contractors that the tendering process for some government mega-infrastructure projects is well underway. Businesses like Siam Cement (a major construction material producer) are making preparations to meet growing demand ahead.
- Big companies and foreign corporations are starting to invest more.
- Factory utilisation rates are picking up.
- Retail sales are starting to rise after prolonged stagnation.

The most puzzling observation from our trip was a paradoxical expectation by most managements that we met with in both countries that inflation and interest rates would remain low while hiring and retaining staff are becoming increasingly difficult. The former assumption is unlikely to hold if the latter continues.

Thailand's banking sector is in good shape. Thai banks have in recent years suffered from tepid loan growth, low interest rates which depressed margins, and ongoing provisioning charges for bad loans made half a decade ago. There are signs that all three metrics are beginning to improve as the economy steadies and gradually rebounds, which bodes well for our exposure to the Thai banking sector.

Changes to the Portfolio

The economic reforms that are taking place in China and India, together with the cyclical recovery across the Asian region, are producing rich pickings of investment ideas that are currently out of favour, hence cheap, but highly attractive over the longer term.

Given our Chinese stocks' strong performance over the past year, we have trimmed some positions while deploying some of the cash to take advantage of the sectoral price weakness emanating from the excessive concerns over the slow-down of China's economy, mostly in the financials and other cyclical sectors.

The portfolio's exposure to the Australian dollar has been reduced to a negligible level.

Outlook

With the market having consolidated around the current levels, the outlook is perhaps becoming more sanguine. With an abundance of prospective ideas generated by the team, we are busy making risk-reward evaluations to prioritise the most attractive opportunities for the portfolio.

Macro Overview

by Andrew Clifford, CIO, Platinum Asset Management

As we enter 2018, the global economy appears to be in as good a shape as it has been any time in the last decade. The US, Europe, China and Japan have each shown improving economic momentum over the course of 2017. Higher commodity prices should bring about stronger growth in many of the emerging economies in the year ahead. Interestingly, the trends in place today (excepting the run up in commodities) were obvious enough a year ago, though at the time investors and commentators were preoccupied with a range of concerns.

The US, which has led the global recovery since the Global Financial Crisis (GFC), continued to grow strongly in the final months of 2017. Consumers appear to be in good shape as employment markets remain strong which, together with the promise of tax cuts coming in 2018, saw consumer confidence reach levels not seen in almost 15 years, well before the GFC. New home sales, which have been relatively slow to recover in the current cycle, are now experiencing sturdy growth. To date, there has been little evidence of rising inflation and, as such, while interest rates are rising, they do not look to be a threat to economic momentum for the moment. While the delivery of the tax cuts is a new impetus for growth (though we suspect not a significant one), the picture is not very different to that of a year ago. A year ago, the great concern was the proposed policies of the newly elected President Trump: the roll-back of the Affordable Care Act (Obamacare) which threatened to leave potentially 20 million Americans without health insurance, a possible trade war with China, and a major revamp of the tax system that contained more sound and fury than legislative detail. Of course, little has come to pass other than a much reduced tax plan; meanwhile the economy has continued to motor along.

In Europe, employment growth is strong and consumer and business confidence is high and rising. Today, economic growth rates across Europe are back at pre-GFC levels. A year ago, the improvement in Europe's economic performance was already well established. The strength of the job market today is simply a continuation of the upward trajectory that had already started then. However, a year ago all were concerned with political instability in Europe post the Brexit vote and the defeat of the Italian constitutional reform referendum. There was much discussion about the possibility of Marine Le Pen winning the French presidential election and the implications that would have for the sustainability of the European Union (EU). Concerns also remained with regards to unresolved bad debts in the European banking systems,

particularly within Italy. What came to pass was a surprisingly positive outcome in the French presidential race with pro-reform candidate Emmanuel Macron claiming victory. Bad debt issues have either been resolved or have faded to the background.

