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Moscow to be a New Offshore Centre of the Yuan

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Abstract

In the paper, the author has formulated and proven the hypothesis according to which among the international financial centres of the BRICS Moscow is the most promising one in terms of becoming a new yuan's offshore centre since there is a working niche for trades in currency pair rouble/yuan. And also, there are commercial banks in Moscow that take deposits in yuan both from individuals and legal entities. According to the conducted research, the author demonstrated the opportunities and optimal ways to use an advantage which presupposes the creation of an investor-friendly environment for Brazil, India and South Africa to trade in currency pair rouble/yuan at the Moscow Exchange. It can be possible in case of direct settlements in yuan in case of direct transactions between the mentioned countries and China both when exporting and importing.

Keywords: the BRICS; rouble internationalisation; yuan's offshore centre in Moscow; the international monetary system; Eurasian Economic Union; Eurasian monetary integration; yuan currency vehicles; yuan contractual exchange rates

JEL Classification: F37

...And so there will be a city-garden here...

Vladimir Mayakovsky

The major conclusions of this article come out of the hypothesis that direct settlements between Brazil, Russia, India and South Africa, on the one hand, and China on the other will lead to the creation of a new offshore centre of the yuan in Moscow by means of circulating currency vehicles traded at the Moscow Exchange. The author hereby proves on the basis of calculating the values of Brazilian, Russian, Indian and South African exports to China and imports from China that if more favourable conditions to buy and sell the yuan at the Moscow Exchange are created in contrast to the terms offered by the central banks, the authorized commercial banks and the Chinese Foreign Exchange Trading System (CFETS) as well as in comparison with the terms of trading in yuans by means of swap agreements between the BRICS' central banks, then the non-Chinese BRICS exporters and importers

will be more active in purchasing the yuan-denominated currency vehicles at the Moscow Exchange to transact with Chinese counterparts, so that not only the yuan will gradually become a more internationalised currency but also the rouble, and Moscow will become a new yuan's offshore centre and later an international financial centre.

One of the prerequisites of organising direct settlements between the BRICS in national currencies in the increasing share of the BRICS (without Russia) in the Russian foreign trade. As can be seen in *Table 1* this is revealed most notably in the bilateral foreign trade between Russia and China. For example, in 2015 China accounted for 7.7 per cent of Russian exports and 19.3 per cent of its imports. The dynamics of Russian and Chinese trade is quite positive.

The comparative analysis of the rest of the world and the BRICS in the Russian foreign trade shows the trend which indicates that the share of the former in the Russian exports and imports

gradually decreases, whereas the share of the later continually increases (*Table 2*).

For the BRICS (without Russia) Russia remains a foreign trade partner of less significance compared to the other countries. Russia has only a 2 per cent share in its exports and imports (*Table 3*).

To a certain extent, the mechanism described here operates like a financial network which is formed by the international swap agreements as well as financial funds such as the BRICS Development Bank. However, the swap agreements which, for instance, China concludes with various countries of the world require the exchange of liquid flows between them in case of financial difficulties, force-major conditions, a necessity to service the current-account deficits, and finance the budget deficits or stabilise the national currency's exchange rate. Swap agreements are usually concluded for vast amounts of money, and therefore they exclude the possibility of small, medium and perhaps some big enterprises as well as participating in them. Among commercial enterprises, such a contract can be concluded only by the multinationals with annual total revenue exceeding 100 billion dollars. Russian multinationals of the sort include only Gazprom and Lukoil. As a whole, the intergovernmental swap agreements are not really applicable for conducting foreign trade deals, especially between private corporations.

As can be seen in the conditions of concluding the swap agreements to facilitate the foreign trade between Brazil, Russia, India and South Africa, on the one hand, and China on the other, other instruments are needed which could have extended the opportunities of these countries' business entities to use the national currencies (Schindler, 2009). In the world practice, such opportunities are usually gained through operating foreign exchange markets and offshore centres where besides fully convertible hard currencies the BRICS' currencies can be traded (Kaufman, 2001).

Among the emerging international financial centres of the BRICS such as Sao Paulo, Mumbai or Johannesburg, the most prospective one in terms of a future yuan's offshore centre is Moscow. It is due to the following reasons:

1) Moscow Exchange is the only foreign exchange market among the BRICS where there are trades done in currency pair rouble/yuan;

2) The trade turnover between Russia and China is one of the largest in volume compared to bilateral exports and imports balance of the rest of the BRICS;

3) Russia and China have a common border, cooperate in customs control and create the mechanisms of cross-border flows of goods and services and financial capital;

4) Among the BRICS Russia and China have long-term expertise in organising direct settlements in rouble and yuan.

Since China is a more important trading partner for Russia, Brazil, India and South Africa than the latter for the former, it is quite sensible to conduct the settlements between them in yuan under the conditions of keeping monetary sovereignty and their currencies. Using its privileged positions, the Moscow Exchange needs to create the environment and prerequisites of buying and selling yuan by Brazil, India and South Africa (Yu, 2014). Buying and selling yuan at the Moscow Exchange can be done by the following means:

1) The most beneficial alternative for Russia in making such trade is buying roubles for dollars and yuan for roubles. The advantage of this scheme is that by trading yuan at the Moscow Exchange through currency pair rouble/yuan, there will be additional liquid assets in hard currency (the dollar) coming into Russia.

2) A second alternative would be exchanging reals, rupees and rands for roubles at the Bank of Russia's exchange rate and purchasing yuan for the acquired roubles at the Moscow Exchange. In this case, there will be an accumulation of international reserves in reals, rupees and rands in Russia. The effect of such transactions for the Russian economy is going to be the diversification of foreign exchange reserves and an opportunity for the Russian importers to settle the deals of product delivery from Brazil, India and South Africa in the national currencies.

Foreign direct trade deal settlements between China, on the one hand, and Brazil, Russia, India and South Africa, on the other, can be done as follows:

Through central bank and commercial banks intermediation: this way is costly because in case of direct settlements when importers buy Chinese products they need to purchase the foreign currency (dollars) for the national currencies (reals, roubles, rupees and rands), then they

should deposit the acquired dollars on special transaction accounts of the Chinese authorised banks, exchange them for yuan, and only after that they may settle with the deliverers of the Chinese products (Goldberg, Cédric, 2008). The benefits of such an exchange will mostly fall on the central banks and authorised commercial banks. For the importers of the BRICS (without China), this will result in high transaction costs, which will prevent the mutual trade development.

Through the intermediation of a foreign exchange market in case of its having a respective niche to trade in yuans: in this particular situation yuans could be directly purchased for the national currencies (reals, roubles, rupees and rands), and despite the fact that an exchange rate of these currencies to yuan in the foreign exchange market may sometimes seem less beneficial in comparison to the official exchange rates of those currencies at the national central banks (i.e. to purchase one yuan in the foreign exchange market you would usually require more reals, roubles, rupees and rands than for the same operation at central bank's rates), the costs of transacting through the central bank usually exceed the benefits. This happens due to the fact that to purchase the yuan at the central bank's exchange rate is impossible after all, since at first Brazilian, Russian, Indian and South African importers of Chinese products will have to open a special account with one of the authorised commercial banks which are allowed by the Chinese government to take deposits in yuan, and only then they will eventually be able to buy yuan at an exchange rate of those banks (Avdokušin, Kovalenko, 2012). On the whole, it means that the importers of Chinese products get no profit when purchasing yuan at the central bank and commercial banks.

Through the intermediation of the currency offshore centres. A yuan offshore centre usually coincides geographically with an international financial centre where there are the necessary conditions to deal in that currency. The trading procedure at the offshore centre and that at the foreign exchange are distinct from each other, first of all, because at the latter there must be a two currencies' pair (e.g. rouble/yuan) in which the trading is done within one or several lots. In contrast to the foreign exchange market, the currency pair at an offshore centre is not a ne-

cessity, and a person has an opportunity to buy and sell the currency in exchange for any other convertible one with no limits at all, which are usually present when dealing in currency pairs. Consequently, for Moscow to become a yuan offshore centre, it needs to change the trading procedures from simple currency pair deals over to deals with any convertible currency on choice (Binder, 2013). Also, in such an offshore centre there must be a sufficient number of commercial banks which take deposits in yuan and a specially advanced infrastructure constituted of institutions such as insurance companies, consulting agencies, auditing firms, accounting offices, legal advisories, hedge funds, etc. which provide specialised services to assist in yuan trading or opening yuan deposits (Butorina, 2011).

Taking this into consideration, the prerequisites of creating an offshore centre of yuan in Moscow are as follows:

- 1) There is a niche to trade in currency pair rouble/yuan;
- 2) There is an existing portfolio of foreign exchange vehicles to trade in currency pair rouble/yuan;
- 3) There are some commercial banks taking deposits in yuan from both the individuals and legal entities, e.g. VTB Bank, Eastern Express, etc.

The existing niche to trade in the currency pair rouble/yuan in the Chinese Foreign Exchange Trading System in Shanghai, which creates the conditions for wider international use of the rouble in cross-border deals and which will affect this currency pair trading at the Moscow Exchange. Trading in the currency pair yuan/rouble in Shanghai may also influence on the same currency pair trading in Moscow in case of Chinese importers deciding to purchase Russian products for roubles. It will certainly lead to increasing demand for roubles, and the foreign exchange market in Shanghai will need extra liquid assets expressed in roubles. Increasing demand for roubles will become a factor helping strengthen its exchange rate towards the leading currencies of the world (Lane, Milesi-Ferretti, 2011). In contrast, a more expensive rouble would be a factor which may decrease the competitiveness of Russian exports to China. Then the Bank of Russia will have to inject additional liquidity into the interbank market which may result in rouble's exchange rates toward yuan at the

Moscow Exchange, which would consequently cause changes in the value of the contracts to buy and sell yuan. However, at the same time, a more expensive rouble at the Moscow Exchange is good for the Russian importers of the Chinese products because it will take fewer roubles to buy a yuan.

To prove the hypothesis that in case of covering Chinese imports to Brazil, Russia, India and South Africa and the latter's exports back to China in yuan with the Moscow Exchange's intermediation, Moscow may become a new yuan offshore centre, it is necessary to conduct the analysis of the mutual trade directions between these trade partners taking in account the possibility of using currency vehicles to buy and sell yuan in the foreign exchange markets in Moscow and Shanghai (Kasekende, Brixova, Ndikumana, 2010). These trade directions depict flows of goods and services from one BRICS nation to the other at a value expressed in dollars and at a value converted into the national currencies to compare the costs and benefits connected with the transition to direct settlements (Kadayan, 2014).

The initial data to calculate the gap between the imports/exports value expressed at different yuan's exchange rates show that the rouble's exchange rate fluctuations have an enormous significance in direct settlements. For example, in 2012 the rouble to yuan exchange rate amounted to more than 20 roubles a yuan in Bank of China (a bank authorised by the People's Bank of China), whereas it cost approximately 5 roubles a yuan in the Bank of Russia. One of the reasons of such an exchange rate gap was the willingness of China's monetary authorities to concentrate the trading in currency pair rouble/yuan in the foreign exchange market in Shanghai. There there were more convenient terms for such deals as well as it wanted to limit speculative attacks in deals with this currency pair and increase the share of rouble and yuan's use in the mutual cross-border trade deals. By 2015 the rouble to yuan exchange rates narrowed down to about 11 roubles a yuan at the Bank of China and about 9 roubles a yuan at the Bank of Russia. The gap narrowed due to the liberalisation of trading in roubles in China and because of a series of rouble's devaluations in Russia in the period of the end of 2014 and early 2016. So, together with the rouble depreciating

against the dollar, the former devalued against the yuan (Jordà, Schularick, Taylor, 2011).

Besides official exchange rates of yuan and rouble, there are contractual exchange rates which appear in currency vehicles at the Moscow Exchange and in the Chinese Foreign Exchange Trading System. These contractual rates are more beneficial to transact in foreign trade. These exchange rates are different from each other. However, the gaps between them are not so large as in the case of the official exchange rates of the nations' central banks discussed above.

According to actual exports and imports data as well as yuan/rouble currency pair trading statistics, among all observations of rouble to yuan exchange rates, the most convenient to use, at least for Russian exporters to China, was swap currency vehicle CNY_TODTOM. It is so because in this contract the rouble was relatively cheaper to buy, and the Russian products would have been more price-competitive if this contract had been used to purchase yuans to cover the bilateral trade deals in the first place. In the reverse situation, for Russia to import from China is more convenient and profitable in the yuan purchased using the currency vehicle in which the rouble is relatively more expensive than the yuan. According to the data collected by the author this would have been currency vehicle CNYRUB_TOD. Choosing this currency vehicle will mean that purchasing the same amount of imported products from China will require fewer roubles. For example, if in 2014 Russia and China transacted wholly in yuan, then buying Chinese goods using currency vehicle CNYRUB_TOD Russian importers would have to pay 240.42bn yuan, whereas at Bank of Russia exchange rate that would be 241.86bn. The difference between these two figures (1.44bn yuan) reflects the amount of money which the Russian importers would not have paid when buying Chinese products in yuan by means of that currency vehicle. However, on the other hand, the Russian exporters would have received 1bn yuan less if they had traded directly with China in yuan purchased through currency vehicle CNYRUB_TOD in 2014 (Table 4).

If the Russian exporters to China used a spot currency vehicle in the Chinese Foreign Exchange Trading System, the exports value would have amounted to 173.9bn yuan, which would have also meant losses to the sum of 1bn yuan. It is

why the uncertainty which arises when choosing an optimal contract to buy yuan needs a deeper analysis.

To do this, we propose a correlation analysis of actual data beginning in April 2013 showing the exports/imports operations between the BRICS (without China) and China. To reduce the approximation mistake in the gap between the exports/imports value in yuan at different exchange rates we propose the following conditions:

1) To eliminate external factors which may influence the currencies' exchange rates the author used the method of auto-regression when making a prognosis;

2) Because of a significant devaluation and volatility of the Russian rouble reliable prospective data cannot be obtained because the trend line being applied to the retrospective data has a considerable angle. To this end, the future exchange rate of the rouble to the yuan should be calculated at various stages (Wade, 2008);

3) The future data of the contractual exchange rates of the yuan to the rouble at the Moscow Exchange are adequately verified using adding the yuan-to-rouble exchange rates obtained using the retrospective statistics of the Bank of Russia to their average deviation from the respective contractual exchange rates supplied by the Moscow Exchange;

4) The exports/imports dollar value is forecast using drawing the trend lines to the retrospective data of the exports/imports dollar value taking into account the average square deviation.

On the basis of the correlation analysis of the actual and future data we prove that the influence-factor of the foreign trade volume of the BRICS countries with China depending on the one or the other exchange rate is less significant than the influence-factor of the trading volume in currency pair rouble/yuan at the Moscow and Chinese Exchange and the foreign trade volume of the BRICS with China. For example, the calculations show that in the period of Q3 2013 and Q4 2020 the correlation between the latter is very tight (ranging from 0.7 to 1.0) in 20 cases of the 31 observations. In the case of imports and exports of Russia and China, the majority of high correlation figures (21 and 17, respectively) occurs when trading in yuan purchased using currency vehicle CNYRUB_TOM.

The correlation of indicators in question is also proved graphically. For example, it is seen that the dynamics of the actual and prospective data of imports and exports between Russia and China as measured at the rouble-to-yuan exchange rate appearing in spot currency vehicle CNYRUB_TOD and the trading dynamics of this instrument at the Moscow Exchange in the period of 2013–2020 touches the contours and extreme points and coincide in the trend direction, which says of high correlation.

It is worth mentioning that of the eight cases of mutual trade directions within the BRICS only in three of them it is recommended to purchase yuans using spot currency vehicles at the Moscow Exchange (i.e. in case of Russian and Brazilian exports to China and Russian imports from China), whereas in the four of the cases it is better to do it through swap currency vehicles (i.e. Chinese imports to India and South Africa and Indian and South African exports to China). And only in one of the cases (i.e. Brazilian imports from China), it is recommended to use the spot currency vehicle offered by the Chinese Foreign Exchange Trading System (Griesgraber, 2009). In this case, Brazil has more benefits in purchasing yuan, and the high correlation of the exports dynamics and the trading volume of yuan/rouble currency pair is reached there in 20 of the 31 observations. The dominance of swap currency vehicles when purchasing yuan to trade with Brazil, India and South Africa with China can be explained by the fact that they are situated far more distant than Russia, so hedging foreign exchange risks should be done by the former via the longer term contracts (Burlačkov, 2012).

On the whole, the correlation analysis shows that for the BRICS (without China) as trade partners in the foreign trade there are more beneficial conditions to purchase the yuan at the Moscow Exchange than in the Chinese Foreign Exchange Trading System.

Since one of the factors of increasing trading in yuan at the Moscow Exchange is providing a better business environment of buying and selling it compared to other offshore centres, there arises the question about the optimal currency vehicle to purchase yuan. The optimal currency vehicle to buy and sell the yuan, according to the data obtained by the author is the agreement between the exporters and

importers which is concluded at a more beneficial exchange rate in case of close correlation between yuan's trading volume via a specific currency vehicle and the exports/imports value of the BRICS with China as recalculated into the yuan at a contractual exchange rate of the same currency vehicle.

According to the approach elaborated by the author the exporter/importer of the BRICS when dealing with China, it is recommended to choose the currency vehicle in which there is the maximum number of close correlation observations. And the close correlation between the actual and future forecast indicators of exports/imports and the yuan trading volume at the Moscow Exchange are those situations where the correlation figures lie within 0.7–1.0.

As a result the author comes to the conclusion that for example the Russian exporters and importers to conclude foreign trade deals are recommended to buy yuans via currency vehicle CNYRUB_TOM at the Moscow Exchange, since the close correlation of the imports/exports dynamics as recalculated into the yuan at the exchange rate of that currency instrument is reached in 21 of 31 instances in case of imports and 17 of 31 instances in case of exports.

And only Russian trade partners among the BRICS can buy the yuan for their own national currency. As for Brazil, India and South Africa, their exporters and importers may purchase the yuan only via the system of commercial banks in exchange for the dollars, i.e. when exporting their products to China they will continue to receive in return the dollars. Then they will have to exchange the received dollars into yuan, which they need to do first of all because they usually have a current-account deficit with China. Therefore they require the yuan to cover the existing and future potential debt to pay for the imported Chinese products. And if the conditions to buy the yuan in the Chinese authorised commercial banks and the Chinese Foreign Exchange Trading system are less beneficial, and Brazil, India and South Africa will have to look for better chances to purchase the yuans, they may well buy the roubles for the dollars, and via one of the currency vehicles at the Moscow Exchange they will purchase the yuans for the roubles. So, the more yuan will be received by Brazil, India and South Africa at the Moscow Exchange, the more

convenient it is to conclude a foreign trade deal using the latter's currency vehicles.

According to the author's calculations, Brazil could have received the maximum amount of yuan, in 2015 for example, (279.6bn yuan) at the Moscow Exchange in return for the dollars it had got from exporting to China. In the choice of such an alternative, the rouble would be the obligatory intermediary in the foreign exchange deals. It means that the demand for roubles at the Moscow Exchange can rise not only when Brazil, India and South Africa are importing from China, but also when exporting to China. As a result of covering exports/imports operations of Brazil, India and South Africa in yuan via the Moscow Exchange, the trading volume in currency pair rouble/yuan will increase, which quite certainly will lead to the formation of a yuan offshore centre in Moscow in the long run (*Table 5*).

To estimate the prospects of yuan's offshore centre can emerge in Moscow, we have developed a prognosis up to 2020 forecasting the changes in the following criteria: the volume of financing exports and imports of the BRICS in yuan and the trading volume in currency pair rouble/yuan at the Moscow Exchange. Then the calculated forecast data are recommended to compare with the corresponding indicators of the existing yuan offshore centre in London. The actual figures of yuan's financing exports/imports operations through London and Moscow Exchange show that they are quite comparable in volume in case of at least 3 per cent import's coverage of the BRICS from China and 2 per cent export's coverage of the former to China.

According to the generated prognosis in order to keep the yuan's trading volumes at the scope of the London offshore centre via the Moscow Exchange using the spot and swap currency vehicles, the yuan should cover at least 5 per cent of the BRICS' imports from China and 3 per cent of their exports to China under the conditions of the Moscow Exchange.

According to the acquired data, the increase in yuan's financing the exports of up to 3 per cent and the imports of up to 5 per cent via the currency vehicles at the Moscow Exchange will be perhaps possible due to the decrease in foreign trade volumes of the BRICS because of a possible diversification of their foreign trade structure

and due to an increasing number of foreign trade partners (*Table 6*).

