



REGIONAL COVERAGE AMERICAS

Comprehend Brazil's economic challenges of the future

PAGE 8



REGIONAL COVERAGE EUROPE

Circular economy - EU strategy to cope with plastic waste

PAGE 6

Elinor Ostrom

It took more than 60 laureates until Elinor Ostrom became the first woman to be awarded with the Nobel Memorial Prize in Economic Sciences. Understand why her work on the governance of common resources is so important

PAGE 16

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For over six years, Nova Economics Club has followed its pledge in connecting real life economics through dedicated economic research, widely recognised events such as “Economia Viva”, publishing opinion articles namely in “Público” and others.

We are a network of economic enthusiasts from PhD to BSc students eager to reflect and apply economical solutions to real world problems.

Born from the desire to have a real impact in society, after assessing the reforms from the Memorandum of Understanding (MoU) signed between troika and the Portuguese government, our members have produced reports under the Country Specific Recommendations (CSR) for the European Commission in Portugal prosecuted by Policy Briefs on the Eurozone in partnership with the European Banking Authority and Evaluations of Structural Reforms in partnership with the Ministry of Finance – GPEARI, among many others with the support from our experienced professors at Nova SBE.

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“Ideas shape the
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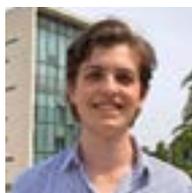
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ECONOMISTS IN THE SPOTLIGHT

ROBIN BOHN

Dear Reader,

We are excited to publish our third edition of this academic year. At Nova Economics Club, we decided to restructure the content of the NEC Magazine to deliver more high-quality content and to increase our coverage for you.

The content of this edition is therefore structured along a geographical dimension to analyse the most important economic developments around the world while continuing the popular article series of our previous editions.

This edition discusses important developments in Europe: the trade-off between privatization and public ownership as well as the EU's strategy to deal with plastics. In Tanzania, Brazil and Vietnam, we give insights into the current developments of the economy, the political situation and provide an outlook for the future. Moreover, we discuss the role of cryptocurrencies and highlight possible future scenarios. Finally, we present the economic ideas from Elinor Ostrom who contributed substantially to our understanding of governance structures, especially the commons.

Enjoy reading this edition!

**PAUL-LEONARD
GLOECKNER**
Editor



CONTENTS

REGIONAL COVERAGE

- 4 **Portugal:** CTT - Should the State lend a hand?
- 6 **Europe:** Plastics - Path to a more circular European economy
- 8 **Americas:** Dealing with the Peak of an Iceberg - Brazil's Economic Challenges
- 10 **Asia:** Vietnam - Where socialism and market economy coexist
- 12 **Africa:** Tanzania - Is this Paradise out of the Frying Pan?

CHAOS THEORY

- 14 **Cryptocurrencies:** Here to stay, or a passing trend?

ECONOMISTS IN THE SPOTLIGHT

- 16 **Elinor Ostrom:** Understand her work on the governance of common resources

CTT - SHOULD THE STATE LEND A HAND?

Covered by Miguel Amaral

The privatization of CTT (Correios Telégrafos e Telefones), a post offices firm with a recent business on commercial banking, has been heavily discussed in the Portuguese media these past weeks. In the past, the state controlled the post offices business by completely owning this company. However, in 2013, Portugal sold 70% of CTT's capital in the stock market, and the rest was sold to private investors in 2014.

To understand this recent reform, its reasons and consequences, we first have to analyse the macro circumstances of this country. Portugal has been through significant transformations during these past years due to its adjustment program. To address the pressing financial problems Portugal faced some years ago, one policy followed by the last government - supported by a centre-right majority in Parliament - was to privatize many services and national companies to reduce the size of the state and public expenses. However, problems with keeping public expenditures under control continues. In the previous legislature, according to Observador, a total of around € 10 billion - about 6% of 2015 GDP - was raised with the sales of CTT, REN (Rede Elétrica Nacional), EDP (Energias de Portugal), ANA (Aeroportos e Navegação Aérea), and many more public firms and shares of firms which are now run totally or partly by private capital.

Given the large deficit in Portugal's public accounts before and during the

crisis, chaotic public accounts which came cleaner at the time of the 2008's crisis and the need to finance the state in the short-medium term resulted in this vast program of privatizations. Although, because Portugal was governed by this referred parliamentary majority from 2011 to 2015, this resulted in almost no public debate about the firms we should or not privatize.