Throughout 2016 China staged an impressive economic recovery from its investment downturn, kick-started by government spending on infrastructure as part of its "One Belt One Road" program. The residential property market recovered and excess inventories were well on the way to being cleared. Despite this clear improvement in the economic environment, there remained much scepticism at the beginning of 2017 as to whether the recovery was sustainable, with most concerns focused on the level of indebtedness in the economy and the potential for a bad debt crisis in the banking system. While these were not unreasonable concerns, as we first discussed in our March 2017 quarterly Macro Overview and then in more detail in the September 2017 Macro Overview,¹ China's supply side reforms were dealing with issues of excess capacity in industries such as coal and steel. The result was immediate improvement in profitability and, with that, the ability to service debt. Over the course of 2017 these supply side reforms have been extended, particularly with respect to enforcement of environmental standards, leading to further improved profitability across a wide range of industries both within and outside of China.

While the fears regarding China's indebtedness have receded somewhat in the second half of 2017, investors and commentators generally remain sceptical. Along with the supply side reforms, there have also been reforms of the financial sector, in part to address the reckless use of credit in the system. It is somewhat ironical that these changes, both of which act to limit the state's role in the economy, are viewed as evidence that President Xi is steering the economy back towards central planning and away from markets. Our observation is that all the signs point in the other direction. Indeed, if one looks at the electric vehicle (EV) market in China, the mechanism being used to encourage auto producers to sell EVs is essentially a simplified version of the mechanism employed by the EU, only that it will be implemented in China a year or two sooner. Besides, the auto industry, like most of the other fast growing industries in

¹ Available at <https://www.platinum.com.au/Insights-Tools/The-Journal/Macro-Overview> and <https://www.platinum.com.au/Insights-Tools/The-Journal/Macro-Overview-September-2017>.

China, is dominated by private companies operating in a predominantly free market.

Finally, there is the world's third largest economy, one that is almost forgotten by investors after 25 years of deflation, slow growth, and falling asset prices. The list of woes that usually attract attention when Japan is mentioned includes massive government debt, the extraordinary printing of money by the Bank of Japan (BOJ), and a rapidly aging population, to name just a few. Yet, the country is currently enjoying record levels of employment, driven by rising participation in the work force by women, and rising wages. Corporate profit margins are at record highs. And, for the record, the economy has not seen such robust levels of growth for more than two decades!

The world has not seen this degree of synchronised growth across the major economies since 2008. Together with the supply side reforms in China, this growth has helped to drive a range of commodity prices higher during 2017. Over the next five years, an additional factor driving demand for various metals will be electric vehicles. Combined with a lack of investment in new supply in recent years, this should see commodity prices remain buoyant. While it may act as a tax on most of the developed world, this transfer of income to large emerging economies such as Indonesia, Brazil and Russia should be beneficial for overall global growth.

What are the key risks to this buoyant global outlook? The obvious risk, and one that the markets are focused on, is a return of inflation. In particular, labour markets are tight in the major economies, with the exception of Western Europe, so higher wage inflation is certainly possible if growth remains strong. Couple this with higher commodity prices (and the anecdotal evidence of shortages in a range of industrial and electronic components), a scenario of rising inflationary pressures cannot be dismissed. If central banks were to raise rates in a sustained and steady fashion in response to inflation, given the level of debt carried in all the major economies, it would certainly pose a threat to current rates of growth.

The other great unknown is the longer term ramifications of the money printing exercises by the US Federal Reserve, the European Central Bank and the BOJ. While the US, on face value, has extricated itself successfully from its quantitative easing (QE) program (i.e. it has stopped "printing money" via bond and other asset purchases), it is yet to attempt to unwind this policy in any meaningful way. For the moment, QE continues in both Europe and Japan.