As for comparing the yuan's offshore centre-to-be in Moscow and the existing one in London in terms of yuan's trading volumes, the former could have rivalled the latter in case of spot currency vehicle. However, in terms of swap currency vehicle trading volume, Moscow is still lagging behind London. For example, in the first half of 2014, the yuan spot trading deals in London amounted to about 14.5bn yuan, whereas the swap deals with yuan reached more than 15.6bn yuan. At the same time, the yuan's spot transactions in Moscow totalled 12.2bn yuan, and the swap deals were just 2.4bn yuan. In the second half of the year, 2014 Moscow outperformed London in terms of yuan's spot trading deals by almost 10bn yuan, whereas the situation with the swap market remained practically unchanged. Significant changes at the Moscow Exchange happened in the second half of 2015 when the volume of spot transactions exceeded 52.7bn yuan, and in the first half of the year 2016 when the swap transactions volume was almost half of London's figure, i.e. 17.6bn yuan.

According to the author's prognosis, yuan's spot trading volumes at the Moscow Exchange are going to increase up to 28.8bn yuan by the second half of the year 2020. And the figure for the swap transactions will amount to 21.1bn yuan. On the whole, Moscow may claim for the status of the yuan's offshore centre in terms of growth rates in trading volumes by 2020 (*Table 7*).

To finish the process of creating an offshore centre of the yuan in Moscow, it is necessary:

- 1) To have a bigger amount of commercial banks taking deposits expressed in yuan;
- 2) To increase the number of highly qualified professionals and companies offering complicated financial, legal, insurance, consulting, auditing and credit rating services which generally characterise the normal workings of an international financial centre;
- 3) To specifically increase the swap trading deals in yuan;
- 4) To abolish the restrictions on lot limits to buy and sell currency vehicles in case of currency pair rouble/yuan;
- 5) To assist in yuan's covering exports and imports of the BRICS;

- 6) To attract debt securities denominated in yuan to circulate in the Russian financial market.

The creation of the yuan's offshore centre in Moscow is, on the one hand, an important step on the path to becoming an international financial centre, and on the other hand, the infrastructure of such a centre largely determines the development of yuan's offshore centre in Moscow.

In turn, the increasing demand for roubles in the Chinese Foreign Exchange Trading System may lead to establishing a rouble's offshore centre in Shanghai, since to increase the amount of liquid assets China will require more roubles which it will be able to purchase either in case of acquiring particular currency vehicles at the Moscow Exchange, or China will want to demand more roubles than dollars in exchange for its imports to Russia.

According to the analysis of different variants to account for the exports/imports operations between China and India, the author proves that both roubles and yuan may well participate in them. When importing from China to India, the rouble may turn the means of exchange in a foreign trade contract under the conditions of direct settlements.

The creation and functioning of a yuan's offshore centre in Moscow will add to the Russian economy the following strong points:

- 1) Investors in the BRICS will increase the demand for the yuan and the rouble; the same goes for the countries near Russia, for whom China is also one of the most important foreign trade partners;
- 2) Parallel to increasing demand for yuan and rouble, the latter will strengthen its position as a regional currency for the CIS and the EEU, which will mean a further deepening of the rouble's internationalisation at the macro-level;
- 3) Active trading in currency vehicles to buy the yuan at the Moscow Exchange will become an important step on the path towards the internationalisation of the rouble itself at the mega-level, and the rouble will gradually convert into an international currency, however, in a very long run.

If Brazil, India and South Africa are to purchase the yuan using the swap and spot currency vehicles at the Moscow Exchange, this operation will be more profitable compared to the conditions of the swap agreements which are bilater-

ally concluded between the BRICS to cover the mutual trade. Eventually, this will lead to the following results:

1. The yuan's international use is going to expand, i.e. there will be an intensification of its internationalisation at the mega-level. For example, if in 2015 the BRICS' imports and exports were wholly expressed in yuan, its circulating volume abroad would amount to approximately 1.5 trn yuan (or 235.7bn dollars). And although according to the author's prognosis, this figure is going to drop down to 1.2 trillion yuan (or 182.5bn dollars) by 2020, it will not mean a decrease in yuan's use abroad. This reduction, as was said earlier, could be attributed to the increase in the number of China's foreign trade partners and the growth in foreign trade flows with them or the slowdown of the manufacturing capacity of the country itself;

2. Moscow is going to see its status rise to the level of an international financial centre;

3. The rouble's exchange rate is going to stabilise under a free-floating regime in case of Brazil, India and South Africa are to going to purchase the roubles for dollars (or national currencies), then there will be an increase in the demand for roubles, which will eventually strengthen its positions.

The potential of Moscow as a new yuan's offshore centre and a clearinghouse for the settlements in foreign trade deals of Brazil, India and South Africa, on the one hand, and China, on the other, is proven by the author using an analysis of all exports/imports flows between them, with the exception of Brazilian imports from China, when the conditions of purchasing yuans in the Chinese Foreign Exchange Trading System are more beneficial compared to the Moscow Exchange. The favourable conditions of acquiring yuan at the Moscow Exchange include the diversification of the currency vehicle portfolio using which the buying and selling of yuan are done. Besides, the most optimal contracts to ensure the foreign trade deals of Brazil, India and South Africa with China are the contracts expressed in yuan which have been purchased through swap currency vehicles at the Moscow Exchange, whereas in case of the Russian cross-border transactions that would have to be done by means of spot currency instruments. In case of Moscow becoming an emerging offshore centre of the yuan and by

taking advantage of the favourable conditions of the business environment to buy and sell yuan there will be more prerequisites for the rouble's deeper internationalisation.

The creation and effective functioning of the yuan's offshore centre in Moscow is a factor which may intensify the rouble's internationalisation in the long run. For the rouble to go over to the mega level internationalisation may be facilitated by the creation of the rouble's offshore centre in Shanghai by means of increasing trading volumes of roubles using the spot currency pair rouble/yuan vehicle of the Chinese Foreign Exchange Trading System. Increasing rouble's usage via the foreign exchange market in Shanghai can be done using mutually beneficial foreign trade deals between Russia and China in the national currencies. A factor which slows down the growth in rouble trading volumes in Shanghai is an insufficiently diversified and developed export of Russia to China and a tiny share of knowledge-intensive products in their cross-border trade. The establishment and the functioning of a yuan's offshore centre in Moscow may be considered as a transition step to setting up an international financial centre in Moscow.

Russian rouble's internationalisation at the mega level is hypothetically and potentially possible, since it is already being used at several levels of currency internationalisation, i.e. the rouble is a payment currency vehicle, settlement currency vehicle, cross-border transit currency vehicle and deposit currency vehicle at the macro level of currency internationalisation within the EEU; the rouble is a bilateral settlement currency vehicle in cross-border trade with China at the medium level of currency internationalisation; finally, the rouble is a component in currency pair trading rouble/yuan in the Chinese Foreign Exchange Trading System in Shanghai at the micro level of currency internationalisation. For the rouble to be an international currency the following conditions are accomplished: the rouble is a fully convertible currency, and it fluctuates in term of the free-floating regime. An additional point in favour of rouble's internationalisation at the mega level is a bilateral swap agreement between the central banks of Russia and China. However, the potential for rouble's

internationalisation at the mega level has decreased due to the economic crisis, devaluation and international sanctions. Still, comparing the corresponding actual and prognosis data of London as an existing yuan's offshore centre and a possible new yuan's offshore centre in Moscow as an emerging market, the author has identified that the latter has certain competitive advantages. And in the long run, under the condition of the increasing use of the roubles and yuan in bilateral trade deals between Russia and China, there will be an increase in the demand for roubles as well as for currency vehicles expressed in roubles and yuan.

Rouble's internationalisation at the mega level as a result of creating a yuan's offshore centre in Moscow may be stimulated by the following factors:

An increase in the demand for roubles on the part of the Chinese Foreign Exchange Trading System as a consequence of a rise in a share of

rouble in the volume of rouble-covered exports from Russia to China;

The increase in the demand for the yuan in the Moscow foreign exchange market in case of a rise in bilateral foreign trade transactions between Brazil, Russia, India and South Africa, on the one hand, and China, on the other hand. In this situation the rouble is going to become a currency-intermediary in buying/selling swap or spot currency vehicles traded by means currency pair rouble/yuan, so that to purchase the yuan, India, Brazil and South Africa will have to exchange their national currencies or dollars for roubles, and exchange for the received roubles the required yuan. Then in the first instance, Russia will accumulate dollar reserves, and in the second one, there will be an accumulation of the reserves in reals, rupees and rands in Russia, which the country may use for foreign trade settlement deals with the deliverers of the issuing countries.

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Table 1
BRICS's share (without Russia) in the Russian foreign trade in 2006–2015, %

| Indicator | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|----------------|------|------|------|------|------|------|------|------|------|------|
| Brazil | | | | | | | | | | |
| Exports' share | 0.2 | 0.3 | 0.4 | 0.4 | 0.5 | 0.4 | 0.4 | 0.4 | 0.5 | 0.5 |
| Imports' share | 2.2 | 2.1 | 1.7 | 2.1 | 1.8 | 1.4 | 1.1 | 1.1 | 1.4 | 1.0 |
| India | | | | | | | | | | |
| Exports' share | 1.0 | 1.1 | 1.1 | 2.0 | 1.6 | 1.2 | 1.4 | 1.3 | 1.3 | 1.5 |
| Imports' share | 0.7 | 0.7 | 0.6 | 0.9 | 0.9 | 0.9 | 1.0 | 1.0 | 1.1 | 1.2 |
| China | | | | | | | | | | |
| Exports' share | 5.2 | 4.5 | 4.5 | 5.5 | 5.1 | 6.8 | 6.8 | 6.8 | 7.5 | 7.7 |
| Imports' share | 9.4 | 12.2 | 13.0 | 13.7 | 17.0 | 15.8 | 16.3 | 16.8 | 17.7 | 19.3 |
| South Africa | | | | | | | | | | |
| Exports' share | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| Imports' share | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |

Source: compiled by the author.

Table 2
The comparative analysis of the role the rest of the world and the BRICS (without Russia) plays in the Russian foreign trade in 2008–2015

| Indicator | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| BRICS (without Russia) | | | | | | | | |
| Exports, billion USD | 28.5 | 23.9 | 28.6 | 43.6 | 45.9 | 44.9 | 46.5 | 53.6 |
| Exports share, % | 6.1 | 7.9 | 7.2 | 8.4 | 8.7 | 8.5 | 9.3 | 9.7 |
| Imports, billion USD | 41.6 | 28.2 | 45.6 | 55.9 | 58.7 | 60.4 | 58.7 | 68.3 |
| Imports share, % | 15.6 | 16.9 | 19.9 | 18.3 | 18.5 | 19.2 | 20.5 | 20.9 |
| The rest of the world | | | | | | | | |
| Exports, billion USD | 439.1 | 277.8 | 368.5 | 473.1 | 478.8 | 481.1 | 451.3 | 503.3 |
| Exports share, % | 93.9 | 92.1 | 92.8 | 91.6 | 91.3 | 91.5 | 90.7 | 90.2 |
| Imports, billion USD | 225.5 | 139.1 | 183.3 | 249.9 | 258.5 | 254.9 | 228.0 | 264.8 |
| Imports share, % | 84.4 | 83.1 | 80.1 | 81.7 | 81.5 | 80.8 | 79.5 | 79.0 |
| Total: | | | | | | | | |
| Exports, billion USD | 467.6 | 301.7 | 397.1 | 516.7 | 524.7 | 526.0 | 497.8 | 556.9 |
| Imports, billion USD | 267.1 | 167.3 | 228.9 | 305.8 | 317.3 | 315.3 | 286.7 | 333.1 |

Source: compiled by the author.

Table 3

The share of Russia and the rest of the world in the foreign trade of the BRICS (without Russia) in 2008–2015

| Indicator | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|--|--------|--------|--------|--------|--------|--------|--------|--------|
| BRICS (without Russia) | | | | | | | | |
| Imports, billion USD | 1698.9 | 1456.6 | 1998.6 | 2554.5 | 2656.2 | 2782.8 | 2754.1 | 3196.8 |
| Exports, billion USD | 1884.6 | 1579.7 | 2081.5 | 2555.9 | 2672.7 | 2860.2 | 2979.2 | 3292.8 |
| Russia's share in exports, % | 2.2 | 1.8 | 2.2 | 2.2 | 2.2 | 2.1 | 2.0 | 2.1 |
| The share of the Russian produce in imports, % | 1.7 | 2.1 | 1.5 | 1.8 | 2.0 | 1.9 | 2.1 | 2.0 |
| The rest of the world | | | | | | | | |
| Imports, billion USD | 1669.4 | 1426.7 | 1968.7 | 2507.7 | 2601.9 | 2729.1 | 2696.9 | 3131.6 |
| Exports, billion USD | 1843.0 | 1551.5 | 2035.9 | 2500.0 | 2614.0 | 2799.8 | 2920.5 | 3224.6 |
| The share of the rest of the world in imports, % | 98.3 | 97.9 | 98.5 | 98.2 | 98.0 | 98.1 | 97.9 | 97.9 |
| The share of the rest of the world in exports, % | 97.8 | 98.2 | 97.8 | 97.8 | 97.8 | 97.9 | 98.0 | 97.9 |

Source: compiled by the author.

Table 4

Comparative analysis of London and Moscow as yuan's offshore centres in terms of yuan's financing foreign trade transactions in 2012–2016, billion yuan

| Indicator | 1st half of 2012 | 2nd half of 2012 | 1st half of 2013 | 2nd half of 2013 | 1st half of 2014 | 2nd half of 2014 | 1st half of 2015 | 2nd half of 2015 | 1st half of 2016 |
|-------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| London | | | | | | | | | |
| Import financing | 8.1 | 19.2 | 20.2 | 6.5 | 18.4 | 5.3 | 20.0 | 10.2 | 16.7 |
| Export financing | 2.0 | 4.7 | 4.3 | 7.5 | 7.3 | 2.4 | 4.4 | 8.5 | 7.9 |
| Moscow | | | | | | | | | |
| Conditions of financing | | | 3% | | | | | 5% | |
| Import financing | 13.3 | 15.3 | 14.0 | 16.3 | 14.2 | 15.5 | 21.3 | 24.5 | 19.9 |
| Conditions of financing | | | 2% | | | | | 3% | |
| Export financing | 6.6 | 6.3 | 6.5 | 6.6 | 6.7 | 6.6 | 8.2 | 8.9 | 10.7 |

Source: compiled by the author.

Table 5

Yuan's financing foreign trade deals through Moscow as a potential offshore centre in 2016–2020, billion yuan

| Period | Indicator | |
|-------------------------|-------------------------------|------------------|
| | Coverage/financing conditions | |
| | 5% | 3% |
| | Import financing | Export financing |
| 2nd half of 2016 | 20.2 | 9.6 |
| 1st half of 2017 | 20.7 | 9.8 |
| 2nd half of 2017 | 21.7 | 8.8 |
| 1st half of 2018 | 18.1 | 7.7 |
| 2nd half of 2018 | 19.3 | 7.6 |
| 1st half of 2019 | 18.6 | 7.3 |
| 2nd half of 2019 | 17.4 | 6.5 |
| 1st half of 2020 | 19.8 | 5.9 |
| 2nd half of 2020 | 23.1 | 6.6 |

Source: compiled by the author.

Table 6

The actual yuan trading in London and Moscow in 2012–2016, million yuan

| Period | London | | Moscow | |
|------------------|---------|---------|---------|---------|
| | Spot | Swap | Spot | Swap |
| 1st half of 2012 | 1691.0 | 2468.0 | 756.9 | – |
| 2nd half of 2012 | 2496.0 | 3364.0 | 797.3 | – |
| 1st half of 2013 | 4815.0 | 6260.0 | 1102.2 | 709.3 |
| 2nd half of 2013 | 5564.0 | 7600.0 | 2699.6 | 2256.2 |
| 1st half of 2014 | 14485.0 | 15625.0 | 12242.2 | 2380.5 |
| 2nd half of 2014 | 18350.0 | 18520.0 | 27177.5 | 5710.3 |
| 1st half of 2015 | 24964.0 | 23116.0 | 14944.9 | 5588.5 |
| 2nd half of 2015 | 19297.0 | 28267.0 | 52726.1 | 10251.9 |
| 1st half of 2016 | 36325.0 | 34041.0 | 19785.7 | 17592.9 |

Source: compiled by the author.

Table 7

Moscow's performance as a new yuan's offshore centre: the past, the present and the future, million yuan

| Period | Spot market | | | Swap market | | |
|------------------|----------------|----------------|---------|----------------|----------------|---------|
| | CNYRUB_ TOD | CNYRUB_ TOM | Total | CNY_ TODTOM | CNY_ TOMSPT | Total |
| 1st half of 2016 | 1079.1 | 18706.6 | 19785.7 | 16509.3 | 1083.6 | 17592.9 |
| 2nd half of 2016 | 754.1 | 5163.8 | 5917.9 | 14693.9 | 2325.3 | 17019.3 |
| 1st half of 2017 | 2697.1 | 15183.0 | 17880.1 | 14834.3 | 1636.7 | 16471.0 |
| 2nd half of 2017 | 1460.2 | 14741.4 | 16201.6 | 19024.5 | 1588.9 | 20613.4 |
| 1st half of 2018 | 1100.0 | 12742.5 | 13842.5 | 14991.4 | 3205.2 | 18196.5 |
| 2nd half of 2018 | 2294.5 | 18676.5 | 20971.0 | 13483.5 | 2150.3 | 15633.9 |
| 1st half of 2019 | 1300.1 | 17414.6 | 18714.7 | 19035.7 | 1501.2 | 20537.0 |
| 2nd half of 2019 | 1222.3 | 8108.8 | 9331.2 | 20389.1 | 1739.5 | 22128.6 |
| 1st half of 2020 | 1519.5 | 8954.1 | 10473.6 | 12964.4 | 2175.5 | 15139.9 |
| 2nd half of 2020 | 2324.9 | 24484.4 | 26809.3 | 19694.4 | 1382.3 | 21076.7 |

Source: compiled by the author.

Москва как новый офшорный центр юаня

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Аннотация. Цель статьи – попытка обосновать и доказать перспективы Москвы как нового офшорного центра юаня. Изучив деятельность Московской биржи, где имеется функционирующая ниша для осуществления валютных торгов по валютной паре рубль/юань, а также коммерческих банков, которые принимают депозиты, выраженные в юанях, от физических и юридических лиц, автор предлагает использовать данное преимущество в целях создания особо благоприятного инвестиционного климата для Бразилии, Индии и ЮАР в рамках ведения торгов по валютной паре рубль/юань на Московской бирже в случае организации прямых импортно-экспортных сделок между ними и Китаем.

Ключевые слова: страны БРИКС; интернационализация рубля; офшорный центр юаня в Москве; международная валютная система; Евразийский экономический союз; евразийская валютная интеграция; юаневые валютные инструменты; контрактные обменные курсы юаня

Fruitful Achievements of Heilongjiang Province in Construction of Online Silk Road

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Abstract

In recent years, *Heilongjiang Province* has constantly been improving and upgrading the e-commerce development model, and successfully opening up Online Silk Road, actively docking the Belt and Road and participating in the construction of the Sino-Mongolian-Russian economic corridor. This paper analyses the foundation of Heilongjiang Province's Online Silk Road construction combs its development status and further proposes the challenges and problems in the construction process. Finally, the paper puts forward prospects and recommendations for the development potential of e-commerce concerning cooperation with Russia and agricultural products.

Keywords: Heilongjiang Province; Online Silk Road; development status; the prospect

JEL Classification: F23

1. Introduction

The online Silk Road is a multi-domain and multi-level information economy belt based on the "Internet Plus" formed by China and the countries along *the Belt and Road* to strengthen network interconnection and information exchange. With its geographical advantages and its comparative advantages in the Internet field, Heilongjiang Province promoted the rapid development of the Internet economy in Russia, fostered a new digital trade format represented by cross-border e-commerce, and promoted online and offline collaborative promotion of customs clearance logistics and financial services. With the cooperation in the field of the Internet, we will promote the construction of a new pattern of all-round cooperation with Russia [1].