Today, the issue discussed relates to the proposal of private strategists of CTT to reduce the number of CTT post offices, centralizing services on more densely populated areas, and moving out from the others, reducing costs to face the loss profits which diminished by 27% in 2017, according to the firm. However, the case of CTT is not simple- it does not provide just a traditional postal service and the Portuguese territorial and demographic peculiarities make it a case worth more attention than the Portuguese state has and is paying to it. The problem is, many small populations rely on CTT post offices for receiving pensions, bill payments, and deal with many other bureaucracies that most of us would do online, with every tool at our disposal, be it in Portugal or in any other European country. There are people who might claim that in fifty years these services will be fully managed online - indeed, it's true - but today, this is not the case. Portugal has a demographic situation that makes it one of the countries with the largest aging population in the EU. The Portuguese population has a 20% share with people who are more than 65 years old, a value only exceeded by Germany, Italy and Greece, and superior to the EU's average of 19%. Summing this with the vast interior not near the great metropolitan areas, a degrading railway network, the relatively low public and private investment in interior regions, and the relatively rapidly aging populations of these same regions, makes them vulnerable to any centralization attempt.



As a society, we may think of the “Should it be state-owned or privately-owned?” dilemma as a spectrum: the more the market is keen to fail to provide that service, the more we are leaning to say the state should lend a hand in that market – like in the case of natural monopolies. On one side of this spectrum, we end up listening to some arguments stating that the more we let the markets work on their own, the more potentially-harmed may the

expense should be minimized in order to relief the fiscal burden on the people, that free market competition results in innovation and services with higher quality or even that state-owned firms are inefficient by definition. In summary, there are two approaches: a pro-state-owned approach and a pro-market position.

Some countries already faced this dilemma. Indeed, a reform in the post office

owned by private investors today. This Deutsche Post DHL Group received the 2017 Excellence in Service Logistics award from Cisco. Moreover, the Netherlands privatized their national service in 1994. If we think straight, the postal service is not an essential sector nowadays. People in general do not depend on it as they do on other sectors such as electricity, urban transportation or water supply. Therefore, it is reasonable to assume that it should work in Portugal, as it does in other European countries, taking this monopoly away from the state and opening it to competition.

SHOULD IT BE STATE-OWNED OR PRIVATELY-OWNED?



As a conclusion, I will not argue against CTT’s current business strategy, as examples in other countries demonstrate that privatization can work. But as there are market failures under these circumstances – or at least some kind of public goods which cannot be rationalized from a business perspective - it would be helpful if the state intervened to some extent. Having the state with such a complex and broad network of regional powers (parishes, local administrative powers, etc), should these civil rights and needs – especially for the highest age groups – not be secured by the state in cooperation with these local powers? Is not the state’s duty of looking after those who cannot do so for themselves one of the most important? Moreover, in a country where everybody talks about the need to decentralize, should the state not try to make up for these market failures which have direct impact on its citizens?

consumers be, that the state is the only one capable of providing a trustful service accessible to everybody, that central services are hard to provide adequately relying on the free market or that the state has social responsibilities. On the other side, we may hear that the state should minimize its intervention relying on the efficiency of the markets, that public

service is not a novelty – many countries have undertaken privatizations. The UK privatized its postal service company Royal Mail in a public offering in 2013 and 2015. Ofcom’s Consumer Experience 2013 report revealed that around 87% of UK’s population is satisfied with the postal service. Germany also partly privatized Deutsche Post in 2000 - around 21% of shares are

PLASTICS

PATH TO A MORE CIRCULAR EUROPEAN ECONOMY

Covered by André Santos

The European Union's (EU) plastic demand amounted to 49 million tons in 2015, representing 15.2% of the world's production. The enormous amounts of plastic used in the manufacturing of products such as cars or, more importantly, packaging (40% of the EU's plastic demand) can easily explain this huge demand for plastic. However, all this plastic material must be disposed somewhere at some point, which represents a real challenge. According to Plastics Europe, an association representing European plastics manufacturers, Europeans generate 25,8 million tons of plastic waste every year, but unfortunately less than 30% of those millions are recycled[2]. The EU exports a large part of those debris to other countries. Today, Europe's main importer of plastics is China that imports more than 85% of European plastic waste, according to The Global Waste Management Outlook of 2015. However, this will no longer be a reality, given that the Chinese government banned many types of plastic imports from 2018 onwards.