Market Outlook

Global stock markets have recognised these improving prospects and rewarded investors with good returns over the last 12 months. The following table shows the 1-year and annualised 5-year returns in local currency terms for key global markets.²

MSCI Regional Indices

Local Currency Returns as at 31 December 2017

| REGION | 1 YEAR | 5 YEAR COMPOUND P.A. |
|---------------|--------|----------------------|
| World | 19.8% | 12.7% |
| United States | 21.2% | 15.0% |
| Europe | 13.0% | 9.9% |
| Japan | 19.8% | 17.2% |
| Asia ex Japan | 35.6% | 9.1% |
| China | 55.0% | 10.1% |
| India | 30.5% | 12.3% |

Source: RIMES Technologies

The 1-year returns presented here would usually suggest that one should be cautious about the prospects of future returns. However, the 5-year returns, while solid, are not spectacular except in the case of Japan and the US. Japan, it must be remembered, started the period at the bottom of a 23 year bear market!

It is our assessment that, despite these good outcomes, most investors remain cautious when it comes to the prospects for future returns from owning shares. We see this in the frequent headlines carrying warnings from investment experts for overvalued stocks, stock market bubbles, and even the looming possibility of another GFC. We also see this caution in the actions of investors around the world where we still observe a strong preference for other asset classes, notably debt securities. This assessment, together with the fact that we continue to find new companies to buy at attractive valuations, makes us cautiously optimistic that we can continue to generate good returns for investors, if not in the next 12 months, certainly over the next three to five years.

Interestingly though, despite caution around share markets, the rise of Bitcoin and other cryptocurrencies shows that enthusiasm for speculation is far from dead! I would encourage anyone with an interest in this topic to read Sava Mihic's excellent article on the following pages. Certainly, some cryptocurrencies look on face value to be another old-fashioned bubble, though they may still have some way to go despite the daily predictions of their demise. Could an eventual burst of the bubble have the potential to cause disruptions to broader financial markets? Perhaps, particularly if significant amounts of debt are involved, though for the moment this appears unlikely. For every loser in this speculative game, there is an offsetting winner. Perhaps a more likely scene for a significant financial accident may be the debt markets, where the risk aversion of investors, together with the QE policies of central banks, has driven yields to extraordinarily low levels.

² For Australian investors, the returns in most cases would have been significantly better over 5 years due to a weak Australian dollar, but weaker over the 1 year period as the Australian dollar has appreciated against most currencies over the last 12 months.

Bitcoin – A Primer

by Sava Mihic, Quant Analyst, Platinum Asset Management

Bitcoin has recently captured popular attention by exceeding the US\$10,000 per coin mental barrier. Discussion has been extremely polarised, with some claiming it is the biggest bubble since the Tulip while others claim we are seeing the start of a new paradigm.

This article will discuss what it is, some perspectives, and what the future may look like.

What is Bitcoin?

Bitcoin is the first of a new breed of digital tokens labelled “cryptocurrencies” (or simply “cryptos”). The core idea is that it has a public record of all transactions, called a “blockchain”. New transactions are recorded by adding transaction record blocks to the existing chain, with specific rules around who can add blocks, how new blocks are recognised, the types of blocks and the rate at which they are *meant*¹ to be added.

Bitcoin follows a “proof-of-work” requirement in order to add a block to the blockchain. This means that the right to record the next block is attained by doing work – also known as “mining”. The work required, in the case of Bitcoin, is testing a large number of random numbers until you happen upon one that produces a specific outcome. By making the numbers random, the playing field is levelled, with anybody able to jump in and mine. The more miners there are testing random numbers, and the more computing power they use, the faster somebody finds the correct random number. Miners that control more computing power are more likely to be the first to find the solution, with their rate of success being proportional to their share of computing power. Making mining simple means it isn’t dominated by any one party, preventing a malicious party from consistently adding fraudulent transaction blocks.

Once a new block is mined, the miner will broadcast it to the network. The network will confirm that the random number the miner chose does indeed generate the required outcome, and will append it to all the other blocks in the Bitcoin blockchain. One Bitcoin block is meant to be added every 10 minutes – the idea being that prescribing 10 minute intervals makes it less likely for two miners to independently find and broadcast competing solutions to the network at the same time. If mining activity increases and blocks start to be added faster, the difficulty of mining will increase in order to keep

the rate at one block per 10 minutes.² Conversely, the difficulty will decrease if there is less mining. Each block can at present accommodate around 2,000 transactions.