The structural framework of the paper is composed of three main parts. The first part is concerned with the foundation of Heilongjiang Province's Online Silk Road construction. Especially in the era of science and technology, the popularity of the Internet has greatly increased, and the awareness of people's online shopping has become stronger. On this basis, Heilongjiang Province has also used its industrial transformation to build a new era of digital trade and help its

economy improve. The second part expounds that in the process of building Online Silk Road, Heilongjiang Province has issued some favourable policies and actively upgraded the development of software and hardware facilities to support e-commerce cooperation with Russia, which achieve remarkable results. Russia, especially the Far East, is an important strategic partner of Heilongjiang Province. With the effective cooperation in the Internet field, Heilongjiang Province and Russia can continue to extend cooperation in various fields.

2. Foundation of Heilongjiang Province's Online Silk Road Construction

2.1. Steady increase in the number of Internet users in China and Russia

The following table [2] [3] shows that the development of cross-border e-commerce between China and Russia has unique advantages in terms of online consumer groups (Table 1). In February 2017, Heilongjiang Province issued the "13th Five-Year Development Plan for Information and Communication Industry in Heilongjiang Province", which was to build a special channel for Harbin international com-

Table 1
Statistics on the number of internet users

| Russia | | | China | | | Heilongjiang | | |
|--------|------------|---------------------------|-------|---------------|---------------------------|--------------|---------------|---------------------------|
| Year | Number | % of the total population | Year | Number | % of the total population | Year | Number | % of the total population |
| 2012 | >70million | 49.0% | 2017 | 77.20 million | 55.8% | 2015 | 17.07 million | 44.5% |
| 2017 | 87million | 60% | 2018 | 80.20 million | 57.7% | 2016 | 18.35 million | 48.1% |

Source: the author.

Table 2
Effective documents

| Year | Name | Goal |
|---------|---|---|
| 2016.12 | Harbin City Promoting Modern Logistics Innovation and Development City Pilot Three-Year Action Plan (2016–2018) | Creating a regional logistics organisation centre for Russia Building a Sino-Russian cross-border e-commerce logistics platform Smooth access to international logistics channels for Russia, Mongolia and Europe |
| 2017.01 | Implementation plan for promoting rapid development of e-commerce in Harbin | Actively carrying out the establishment of a national e-commerce demonstration system and the construction of a cross-border e-commerce pilot city Striving to build Harbin into a centre city for e-commerce in Russia in three to five years |
| 2018.07 | Harbin International Aviation Hub Strategic Planning | Positioning Harbin as an international aviation hub that radiates Northeast Asia Unicom Europe and America |

Source: the author.

munication and actively create information for Russia. Communication hub; by 2020, the access rate of 1G fibre optic access at important ports will reach 100%. Among the seven goals identified in the Plan, it is specifically proposed to build an information and communication hub for Russia actively, and therefore, the capacity of cross-border communication networks has been dramatically enhanced [4]. It can be seen that the continued growth of Internet users in China and Russia has laid a good foundation for the development of cross-border e-commerce between China and Russia and Heilongjiang Province's Online Silk Road construction.

2.2. Rapid changes in the mode of trade and transportation mode and frequent promulgation of effective documents

Historically, compared with coastal provinces, Heilongjiang Province is remote, with high logistics costs and long transportation time. There are inherent limitations and shortcomings in foreign economic and trade exchanges. Taking trade with Russia as an example, before 2014, China and Russia had insufficient capacity to handle cross-border mail at both ends. Also, the customs clearance policy was cumbersome, and the mode of transportation was backward. The international parcel delivery time was 40–75 days, which was far from

Table 3
E-commerce demonstration system

| City/zone | Category | Approval authority |
|--|--|--|
| Harbin, Daqing | National e-commerce demonstration city | National Development and Reform Commission |
| Harbin, Mudanjiang, Suifenhe | Cross-border trade e-commerce service pilot city | China Customs Administration |
| Harbin Economic and Technological Development Zone, Suifenhe Border Economic Cooperation Zone, Daqing E-commerce Industrial Park, Mudanjiang Economic Development Zone, E-commerce enterprise park | National e-commerce demonstration base | Ministry of Commerce, China |
| Heilongjiang SEG International Trade Co., Ltd., Heihe Zhongji E-commerce Co., Ltd., Heilongjiang Russian Express International Logistics Co., Ltd. Etc.(8 enterprises) | E-commerce demonstration enterprise | Ministry of Commerce, China |

Source: the author.

meeting the actual demand. In recent years, as the most important online commodity supplier in Russia, China has become a new trade growth point for the two countries. With the rapid growth of the Sino-Russian e-commerce market, Heilongjiang Province has actively used the existing open ports to Russia to vigorously develop the logistics industry and accelerate the transformation and upgrading of the cross-border e-commerce trade model and transportation mode. The following table cites Harbin city, the capital of Heilongjiang Province, as an example to illustrate it [5] [6] [7] (Table 2). As a central city and aviation hub city for cooperation with Russia, Harbin has built a comprehensive logistics network covering Russia, including roads, railways, waterways and aviation.

The promulgation of these documents provides an important policy-leading guarantee for Harbin to carry out cross-border e-commerce to Russia. From the first flight in November 2013 to June 2017, the Harbin-Yekaterinburg e-commerce cargo charter had shipped 355 flights, with a total cargo capacity of nearly 500,000 pieces and a weight of 7,525 tons. In the first half of 2017, Harbin Airport carried out 85 classes of cross-border e-commerce charter flights to Russia, transporting goods of 1,830 tons, an increase of 130 per cent.

3. Fruitful Achievements of Heilongjiang Province's Online Silk Road Construction

3.1. Remarkable results of e-commerce demonstration system construction

The following table shows that Heilongjiang Province, as the traditional trade province, is vigorously promoting "Internet + trade" and exploring a new model of cross-border e-commerce business between China and Russia, which has achieved fruitful results [8] (Table 3).

3.2. Software and hardware upgrade of E-commerce service [9] [10]

3.3. Better function of cross-border e-commerce platform and rapid development of the industrial parks

At the beginning of 2014, there were 95 self-built e-commerce platforms in Heilongjiang province, including 19 cross-border e-commerce platforms dominated by Russia. The business scope covers commodity sales, logistics, payment, trade matching and integration of cross-border e-commerce industry chains. Services, etc.; enterprises and individuals in the province opened 39,000 stores on third-party platforms. These platforms

Table 4
The status quo of hardware and software development

| Hardware support | Software support |
|--|---|
| Convenient traditional trade channels(railway, highway) | Various cross-border e-commerce integrated service platforms |
| Flourishing e-commerce parks | A large number of Chinese and Russian bilingual business professionals |
| The emerging border warehouses and cold chain logistics networks | The emerging cross-border e-commerce online payment platform |
| Professional big data platform construction | "Internet+" expansion into many fields such as tourism education, culture and equipment manufacturing, etc. |

Source: the author.

and merchants sent more than 1.7 million international parcels to Russia in the first quarter. An average of nearly 20,000 items per day was sent to Russian consumers through cross-border e-commerce platforms. At that time, the "Double 11" cross-border parcel reached a historic peak of 200,000 pieces per day [11].

In 2016, Heilongjiang province's e-commerce platform reached 145, and 44 local pavilions were opened in major e-commerce platforms such as Taobao and Jingdong. There were more than 40,000 stores of various types, and the number of online merchants in the province reached 101,800.

At the beginning of 2017, among the 32 e-commerce industrial parks in the province, there were four national-level e-commerce demonstration bases and 1,368 settled enterprises. Until the end of 2017, eight companies in Heilongjiang had 19 overseas warehouses in Russia.

3.4. New channel opening of cross-border e-commerce air transport

The Internet era has opened not only a new era of economics but also a unique way for the transformation of traditional enterprises. With the opening of the Russian cargo charter, the average period of cross-border electronic logistics delivery between China and

Russia in Heilongjiang Province was shortened from nearly two months to 13 days (the fastest four days), which made Russian buyers feel the speed of Heilongjiang e-commerce. In December 2013, Russian Ural Airlines opened a cargo charter from Harbin to Yekaterinburg. Subsequently, the Harbin-Novosibirsk route and the Harbin-Krasnoyarsk route were opened. Harbin Taiping International Airport became the gateway airport to the Russian Far East. Customs, border inspection, health inspection and other departments have opened green channels to facilitate airlines and cargo owners. The cargo charter operated more than 100 flights a year, with a total cargo capacity of 2,000 tons, and the value of goods exceeded 200 million US dollars, accounting for 40% of the total amount of e-commerce logistics packages. In 2016, the number of international postal parcels to Russian by freight charter and passenger and cargo mixed mode reached 8,814,400, with a cargo weight of 2,218.09 tons and a value of 175 million US dollars. Until the end of 2017, a total of 414 flights had been shipped to Russia's cargo charter flights, with a value of US\$ 1.02 billion, exceeding the US\$ 1 billion mark [12].

With the opening of logistics, nearly 5,000 domestic appliance manufacturers and 8 million Internet users in Russia had begun to enjoy high value-added logistics experience and had

Table 5
The status quo of cooperation with giants

| Year | Enterprise Giant | Goal |
|---------|--|--|
| 2013.04 | Alibaba (Sino-Russian Cloud Warehouse) | Utilising the advantages of the Suifenhe Golden Port to establish a low-cost, convenient, safe and efficient, and internationally-accepted e-commerce trade platform for Russia. |
| 2015.08 | Jingdong Group | Working together to develop cross-border e-commerce business in the Far East |
| 2015.10 | Tencent Group, Jingdong Group | All-dimensional cooperation in urban services, cross-border e-commerce, green food, tourism, big data, innovation and entrepreneurship, social and people's livelihood |
| 2017.04 | ZOL | Creating regional characteristic industry development, promoting kinetic energy conversion and structural upgrading. |

Source: the author.

great potential for improvement in trading, trade services and financial services. Taking Heilongjiang Russian Express International Logistics Co., Ltd. as an example, the recent logistics orders to Russia increased by 200%, accounting for nearly 40% of the total domestic exports of mail to Russia, and built the first brand image of cross-border logistics. Self-developed big data order operating system and warehouse management system by Russian Express International Logistics Co., Ltd. for the first time enables real-time track query tracking for cross-border logistics packages. From January to October 2018, 164 sorties were carried to Russian charter passengers, with 7 million pieces of parcels and 1,658 tons of parcels, and the income reached more than 200 million yuan. Through Russian parcels to Russia, the e-commerce charter from Harbin, flying to Yekaterinburg, Russia's logistics hub, for six and a half hours, was sent to the internet users by the Russian Post Office.

3.5. New path of Cross-border e-commerce land transportation

Russia: In November 2014, Russia Post set up the Far East Distribution Center in Vladivostok, which was only 220 km away from Suifenhe. After the Russian Far East buyer placed an order online, the logistics company directly transported the goods to the distri-

bution centre through Suifenhe. Thus, parcels can be no longer posted bypass the "Harbin (or Beijing)-Moscow headquarters-Far East distribution centre" line, which saves half of the transportation time.

China: Since the operation of Harbin-Europe train from 2015 to 2017, a total of 665 classes had been shipped, with a value of 1.18 billion U.S. dollars; in 2017, 461 classes were shipped in total, with a value of 800 million U.S. dollars, which showed that the volume of transportation was accelerating.

3.6. All-dimensional strategic cooperation with e-commerce giants

The table 5 shows that Heilongjiang Province has important development potential in the field of "Internet +" in the information industry. The cooperation with the e-commerce giants promotes to upgrade Heilongjiang Province's industrial structure.

4. Conclusion

In September 2018, General Secretary Xi Jinping carried out the inspection in the north-east of China and made an important speech at the in-depth promotion of the Northeast Revitalization Symposium. He who claimed to deeply integrate the Belt and Road and build an open and cooperative highland, which was

to lead the direction and inject momentum to better participate in the Belt and Road and to create a new pattern of opening up to the outside world for Heilongjiang Province. Heilongjiang Province should take advantage of the 4th Oriental Economic Forum to give full play to the geographical advantages adjacent to Russia, continue to focus on promoting multi-directional connectivity to Russia, and build a new platform for cross-border cooperation development and opening up. With regard to the level of economic and trade cooperation with Russia, Heilongjiang Province will strive to promote Heilongjiang Province's cooperation with Russia and open up a new pattern for all countries in Northeast Asia such as Japan, South Korea, North Korea and Mongolia [13].

The paper points out the countermeasures on Heilongjiang Province's Online Silk Road construction concerning the development potential of cross-border e-commerce and agricultural e-commerce as follows:

First, there is still room for growth in total e-commerce demand. The volume of e-commerce transactions and online retail transactions at home and abroad still maintain rapid growth. Heilongjiang Province should actively

participate in industry competition and seek opportunities;

Second, the influence of green organic agricultural products and under-forest products in Heilongjiang Province has been continuously improved at home and abroad, and has become a brand of online retail transactions;

Third, new technological changes will continue to trigger changes in e-commerce business practices. Heilongjiang Province should study the technological trends of e-commerce platform development, strengthen the training of e-commerce platform operating enterprise systems, and organise research on the new mode of the e-commerce platform. Heilongjiang Province should study an effective way to reduce the cost of e-commerce logistics, and improve the logistics distribution system to get through the last mile of distribution. Agricultural products speed up the construction of agricultural products outside the province in the main sales area, cross-border goods to increase the construction of overseas warehouses and border warehouses. It is necessary to strengthen the connection with upstream and downstream enterprises and strengthen cooperation in the fields of design, packaging, marketing and talents [14–16].

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CONFLICT OF INTEREST

The author confirms that this article content has no conflict of interest.

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Заметные достижения строительства «Шелкового Пути Онлайн» в провинции Хэйлунцзян

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Аннотация. В последние годы в провинции Хэйлунцзян постоянно совершенствуется и модернизируется модель развития электронной коммерции, в том числе Шелковый Путь Онлайн. Активно реализуется проект «Один пояс, один путь» и идет строительство китайско-монгольско-российского экономического коридора. Анализируя состояние развития проекта «Шелковый Путь Онлайн» в провинции Хэйлунцзян и связанные с этим задачи и проблемы, автор предлагает конкретные рекомендации по развитию потенциала электронной торговли в части сотрудничества с Россией в области сельскохозяйственного производства.

Ключевые слова: провинция Хэйлунцзян; Шелковый Путь Онлайн; статус развития; перспектива

Development of Banking Activities in Emerging Market Countries

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Abstract

The global financial crisis of 2008 has shown the importance of a sound and profitable banking industry in developed, developing and emerging countries as well. Therefore, it is highly valuable to understand the development of banking activities in emerging market economies not only for evaluating the impact of them for encouraging emerging economies' growth, but also establish the overall effect of these processes to global financial market. Moreover, during the last few years, the role of the emerging economy in the world economy is increasing substantially due to its economic growth, industrial potentials and a massive supply of resources and labour to the advanced economy countries. The number of researches conducted on the problem concentrated on two opposing opinions stating the foreign banks either encourage overall efficiency or cause financial instability. Despite a huge literature on this topic, the risk foreign banks impose on emerging market countries' domestic banks should be evaluated in advance. The primary goal of this research work is to evaluate the extent of development of banking activities in emerging market countries and provide an analysis of the performance of emerging market banks. In article the author described the process of development of banking activities in emerging market economy countries.

Keywords: banking industry; emerging market economies; financial instability; financial markets; bank performance

JEL Classification: G15, G18

Introduction

Over the last decades, the banking sector worldwide transformed continually. The substantial transformation of banking activities was triggered by numerous changes in national and global level such as technological development, international competition, deregulation of financial services, banking crises, privatisation of state-owned banks and others. Notably, during the last few years, the role of the emerging economy in the world economy is increasing substantially due to its economic growth, industrial potentials and a massive supply of resources and labour to the advanced economy countries. As most of these transitions take place in emerging economies, and the role of those countries boosts, it is highly valuable to

understand the development of banking activities in emerging market economies not only for evaluating the impact of them for encouraging emerging economies' growth, but also establish the overall effect of these processes to global financial market. In the context of banking activities of emerging market economies, the historical impact of its development, current trend and its impact in economic potential should be highlighted in advance.

The global financial crisis of 2008 has shown the importance of a sound and profitable banking industry in developed, developing and emerging countries as well. But in comparison with banks in developed and developing market, banks of the emerging market were impacted by the crisis in less extend due to the prudent policy and healthy

macroeconomic condition. Thus, emerging market economies' banking performance should be measured and sustained at an appropriate level to secure from negative consequences. The current researches mostly highlighted the importance of emerging countries' banking stability and profitability on the economic growth of the country. In recent years, there has been an increasing number of researches conducted in examining the relationship between financial development and economic growth and established a direct relationship between them. But as for emerging market economies' financial development should be examined in terms of banking stability, competition and economic growth. There are many articles and researches are conducted for evaluating the current trends in the banking sector and its relationship with economic growth, which mostly concerns particular countries with developing economies. Whereas previously, most of the works are highlighted the development process of banking activities in developed countries and revealed positive trends in economic growth and productive capacity of the individual country.

The current trend in analysis of many types of research is concentrated on banking activities of emerging economies of Asia, Latin America and Sub-Saharan Africa and its impact on encouraging economic and financial growth to the global level. Also, as a result of deregulation and liberalisation, the number of foreign banks in emerging market economies increased by 74 per cent and their market share doubles between 1995 and 2009. Currently, the trends continue with more moderated pace, but the role of them in the development of emerging market economies' banking sector is irreplaceable. The number of researches conducted on the problem concentrated on two opposing opinions stating the foreign banks either encourage overall efficiency or cause financial instability. Despite a huge literature on this topic, the risk foreign banks impose on emerging market countries' domestic banks should be evaluated in advance.

The primary goal of this research work is to evaluate the extent of development of banking activities in emerging market countries and provide an analysis of the performance of emerging market banks. The objective of assessing modern trends in the development of banking activities

of emerging economy countries and establishing the role of them in encouraging economic and financial growth in the rough competition of global market would be performed by use of different statistical and non-statistical methods. Moreover, the object of study is banking activities of emerging market economies, and the subject is the impact of banking activities development on economic growth of emerging market economies. To accomplish the goal of the research work the following tasks should be fulfilled in advance:

- To observe current trends in development and determinants that characterise banking activities of emerging market economy countries

- To reveal specific characteristics that distinguish banking activities of emerging market economies from developed countries

- To evaluate bank performance using stability, profitability and efficiency

- To establish relationship and effect of banking activities development and economic growth for emerging market economies

- To determine any characteristic differences of banking activities' development for emerging economies and developed economies

- To present a practical example by analysing trends and relationships for emerging economies region and a particular country.

To fulfil these tasks, the study work is divided into three main chapters regarding banking activities in emerging market economy countries – first, the process of development of banking activities in emerging market economy countries. Second, the evaluation of banking activities' peculiarities for the Asian region. Third, the development of Chinese banks as representative of an emerging market economy country.

The banking sector in emerging market economies

Main determinants of banking activities development in emerging market economies

Significantly improved economic fundamentals stimulated emerging market banks to join the ranking of the largest banks in the world. The emerging market banks are growing faster than banks in developed and developing countries. In 2018, 10 of the world's 50 largest banks by market capitalisation come from emerging

Table 1
World's largest banks from emerging market economies 2018

| Company name | Country | Market capitalisation, bn \$ | Assets, million \$ |
|---|---------|------------------------------|--------------------|
| Industrial and Commercial Bank of China | China | 308.63 | 4,006,242 |
| China Construction Bank | China | 253.3 | 3,397,688 |
| Agricultural Bank of China | China | 181.4 | 3,233,212 |
| Bank of China | China | 167.89 | 2,989,653 |
| China Development Bank | China | 121.67 | 2,450,812 |
| Bank of Communications | China | 64.54 | 1,388,024 |
| China Merchants Bank | China | 110.84 | 967,141 |
| Itau Unibanco Holding | Brazil | 71.19 | 901,764 |
| Industrial Bank | China | 43.63 | 985,448 |
| Banco Bradesco | Brazil | 49.84 | 897,512 |

Source: Sanders D. Biggest Banks in the World 2018. (November 01, 2018). *Global Finance Magazine*. <https://www.gfmag.com/magazine/november-2018/biggest-banks-world-2018>. Accessed 26/02/2019. Asset figures from Fitch, Moody's, and company reports. Ratings are valid as of Aug. 17, 2018.

markets and together merging market banks account for one-third of global banking revenues (Sanders, 2018). Among 50 of the world's top banks by asset 12 banks are from emerging economies, i.e. all of them from China (Top 100 banks, 2018). Chinese banks dominate the largest banks of the world, i.e. from top 100 banks, 20 are Chinese, 5 Brazilian and 5 South Korean. Table 1 lists the largest banks of the world from emerging market economies in terms of market capitalisation and assets.