This major shift in plastic waste management creates a window of opportunity for the EU. Europe has come upon a new way to accelerate its transition from a linear to a circular economy. The former is characterized by the "take, make, dispose" model, whereas the latter defines itself by the extension of the product's life, and also by a waste and resource use minimization, as suggested by the European Commission (EC). Policy makers in Brussels recently declared to seriously reduce plastic litter and to ensure that all plastics packaging is reusable and recycled in a cost-effective manner by 2030. This is certainly a great chance to increase the circularity of the European economy, but also an opportunity to tackle all the problems that come with the accumulation of plastic waste.

Plastics are becoming more and more problematic for both the economy and the environment. The main problems are related to single-use plastics, e.g. straws, plastic and bags, as well as micro plastics, which are less than five millimeters in length. The massive amounts of litter that are polluting our oceans, eroding our ecosystems and harming the European economy through the negative externality imposed by various industry sectors, primarily tourism and fisheries. Every year, EU citizens pollute the oceans with 500 000 tons of plastic waste which is equivalent to 66 000 trucks fully loaded of debris, as stated by the EC. Moreover, these types of plastics are clearly inefficient from an economic point of view. The Ellen MacArthur Foundation, an organization that aims





to accelerate the transition to a circular economy, estimates that 95% of the value of plastic packaging material is lost after a very short first-use cycle, which represents a loss between 70 and 105 billion Euro to the economy every year. Europe has to reverse this situation if it wants to reach a more circular economy. However, the plastics recycling business is still unprofitable and uncertain, leaving producers with little incentives to enter the industry and, consequently, hindering the adoption of a more sustainable system.

Transitioning into a circular economy is not an easy task, but the EC has already outlined its strategy in two steps. The first one is about improving the economics and the quality of recycled plastics, while innovation and investment are directed towards circular solutions. This may be achieved through more homogeneous designs, and also through innovation financed by different

European funds. This may reduce overall waste collection costs and improve the recycling capacity, boosting the attractiveness of the recycled plastics' industry. According to the Ellen MacArthur Foundation, increasing the homogeneity of plastic components can save between 77 and 120 euros per ton of plastic litter collected.

The second step focuses on curbing plastic waste and its implications. Both Extended Producer Responsibility (producers are given a significant responsibility – financial and/or physical – for the treatment or disposal of post-consumer products, as defined by the OECD) and Deposit-Return (forcing packaging to be returned) schemes will be used to internalize the hazardous effects that result from littering. This, in return, will force suppliers to adopt a process that is key in a circular economy, the reverse logistics process – the reuse of products and materials

leading to an extended life cycle. This innovative model is of utmost importance when it comes to minimizing plastic waste while achieving economic, social and environmental benefits. Overall, the EC's approach is still a very general strategy but one that will certainly yield results.

Europe faces a big opportunity to become a pioneer and be the first to take the circular economy seriously. Having a more circular system will surely benefit both the economy and the environment, and therefore must be a European priority in terms of development for the future. Pursuing this strategy on plastics may represent the first step for Europe to become a leader in the circular economy. ■

Sources:
Plastics Europe
European Commission
Ellen MacArthur
Foundation



DEALING WITH THE PEAK OF AN ICEBERG BRAZIL'S ECONOMIC CHALLENGES

Covered by Davi Ferruccio Ferreira

The political environment in Brazil remains tense and uncertain. The year 2018 is already marked by discussions about who will enter office as the first elected president after the impeachment of former president, Dilma Roussef, in 2016. Only when the political turmoil ends, Brazilians can expect a clear road ahead for consistent economic recovery.

The current president Michel Temer has only 6% of public opinion approval, according to Datafolha's poll, owing his low popularity to many reasons including denunciations against him for passive corruption, justice obstruction and criminal organization.

The approval of unpopular economic reforms such as changes in labor market rules and fiscal adjustment policies, to lift the economy out of a deep recession that started in 2015, when GDP fell by 3.8%, did not help its overall popularity either. Nonetheless, one should not expect that the economic reforms will bring immediate results. This is one of the reasons why a credible new leadership is needed in the general elections this October.

One of the most relevant law changes approved by Temer's government so far was the constitutional amendment 95 ratified by the Congress in 2016 which dictates, in a nutshell, that the federal government's annual primary expenditure is not allowed to increase in real terms for the next 20 years. Therefore, the official inflation index of the previous year is used to adjust the ceiling of public expenditures of the following year. The goal is not only to smooth and eventually stabilize the increasingly higher debt-to-GDP ratio, while revenues increase as a result of the economy recovery, but also to show the government's commitment to reach a sustainable equilibrium in public finances.