Of course, people need to be incentivised to do the work required to record transactions, so Bitcoin has an incentive system to encourage mining. There are two parts to the incentive system, and both go to the miner that solves the block first:

1. The first part is the block reward. Currently set at 12.5 Bitcoin and halving every four years, it will increase Bitcoin supply up to a maximum of 21 million Bitcoin and will therefore end in 2140 if all goes to plan. This amount isn’t paid by anybody in particular, but rather is inflationary. Essentially, it is partially funded by everybody that owns Bitcoin.
2. The second part is the transaction fee, which is a variable amount and depends on how much Bitcoin users are willing to pay in order to have their transaction included in the next block. Users bid a transaction fee, and miners then decide which transactions to include in the block they are mining. As Bitcoin has risen in popularity, transaction fees have moved from being around 0.1 Bitcoin to 2 Bitcoin per block, with this cost borne by the parties initiating transactions.

Chart 1 on the following page shows the price of Bitcoin on a log scale, and puts into perspective just how extreme the initial boom in 2013 was. While it got a lot of attention then, it didn’t get the same level of attention as the latest boom, primarily because the total value of all outstanding Bitcoin peaked at US\$10 billion at the time, whereas we are now looking at US\$250 billion. See our commentary in *The Journal* on the 13th of January 2014 for further thoughts at the time.³

A lot has changed since the early days of Bitcoin. Nobody thought Bitcoin prices would reach the stratosphere when it first started, and there were so few miners at the time that mining could be done by a home PC. Today, mining has become so intense that it requires specially designed hardware, huge amounts of electricity and heavy cooling. Bitcoin has been able to rise through a combination of fulfilment of needs, strong promotion, and a healthy dose of speculative exuberance. Some of these are discussed in the

¹ Bitcoin blocks require testing random numbers to process, so a block can take more or less than the 10 minute target depending on miner luck. That is why processing time is *meant* to be 10 minutes, rather than *is* 10 minutes.

² Difficulty is increased by requiring more random numbers to be tested by miners before a solution can be found.

³ <https://www.platinum.com.au/Insights-Tools/The-Journal/The-Fantastic-Rise-of-Bitcoin>

Chart 1 – Bitcoin Price History

BitStamp (USD) – Closing Price – Daily (Log Scale)



Source: <https://bitcoincharts.com>

following sections. The price of US\$15,000, which is current at the time of writing, will be used in numbers quoted below.

Bitcoin as a Medium of Exchange?

One of the early hopes was the idea that Bitcoin could be used as a cheap means of transaction that circumvents the banking system. As things stand today, however, this is not a realistic proposition unless some significant changes are made to the Bitcoin protocol. The reason is that transaction costs on the Bitcoin network are simply too high – today the block reward, i.e. the socialised cost of a transaction, is about US\$100 at the 2,000 transactions per block rate (see Chart 2). Additionally, the specific transaction cost borne by the transacting parties is about US\$15. Add to this the fact that each block takes 10 minutes to process,⁴ and you will be waiting quite a while to confirm your \$25 coffee order. The Bitcoin blockchain simply cannot be used to process small transactions as it is currently configured.

Bitcoin as a Store of Value?

With the reality that it cannot be used as a medium of exchange recognised, the narrative has shifted to Bitcoin being a store of value, with gold being used as an analogue. Proponents argue that the limited total supply of Bitcoin creates scarcity value, and that the mining of Bitcoin, similar to the mining of gold, takes work. In the case of gold, the price is often underpinned to some extent by the cost of

⁴ There is a backlog, which varies in size, but currently has over 100,000 unconfirmed transactions, which would take over 8 hours to process assuming no further transactions are recorded. Even with no backlog, one would generally require several blocks to be added after the block processing one's transaction, to ensure that the transaction is embedded in the blockchain.

mining it, and mining costs generally increase over time as the geology becomes more difficult. In contrast, no such analogue can be drawn in Bitcoin, because the difficulty of mining is proportional to the amount of processing power being expended. High Bitcoin prices incentivise more processing power and therefore higher costs, but the reverse is also true, which implies that there is little pricing support when Bitcoin prices fall.