The banking activities are one of the most important achievements of economic civilisation in the financial intermediation process, which encompasses multiple tools for regulating and maintaining the stability of the whole economy. The banking activities perform five functions which are providing information on allocation of resources, facilitating the exchange of goods and services, encouraging trading and risk diversification, pooling and mobilising deposits, and monitoring investments. Therefore, banking activities development defines the efficiency of conducting these functions. The number of

literature and studies highlight the irreplaceable role of banking activities in an increase in economic productivity and efficiency of companies. The banking sector development differs from country to the country depending on economic growth, openness to trade and capital, financial and political institutions, income level, geographical endowments and human capital. Thus, establishing what makes banking sector to develop is essential to encourage economic growth for particular countries.

The banking activities are multi-dimensional by its nature and evaluating determinants of its development is complicated. In many empirical studies, gross domestic products (GDP) is used as the primary determinant of banking sector development, but the single measure is not enough to provide comprehensive information on the development of multi-dimensional phenomenon. Measuring the development of the financial sector and particularly the banking sector is complicated and mainly depends on the development of the financial system of a particular country. Feyen and Levine in their work identified four dimen-

Table 2
Institutional quality index of emerging market economies in 2017

| Country | IQI score | Ranking |
|--------------------|-----------|---------|
| Argentina | 0.3082 | 138 |
| Brazil | 0.4397 | 104 |
| Czech Republic | 0.8181 | 25 |
| China | 0.3727 | 118 |
| Turkey | 0.4903 | 91 |
| India | 0.4940 | 90 |
| Indonesia | 0.5114 | 86 |
| Malaysia | 0.6478 | 53 |
| Nigeria | 0.2480 | 151 |
| Republic of Korea | 0.7842 | 29 |
| Poland | 0.7861 | 28 |
| Russian Federation | 0.3497 | 126 |
| Thailand | 0.4790 | 94 |
| Philippines | 0.5148 | 85 |
| South Africa | 0.5923 | 59 |

Source: Institutional quality index 2017. https://shop.freiheit.org/download/P2@688/101471/2017_Institutional%20Quality%20Index.pdf. Accessed 26/02/2019.

sions of banking sector development as depth, access, efficiency and stability (Feyen & Levine, 2013, pp. 17–21). As for emerging economies' banking, the measures of depth, efficiency and stability are more sensitive. Thus, the composition of different indicators is required to be used in determining banking activities development. Banking activities development as a critical element of economic growth can be estimated by the used of numerous theories including endowment theory, law and finance theory, financial liberalisation theory, interest group theory, inflation and finance theory. All these theories identify and highlight determinants that either promote or deter banking activities development.

First, the endowment theory states the significance of institutions in banking activities development and emphasises the dependence of quality of banking activities upon its development (Filippidis & Katrakilidis, 2014, pp. 501–507). This theory examines institution and geography as the main determinants of the banking activities development. As for emerging countries the geographic location is closely interrelated to its

development, i.e. the countries that are located in borders of developed and developing countries which provide possibilities to share knowledge, experience and practices to improve institutions. The theory stipulates two assumptions:

The historical conditions do not influence the formation of institutions, and current institutions are independent of a historical one

The influence of historical conditions on ongoing formation and development still exists.

The developed financial institutions primarily decrease the cost faced by economic agents which increase the efficiency of the banking sector. The significance of financial institutions in the development of banking activities was studied by Law and Azman-Saini, Asiama and Mobolaji, Herger, Filippidis and Katrakilidis. Law and Azman-Saini in their work highlighted the positive role of institutions in banking activities development (Law & Azman-Saini, 2012, pp. 217–220). They emphasised the high-quality institutional environment is a defining factor in enormous growth in the banking sector in developed and developing countries. In contrary, Asiama and Mobolaji

explained the negative impact of inefficient and ineffective institutions on banking activities growth (Asiama & Mobolaji, 2015). Currently, the best measure of institutional efficiency in international level is an institutional quality index (IQI) developed by World Bank which ranks 191 different countries in terms of the rule of law, corruption, voice and accountability, freedom of the press, global competitiveness, economic freedom and doing business. Table 2 provides the ranking of emerging countries in terms of institutional quality in 2017.

Second, law and finance theory is closely related to institutions and reveal the importance of law and legal systems in the development of banking activities. The relationship between law and development of banking activities was researched widely. Coyle and Turner stated that if right and appropriate law is as itself a guarantee for development of banking activities (Coyle & Turner, 2013, pp. 810–813). The regulation of the financial market in emerging economies has to deal with institutional constraints to promote financial stability. In emerging economies, the banks are mainly regulated through capital requirements, resolution mechanisms on failing banks, increasing transparency, liquidity risk and leverage management, and coordination among regulations (Eswar, 2017).

Third, the concept of financial liberalisation developed by McKinnon and Shaw emphasises on financial liberalisation and consequent possibilities of banking activities development. The banking sector is considered to be liberalised when the restrictions imposed on its activities by the government and other institutions are eliminated, and capital flows are permitted. But the liberalisation of banking activities does not necessarily lead to the development of banking activities, i.e. the most of developed countries experienced crises as a result of liberalisation. Atiq and Haque established that financial liberalisation should be at an appropriate level not to restrain banking sector development (Atiq & Haque, 2013). Whereas, Ahmed in his work highlighted the positive effect of financial liberalisation in most of the emerging countries by examining using empirical assessment (Ahmed, 2013, pp. 261–265). Banking Z-score measures the extent of liberalisation of individual country's banking sector, which primarily establishes the

Table 3
Z-score of emerging market economies in 2017

| Country | Z-score |
|--------------------|---------|
| Argentina | 6.83 |
| Brazil | 15.21 |
| Czech Republic | 13.93 |
| China | 20.83 |
| Turkey | 8.07 |
| India | 18.17 |
| Indonesia | 6.08 |
| Malaysia | 16.31 |
| Nigeria | 15.44 |
| Republic of Korea | 10.2 |
| Poland | 8.47 |
| Russian Federation | 5.82 |
| Thailand | 7.33 |
| Philippines | 17.74 |
| South Africa | 14.69 |
| World average | 12.67 |

Source: World Bank. (2017). Bank Z-score. <https://databank.worldbank.org/data/reports.aspx?source=1250&series=GFDD.SI.01>. Accessed 26/02/2019.

probability of bank default. It is calculated as Z-score of every particular bank in the country and then weighted as average for the overall banking sector. Higher the Z-score higher the process of liberalisation and vice versa. The Z-scores for banking activities of emerging market countries shows a favourable result for eight countries out of selected 15 (Table 3). Also, for most emerging market countries' banking sector, the Z-scores are increasing from 2012.

Fourth, interest group theory postulates the importance of macroeconomic factors on the development of the financial sector, i.e. openness to trade and capital flows to the country. In providing their significance for encouraging financial development, many researchers highlighted that only a combination of both of them promotes banking activities development. For emerging countries, the openness to capital and trade flows already at a high level to most countries. Trade and financial openness indexes measure the degree on which country is exposed to foreign

Table 4
Trade and financial openness index for emerging countries

| Country | TOI (%) | FOI |
|--------------------|---------|------|
| Argentina | 25.02 | 0.05 |
| Brazil | 24.12 | 0.1 |
| Czech Republic | 151.7 | 0.7 |
| China | 37.8 | 0 |
| Turkey | 54.12 | 0.7 |
| India | 41.07 | 0.1 |
| Indonesia | 39.54 | 0.3 |
| Malaysia | 135.84 | 0.2 |
| Nigeria | 26.35 | 0.9 |
| Republic of Korea | 80.78 | 0.9 |
| Poland | 104.56 | 0.2 |
| Russian Federation | 46.73 | 0.55 |
| Thailand | 122.8 | 0.05 |
| Philippines | 71.83 | 0.1 |
| South Africa | 58.18 | 0.25 |

Source: UNCTAD. (2017). UNCTAD Statistics. <https://stats.unctad.org/handbook/MerchandiseTrade/Indicators.html>. Accessed 26/02/2019.

trade and capital. These indexes developed by the IMF are presented in Table 4 for emerging economies in 2017.

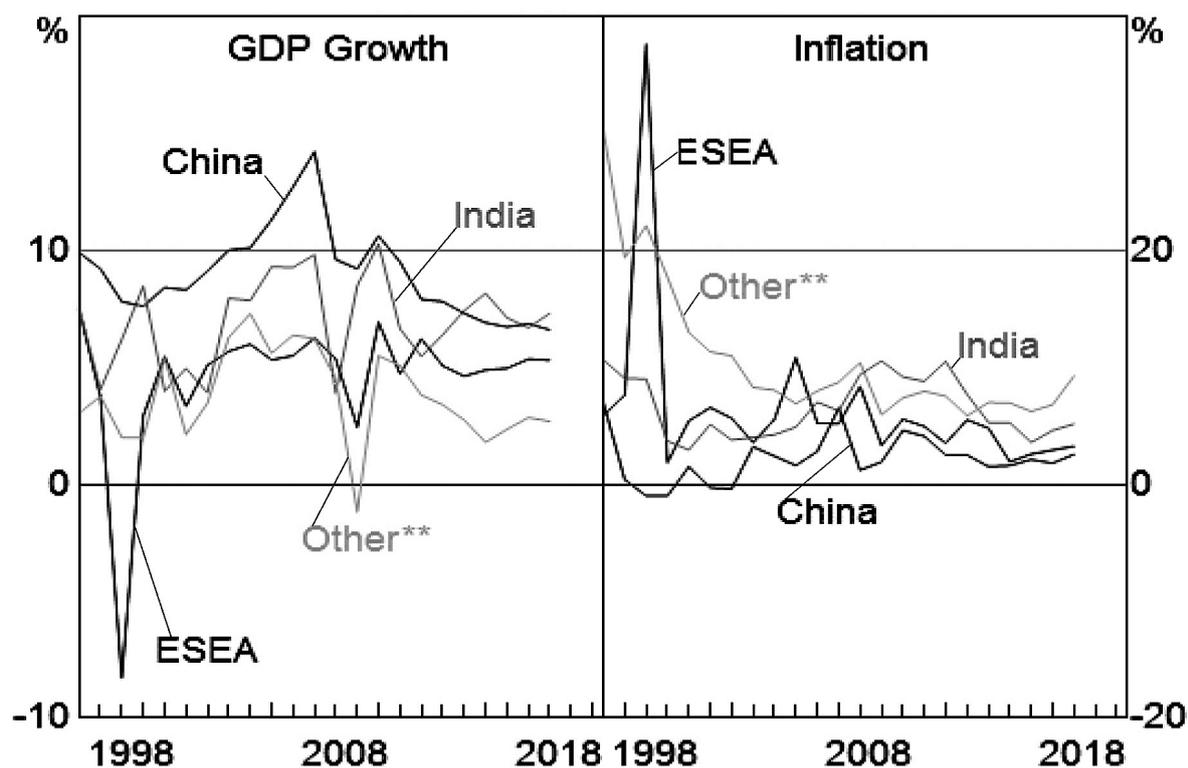
Fifth, inflation and finance theory is the only theory that proposes the factor which has a substantial negative impact on the development of the financial sector. Inflation can be described as a persistent rise in the price and defines the overall macroeconomic stability. Kim and Lin in their work stated that high inflation rates discourage banks from providing long-term credit and cause a reduction in the allocation of resources (Kim & Lin, 2013, pp. 343–345). But Huybens and Smith in their empirical work highlighted the point that when the inflation rate reaches 15 per cent, the negative effect of inflation in banking development reduces. In this context, the point of view of Ayadi is essential, i.e. he discovered the lesser negative effect of inflation in emerging countries with capital flows openness (Ayadi & Naceur, 2015). Figure 1 shows the relationship between economic growth of emerging economies and inflation rates, which represents reverse dependence as-

suming that high economic growth corresponds to the development of banking activities.

There are many other determinants including income level, government, culture, democracy and human capital which would affect the banking development. Theoretically, all these determinants regarded to have a favourable influence on the development of the financial sector. The effects of each determinant can be summarised as represented in Table 5. Not all determinants have a direct positive impact on banking development, i.e. some determinants which have a positive effect on developed countries' banking have a negative effect on emerging market banking activities.

The banking activities performance in emerging market economies

The banking performance is a measure of profitability, stability and efficiency, the importance of which increased after the global financial crisis of 2008. Even though banking profitability has shrunk after the global financial crisis in both developed and emerging countries, it is still the best measure of bank



* Forecast from October 2018 WEO for 2018

** Emerging market aggregate excluding ESEA, China, India and Venezuela

Fig. 1. Emerging economies growth and the inflation rate.

Sources: IMF: RBA

performance. The empirical studies on bank profitability can be divided into two directions: analysis of banking profitability in multiple countries and analysis on the example of a single country. In other words, there are a few studies on emerging market countries. But the studies of the individual emerging country provide evidence that risk and competition affect profitability as in Table 6.

The banking profitability is measured either by return on asset or return on equity. Return on asset (ROA) is the simplest measure of profitability, which reflects the ability of the bank to generate profit from asset management. It is calculated as the ratio of net income before extraordinary items and taxes to an average asset for the period. Bank profitability in emerging economies was an upward trend until 2007, but it extremely high in comparison with developed countries. The current average of banking industry ROA is 1.12 per cent and 1.02 per cent for banks with an asset of less than 1 billion \$ (Lukosiunas, 2017). Thus, in our analysis, the measure of 1.02 per cent is more appropriate taking into account that most

Table 5

The effects of the main determinants of banking activities development for emerging market countries

| Main determinants | Effect on banking development |
|------------------------------|-------------------------------|
| Institutional quality | Positive |
| Legal system and regulation | Negative/Positive |
| Liberalisation | Positive |
| Trade and financial openness | Positive/Negative |
| Economic growth | Positive |
| Inflation | Negative |

Source: the author.

of the banks in the emerging market, excluding Chinese largest banks with assets of 4 trillion \$ individually (Sanders, 2017). Return on equity (ROE) in its turn is a measure of net income generated by invested capital of shareholders. It is calculated by dividing net income before common stock dividends for the past 12 months by shareholders' equity. The average ROE for the

Table 6
The empirical studies on bank profitability of emerging market economies

| Study references | Banking sector investigated | Main findings |
|-------------------------------------|--|--|
| Mirzaei A., Moore T., Liu G. (2013) | Emerging countries banking sector (Czech Republic, Poland, Turkey) | Market share and concentration have an insignificant and negative correlation with bank profitability. |
| Sufian F. (2011) | South Korean banking sector | Risk hurts bank profitability. |
| Liu H., Wilson J. (2010) | Japanese banking sector | Higher profitability tends to have banks with lower risks, greater capital and higher efficiency. |
| Sufian F., Chong R. (2012) | Philippine banking sector | Risk and bank profitability have a negative correlation. |
| Tan Y., Floros C. (2012) | Chinese banking sector | Taxation and GDP growth rate hurt bank profitability. |

Source: the author.

Table 7
Bank profitability in selected emerging market countries for 2015–2017

| Country | ROA (%) | | | ROE (%) | | |
|--------------------|---------|------|------|---------|-------|-------|
| | 2015 | 2016 | 2017 | 2015 | 2016 | 2017 |
| Argentina | 3.59 | 3.22 | 3.38 | 30.82 | 26.50 | 28.54 |
| Brazil | 1.06 | 0.92 | 1.43 | 13.89 | 11.16 | 15.47 |
| Czech Republic | 1.26 | 1.32 | 1.42 | 12.04 | 12.25 | 13.78 |
| China | 1.09 | 1.54 | 0.96 | 16.99 | 22.44 | 13.83 |
| Turkey | 1.34 | 1.10 | 1.39 | 12.38 | 10.02 | 12.77 |
| India | 0.75 | 0.31 | 0.47 | 10.61 | 4.24 | 6.17 |
| Indonesia | 2.16 | 1.75 | 1.72 | 17.35 | 13.35 | 11.93 |
| Malaysia | 1.36 | 0.93 | 1.04 | 12.67 | 9.09 | 10.56 |
| Nigeria | 2.09 | 1.47 | 1.53 | 14.88 | 10.14 | 10.69 |
| Republic of Korea | 0.41 | 0.32 | 0.48 | 5.16 | 4.24 | 6.73 |
| Poland | 1.07 | 0.85 | 0.96 | 9.59 | 7.56 | 8.6 |
| Russian Federation | 1.00 | 1.00 | 0.49 | 8.68 | 8.68 | 5.93 |
| Thailand | 1.39 | 1.13 | 1.16 | 12.14 | 9.53 | 9.28 |
| Philippines | 1.27 | 1.14 | 1.19 | 12.22 | 10.62 | 10.89 |
| South Africa | 0.90 | 0.91 | 1.19 | 12.34 | 15.42 | 15.46 |
| World average | 1.19 | 1.02 | 1.02 | 12.21 | 10.23 | 10.23 |

Source: World Bank. (2018). World Bank's Global Financial Development Database (GFDD). <https://data.worldbank.org/indicator/FB.AST.NPER.ZS?view=chart>. Accessed 26/02/2019.

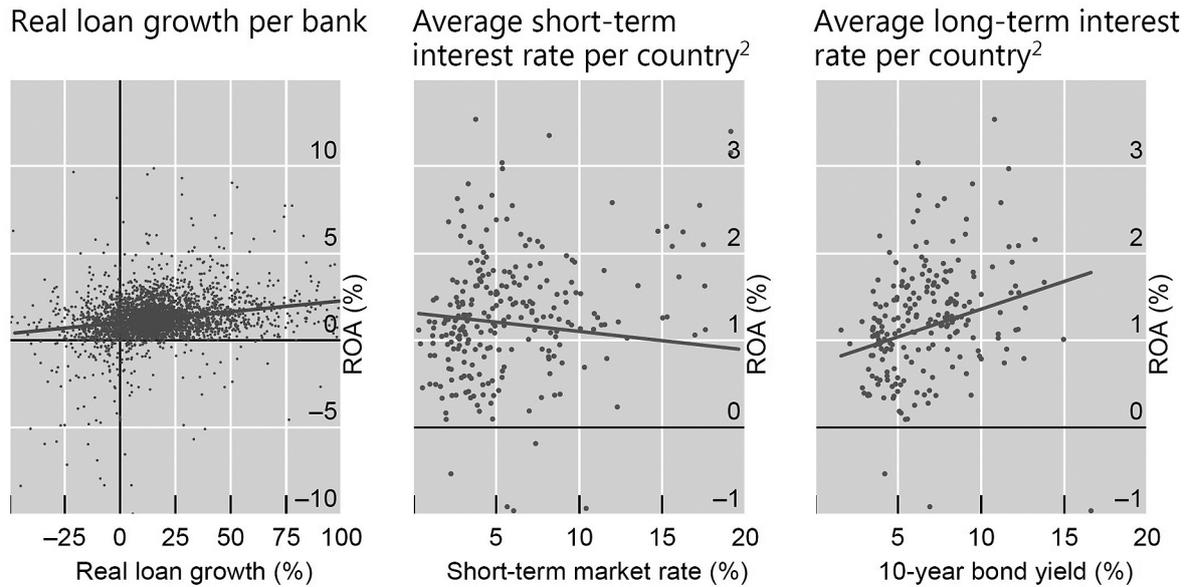


Fig. 2. Correlates of bank profitability¹.

Source: Kohlscheen & Murcia, 2018, p. 11.

Note:

1 Scales adjusted to show most data points.

2 Data correspond to the average ROA of all banks in the sample per country and year. Therefore, each data point represents a country in a specific year.

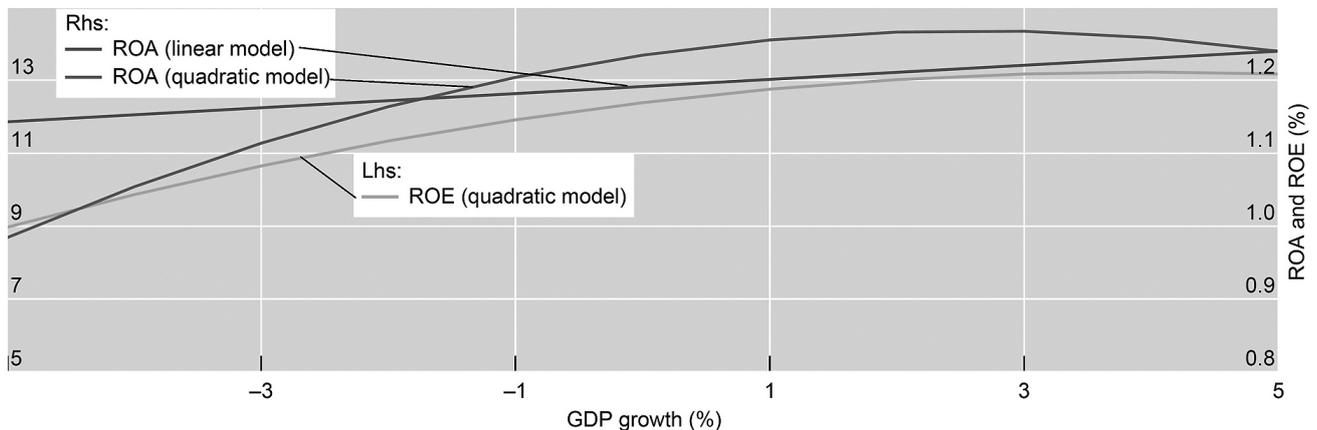


Fig. 3. ROE and ROA's correlation with GDP growth in selected emerging economies.