One of the critical factors for this goal to be sustainable is the approval of the pension reform, which is still discussed in Congress, due to political resistances that sparked after denunciations against Temer were made public last year. The social security spending will account for around 38.6% of the total fiscal and social security budget in 2018, according to the Annual Budget Bill (PLOA) 2018. A study from the Brazilian Institute of Geography and Statistics (IBGE) in 2013 shows that the share of people older than 65 years in Brazil will rise from 7.4% in 2013 to 18.5% in 2042 and eventually reach one fourth of the total population by 2060. Moreover, the birth rate is declining and the share of children between 0 and 14 years old will decrease from 24.1% in 2013 to 15.2% in 2042. Demographic changes will put pressure on the pension system and thus it might also put in check the amendment 95. If no pension reform is implemented, this would bring severe economic and social consequences as there will be less budget available for other important public primary expenditures.

Following the delay in the pension reform approval and due to political uncertainties, Standard and Poor's downgraded Brazil's sovereign credit rating again in January to "BB-", which is a non-investment grade. As long as the sustainability of public finances is not secured, one might not expect any improvements. In fact, this reality seems unlikely to change in the short term since Temer's government is signaling that the pension reform may not be voted this year, because of the lack of support in Congress to reach the necessary 308 votes from deputies for the amendment approval.

A new source of political tension also became apparent in the first month of 2018 when Luís Inácio Lula da Silva - president in the period between 2002 and 2010 - was condemned by the TRF-4, the federal regional court, for passive



corruption and money laundry. Lula was leading the polls for the presidential election in October 2017 and many left-wing parties were supporting his candidature. However, his participation in the next elections is not certain anymore because the Superior Electoral Court (TSE) would have to allow it based on the “Ficha Limpa” law before the elections. Therefore, assuming the office at Palácio do Planalto is a very remote scenario, depending also on an unlikely major reversal of the condemnation by the Supreme Court. So far, it is not very clear what consequences that situation will bring for the next political cycle that starts in 2019 and whether the new president elected will be able to find a common ground for both left-wing and right-wing parties if Lula goes to prison. But one should certainly take into account the political importance of a range between 34% and 37% of the electorate that is supporting Lula in the first round, according to recent Datafolha polls.

Indeed, there are some positive signs for economic recovery, but political instability might undermine any gains in Brazil so far. Inflation has already fallen from 10.67% in 2015 to 2.95% in 2017. According to the last meeting report, the Central Bank of Brazil also sees more consistency in the economy recovery, with inflation closer to its target, and the basic nominal interest rate (SELIC) is now set in 6.75% accumulated in one year compared to 12.9% in the beginning of 2017. The unemployment

rate of 12.7% is still high, reflecting the persistent idleness of industrial activity.

The Brazilian economy needs a stable political environment to recover in a sustainable fashion. The fiscal stabilization policies will not be effective if a new leadership defined in October decides to revert the gains attained so far, and the pension reform approval is essential in the short term. Some economists such as Marcos Lisboa, president from INSPER, clearly stress the importance of fostering the discussions around the microeconomic agenda, such as trade openness, reduction of bureaucracy and increase in competitiveness in business, tax system reform among others, to generate productivity growth, to accelerate economic recovery and employment. One of the main challenges will be to separate the necessary economic reforms from a government with very low credibility. Another challenge will be to raise public awareness and to increase support for necessary economic reforms in a very polarized society. And that is just dealing with the peak of the economic iceberg. ■

Sources:
Datafolha

Brazilian Government

IBGE

Central Bank of Brazil



VIETNAM

WHERE SOCIALISM AND MARKET ECONOMY COEXIST

Covered by Paul-Leonard Glöckner

Vietnam has enormous growth potential. With a population of more than 90 million people, it represents a huge future market. But it is also a country of contradictions: state socialism and market economy, control and freedom, repression and prosperity. These contradictions have become a reality for most Vietnamese, much like its big neighbour China.

THE SOCIALIST-ORIENTED MARKET ECONOMY

The Communist Party of Vietnam (CPV) officially calls its system a “socialist-oriented market economy”. It continues to give the state a major role, but it also wants to capitalize on the productive forces of capitalism. At least officially, the CPV’s goal is the equal distribution of prosperity and benefits from economic development across the entire population. In fact, economic openness has helped the country enormously. Before the start of the reforms in the mid-80s, the average income of the Vietnamese was around 90 Euros per year. Today, the yearly average income has reached 1,900 Euros. The World Bank refers to the country as success story of economic development.