ICOs and "Forks"

But what about scarcity value? While Bitcoin supply is limited (unless the code is changed), there has been an enormous proliferation of copycats⁵ – the count of recognised cryptocurrencies stands at 1324 as of today. Coinschedule.com indicates that in 2016 a total of US\$96 million was raised in 46 "Initial Coin Offerings" (ICOs), and in 2017 the number has jumped to 235 ICOs, raising a total of US\$3.7 billion – a 39 fold increase in money raised.

⁵ An example of a copycat is Ether, which is similar to Bitcoin, but has the added use of being able to pay for "smart contracts" on the Ethereum network, which are payment contracts that are executed automatically. For example, a smart contract may have an address, and when something is paid into that address, it may be split among two different addresses automatically in a certain share, like a royalty. The Ethereum network can also be used to issue ICOs. Another example is Ripple, which, instead of using proof of work like Bitcoin and Ether, relies on consensus among trusted parties to approve transactions, thereby removing the costs of proof of work, but also to some extent the decentralisation. If Ripple, which has some institutional backing, were to advance from concept to a fully functioning network, it may represent an efficient payment system. Among the many less popular tokens is UET, the "Useless Ethereum Token". The "ICO disclosure" of UET, "the world's first 100% honest Ethereum ICO", says that it has "no value, no security and no product. Just me, spending your money."

Chart 2 – Cost per Transaction



Source: <https://blockchain.info>

In an ICO, the promoter profits by selling tokens to the public. Generally the promoter will start by publishing a "whitepaper" to explain the token and getting backing from a few high net worth investors that are willing to fund the advertising of the token. Then the promoter will selectively groom some initial investors, for example, by setting up a Slack channel in which he chats with them directly, convincing this group that they are "in the know". This "special" group will take a pre-ICO placement of tokens to distribute ownership and some will then proceed to spread the word on the ICO and how great it is. Finally, after a strong burst of advertising, and once interest is judged to be at peak, the promoter will issue as many tokens as there is demand for while cashing out, usually significantly.

The other angle is "forking", which involves creating a new cryptocurrency and issuing the tokens to the owners of an existing cryptocurrency. Fork promoters tend to be involved in cryptocurrency mining and/or the running of cryptocurrency exchanges. They bet that the more widely distributed a token is the more valuable it is likely to be. So, instead of staging an ICO, which is likely to attract only a limited number of investors, they freely give the new tokens to everyone who is listed as an owner of Bitcoin (or some other well-known token) at a certain point in time, hoping to profit by being the trading hub where their token is traded, earning transaction fees. There have been two significant forks using the Bitcoin blockchain – Bitcoin Cash and Bitcoin Gold. While the names may give the impression that these tokens are somehow the offshoots of Bitcoin, in reality they are not – these are entirely unrelated cryptocurrencies created by those seeking to take advantage of Bitcoin's popularity and wide ownership base.

Some argue that these ICOs and forks will fade over time, and that people will refocus on Bitcoin, thereby retaining its scarcity value. For now, the proliferation is massive.

Black Market Demand

One of the initial use cases of Bitcoin was black market activity, because Bitcoin addresses⁶ have no identifying information, allowing criminals to stay anonymous. While there is no doubt that underground activity remains a significant part of the actual transactions using Bitcoin, which is considered the currency of the dark web, it is probably not playing as large a part in Bitcoin's recent run as it may have done previously.

The Miners

Around 300,000 Bitcoin transact each day using the blockchain, representing US\$3.5 billion at the moment. Of that, miners are earning around 2,200 Bitcoin per day, for revenues of about US\$33 million per day or US\$12 billion per year. There are estimates that mining electricity costs are around 16% of mining revenues today, with total power consumption up 25% in December alone and approaching one-seventh of Australia's national energy consumption.⁷ Currently miners are very profitable, but in the past they have suffered large losses when the price fell, as they were unable to recoup the significant capital outlay for the custom mining chips they operate. The chips used for mining are called ASICs (application-specific integrated circuits), and they have no use

⁶ Bitcoin addresses are digital keys that represent the location at which Bitcoin are held by an individual, similar to a bank account number, and are usually in the format of a string of random letters and numbers.