Source: Kohlscheen & Murcia, 2018, p. 18.

Note: EME bank returns and real annual output growth (Estimation results).

banking industry is 10.34 per cent for large institutions and 10.23 per cent for smaller which is suitable for emerging market banks (Table 7.).

By comparison with average ROA and ROE, the measure of ROE is more favourable than ROA in emerging market banks. Despite this fact, ROA and ROE of emerging market banks are very promising. Mostly, bank performance in emerging markets is affected by credit growth, long-term interest rate, and by short-term interest rate and GDP growth to less extent. In other words, bank profitability in emerging markets is influenced

more by credit growth. Figure 1.2 illustrates the correlation of real loan growth, short-term and long-term rate with ROA growth in selected emerging countries. Bank loan growth per bank and long-term interest have a strong positive relationship with ROA, while short-term interest rate causes a decrease in ROA due to funding cost (Kohlscheen & Murcia, 2018, pp. 6–9).

The GDP growth effect on profitability is less than credit growth but influences both ROA and ROE. The relationship between GDP growth with ROA and ROE using the quadratic and linear mod-

Table 8
The empirical studies on bank stability of emerging market economies

| Study references | Banking sector investigated | Main findings |
|--|---|--|
| Fu X., Lin Y., Monyleux P. (2013) | Asian banking sector (China, Indonesia, South Korea, Malaysia, Singapore, Thailand, Taiwan, Philippines) | Bank concentration is no sufficient measure of competitiveness. Also, competition-stability and competition-fragility relationships are both true. |
| Bermpei T., Kalyvas A., Nguyen T. (2018) | Emerging countries banking sector (Argentina, Brazil, India, Indonesia, Malaysia, Russian Federation, South Africa, Thailand) | Bank regulation and institutional quality together effectively promote bank stability by influencing profitability rather than bank capital. |
| Mohammed A., Wolfe S. (2013) | Emerging countries banking sector (Nigeria, South Africa, China, Philippines, Thailand, South Korea, India) | Greater competition in the banking sector and revenue diversification enhance bank stability. |
| Mirzaei A., Moore T., Liu G. (2013) | Emerging countries banking sector (Czech Republic, Poland, Turkey) | Market share is positively correlated with bank stability in emerging market countries. |
| Mohamed R. (2015) | Emerging countries (Brazil, Mexico, China, India) | The use of option and future instruments affect negatively on banking stability. |

Source: the author.

Table 9
Bank stability in selected emerging market countries for 2015–2017

| Country | NIM (%) | | | NPL to gross loans (%) | | | Liquid assets to deposits and short-term funding (%) | | |
|--------------------|---------|------|-------|------------------------|-------|-------|--|-------|-------|
| | 2015 | 2016 | 2017 | 2015 | 2016 | 2017 | 2015 | 2016 | 2017 |
| Argentina | 5.91 | 9.20 | 10.35 | 1.99 | 1.74 | 1.84 | 42.92 | 56.23 | 61.27 |
| Brazil | 3.65 | 3.18 | 8.33 | 2.85 | 3.31 | 3.92 | 54.67 | 47.54 | 62.37 |
| Czech Republic | 2.41 | 2.31 | 2.25 | 5.61 | 5.48 | 4.59 | 19.02 | 28.27 | 33.74 |
| China | 2.84 | 4.07 | 2.29 | 4.01 | 3.92 | 3.44 | 16.99 | 15.75 | 13.83 |
| Turkey | 4.15 | 3.80 | 4.00 | 2.99 | 3.11 | 2.84 | 9.85 | 24.38 | 21.97 |
| India | 2.85 | 2.89 | 2.84 | 5.88 | 9.19 | 9.98 | 6.75 | 13.26 | 15.13 |
| Indonesia | 5.68 | 5.70 | 6.39 | 2.43 | 2.89 | 2.56 | 21.94 | 20.62 | 19.41 |
| Malaysia | 2.45 | 1.80 | 1.93 | 1.60 | 1.61 | 1.55 | 20.10 | 18.19 | 17.00 |
| Nigeria | 7.12 | 6.84 | 5.60 | 4.86 | 12.82 | 14.81 | 20.73 | 18.88 | 17.32 |
| Republic of Korea | 2.06 | 1.52 | 1.86 | 0.49 | 0.46 | 0.47 | 8.19 | 11.57 | 10.74 |
| Poland | 2.61 | 2.39 | 2.59 | 4.34 | 4.05 | 3.94 | 13.44 | 11.96 | 9.33 |
| Russian Federation | 4.25 | 1.45 | 4.11 | 8.35 | 9.45 | 10.00 | 44.33 | 40.76 | 34.34 |
| Thailand | 2.95 | 2.72 | 2.94 | 2.68 | 2.99 | 3.07 | 18.27 | 17.84 | 18.07 |
| Philippines | 3.44 | 3.31 | 3.31 | 1.86 | 1.72 | 1.58 | 31.71 | 11.96 | 12.64 |
| South Africa | 3.33 | 2.98 | 3.45 | 3.12 | 2.86 | 2.84 | 22.09 | 24.06 | 23.12 |
| World average | 3.77 | 3.56 | 3.56 | 4.01 | 3.92 | 3.45 | 28.32 | 27.96 | 21.34 |

Source: World Bank. (2018). World Bank's Global Financial Development Database (GFDD). <https://data.worldbank.org/indicator/FB.AST.NPER.ZS?view=chart>. Accessed 26/02/2019.

Table 10
The empirical studies on bank efficiency of emerging market economies

| Study references | Banking sector investigated | Main findings |
|---|---|--|
| Du K., Sim N. (2016) | Emerging countries banking sector (China, India, Indonesia, Russia, Malaysia, Thailand) | Bank M&A has a positive effect on bank efficiency and mainly benefit directed to the target bank. |
| Phan H., Daly K., Akhter S. (2016) | Emerging Asian countries banking sector (Indonesia, India, Malaysia, Philippines) | For banks in Indonesia, market concentration is negatively associated with bank efficiency. For banks in Malaysia, India and the Philippines, market competition is negatively affecting banks efficiency. |
| Partovi E., Matousek R. (2018) | Turkey banking sector | The presence of NPLs and riskier portfolio diminish Turkey banking sector efficiency. |
| Hou X., Wang Q., Zhang Q. (2014) | Chinese banking sector | There is a positive relationship between bank efficiency and risk-taking. |
| Peng J., Jeng V., Wang J., Chen Y. (2017) | Taiwan banking sector | Both bank efficiency and profitability are increased with shareholder value maximisation. |

Source: the author.

el is represented in Figure 3. The concave curve describing the relationship between ROE and ROA with GDP growth (yellow and blue lines) is similar to the linear curve (red line) indicating a positive correlation of both ROA and ROE with GDP growth (Kohlscheen & Murcia, 2018). The exception is strong negative GDP growth, where ROE is significantly sensitive to negative GDP growth indicating high relevance.

It is possible to measure the bank stability in terms of net interest margin, non-performing loans to gross loans and liquid assets to deposits and short-term funding (Baum, Pundit & Ramayandi, 2017, pp. 4–7). The factors influencing banking stability is discussed in many academic and regulatory circles in different countries. These papers highlight competition, concentration, market structure and derivatives role on banking stability in emerging economies (Table 8.).

Net interest margin (NIM) is a measure of banking stability which expressed as the difference of interest income and interest expense in ratio with interest-earning assets. In other literature, it is also referred to as bank's markup — the difference between weighted average yields of assets and liabilities. A very high or low

NIM can create distrust between bank shareholders and cause bank management problems. NIM in emerging market banks volatile, but stable in comparison with world average NIM. Non-performing loan (NPL) is a loan that is close or in the position of default, thus the measure of the non-performing loan to gross loan measures of asset quality and problems with stability in financial operations. It is calculated as the ratio of non-performing loan to total loan on balance sheet including the non-performing loan. NPL to gross loan in emerging economies is characterised by a positive trend, i.e. decreasing in 9 of 15 presented countries. It means that emerging market banks are increasing their ability to enhance asset quality and conduct operation effectively not causing default problems. A liquid asset to deposits and short-term funding is a measure of bank stability that is calculated as easily converting assets divided by the sum of short-term funding and deposits. This indicator is highly volatile in individual emerging market banks, but higher than world average indicating that they are managing assets and liabilities effectively (Table 9).

Bank efficiency is also one of the bank performance measures, which establishes bank health

Table 11
Bank efficiency in selected emerging market countries for 2016–2018

| Country | Accessibility | | | Availability | | | Usage | | |
|--------------------|--|-------|-------|-------------------------------|--------|--------|--------------------------------|--------|--------|
| | Number of bank branches per 100,000 adults | | | ATMs per 1000 km ² | | | Credit plus deposit to GDP (%) | | |
| | 2016 | 2017 | 2018 | 2016 | 2017 | 2018 | 2016 | 2017 | 2018 |
| Argentina | 13.17 | 13.37 | 13.42 | 7.19 | 7.22 | 7.22 | 16.53 | 17.79 | 18.77 |
| Brazil | 20.72 | 20.40 | 19.22 | 21.82 | 21.55 | 20.92 | 51.79 | 55.34 | 59.26 |
| Czech Republic | 23.69 | 22.36 | 21.29 | 58.96 | 61.08 | 64.60 | 65.43 | 65.86 | 67.56 |
| China | 37.81 | 37.47 | 38.7 | 65.49 | 92.32 | 98.44 | 44.75 | 43.91 | 44.95 |
| Turkey | 19.19 | 18.14 | 17.39 | 60.05 | 60.25 | 61.51 | 45.07 | 44.47 | 46.33 |
| India | 13.54 | 14.06 | 14.72 | 61.88 | 67.91 | 71.77 | 64.26 | 64.49 | 65.96 |
| Indonesia | 17.75 | 17.39 | 16.89 | 54.81 | 57.09 | 58.87 | 32.82 | 33.71 | 34.39 |
| Malaysia | 10.51 | 10.26 | 10.06 | 35.39 | 34.42 | 34.06 | 124.45 | 123.83 | 119.54 |
| Nigeria | 4.98 | 4.74 | 4.44 | 18.01 | 19.10 | 19.16 | 17.91 | 17.69 | 17.27 |
| Republic of Korea | 16.76 | 16.26 | 15.45 | 125.45 | 124.48 | 123.42 | 124.02 | 127.44 | 130.29 |
| Poland | 31.14 | 31.02 | 29.29 | 61.64 | 67.05 | 72.32 | 51.94 | 53.59 | 55.83 |
| Russian Federation | 32.91 | 30.14 | 29.22 | 12.63 | 12.29 | 11.92 | 41.34 | 48.66 | 50.41 |
| Thailand | 12.54 | 12.38 | 11.88 | 124.29 | 125.49 | 131.03 | 114.64 | 115.01 | 114.45 |
| Philippines | 8.79 | 8.87 | 9.05 | 58.08 | 64.00 | 68.01 | 60.46 | 62.79 | 64.15 |
| South Africa | 10.86 | 10.16 | 10.43 | 22.21 | 22.62 | 22.55 | 58.32 | 59.52 | 59.54 |
| World average | 20.63 | 20.72 | 20.74 | 63.12 | 65.70 | 66.14 | 59.45 | 61.35 | 62.16 |

Source: IMF. (2018). Financial Sector Assessment: A Handbook. Chapter 2. Indicators of Financial Structure, Development, and Soundness. <https://www.imf.org/external/pubs/ft/fsa/eng/pdf/ch02.pdf>. Accessed 26/02/2019.

and drives the economic growth of the country. The growing studies are concentrating on negative and positive relations of bank efficiency with bank and market characteristics on single and group of countries. For emerging market banks, bank efficiency is studied on relation of it with bank M&A, market concentration, banks size, NPLs and risk-taking (Table 10).

Currently, literature highlighted the phenomenon of so-called financial inclusion which is more appropriate for defining bank efficiency (Goel & Sharma, 2017, pp. 952–954). A financial inclusion system is a system that determines bank efficiency in terms of its accessibility or penetration, availability and usage. Accessibility dimension of banks for emerging countries is measured in this study using some bank branches

per 100,000 adults to define the depth of the banking services access. In this case, the number of accounts per capita also can be used, but if the single person holds two and more accounts, the result of the indicator would be improper (Ahamed, 2016, pp. 208–212). Availability dimension of banks is measured by the outreach pervasiveness of financial services in terms of physical banks. It can be expressed by geographical outreach of automated teller machines (ATMs) per 1000 km², the number of ATMs per 100,000 adults also can be used, but km² defines geographic availability more precisely (Allen & Carletti, 2013, pp. 3365–3367). Usage dimension shows ease and affordability of banking activities, and for measurement transaction cost, ease of transaction and credit plus deposit to GDP

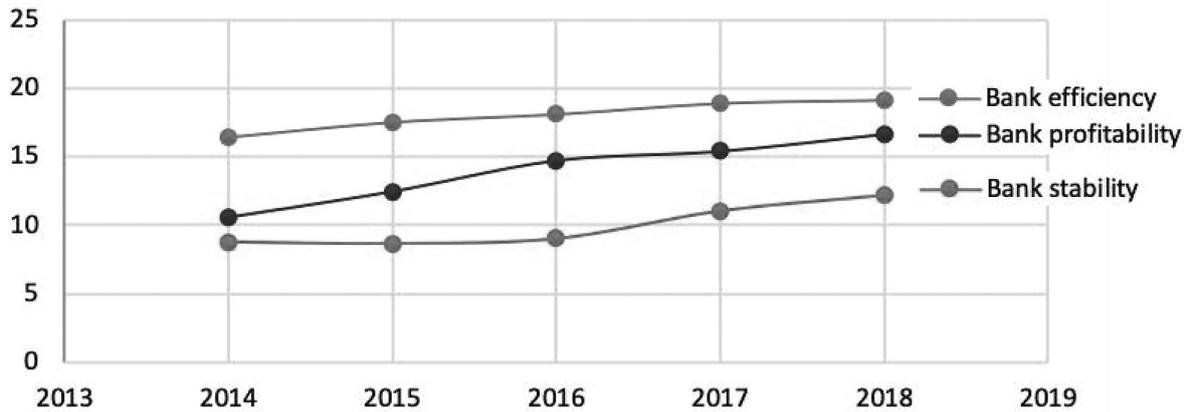


Fig. 4. Bank performance in emerging market countries for 2013–2017.

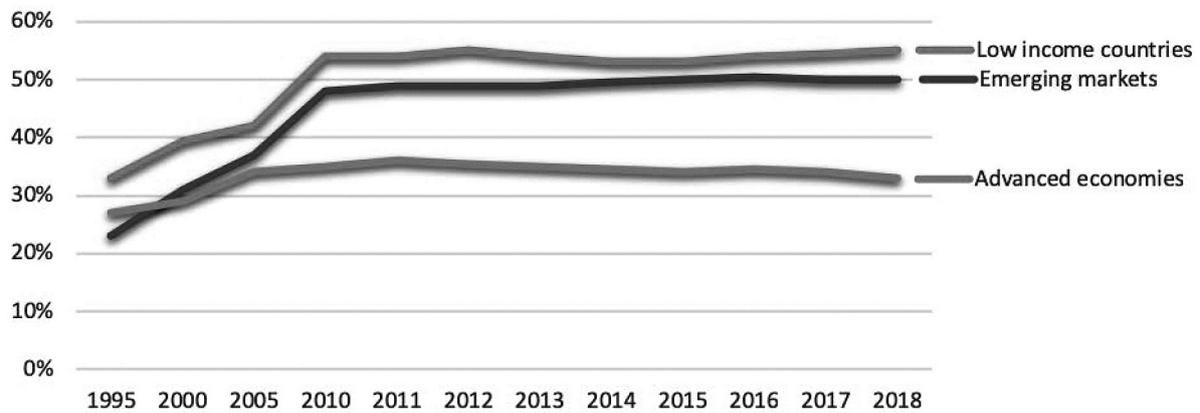


Fig. 5. Percentage of foreign banks to total banks.

Source: World Bank. (2018). Global Financial Development Report 2017/2018. <https://openknowledge.worldbank.org/bitstream/handle/10986/28482/9781464811487.pdf#page=41>.

can be used (Jiang & Yao, 2013, pp. 3365–3367). But as banking transactions costs and ease of transaction is different for individual banking institutions, it is more appropriate to use credit plus deposit to GDP as a representative indicator. It represents the extent to which people use credit and deposits for banks, i.e. more efficient banks more credit and deposits in circulation. (Table 11) Bank efficiency in emerging market banks is always in a positive trend, i.e. most of the countries are increasing their position. The indicators of accessibility, availability and usage dimensions are not only comparable with average world figures but also characterised with substantial growths.

Bank performance based on bank profitability and stability indicators represent a stable trend for selected 15 countries between 2013 to 2017 (Figure 4). Figure 4 is the average of each

indicator aggregated by comparison with world average into one measure of bank profitability, stability and efficiency. As apparently the figure represents, bank efficiency in emerging market banks is high surpassing both bank profitability and stability. As emerging market banking activities highly depend on developed countries financial situation, stability is not guaranteed. Banking activities profitability in the era of fintech revolution and high regulation is considerably presentable with constant growth.

Internationalisation of emerging market banking

A dramatic shift in wealth distribution is a phenomenon that drives the global economy in modern times. The emerging economies' wealth is increasingly growing during the last years and mainly driven by wealth distribution.

The total number of so-called high net worth individuals in emerging economies, mostly in Asian region drives the wealth attraction to emerging economies. In other words, the growth of high net worth individuals is comparative to GDP rate (Marques & Schneider, 2017, pp. 720–725). Many of these individuals in emerging countries require the same banking services with the same qualities as in developed countries. Despite growth banks of a potential emerging market, a large portion of a population is still not banked at a sufficient level or not banked at all. Thus, the result is a massive expansion of the internationalisation of banks.

In the process of banking internationalisation, financial integration and globalisation are driving force. In emerging market countries, it is characterised by two directions: going abroad and arrival. From 1995 to 2009 the number of foreign banks entering emerging market economies increased by 74 per cent, but from 2010 the trend is considerably slowing (Ghosh, 2017, pp. 84–87). The reasons behind such massive movements of banks are as follows:

To accelerate asset under management to attain a comparable size

To diversify current customers' assets composition

To gather access to new products and technology

To gain more knowledge, more significant presence and further visibility

To encourage brand recognition.

In other words, foreign banks in host nations are mostly driven by higher profits, diversification of opportunities and accessibility for more expanding services. Also, two main methods of foreign banks entrance to the host country are distinguished as entering through branches and subsidiaries or merger and acquisition of existing banks.

Historically, foreign banks in low-income countries surpass by amount size those in advanced and emerging countries. The distinguishing characteristic of foreign banks in emerging market countries in comparison with low-income countries is its persistent and sustainable growth. This huge penetration of foreign banks in emerging and low-income countries can be described by their old banking activities, the inefficiency

of information and the exemption from credit allocation regulations which gives foreign banks possibility to gain more profits. Some foreign banks in advanced economies in continuous decline, mostly because advanced countries already undergone liberalisation and relation of regulations. Thus, the entrance of new banks to the market will have a marginal effect, i.e. there is an insignificant influence. Therefore, due to the lack of possibilities for development for new participants even through increasing banking sector openness, there is shallow penetration to advanced economies (Figure 5).

Many emerging market banks were slow in internationalisation due to the vast size, attractiveness and comparative advantages of their domestic market. Currently, this phenomenon is under change by becoming the world's lending force. But few of them are experiencing into neighbouring countries following their large multinationals (MNCs). Their attractiveness is defined by competitive technologies and banking networks that will shape the banking future. But before examining international strategies of emerging market banks, it is essential to understand the environment that develops foreign banks interest to the emerging market.