VIETNAM WANTS TO REDUCE DEPENDENCE ON CHINA

On the one hand, one main driver of the economic development are Vietnam’s close ties with the Chinese economy. There are numerous Chinese companies producing in Vietnam. On the other hand, the close economic ties have strengthened the Chinese political influence in Vietnam too. The Vietnamese government has therefore tried to reduce its dependency on China and seeks to further expand its economic ties with the US, its former war opponent, and with the European Union.

The leadership increasingly relies on the invisible hand of the market. Thereby, the CPV hopes to conclude free trade agreements with countries such as Japan, Australia and Chile. After all, Vietnam wants





to expand its booming export sector and, in doing so, submits even more strongly to the rules of global capitalism. The recent protectionism of the United States has come as a threat and may push Vietnam back into a higher dependency on China.

LOW LABOUR COSTS ATTRACT FOREIGN INVESTMENT

Above all, companies value Vietnam's low wages, which are now around two thirds lower than the labour cost at the coastal regions of China. While companies started to produce increasingly more complex and even self-designed high-technology goods in China, the factories in Vietnam still produce simple goods. For example, Microsoft recently closed two smartphone factories in China to produce in Vietnam. The textile company Lever Style, which produces for brands such as Hugo Boss, is also increasingly sewing in the country.

The strong international interest in Vietnam is expressed, among other things, in the booming stock market. The VN 30 index, which increased almost tenfold within five years, has gained 48% over the past calendar year. According to the Dragon Capital asset management group, the two exchanges in Ho Chi Minh City and Hanoi

recorded record foreign net inflows of \$ 1.15 billion in 2017.

The boom is underlined by years of strong economic performance. After a 6.2% growth rate in the previous year, the GDP of the \$ 210 billion economy increased even stronger by 6.8% in 2017. Vietnam is one of the fastest growing countries in Southeast Asia. The freezing of the TPP negotiations, which Vietnam had hoped to gain in terms of better access to the US market, has caused disillusionment. Nevertheless, the forecasts for 2018 are assuming similar momentum.

OUTLOOK - A BUMPY ROAD AHEAD?

Despite the positive economic forecasts, companies are struggling to effectively fight corruption and are not always able to rely on existing law. The leadership unleashed the economy to let markets work. However, the CPV barely grants political freedom to its citizens. There is no true public debate or even demonstration about inequality or negative externalities of economic growth. This looks like an demanding, sometimes painful balancing act. How long the Vietnamese society can balance the apparent contradictions remains to be seen. ■

TANZANIA

IS THIS PARADISE OUT OF THE FRYING PAN?

Covered by Rodrigo Camacho



When a President is both unchecked and unbalanced, a political U-turn is easy and inevitable. In recent years, Tanzania has suffered numerous setbacks in what concerns human rights and democracy.

Is Tanzania newsworthy? “No”, many would promptly say in Western countries. One of the reasons for this line of thought is Tanzania’s lack of economic power. After all, Tanzania, with a GDP per capita of USD 879.19 USD, ranks second in East Africa. The current leader – Kenya – has a GDP per capita almost twice as big. Nevertheless, with 56 million inhabitants, and strong mining, banking and tourism sectors, Tanzania is a regional rising star.

Another reason would be the lack of strong cultural ties between Tanzania and its former colonizers (and remaining western countries, for that matter). On the one hand, Germany was often seen as an oppressor. Germany let no stone unturned when it came to exploring Tanganyika’s (mainland Tanzania) natural resources or even its inhabitants. On the other hand, Great Britain is often seen as a benevolent colonizer, despite the fact, that it occupied Tanzania from 1920 until 1961. Thus, Tanzania’s importance for the UK

remains average at best. Not to mention the large number of colonies which the UK once possessed, which banalizes ties with the metropolis. For example, see Portugal which, at its heyday, possessed no more than a dozen of colonial territories. Emotional ties are, for obvious reasons, stronger between Portugal and Angola, Brazil or Timor. Moreover, there is a common perception that Tanzania does not excel in any subject. Nevertheless, this last one is certainly not true.

Since its creation in 1963, Tanzania has been a beacon of peace and stability. Although these factors do not necessarily imply economic development, they are rare in Sub-Saharan Africa. Furthermore, they are *condicio sine qua non* in order to reach a high degree of development. Moreover, Tanzania is seen as Africa’s champion when it comes to fighting inequality. Although it only ranks 24th out of 45 countries in the Sub-Saharan world regarding its Gini Coefficient, some argue this index does not capture reality when it comes to underdeveloped countries. As a matter of fact, Tanzania was announced, by the World Economic Forum, as Africa’s top inclusive society in 2017. As the Tanzanian Daily news puts it, “inclusive

growth is economic growth that creates opportunity for all segments of the population and distributes the dividends of increased prosperity, both in monetary and non-monetary terms, fairly across society." Topping WEF's Inclusive Development Index (IDI) was seen as a national milestone and a victory for the governmental cabinet.