⁷ <https://powercompare.co.uk/Bitcoin/> has great data.

outside of mining Bitcoin, resulting in Bitcoin miners being unable to sell them during the last crash. The most popular Bitcoin mining ASICs, Antminers, are developed by the biggest Chinese crypto mining company, a privately held firm called Bitmain.

The Exchanges

A cryptocurrency exchange is an entity through which a customer can exchange Dollars for Bitcoin or another cryptocurrency, or exchange one cryptocurrency for another.⁸ This is how most Bitcoin are bought. When a customer buys Bitcoin on an exchange, it does not go to their private wallet immediately; rather, it is held in custody by the exchange, where the customer can sell it. Moving Bitcoin between an exchange and one's private wallet, in either direction, will incur the blockchain fee. This means that customers holding Bitcoin in a private wallet run the risk of not being able to return their Bitcoin to the exchange in a timely manner if they wish to sell it, as there tends to be a large backlog to process transactions through the blockchain during times of heavy trading. Regulation on Bitcoin exchanges is currently minimal – the market has grown too fast for legislation to catch up.⁹

Impressively, the exchanges bear no mining costs but are, in aggregate, trading around US\$10 billion¹⁰ in Bitcoin per day, more than double the daily transaction volume on the blockchain itself. Taking a 1% clip (0.5% on each side) of that US\$10 billion means that the Bitcoin exchanges are pulling in US\$100 million per day at the current pace – annualising fees of US\$36.5 billion,¹¹ with relatively low overheads. If one adds the exchange trading of other cryptocurrencies to the mix, total annualised fees exceed US\$60 billion. To put this in perspective against conventional exchanges, Intercontinental Exchange, a group that operates the New York Stock Exchange among other regulated exchanges and clearing houses and has a market capitalisation of US\$46 billion, is expected to produce revenue of US\$4.6 billion in 2017.

If you ever wondered who funded all of the Bitcoin and cryptocurrency ads that you saw, now you know – the crypto

8 The main exchange for Australians is BTC Markets. There one can purchase Bitcoin using Australian Dollars. If one then wants to buy one of the more exotic cryptocurrencies, one could convert their Bitcoin to Ether and send the Ether to an offshore exchange that offers trading in other cryptocurrencies. Using Ether to fund the alternate exchange account is sensible as the transaction cost is lower and transaction confirmation is faster.

9 The government of South Korea has indicated concern around unsophisticated investors being too involved in cryptocurrency trading and is therefore considering regulating their exchanges. China has banned the exchange of Renminbi for cryptocurrency on exchanges.

10 <https://coinmarketcap.com/> has aggregation data regarding trading on all of the popular crypto exchanges.

11 This annualises current turnover with the current elevated Bitcoin price. If the price falls, their annual take would fall proportionally.

exchanges are the true winners in the Bitcoin phenomenon, bearing none of the risk and earning outside profits. It is somewhat ironic that these exchanges, which have none of the proof of work or decentralisation features that give Bitcoin its appeal, actually transact twice as much Bitcoin as the blockchain!

Bitcoin as Gambling Arbitrage

So how did the exchanges get so big? Part of the answer is gambling arbitrage. In Japan and South Korea gambling is heavily regulated. Japan has no casinos and pachinko parlours, the traditional gambling outlets, have been curtailed by regulation over time. The extreme volatility that has occurred in Bitcoin, coupled with its unregulated nature and high turnover, makes it an ideal avenue for gambling. A large Japanese cryptocurrency exchange plays the sound of pachinko machines as the prices of cryptocurrencies move up and down, as well as when trades are done, triggering all the necessary endorphins.