There is an increasing volume of literature concentrated on the influence of foreign banks on the emerging market. A presence of foreign banks traditionally is considered as a positive development for the financial market, but in recent studies, the adverse effects of foreign banks have been revealed. The principal arguments supporting the positive impact of foreign banks are their ability to bring capital, technical improvements and skills, innovation and fostering competition. But current studies highlight the destabilising role of foreign banks mostly due to increased competition, transmission of foreign shocks and imposed different risks to the domestic financial system. (Table 12)

There are many pieces of evidence that across developed, developing and emerging countries share of banks owned by foreigners increased. For emerging countries like Brazil, India and China, the state-owned banks play an essential role in the banking sector, but after the crisis of 2008–2009 mainly the foreign banks helped to recover from financial distress. A foreign bank is a bank where 50 per cent of

Table 12
The empirical studies on foreign banks penetration on emerging market economies

| Study references | Banking sector investigated | Main findings |
|--------------------------------------|---|--|
| Chen J., Zhu L. (2018) | Emerging countries banking sector (Asia, Latin America, Eastern and Central American region countries) | Foreign banks penetration using competition encourages banking activities development in Latin America more than in Asia and Europe. |
| Lee Ch., Chou P. (2018) | Emerging countries banking sector (China, Czech Republic, Egypt, Indonesia, Philippines, Taiwan) | Financial market openness improves financial market mobility and liquidity in emerging markets more than in developed markets. |
| Wu J., Chen M., Jeon B. (2017) | Emerging countries banking sector (Poland, Czech Republic, Argentina, Brazil, China, India, Indonesia, Thailand, Korea) | An increased presence of foreign banks in emerging market pressures financial stability and implies higher risk than domestic banks. |
| Ghosh A. (2016) | Emerging countries banking sector (Argentina, Brazil, China, Czech Republic, Hungary, India, Indonesia, Poland, Qatar) | The greater presence of foreign banks and share of loan causes reduction of both profits and costs for domestic banks. |
| Hryckiewicz A., Kowalewski O. (2011) | Emerging countries banking sector (Czech Republic, South Korea, Poland) | Foreign banks' choice of entrance depends on economic characteristics and risk of country, and emerging countries are more attractive in these respects. |

Source: the author.

overall shares is owned by foreigners. In this respect, Table 13 presents the percentage of foreign bank assets to total bank assets, where the Czech Republic and Poland are substantially owned by foreigners.

Most countries have a share of foreign bank assets to total bank assets of less than the world average. These small shares also can be described by the fact that the number of total assets of local banks of emerging market countries is considerably increasing over several years.

Several developed countries dominate the amount of total investment made to the banking sector of emerging market countries. Among them, the UK and the US are distinguished by huge investment and increasing interest in emerging market banking activities. Despite numerous obstacles to enter and operate in the new market especially the banking sector in which high regulation and competition, they adapt to it successfully. Investments in the form of establishment of new banks including branches and subsidiaries increased substantially from the US

and Japan. The UK, the US, Germany, Australia and Japan invest in emerging Asia more than in emerging Latin America and Europe. While Spain, Austria, Italy and the Netherlands more often contribute to emerging Europe and Latin America (Figure 6).

Branches, subsidiaries and representative offices of foreign banks in emerging countries are mostly established in capital cities and then in less extent in other places. The superiority of different countries foreign banks employing branches, subsidiaries and representative offices can be represented as follows (Banks around the World):

Argentinian banking sector — HSBC, Deutsche Bank, Santander Bank, BNP Paribas (European banks)

Brazilian banking sector — Barclays, Santander Bank, HSBC, Crédit Suisse, BNP Paribas (European banks)

Czech Republic's banking sector — BNP Paribas, Deutsche Bank, HSBC, UniCredit Bank, Raiffeisen Bank International (European banks)

Table 13
Percentage of foreign banks assets to total bank assets for 2016–2018

| Country | Foreign bank assets to total banks assets (%) | | |
|--------------------|---|-------|-------|
| | 2016 | 2017 | 2018 |
| Argentina | 27 | 26 | 25 |
| Brazil | 16 | 15 | 15 |
| Czech Republic | 85 | 86 | 87 |
| China | 1 | 1.32 | 1.45 |
| Turkey | 15 | 16 | 17 |
| India | 3 | 3 | 3 |
| Indonesia | 27 | 28 | 29 |
| Malaysia | 17 | 17 | 17 |
| Nigeria | 17.42 | 16.82 | 15.54 |
| Republic of Korea | 7 | 7 | 8 |
| Poland | 56.6 | 45.5 | 44.3 |
| Russian Federation | 7 | 6 | 4 |
| Thailand | 7 | 8 | 9 |
| Philippines | 1 | 1 | 1 |
| South Africa | 24 | 25.5 | 26 |
| World average | 26 | 24.3 | 22.1 |

Source: World Bank. (2018). Percentage of foreign bank assets to total bank assets. <https://databank.worldbank.org/data/reports.aspx?source=1250&series=GFDD.OI.16>. Accessed 26/02/2019.

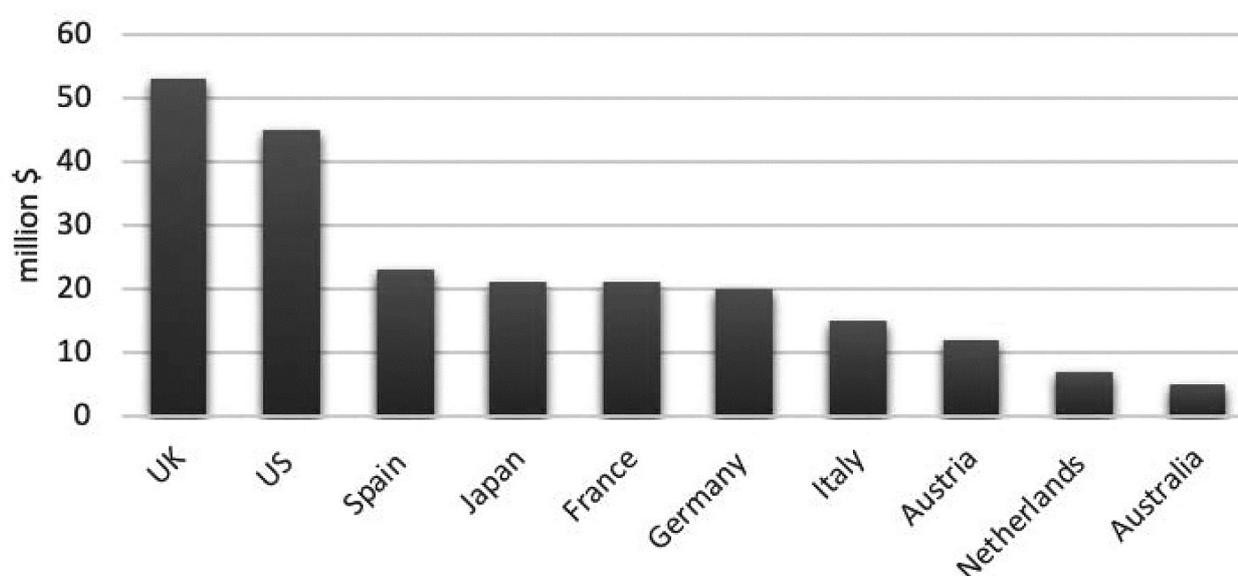


Fig. 6. Total investments in the banking sector of emerging countries.

Source: International banking statistics 2018. BIS, 2018 <https://www.bis.org/statistics/rppb1810.htm>.

Chinese banking sector — Citibank, J.P. Morgan, Morgan Stanley, East West bank (American banks)

Turkish banking sector — Merrill Lynch Bank, J.P. Morgan Chase, Citibank (American banks) and Deutsche Bank, HSBC, Société Générale (European banks)

Indian banking sector — Standard Chartered Bank, Barclays Bank, The Royal Bank of Scotland, Deutsche Bank, Société Générale (European banks) and Shinhan Bank, Woori Bank, KEB Hana Bank, Industrial Bank of Korea (South Korean bank)

Indonesian banking sector — Bank of America, Citibank, J.P. Morgan Chase (American banks)

Malaysian banking sector — Standard Chartered Bank, HSBC, Deutsche Bank, BNP Paribas, Royal Bank of Scotland (European banks)

Nigerian banking sector — Citibank and J.P. Morgan Chase (American banks);

South Korean banking sector — Bank of America, Bank of New York Mellon, Citibank, J.P. Morgan Chase (American banks)

Polish banking sector — BNP Paribas, Crédit Agricole Bank, Crédit Suisse, DZ Bank, HSBC, Société Générale (European banks)

Russian banking sector — Raiffeisen Bank International, Société Générale, Home Credit & Finance Bank, Credit Europe Bank (European banks)

Thailand's banking sector — The Bank of Tokyo-Mitsubishi, Sumitomo Mitsui and Mizuho (Japanese foreign banks)

Philippine banking sector — J.P. Morgan Chase Bank, Citibank, Bank of America, Wells Fargo Bank (American banks)

South African banking sector — Standard Chartered Bank, Société Générale, Deutsche Bank (European banks).

These list of foreign banks in selected emerging market countries prove the results of Figure 1.6, which highlights the increasing role of American and European banks in the internationalisation process.

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Развитие банковской деятельности в странах с формирующейся рыночной экономикой

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Аннотация. Мировой финансовый кризис 2008 г. продемонстрировал важность наличия здоровой и прибыльной банковской отрасли в развитых, развивающихся и менее развитых странах. Поэтому крайне важно понимать пути развития банковской деятельности в странах с формирующейся рыночной экономикой не только для оценки ее влияния на стимулирование роста этих стран, но и для определения общего воздействия этих процессов на мировой финансовый рынок. Кроме того, в последние несколько лет роль стран с формирующейся экономикой в мировой экономике существенно возросла благодаря высокой динамике экономического роста, промышленному потенциалу и массовым поставкам ресурсов и рабочей силы в развитые страны. Результаты исследований, проведенных по данной проблеме, были диаметрально противоположны. Одни доказывали, что иностранные банки либо поощряют общую эффективность, другие – вызывают финансовую нестабильность. Поскольку риск, которому иностранные банки подвергают внутренние банки стран с формирующимся рынком, должен быть оценен заранее, автор статьи попытался дать оценку степени развития банковской деятельности в странах с формирующимся рынком и проанализировать деятельность иностранных банков в этих странах.

Ключевые слова: банковская отрасль; страны с формирующейся рыночной экономикой; финансовая нестабильность; финансовые рынки; банковская деятельность

General Characteristics of the Financial Markets in the People's Republic of China

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Abstract

In this article the author presents the main characteristics of the economy of the People's Republic of China. First of all, the Chinese government has a prudent policy of gradual opening and liberalisation of the economy. However, significant impact on economic development and the state of international settlements in the Asian region is influenced by currency and monetary policy. Therefore, for Chinese state authorities maintenance of stable national currency becomes especially important. In the early 1980s, the government began opening the banking system and the four state-owned specialised banks to accept deposits and perform banking activities. Also, the author analysed development of financial markets of the People's Republic of China. Finally, the author discussed the emerging markets of bitcoin and cryptocurrencies in China.

Keywords: People's Republic of China; monetary policy; economic growth; cryptocurrencies; Chinese stock exchanges; renminbi

JEL Classification: D53, G15, G23, G28

The economy of the People's Republic of China

As we all know, the economy of China has some advantages. First and foremost, almost inexhaustible labour resources: labour force is very motivated, the work ethics of Chinese labour is at the highest level, and Chinese people commit to real education (Brown, 2009, pp. 321–323).

Despite the absence of the political parties, the political system of the country is arranged in such a way that there are competition and a real alternation of power. Hence, there exists an effective system of state regulation and economic policy, as well as the enormous public investment in infrastructure development.

Also, the country makes enormous investments in research and development (R&D). According to last available data (OECD Data, a) total gross domestic spending on R&D as% of GDP was in 2016 2.108 per cent for the People's Republic of China and 1.097 per cent for Russian Federation. That is why China is approaching to be the most developed country.

Moreover, it should be noted that for China exists a very high rate of savings. It is one of the highest in the world — according to last available data (OECD Data, b) saving rate was 46.9 per cent of GDP in 2015. For Russia, this figure was equal to 15.3 per cent in 2015. It was achieved thanks to the low tax burden.

Due to these factors, the country has a very high level of monetisation of the economy. The four largest banks of the country are among the ten largest banks in the world by capital and assets. Due to the developed financial system, the domestic stock market is highly developed too. With the help of IPO and issuing of shares in the domestic market, the contribution to the economy is up to 100 billion U.S. dollars annually. Two largest Chinese stock exchanges by market capitalisation and turnover are among the ten largest in the world (Kroeber, 2016, pp. 246–250).

The government has a prudent policy of gradual opening and liberalisation of the economy. There still are severe restrictions on foreign portfolio investment, restrictions on capital balance. However, there is a general trend to openness, including the

transformation of the Chinese currency — yuan or renminbi into a global currency. It is worth to mention the increased income inequality. Here the damping factor is Confucianism as the basis of social conduct and anti-corruption policy of the Chinese Communist Party (Yu, 2012, pp. 194–201).

At the same time, it should be noted that many risks exist in the Chinese economy. First and foremost, there exists the possibility of «overheating» of the economy and creating excess capacity. Furthermore, there is an environmental problem (Shenggen *et al.*, 2014, pp. 305–316). It should lead to an inevitable slowdown in the gradual elimination of the low base effect. Another important risk factor is the gradual reduction of the effect of cheap labour at the expense of the welfare of the population.

Significant impact on economic development and the state of international settlements in the Asian region is influenced by currency and monetary policy. Cash-credit policy is directed mainly by regulation of inflation, unemployment, economic growth, financial stabilisation and maintenance of stable national currency. Maintenance of stable national currency becomes especially important in connection with the recent trends; however, in similar conditions, the state authorities in different countries have used different approaches to overcome crises (Hossain, 2015, pp. 574–578).

The currency of China is Renminbi (is written by three hieroglyphs: 人民币, translated like “people’s currency”) or Yuan (Chinese writing: 元). The interbank exchange rate on February 28, 2019, was \$US = 6.6182607 CNY (<https://www.hsbc.com.cn/1/2/misc/exchange-rates/>). The yuan has divided into 100 fens each or 10 jiao. Coins come in denominations of one, two and five fens each; one and five jiao, and one yuan coin. Banknotes come in denominations of one, two and five jiao; and one, two, five, 10, 50 and 100 yuan.

The Renminbi is issued and controlled solely by the People’s Bank of China. The exchange rate of yuan is determined by the People’s Bank of China and issued by the state administration of foreign exchange, the latter exercising the functions and powers of exchange control (Zhang, 2012, pp. 187–189). In 1994 China made the reformation of the foreign exchange system, combined the RMB exchange rate adopted by settlement systems of the Bank exchange and created a unified inter-

bank foreign exchange market. On 1, December 1996, China officially recognised article 8 of the Agreement on international currencies and funds and realised RMB convertibility under the current account ahead of schedule.

The interbank exchange rate of the renminbi

Meanwhile, China is actively involved in promoting bilateral currency exchange between ASEAN, Japan, and the Republic of Korea. A variety of financial companies is growing steadily; China opened several new companies to integrate into various aspects of modern international financial business, such as consumer credit, securities investment funds, and insurance-linked investments (Minikin & Lau, 2012, p. 208).

The banking system in China used to be monolithic, with the People’s Bank of China (PBC), the Central Bank, as the primary entity authorised to conduct operations in this country. In the early 1980s, the government began opening the banking system and the four state-owned specialised banks to accept deposits and perform banking activities. These four specialised banks are the Industrial & Commercial Bank of China (ICBC), China Construction Bank (CCB), Bank of China (BOC) and Agricultural Bank of China (ABC).

In 1994, the Chinese government established three more banks, each dedicated to a specific purpose of lending. These policy banks include the Agricultural Development Bank of China (ADBC), the China Development Bank (CDB) and the Export-Import Bank of China. Four specialised banks all held initial public offerings and have a different degree of ownership by the public. Despite these IPOs, banks are still majority owned by the Chinese government.

China also allowed a dozen joint-stock commercial banking institutions and more than one hundred urban commercial banks in the country. There are also banks in China dedicated to rural areas of the country. Foreign banks are also allowed to establish branches in China and to make strategic investments minority in many state-owned commercial banks.

The main national regulatory body that controls China’s banking system is the China Banking Regulatory Commission (CBRC), which is charged with writing rules and regulations governing banks

in China. The CBRC conducts inspections and monitors activities of banks, collects and publishes statistical data on the banking system, approves the establishment or expansion of banking activities and addresses potential liquidity, solvency and other problems that may arise in individual banks (Sanderson & Forsythe, 2013, pp. 204–210).

The People's Bank of China also has considerable power over the Chinese banking system. In addition to the typical issues, the Central Bank is responsible for monetary policy and representing the country at the international forum, the role of the PBC is to reduce the risks and increase the stability of the financial system. The PBC also regulates credit and currency transactions between banks and supervises the payment and settlement system.

Financial markets of the People's Republic of China

The 2008 crisis led to a significant decline in all economic indicators of the countries of the Asian region. The countries managed to return to the pre-crisis level of the economy only in 2010–2011 years. However, starting from 2014 in conditions of continuing external shocks from the international markets of oil and gas, metals, falling exchange rates, and other issues, in many countries problems with the current balance of payments and inflow of foreign currency occurred.

As for the 2019 year, economic growth slowed again in the fourth quarter as spillovers from both financial deleveraging earlier in the year and the trade spat between China and the United States continue to weigh on economic activity. Although policy easing is preventing the economy from decelerating sharply and the slowdown appears to be manageable for now, risks are mounting.

To bolster the economy, Chinese authorities are expected to ease fiscal and monetary conditions further this year as outlined at the December Central Economic Work Conference. Moreover, although trade talks with the U.S. seem to be making progress, the March deadline for new tariffs is looming with no concrete results yet (Focus Economics, 2019).

Economic growth will remain lacklustre this year on the back of moderating domestic growth amid trade tensions between China and the U.S. Although authorities will rely on

fiscal and monetary policy support to avoid any sharp slowdown, the scale of the policy stimulus will be rather limited compared to previous initiatives. Focus Economics panellists see the economy growing 6.2 per cent in 2019, which is down 0.1 percentage points from last month's forecast, before decelerating slightly to 6.0 per cent in 2020.

For the past 25 years, China has demonstrated a phenomenal growth of financial depth of the economy. A similar level of financial depth puts China in some countries with the most developed financial system. Such a high rate is associated with some factors. The factors are the following: high savings rate; currency legislation and the overall regulatory system, which made it difficult to transfer savings abroad or to have the appearance of savings in foreign currency cash; reliability of the banking system in the eyes of the public and credibility; relatively moderate rate of inflation; the relatively limited financial products. The latter circumstance facilitated the presence of Chinese population to the stock market (Ming *et al.*, 2014, pp. 168–175).

Deposits make approximately half of the money supply. Most of the financial assets of China are concentrated in the banking system. Bank credit remains the primary source (about 80 per cent) of funding for Chinese enterprises. The corporate bond market is virtually nonexistent. The share of outstanding non-banking corporate bonds is less than 1 per cent of GDP. A dominant position in the banking sector is concerned with five state banks (Andrew Collier, 2017, pp. 164–175.). The five largest and most powerful of them are:

1. Industrial and Commercial Bank of China (ICBC) — the largest Bank in the country that was initially responsible for the lending of industry.

2. Bank of China (BOC) is the second largest and most profitable Bank. Traditionally it was responsible for foreign exchange transactions and foreign trade financing. It has an extensive network of foreign branches and subsidiaries.

3. China Construction Bank (CCB). Its traditionally main activities are crediting of construction of infrastructure facilities.

4. Agricultural Bank of China (ABC) was primarily engaged in lending of agriculture and the development of the agricultural sector. Fourth place is stated by size. However, ABC is the weakest by power among the five largest.