But there is more to it. Tanzania has been a stable democracy since – in a peaceful fashion – ending their socialist regime. With roughly 62% of the population being Christian, and 35% Muslim, this presidential republic is often used as a benchmark for other African countries. Mining their natural resources sustains regular GDP growth. It is even seen as the capital of microcredit, where the local population can ask for short-term loans from their mobile phone operator. The amount is usually due in 1 or 2 months.

Nevertheless, clouds gather over this African paradise's sky. Shortly after being elected in 2015, John Magufuli's – Tanzania's president – has been scaring foreign direct investment. Said attitude is meant to channel profits towards his ambitious plan to further industrialize this country. The most prominent victim of this campaign is certainly Acacia, the country's major mining company. Located in the UK, the enterprise is being accused of owing \$190 billion in taxes, something like "180 times its revenue last year". Elected on a ticket which also aimed at ending corruption, Magufuli is often portrayed as exceeding his constitutional-given powers, adopting an autocratic stance. A clear sign was the shooting down of Chadema's (opposition coalition) whip. Although

MAGUFULI'S - TANZANIA'S PRESIDENT - HAS BEEN SCARING FOREIGN DIRECT INVESTMENT.

the author is yet to be found, authorities are not making an effort to push for this investigation.

And if ends may justify means, it does not seem to be the case. A few years ago, a devastating report on Ivory smuggling was published. A report which was an embarrassment – to say the least – for the governmental cabinet at the time. It stated that said smuggling went all the way to the stop, and within those who capitalized the most were prominent figures of the CCM (ruling party). And after all these years, the current President is yet to tackle this issue.

With numerous zig zags on foreign policy, strong structural economic problems⁹, and gruesome episodes – both in Tanganyika and in Zanzibar - which still linger, Tanzania stubbornly allows itself to remain on a crossroads. A crossroads on whether to join the pack of those whose wish is to leave the "poverty zone", and those which are, for the near future, doomed to stay there.

A good example of basic rights curbing – in this case, freedom of press and speech – is visible by looking at "The Daily News" headline regarding IMF's visit past January to Tanzania. When compared to the neighbouring "The East African" one, the differences are clear. Government interference in newspapers is bound to increase, and the International Community must take watch.

Not everything has been negative about this East African Paradise during the past few years. The already mentioned championing of equality, the boom in tourism, or even the investments made in the energy industry (in a country which is unable to provide electricity to all its regions at the same time), are clear signs that not everything is bad. Whether President Magufuli's war on corruption and lack of industrialization are successful or not, will determine what's next for Tanzania. ■

Sources:
Daily News Tanzania

The East African Kenya

Bloomberg
The Economist



CRYPTOCURRENCIES

HERE TO STAY, OR A PASSING TREND?

Turmoil caused by Gonçalo Lebre de Freitas

In a few words, cryptocurrencies are digital currencies that secure transactions using cryptography. Bitcoin was revolutionary in the sense that it surged as the first completely decentralized cryptocurrency, not relying on any central bank. Instead it uses blockchain, a technology that can record transactions between two parties in a verifiable and secure way. This same technology controls the supply of bitcoin, which is limited by design.

Nowadays Bitcoin is not as dominant as it used to be and represents only about 40% of the total market capitalization of cryptocurrencies, as new coins are becoming increasingly more popular. Altcoins, as the name suggests, are alternative cryptocurrencies that share some features with bitcoin, while innovating in some other regards: Ripple, the 3rd highest capped cryptocurrency, promises to revolutionize the financial system with faster and cheaper global money transfers; while Monero, the 10th highest capped cryptocurrency, allows for privacy transactions for those who seek an untraceable activity.

The cryptocurrency market is in a highly volatile and speculative state. Since the beginning of this year, its total market value has already fallen more than 50% from its all-time high, after a massive appreciation of more than 1000% during the last year. Nobody knows exactly how to value these assets that are not anchored to anything measurable, so speculation is only natural to come in play. The public perceived value has a tremendous impact on this market that is driven by behavioral factors like fear of missing out (FOMO) and fear, uncertainty and doubt (FUD). As such, news from the media enhance market perceptions and may lead to considerable rallies or sell-offs. However, such instability seems unsustainable and it can be useful to think about the possible future developments of this market and their implications for the broader economy.