Bitcoin as a Tool to Circumvent Capital Controls

China has strict capital controls. It also dominates the crypto mining industry, having the largest share of mining as well as of the market for designing custom mining chips. The initial driver of the recent boom in Bitcoin occurred in China – Bitcoin, with its anonymity, allowed some capital to circumvent the traditional currency controls and flee the country. Seeing this, the Chinese government banned ICOs from being sold to Chinese nationals and shut down domestic crypto exchanges by preventing the exchange of Renminbi for cryptocurrencies.¹² Volumes observably related to China are now a tiny fraction of what they used to be.

Bitcoin and Decentralisation

Another of the initial hopes for Bitcoin was its potential to be a decentralised system, with a frequent argument being that it can disintermediate transactions by removing the need for “trusted” centralised institutions such as banks. To date, Bitcoin has not realised this decentralisation, and is becoming more rather than less centralised. For example, a small group of programmers, known as Bitcoin Core, still write the software that the network runs. Bitcoin mining, which was supposed to be democratised by the brute force “proof-of-work” that anybody can do, is instead being dominated by a few Chinese mining pools as institutionalised ASIC-based mining makes individual PC-based mining unprofitable. Mining ASIC design itself is also dominated by Chinese mining pool operator Bitmain, and Bitcoin trading is dominated by cryptocurrency exchanges, which are centralised institutions. Even Bitcoin ownership is highly

12 Not all regulation has been negative – Japan has taken the most positive stance, approving Bitcoin as a means of payment.

centralised, with 1500 addresses (of a 28 million total) owning 38% of all Bitcoin. The number of parties that must be trusted therefore makes the argument that Bitcoin can be used for "trustless" disintermediation difficult.

Bitcoin as a Ponzi Scheme

Some argue that the structure of Bitcoin is an exact replica of a Ponzi Scheme. Nobody can see Bitcoin or make anything out of it and there is no utility value to holding Bitcoin (unlike, say, gold, which is used to make jewellery and has some limited industrial uses). Bitcoin generates no income, and an owner of Bitcoin can only make money by selling the Bitcoin at a higher price to another investor. Bitcoin buyers are attracted by the very high appreciation apparently on offer, and the continuation of the scheme is dependent upon current holders¹³ continuing to hold! Encouraging holding, there are some barriers to moving Bitcoin held off an exchange onto an exchange, such as slow transaction time and high transaction costs, making selling more difficult. To cap things off, the whole process is facilitated by the exchanges, which act as the cashed-up manager of the scheme, pumping out unregulated advertising promoting the wonderful returns on offer.

The Future of Bitcoin

The future of Bitcoin is unclear, but it is unlikely to become a medium of exchange in its current form, and further regulation is likely on the horizon. Whether that regulation removes demand for some of the uses of Bitcoin, and whether it stifles unregulated advertising, is yet to be seen, and its ultimate future will depend on that.

Telling also is the fact that long discussions among enthusiasts on the future uses of Bitcoin have given way to hopes and dreams around how soon one can become rich – one is told to resist the "fud" (fear, uncertainty, doubt), be one with the "fomo" (fear of missing out) and just "hodl" (hold). Amongst many buyers understanding of how Bitcoin works and whether it can be used for anything is minimal. People questioning the long-term value of Bitcoin are promptly banned from online crypto forums, although predictions around short-term declines are allowed. With Bitcoin having made the front cover of Barron's, there is no doubt that things are very frothy today, and while the madness of crowds has taught us that bubbles can persist for some time, ultimately, like every euphoria before it, Bitcoin will come crashing down.

¹³ Or, as they like to refer to themselves, "HODLers" – a famous misspelling of "hold" by a drunk Bitcoin user trying to calm people down during a crash.

Level 8, 7 Macquarie Place
Sydney NSW 2000

GPO Box 2724
Sydney NSW 2001

Telephone

1300 726 700 or +61 2 9255 7500
0800 700 726 (New Zealand only)

Facsimile

+61 2 9254 5555

Email

invest@platinum.com.au

Website

www.platinumasia.com.au

Notes

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