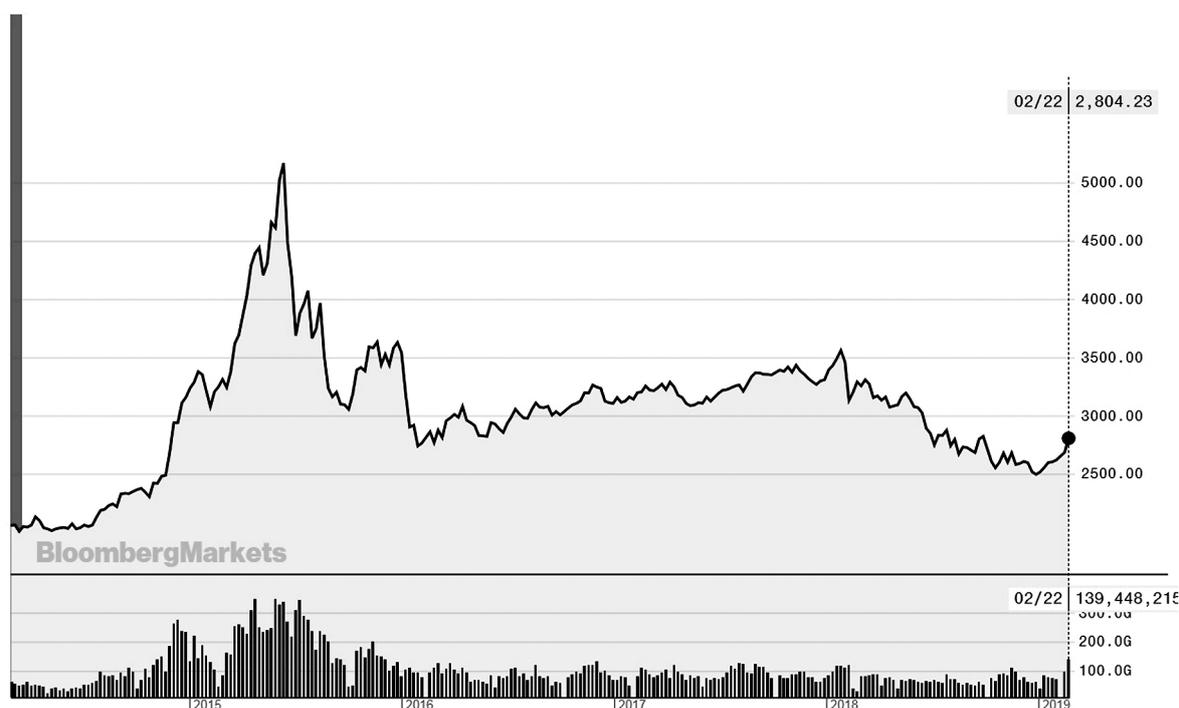


Fig. 1. 5-year SSE Composite index.

Source: Bloomberg. <https://www.bloomberg.com/quote/SHCOMP:IND>.

5. Bank of Communications (BoCom) was founded in 1985, but joined the group of state banks only in 2007 and previously belonged to the category of joint-stock commercial banks.

Currently, all the banks in the Big Five are diversified commercial banks working in different areas. They have more than 200 thousand offices and about 1.5 million employees. To fulfil the targets of the government three specialised state banks were founded: China Development Bank (CDB), Agricultural Development Bank of China and The Export-Import Bank of China. They do not accept deposits and engage in lending for long-term projects by issuing bonds and loans of other banks. The second group of banks (approximately 14 per cent of assets) in the Chinese statistics is called “joint-stock commercial banks”. Four hundred forty institutions, 29 of which are the head offices of the mentioned banks, represent foreign banks.

To sum up, a feature of China’s banking system is a complete dominance of state banks. The share of private banks in the assets does not exceed a few percents. The policy of changing the structure of ownership will not lead to radical changes in its structure. The government has developed a program for the recovery of the banking system. It has issued special treasury bonds amounting

to 270 billion yuan, the proceeds of which were used to recapitalise the state banks.

Unlike Japan, where the national banks have aggravated the problem of public debt, China has managed to maintain healthy public finances (Lou *et al.*, 2008, pp. 260–266). Also, the commercial banks used their own resources and capital to write off bad loans. Besides the apparent progress in reducing the share of bad loans, the quality of loans has considerably improved in the current decade. Overall, to the current year, China’s banking system has significantly improved all the indicators of capital adequacy, quality of loans and other issues of the financial market.

The full operation of the Chinese stock market began with the foundation of the Shanghai Stock Exchange in December 1990. Six months later the Stock Exchange in Shenzhen was opened. Shenzhen is the most successful special economic zone of China. In the period from 2000 to 2004, a multi-level system of the stock market was formed. As is customary throughout the world there were “blue chips” and shares of several echelons (Green, 2003, pp. 105–114).

In 2004, the Chinese government officially allowed Chinese citizens to trade in the stock market. Even though over the past years a variety of Chinese financial instruments has increased,

Hang Seng ▼ **28.228,13** -118,88 (-0,42%)



Fig. 2. Hang Seng Index.

Source: Investing.com <https://ru.investing.com/indices/hang-sen-40>.

it still lags behind the exchanges of developed countries. By 2011, many new financial products were created. These products became an addition to traditional stock, bond, mixed units, currency, and index of insurance shares etc. China has set the creation of the country's international financial centre as one of the priority objectives of economic development. According to Chinese analysts, it will occur in 2025–2030. About the same time, the yuan will turn into a primary world currency. The processes occurring in the Chinese stock market will have an increasing impact on the global economy in general (Yulu, 2013, p. 157).

Shanghai Stock Exchange (Chinese: 上海证券交易所) is the largest stock exchange of mainland China, one of the leading Asian exchanges. It is founded in 1990, registered as a nonprofit organisation, managed by the Securities Commission. Due to its operating power, the Shanghai Stock Exchange is considered one of the most productive in the world (Shanghai Stock Exchange, 2016, pp. 14–18).

To analyse the status and development of the national stock market, the exchange calculates the SSE Composite index, reflecting the dynamics of all exchange-traded equity securities, and the

SSE 50 index, characterising the value of the 50 blue chips of China.

The most significant pick was in the 2nd quarter of 2015 due to the positive changes in the Chinese stock market. Currently, as for 28/02/2019, the index equals 2682. Today the prospects of Shanghai as a financial centre of China remain quite clear, and there are no prerequisites for any changes. The largest state-owned financial, insurance, industrial corporations have traded their shares in Shanghai for a long time: China Unicom, China Railway Construction, Bank of Communications, Air China, Hainan Airlines, SAIC Motor, Industrial and Commercial Bank of China. Undoubtedly, the presence of such players on the Shanghai Stock Exchange confirms its influence on the Chinese economic scene (Wen-Hsin, 2007, pp. 246–248).

Shenzhen Stock Exchange (Chinese: 深圳证券交易所) is one of the three major stock exchanges in China and one of the largest in Asia. Although its exact market capitalisation is continuously changing, everybody can definitely say that it is in the ten largest Asian stock exchanges. Shenzhen Stock Exchange was founded in 1990 in the city of Shenzhen. According to the year 2017, there are more than 1,900 companies listed on the Shenzhen Stock Exchange (Shenzhen Stock Exchange,

2016, pp. 12–24). Shenzhen stock exchange supports multiple indexes. Investors can directly trade these indexes, which include the best companies in different categories. Moreover, the index may be used as economic indicators analysts, exploring the development trends of the Chinese economy and carrying out financial planning.

Hong Kong stock exchange (Chinese: 香港交易所) is a stock exchange situated in Hong Kong. Ranks 6th in the world in terms of capitalisation of exchange-traded companies. During the financial crisis of 2008, the stock exchange of Hong Kong came to first position globally in attracting capital. According to the analytics, Hong Kong surpassed the previous leader — a trading platform in Shanghai and stock exchanges of Brazil and New York. On the Hong Kong stock exchange shares, bonds, warrants, mutual funds, ETFs and other securities are traded (HKEX, 2016, pp. 11–14).

The most known index is Hang Seng index or HIS shortly. It can be called a survivor, as it began on 24 November 1969 and currently its quotes is the most popular indicator of the health of the Hong Kong stock market. One of the brightest representatives, whose quotes are included in the calculation, is HSBC Holdings, as well as the stock exchange HKEx. Below there are the futures quotes on the main index.

The most significant pick was on 01/01/2018 due to the positive changes in the Chinese stock market. Nowadays the situation is in a more negative position. However, the Hang Seng index is growing after the dramatic downturn in 2016. Currently, the index equals to 28228.

The Chinese market is an essential segment of the national economy of China. Currently, units of a foreign currency constitute the largest business component of the global financial market. The exchange rate in China depends on the exchange rate of the yuan against other foreign currencies. The currency exchange rates in China keep on oscillations in accordance with changes in international trade and the scenario of trade. With the recent growth of international trade in China, the yuan also traded as valuable currency in the Forex market to a great extent. RMB exchange rate determined by the Chinese Central Bank depends on some factors. These factors include the trading volume of the yuan, the supply of yuan in the Forex market and other factors (Goldstein & Lardy, 2008, pp. 204–208).

Banks and foreign trading companies do operations with foreign currency in China. These entities offer reliable services to its customers, as well as educational courses. With the help of the object of Forex trading via the Internet, foreign exchanges can be traded 24 hours a day and seven days a week. A large number of sites in China offer reliable information about the Chinese foreign exchange market and exchange rates prevailing in the market. Monetary institutions in China are providing updated information for Forex traders, online Forex, investors in China find it convenient for achieving their financial goals.

Bitcoin and cryptocurrencies in China

As it is said by bitcoin founder Satoshi Nakamoto in the abstract of his fundamental work: “A purely peer-to-peer version of electronic cash would allow online payments to be sent directly from one party to another without going through a financial institution. Digital signatures provide part of the solution, but the main benefits are lost if a trusted third party is still required to prevent double-spending. We propose a solution to the double-spending problem using a peer-to-peer network. The network timestamps transactions by hashing them into an ongoing chain of hash-based proof-of-work, forming a record that cannot be changed without redoing the proof-of-work.

The longest chain not only serves as proof of the sequence of events witnessed but also proof that it came from the largest pool of CPU power. As long as nodes that are not cooperating to attack the network control a majority of CPU power, they will generate the longest chain and outpace attackers. The network itself requires minimal structure. Messages are broadcast on a best effort basis, and nodes can leave and rejoin the network at will, accepting the longest proof-of-work chain as proof of what happened while they were gone.” (Nakamoto, 2008)

China is a major hub for the bitcoin economy in the world. Three Chinese bitcoin exchanges occupy an essential place in the market — they are more than 80 per cent of exchange transactions. Commission for currency control ordered to check the financial institutions and to prevent the outflow of capital. Currency war in the region has led to massive capital losses in the ‘Black Monday’, from which China began the tough financial week.

Table 1
Trading volume (BTC)

| | Country | Trading volume (BTC) 01.01.2017 |
|----|--------------------|---------------------------------|
| 1 | China | 104,000,000 |
| 2 | United States | 2,210,000 |
| 3 | Japan | 868,000 |
| 4 | European Union | 493,000 |
| 5 | United Kingdom | 63,000 |
| 6 | Russian Federation | 30,300 |
| 7 | Canada | 18,100 |
| 8 | Australia | 10 700 |
| 9 | Singapore | 8,550 |
| 10 | Switzerland | 150 |
| 11 | South Korea | 117 |

Source: <http://data.bitcoinity.org/markets/volume/5y/CNY?c=e&t=b>.

Table 2
Ratio Trading volume/Number of nodes

| | Country | A – Trading volume (BTC) 01.01.2017 | B – Number of nodes as of 01.01.2017 | A/B |
|----|--------------------|-------------------------------------|--------------------------------------|---------|
| 1 | China | 104,000,000 | 208 | 500,000 |
| 2 | Japan | 2,210,000 | 88 | 9,864 |
| 3 | United States | 868,000 | 2,011 | 1,099 |
| 4 | United Kingdom | 493,000 | 250 | 252 |
| 5 | Russian Federation | 63,000 | 186 | 163 |
| 6 | European Union | 30,300 | 3,237 | 152 |
| 7 | Australia | 18,100 | 83 | 129 |
| 8 | Singapore | 10 700 | 105 | 81 |
| 9 | Canada | 8,550 | 308 | 59 |
| 10 | South Korea | 150 | 76 | 2 |
| 11 | Switzerland | 117 | 105 | 1 |

Source: Bitcoin nodes <https://bitnodes.21.co>.

It caused interest in alternative currencies, and purchase volume of bitcoins in China has increased. Chinese exchanges have led to the appreciation of the U.S. exchanges. Buying bitcoins, gold, and precious metals actually are not something new for China. The volume of gold reserves of the country in 2009 increased by 60

per cent. Banks regulate this field to stop the devaluation of the yuan. The primary objective of the financiers is to reduce the volatility, to curb capital outflows and limit the pressure on the yuan. Trade bitcoin for yuan captures the central part of the market (Sagona-Stopfel, 2015, pp. 12–14).

The fear of impending inflation is pushing to switch to other international platforms. However, the People's Bank of China makes it increasingly difficult for the purchasing of traditional stocks, bonds, and other assets. Because of this, the volume of transactions with bitcoin in China is growing (Kapron, 2014, pp. 21–25).

The three significant exchanges trading bitcoins for Chinese yuan have an amount close to 1 million bitcoins a day. Goldman Sachs reported that 80 per cent of bitcoin transactions are traded in RMB. Overall volumes on the Chinese exchanges are showing growth in the field of digital currency. The devaluation of the Chinese currency is very real, and the stock market shakes regularly. Bitcoin has become a haven, such as gold and silver, which are happy to buy Chinese buyers. The continued devaluation of the Yuan will help large investors to come into the market for bitcoins. The above table represents the trading volume of bitcoins in the world.

The first place by the trading volume at the beginning of the 2017 year was occupied by China. The second — the USA which trading volume is 47 times lower compared with the Chinese. The third position was taken by Japan. That is why these Asian countries were chosen as the main leaders for the bitcoin-based integration. Nevertheless, the Korean trading volume is lower; Korea is an essential hub for cryptocurrencies and mining in this region.

The second table of this chapter represents the new ratio: Trading volume divided by the number of nodes. First of all, it is necessary to determine the so-called nodes in bitcoin sphere. A full node is a program that validates transactions and blocks. Almost all full nodes to help the network and the transactions taking blocks from other full nodes that verify these transactions and blocks, and then passing them in the future full nodes. Most full nodes also serve light clients, allowing them to transmit their operations to the network and to notify them when a deal involves their wallet.

If not enough nodes to perform this function, customers will not be able to connect via peer-to-peer network — they have instead of using centralised services. Many people and organisations volunteer to run full nodes using spare computing resources and resources — but the bandwidth more volunteers needed for Bitcoin to continue to rise.

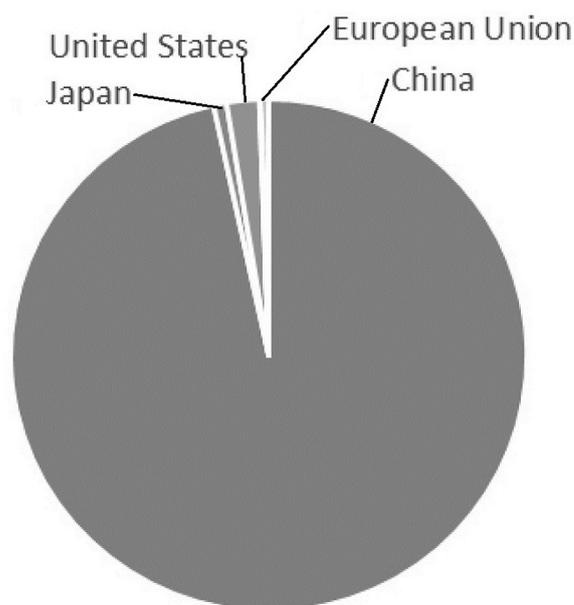


Fig. 3. China as the leader and the driver for integration.

Source: author's calculations.

After determining the leading positions of the equation, it is possible to analyse the presented table. The ratio of Trading volume/Number of nodes represents the capacity of each market. The leaders in this sphere have an excellent opportunity to develop the bitcoin market in the short-run.

China is the leader with the enormous trading volume then go to Japan and the USA. The largest number of nodes is the European Union; however, it takes an only sixth position in the ranking. The gap between China and Japan is quite large, but this gap tends to narrow as the bitcoin market develops all over the world. South Korea occupies the 10th position out of 11. Nevertheless, South Korea is in the 4th place in the Asian region after China, Japan, and Singapore. That is why Korea still has a good position among Asian bitcoin markets.

The Chinese leadership is based on the great variety of facts. From the beginning of 2017, Bitcoin traders were focused on the events taking place between the Central Bank of China and bitcoin exchanges residing in the country.

However, over the past half the year of 2017, the withdrawal was suspended in almost all major Chinese bitcoin trading platforms. The 2017 year showed shakeup in relation to the Chinese bitcoin exchanges, as each company is faced with the legal wrath of the People's Bank of China (PBOC). Regularly review and discussions led to the tightening

**Top 3 countries for 01.01.2017 by the ratio
Trading volume / Number of nodes**

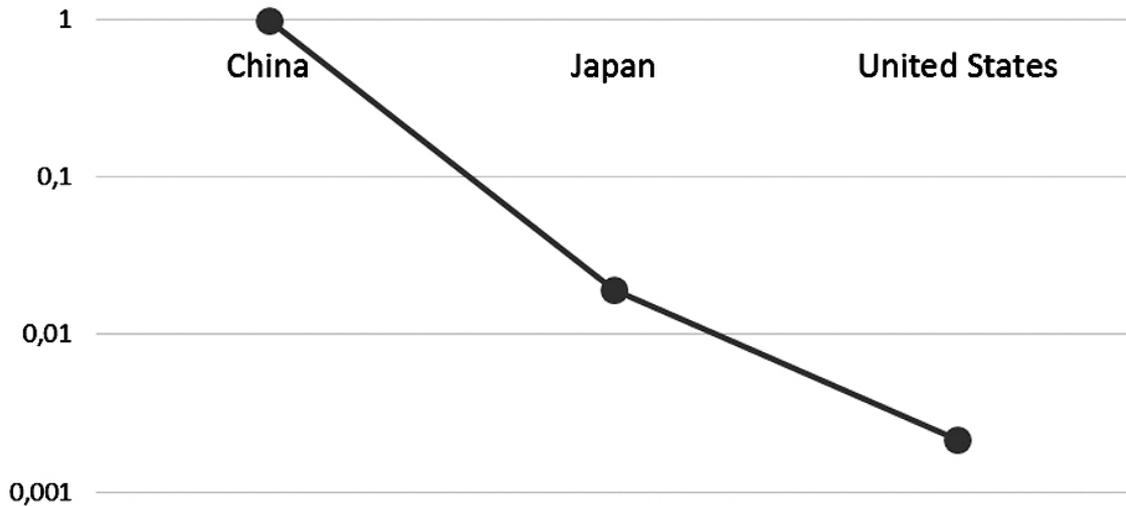


Fig. 4. Top three countries by ratio Trading volume/Number of nodes.

Source: author's calculations.

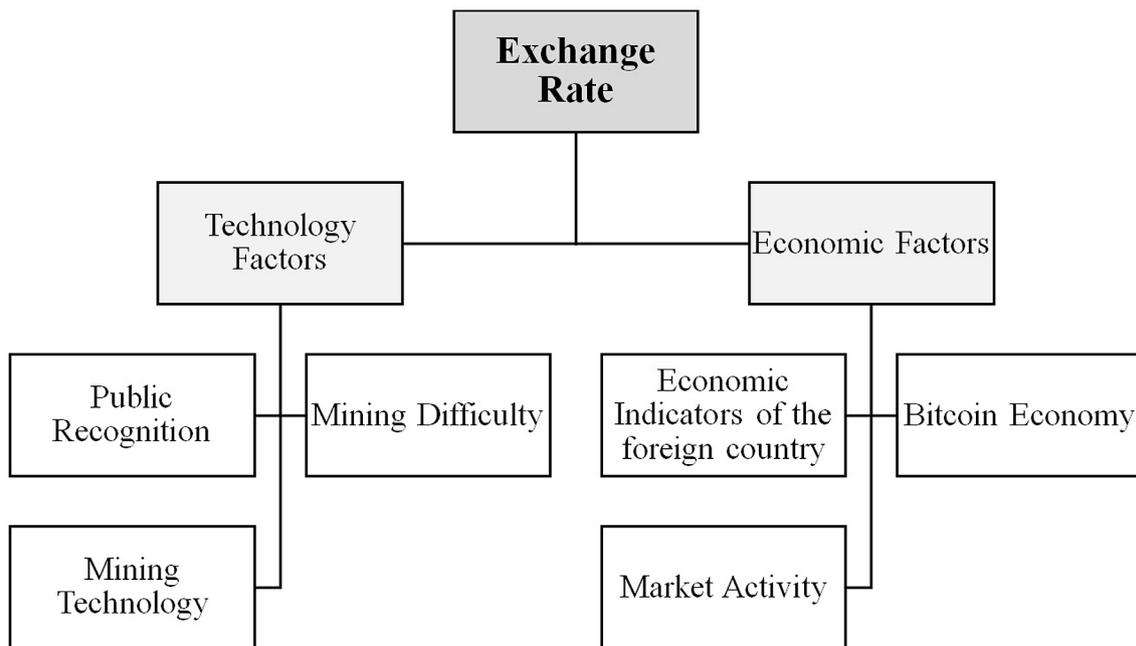


Fig. 5. Technology and economic factors of mining and bitcoins circulation.