THE PESSIMISTIC SCENARIO: AN IMMEDIATE COLLAPSE

The dark scenario for all the crypto-enthusiasts is the one in which all cryptocurrencies crash with a tremendous magnitude, having their prices approaching near zero values. Although brutal, this scenario does not look that unlikely considering the existing threats.

Harsh regulation imposed by a major player like the U.S. could have a devastating impact on the market and eventually lead to its end: a ban to trade on the major exchanges and to use cryptocurrencies for commercial activities could be fatal to the market. And even without government intervention, the same could happen if cryptocurrencies continue to experience major attacks from hackers. Even though blockchain has never been hacked, the virtual wallets where cryptocurrencies are stored can indeed be hacked if they are not protected correctly. Recently, more than \$500 million-worth of the virtual currency NEM were stolen from customers of a Japanese exchange called Coincheck. While the exchange continues operations and promised to repay all the stolen money, a similar but more severe theft could lead to the bankruptcy and closure of one or more exchanges. Ultimately, this could lead to a loss of confidence and trigger a sell-off that could break down the entire market.

The importance of trust is in the center of the discussion about Tether, a cryptocurrency designed to create stability in the cryptocurrency market by being pegged to something with real world value, the U.S dollar. However, people are worried that Tether is not backed by U.S dollars as announced to be, and that it is used to buy bitcoin and artificially drive up its price. To increase concerns, an anonymous analyst suggested that if it were found out to be a scam, Tether could have a massive impact on the cryptocurrency market. This suspicion alone was enough to enhance the early 2018 cryptocurrency market crash,



showing how uncertain and unstable the market can be.

On the bright side, none of these situations are likely to have a major impact on the economy. Despite of its recent growth, the near \$500 thousand million total market capitalization of the cryptocurrencies is still very small when compared with, for instance, the \$23 billion dollars of the S&P500. And most importantly, the majority of big banks and investments firms have approached cryptocurrencies with caution, meaning that a strong contagion is not expected. Many compare cryptocurrencies to the tulips mania, which had little impact on the Dutch economy when the bubble burst.

MAINTAINING STATUS QUO: JUST ANOTHER BUMP

Even though this pessimist scenario is possible, the exact same risks could have a less extreme impact and cryptocurrencies may overcome the difficulties that may come ahead. Up until today, the cryptocurrency market has had numerous sell-offs but somehow managed to rebound each time. In 2014, a bitcoin exchange called Mt. Gox announced its bankruptcy as over 850 thousand bitcoins from customers

were stolen. At the time, Mt. Gox was the world's leading bitcoin exchange and its shut-down led to a decline in the price of bitcoin from an all-time high of \$1149 to a low of \$366, according to coinmarketcap. Still, bitcoin managed to recover and almost four years later cryptocurrencies are more popular than ever.

THE OPTIMISTIC SCENARIO: MASS ADOPTION

If indeed cryptocurrencies are here to stay, one should expect they will begin being utilized in a large scale. Enthusiasts believe that more than changing the modern payments system, the technology behind it can be useful in a wide variety of applications.

Personally, I am skeptical of cryptocurrencies achieving mass adoption as a currency, in the way they are currently designed. The principle of not relying on a central bank, although attractive to some, means that there is not an authority to regulate the money supply which too easily results in prices becoming excessively volatile. And since currencies require price stability to be used as a trusted medium of exchange, by its nature, mass adoption seems impossible. In this regard, the so much feared regulation of

cryptocurrencies could end up being useful for its insertion in the economy.

Nonetheless, blockchain technology can be adapted and prosper in numerous other applications. With it, it is possible to make transparent and secure deals without relying on a third party, meaning that it is conceivable to achieve more credible transactions while also saving by eliminating the middle man. The banking industry is likely to be the first to make use of this with faster and less expensive money transfer, but other sectors might follow: theoretically, this concept could be introduced in politics, for instance, and help preventing voter fraud with an unhackable electronic vote-counting system.

Altogether, the technology behind cryptocurrencies could bring innovation to many sectors and lead to a more efficient and frictionless economy. Still, the future of the cryptocurrencies market is very debated: while some believe they are investing in promising entrepreneurial projects, others call it a bubble and argue that it will collapse, even if blockchain prevails in different forms. ■

ELINOR OSTROM

Highlighted by Robin Bohn

In a list dominated by men, it took a long 40 years and more than 60 laureates for a woman to enter the circle of Nobel Memorial Prize in Economic Sciences winners. Elinor Ostrom was not only the first, but to this day the only female Nobel Prize laureate. While some received her nomination with surprise, it was the vindicated recognition of a decade-long contribution to the Economic sciences - against odds.

Her mother did not want her to attend college in the first place. Being discouraged from studying trigonometry at high school, which had restricted access for girls, Ostrom was rejected to pursue a Ph.D. in Economics and instead followed a graduate programme in Political Science at UC Los Angeles from where she transferred to Indiana University. Much to our fortunate, Elinor Ostrom still pursued her interests in Economics at the intersection of sociology and made outstanding

contributions to our understanding of the management of public goods.

At Indiana University, where she would teach and research for the rest of their career, she founded the Workshop in Political Theory and Policy Analysis together with her husband Vincent Ostrom. The Workshop, which now carries their name in honours, would lay the foundation for her work by making attempts to understand the complex governance of common resources.

During her life, she always encouraged and promoted an interdisciplinary approach to science. Starting as a political scientist, her contribution to economics helped to overcome niche thinking and allowed to “address the important issues”. She put special consideration to the “bridging between political science and economics [with] now the work in new institutional economics”. Elinor Ostrom’s work reframed the tragedy of the commons into a story of rights, rules, mechanism, and sustainability. Ostrom’s work on public choice theory was so fundamental that her contributions are considered a distinct school. Ostrom was also fundamentally different from many economists as she sought to understand economics pursuing a bottom-down approach. Instead of setting up theoretical models that work well on paper, but fail the reality test, Ostrom was convinced that economist could learn from the real world. In her work, Ostrom studied numerous existing frameworks of how a population organizes itself to govern common resources around the globe including Switzerland, Spain and the Philippines. The credo of her analysis was as simple as pragmatic and is now known as “Ostrom’s Law”: “A resource arrangement that works in practice can work in theory.”

Elinor Ostrom’s realistic approach to



understanding the usage of common goods leaves a legacy on how we think about property and property rights, an issue that has become more important over time, not less, and relevant on small and large scale. Thinking of pollution of a local river, deforestation of public land, fishery in the North Sea, climate change: how do we handle the atmosphere, and how the oceans? Featuring some of these issues in newspapers on a daily basis, it is easy to realize the significance of her work.

Her most recognized work was published in 1990 and has since been a source of knowledge and inspiration to students of economics, sociology, and ecology: "Governing the Commons", in which she explored how economic theory and frameworks could best be used to achieve social organization. Her analyses were in line with what came to be known as Ostrom's law: Ostrom described and elaborated on the existing. Observing what functioning system of common resource governance had in common, Ostrom was able to establish 8 design principles.

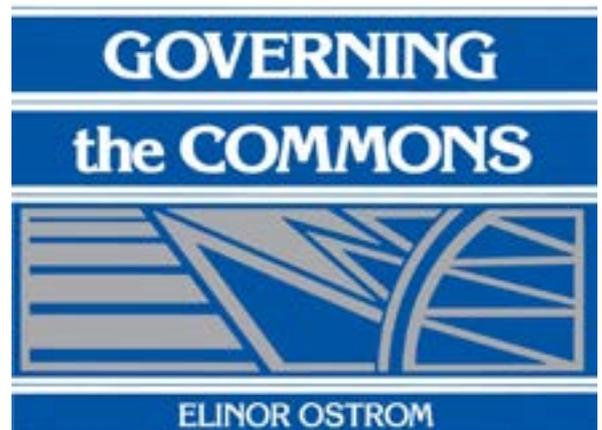
1. Clearly defined boundaries
2. Appropriation and provision of common resources are adapted to local conditions
3. Collective-choice arrangements
4. Effective monitoring by accountable monitors
5. A set of graduated sanctions for violations
6. Conflict-resolution mechanisms
7. Minimal recognition of the right to organize by higher authorities
8. For large common pool resources: a system of nested enterprises in multiple layers.

True to her bottom-up approach, these principles have been changed, adapted and expanded to accommodate new findings and observation, but not changed fundamentally. There are two lessons to be taken from Ostrom's work, for young economists as well as broader society:

First, Economics is not only done on paper. The practical world around us can help to shape economic theory. Ostrom herself refined her principles several times, an

inspiration to students to always challenge existing thinking with new evidence.

Second, management of common pool resources is possible. How to use the oceans and the atmospheres, rivers, and fishing grounds, such that the common resources do not deplete but exist for future generations is an issue that can be solved. Designing mechanisms that achieve this goal of sustainable management is up to us as a society. ■



The Evolution of Institutions
for Collective Action



Political Economy
of Institutions and Decisions

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