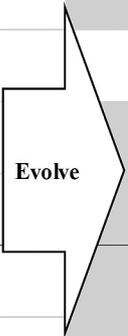
regulation, and Chinese merchants are unable to withdraw bitcoins for two months. Chinese trading platform also revealed new types of control on-the-spot checks and detection.

The light revealed the platform update for multi-signature system output, but not full, when the company will lift the suspension. After April 23, the company's customers will use a multi-signature controlled Wallet for bitcoin and Litecoin

Company. The other two top bitcoin exchanges in China recently told the public that not all bitcoin exchanges in China are adhering to the new regulatory policy and the payments must begin after completion of the upgrade process.

It is evident from the pie chart that China is the leader in the determined ratio. The ratio Trading volume/Number of nodes shows the current situation in the market and determines the pos-

Table 3
Comparison between the Early Market and Later Market

| | | Long-term Equilibrium | | Short-term Adjustment | |
|---|---|-----------------------|---|-----------------------|--------------------|
| | | Early Market Model | Later Market Model | Early Market Model | Later Market Model |
| Technology Facts | Public Recognition (Search, Social Media) | | | | |
| | Mining Difficulty and Mining Technology | Decreasing | Decreasing | | |
| Economic Facts (Foreign Country) | Money Supply | | | | |
| | GDP | |  | | |
| | Interest Rate | | | | |
| | Inflation | | | | |
| Bitcoin Economy | Bitcoin Supply | | | | |
| | Bitcoin Transactions (Volume and Value) | | | | |
| Market Activity | Trading Volume | | | | |
| | Volatility | | | | |

sibility of the increasing in the trading volume and number of nodes.

If the analysis is presented in the historical perspective, the increase in these two parameters is possible to forecast. In the future study, it is possible to show the top three countries graphically by the chosen ratio. These countries are China, Japan and the United States of America.

To make the possibility of bitcoin-based integration more clear it is necessary to take into consideration both technology and economic factors. The figure below summarises the possible factors of mining and bitcoins circulation. From the technology perspective, it is proposed that the bitcoin mining cost has a time-varying effect on the exchange rate based on the inspections.

Meanwhile, the factors that capture public recognition are also included. From an economic perspective, the fundamental economic factors of both the bitcoin economy and the foreign country are included. Trading volume and price volatility are added to capture the impact of market speculation. Not only does the following figure generate a systematic view, but it also includes a

more comprehensive set of factors synthesising and extending existing works in this sphere.

In the sphere of bitcoin-based integration, the following hypothesis might be used:

H1A. Mining difficulty has a positive impact on bitcoin's exchange rate.

H1B. The impact of mining difficulty on bitcoin's exchange rate decreases over time,

H2. Public recognition has a positive effect on the bitcoin exchange rate.

H3A. The bitcoin exchange rate reacts to economic indicators of the foreign country, including money supply, inflation rate, interest rate, and GDP.

H3B. The bitcoin exchange rate reacts to a total number of bitcoins in use and transaction volume.

H4. Trading volume and price volatility have significant impacts on the bitcoin exchange rate in the Asian market.

After the principal terms of the hypothesis were mentioned, it is necessary to make a comparison between the Early Market and Later Market.

The empirical analysis confirmed the relevance of both the technical factors and economic factors. Although the market price is anchored on

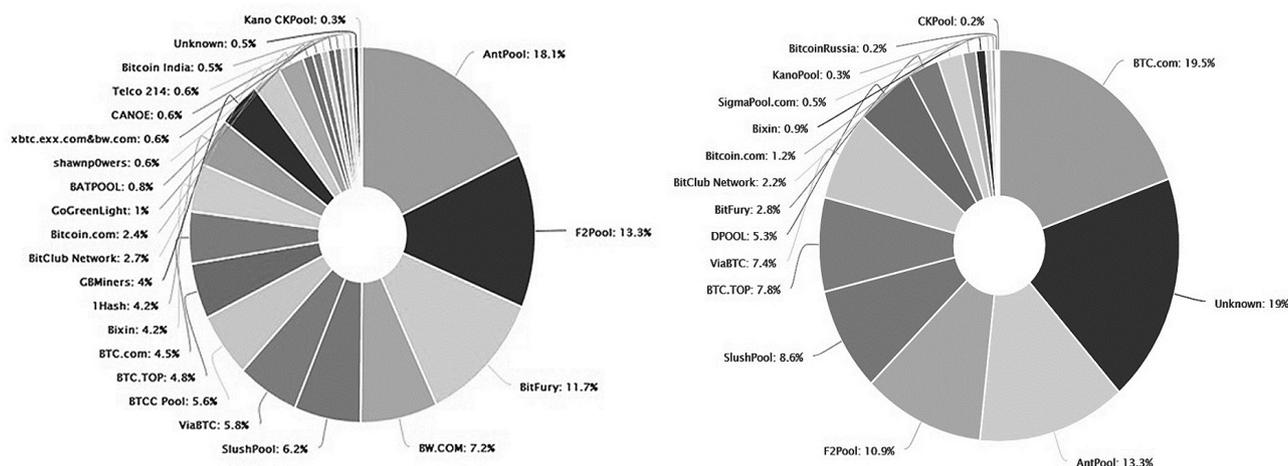


Fig. 6. Hash rate distribution.

Source: <https://www.blockchain.com/ru/pools>.

mining cost. The long-term impact of mining difficulty diminishes over time as mining technology becomes more efficient. The systematic difference also exists between the early market and the later market. The early market exchange rates are driven predominantly to be a speculative investment and deviate from economic fundamentals (Li & Wang, 2017, pp. 49–54). Later, the market matured, and the price dynamic followed more closely with changes in the economic factors, while market speculation cast no significant impact in the long term.

The factors determined above are closely connected to the sphere of mining. From the tables, it is seen that China is the leader in mining. Mining is the part of the bitcoin world that is why mining-based Asian integration becomes possible also. Mining integrates the Asian countries, with the head based in China.

Chinese mining pools control more than 60 per cent of the Bitcoin network's aggregate hash rate. Not only does China manufacture most of the world's mining equipment, but also massive mining farms are located there to take advantage of extremely cheap electricity prices. China also accounts for hefty Bitcoin trading volumes. Chinese exchanges used to lead the world in terms of size.

However, Chinese volume has fallen substantially since the PBOC decreed that exchanges could no longer offer 0 per cent trading fees. This ruling flushed a lot of wash trading from the Chinese exchanges. The reasons for China to become the world's leader in Bitcoin mining is listed below:

1. Cheap Electricity. Electricity cost is the most crucial factor for a profitable mining operation. As mining difficulty increases, the least efficient miners are forced to shut down first. Electricity in China is extremely cheap compared to most other countries.

2. Excess Coal. Coal is the cheapest power's source but also the dirtiest. It is well known that China has comparatively lax environmental policies. Major cities like Beijing are notorious for their high levels of smog, produced mostly by burning coal.

3. Leading Bitcoin Mining Pools. Mining pools, as the name implies, are collaborations between individual miners and, frequently, major mining companies. Their hash rate is combined so that the pool has a better chance of finding a block. The block reward is then shared among all contributing members, according to their proportional hash rate.

The result is that many miners outside of China are attracted to Chinese mining pools due to their size. Many miners are lured by the prospect of small, steady earnings as part of a significant pool, as opposed to the high-reward-but-low-odds lottery, which is solo or small-pool mining. China is home to four of the five largest Bitcoin mining pools over the past year.

Before we get into the best mining pools to join, it's important to note that most mining pools are in China. Many only have Chinese websites and support. Mining centralization in China is one of Bitcoin's biggest issues at the moment. There are about 20 major mining pools. Broken down by the percent of hash power controlled by a pool, and the location of that pool's company, we estimate

that Chinese pools control ~81 per cent of the network hash rate.

1. **BTC.com** is a public mining pool that can be joined and mines 15 per cent of all block.

2. **Antpool** is a mining pool based in China and owned by BitMain. Antpool mines about 11 per cent of all blocks.

3. **Slush** was the first mining pool and currently mines about 11 per cent of all blocks.

4. **F2pool** is based in China. It has mined about 10 per cent of all blocks over the past six months.

5. **ViaBTC** is a somewhat new mining pool that has been around for about one year. It's targeted towards Chinese miners and mines about 9 per cent of all blocks.

6. **BTC.top** is a private pool and cannot be joined. It mines about 7 per cent of all blocks.

7. **DPOOL** is a Chinese pool and mines about 4 per cent of all blocks.

8. **Bitclub.Network** is a large mining pool but appears to be somewhat shady.

9. **Bitfury** is a private pool that cannot be joined. Bitfury currently mines about 3.5 per cent of all blocks.

10. **58COIN** is a Chinese Bitcoin mining pool. China mines the most bitcoins and therefore ends up "exporting" the most bitcoins. Electricity in China is very cheap and has allowed Chinese Bitcoin miners to gain a very large percentage of Bitcoin's hash power. It's rumoured that some Chinese power companies point their excess energy towards Bitcoin mining facilities so that no energy goes to waste. As indicated above China is home to many of the top Bitcoin mining companies. It's estimated that these mining pools own somewhere around 60 per cent of Bitcoins hash power, meaning they mine about 60 per cent of all new bitcoins. After determining the factors and mining issue of the second scenario of Asian currency integration, it is possible to conclude that the second scenario is preferable and realisable in the short-run.

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- Bloomberg. <https://www.bloomberg.com>
- Data bitcoinity <http://data.bitcoinity.org>

Общая характеристика финансовых рынков Китайской Народной Республики

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Аннотация. Характеризуя состояние экономики и финансовых рынков КНР, автор статьи отмечает: в настоящее время поддержание стабильной национальной валюты для китайского государства становится особенно важным, поскольку значительное влияние на экономическое развитие и состояние международных расчетов в Азиатском регионе оказывает валютно-денежная политика. Открыв в начале 1980-х гг. банковскую систему и четыре государственных специализированных банка для приема депозитов и осуществления банковской деятельности, китайское правительство все последующие годы проводило и проводит взвешенную политику постепенного открытия и либерализации экономики, что позволило Китаю стать второй экономикой в мире. В работе анализируются современные тренды развития финансовых рынков в Китае, даются характеристики и оценки развивающимся рынкам биткоина и криптовалюта.
Ключевые слова: Китайская Народная Республика; денежно-кредитная политика; экономический рост; криптовалюты; китайские фондовые биржи; юань

Adaptation of stablecoins as the reserve currency

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Abstract

The article discusses the weaknesses of fiat reserve currencies and proposes modern Distributed Ledger Technologies as a way to lower transaction costs and promote digital payments for the public. Specifically, we concentrate on stablecoins, a particular category of cryptocurrencies, that are designed to maintain stability and to be used as a medium of exchange and store of value. The results allow concluding that tokens backed by commodities may be implemented in payments globally with minimum cost and processing time. Hence, it is a revolutionary solution to the existing international monetary issues.

Keywords: Distributed Ledger Technologies; stablecoins; token; cryptocurrency; gold; COFER

JEL Classification: E42, E58, F31, G23

The diminishing role of the USD as a global currency

In recent years the trend of de-dollarisation has peaked due to lack of confidence in the currency and central banks began interchange dollars in their reserves for other currencies or gold. According to IMF Data, the amount of total foreign exchange reserves rose from \$ 11,178,782.10 million in the 3rd quarter of 2015 to \$ 11,396,623.72 million in the 3rd quarter of 2018 (it is 1.9 per cent growth in 3 years) (IMF Data, 2019a). However, the growth of claims in U.S. dollars rose only by 39.7 per cent, while the claims in euro grew by 52.9 per cent through the same period.

If we look at the Total Market Capitalisation-to-U.S. GDP Ratio (Buffett Indicator), as on 25th February 2019, it is currently at the level of 139.4 per cent, which means that the stock market is significantly overvalued (GuruFocus.com LLC., 2019). For comparison, on the 30th March 2000 (the dotcom Crash) the ratio hit 148.5 per cent, while on the 30th June 2007 (the Financial crisis of 2007) it was at 110.7 per cent. Similarly, Shiller P/E ratio for the same date (Cyclically adjusted price-to-earnings ratio) shows 30.7x meaning that on average corporates' share prices 30 times exceed their earn-

ings (GuruFocus, 2019). This fact also leads to the conclusion that the stock market is too overpriced. The mentioned figure is 81.7 per cent higher than the historical mean of 16.9x. Moreover, the current number has surpassed 27.4x as it was in June 2007 and has almost reached 32.6x as it was in September 1929 (the Great Depression). There is an inevitably growing risk of a new crisis.

Notably, the share of dollars in the Currency Composition of Official Foreign Exchange Reserves (COFER) fell from 65.54 per cent to 61.94 per cent in 3 years. In the early 2000s, its weight was almost constant at the level of 67.3 per cent (3rd quarter of 2004) (Ewe-Ghee Lim, 2007). Meanwhile, the share of the euro improved from 19.79 per cent to 20.48 per cent. Concerning Chinese renminbi, it remained at the level of 1.80 per cent of COFER in the 3rd quarter of 2018.

The mentioned figures suggest that countries fill their foreign exchange reserves using euro and other currencies more actively than the U.S. dollar. In the long-term, it may cause the depreciation of the USD.

Moreover, according to Bank for International Settlements, total credit denominated in U.S. dollars to non-bank borrowers outside

the United States in the 3rd quarter of 2018 increased by 3.5 per cent compared to the previous year, while the credit denominated in euro to borrowers outside the euro area increased by 9.0 per cent (BIS Statistics, 2019). Markedly, the Russian Federation in the same period reduced its credit in USD by 14 per cent to \$ 168 billion. On the other hand, the country acquired 1.4 per cent more borrowings in EUR increasing it to € 47 billion.

Euro may not be the right solution

From the statistics above we may conclude that on the contrast with the U.S. dollar, the role of the euro becomes more significant. Contrarily, on the 5th January 2010, the official exchange rate of EUR to USD was 1.4411, while on the 5th January 2019 1 EUR was equivalent to 1.1395 USD. In other words, euro depreciated by 20.9 per cent in 9 years (Exchange Rates UK, 2019). Even though the euro seems like a more reliable currency in its essence, it is still not advised.

Any replacement of the dollar by analogical currency would not solve the central issue of the fiat, which is its natural instability. The values of modern reserve currencies too much depend on the economic conditions in emitting countries. Their prices are not pegged to any real asset, but they are somewhat based on one's belief about the other's belief that the given economies are stable. Because of such weak assumptions, the prices of major fiat currencies tend to fluctuate daily depending on the news, press releases and other sources of public opinions. The volatility attracts speculation, which in turn causes the currencies' liquidity to suffer. Without sufficient liquidity, money cannot retain one of its primary function — being a medium of exchange.

Stablecoins as a way to rearrange the weights of reserve currencies

To diversify the risk of failing economies, it is advised to implement a new reserve currency, which is backed by the portfolio of assets with little correlation. It is proposed that Special Drawing Rights (SDR) in its current version may not be a solution because its value depends on five other reserve currencies.

According to IMF, on the 5th January 1982, 1 SDR equalled 1.164801 USD (IMF, 2019b). On the 5th January 2010, 1 SDR amounted to 1.567546 USD. As for the 4th January 2019, the same amount of SDR could be exchanged for 1.390737 USD. This is 19.4 per cent appreciation of the SDR value in 37 years and 11.3 per cent depreciation in 9 years. While the figures of SDR are much better than for the dollar and euro, the rates range is still inappropriate for being used globally as a medium of exchange. For the currency to be used in exchanges, its rate should always be around the constant target price set by the regulator. With that intention in mind, stablecoins were designed.

Nowadays, financial institutions, international corporations and other organisations launch private cryptocurrency projects to attract capital from the investors. Their primary concern is that the effects of price volatility should be minimised. The main feature of cryptocurrencies is that they are issued using Distributed Ledger Technology. According to the World Bank, DLT has the following potential applications (Table 1).

Stablecoins is a separate category of cryptocurrencies, which have a limited volatility range around a target price and are pegged to an asset with a stable value. According to Bilal Memon, the Founder of Master the Crypto, “stablecoins have the potential to help people living in countries suffering from high inflation rates.” (Bilal, 2018). They can enhance consumers' purchasing power.

For instance, Tether (USDT), the most traded stablecoin with general prices range from \$ 0.99 to \$ 1.01, and TrueUSD (TUSD), the second most traded and a more transparent alternative to Tether, are coins that are backed by U.S. dollars and have a target rate of \$ 1 per token. Importantly, TrueUSD's legal framework (developed by TrustToken) allows a customer to exchange USD directly with an escrow account. Its open source smart contracts ensure a 1:1 parity between TrueUSD and USD in the accounts (TrustToken, 2019).

According to Bilal Memon, there are generally four categories of stablecoins (Bilal, 2018):

1. Fiat-Backed: a central entity should have the reserves of fiat currencies equivalent to its

Table
Overview of Potential DLT Applications (at varying stages of development)

| Financial Sector Applications | |
|---|---|
| Money & Payments | <ul style="list-style-type: none"> • Digital currencies • Payment authorization, clearance & settlement • International remittances and cross-border payments (alternative to correspondent banking) • Foreign exchange • Micropayments |
| Financial Services & Infrastructure (beyond payments) | <ul style="list-style-type: none"> • Capital markets: digital issuance, trading & settlements of securities • Commodities trading • Notarization services (e.g. for mortgages) • Collateral registries • Movable asset registries • Syndicated loans • Crowdfunding (as initial coin offerings) • Insurance (in combination with smart contracts) for automating insurance payouts and validation of occurrence of an insured event |
| Collateral registries and ownership registers | <ul style="list-style-type: none"> • Land registries, property titles & other collateral registries |
| Internal systems of financial service providers | <ul style="list-style-type: none"> • Replacing internal ledgers maintained by large, multinational financial service providers that record information across different departments, subsidiaries, or geographies |
| DLT-based applications in other sectors | |
| Identity | <ul style="list-style-type: none"> • Digital identity platforms* • Storing personal records: birth, marriage & death certificates |
| Trade & Commerce | <ul style="list-style-type: none"> • Supply chain management (management of inventory and disputes) • Product provenance & authenticity (e.g. artworks, pharmaceuticals, diamonds) • Trade finance • Post-trade processing • Rewards & loyalty programs • Invoice management • Intellectual property registration • Internet of Things |
| Agriculture | <p>Financial services in the agricultural sector like insurance, crop finance and warehouse receipts</p> <p>Provenance of cash crops</p> <p>Safety net programs related to the delivery of seeds, fertilisers and other agricultural inputs</p> |
| Governance | <ul style="list-style-type: none"> • E-voting systems • E-Residence • Government record-keeping, e.g. criminal records • Reducing fraud and error in government payments • Reducing tax fraud • Protection of critical infrastructure against cyber attacks |
| Healthcare | <ul style="list-style-type: none"> • Electronic medical records |
| Humanitarian & Aid | <ul style="list-style-type: none"> • Tracking delivery & distribution of food, vaccinations, medications, etc. • Tracking distribution and expenditure of aid money |

* Identity becomes a token, which can be affirmed as needed and record of identity validation also stored on the DL.

Source: Natarajan *et al.*, 2017, p. 22.

token issued and, additionally, reserves sufficient to keep the price at the target. The advantages are the structure's simplicity and stability, while the disadvantages are trustworthiness of a central body, and regulations.

2. **Commodity-Backed:** a coin represents a specific portion of gold (for example, one token equals 1 gram of gold), oil or any other commodity. The physical gold itself is often stored in a trusted third party's vault. Some great examples are the Digix (DigixGlobal, 2014) and the Goldmint (Goldmint, 2018). The advantages are the support of real assets, stability, liquidity. The main disadvantages are audit and costs of keeping commodity reserves sufficient to regulate the price.

3. **Cryptocurrency-Backed:** coins backed by other digital currencies, usually the top-ranked cryptocurrencies. Not efficient because of the natural volatility of the majority of digital currencies.

4. **Seigniorage-Style:** coins utilise an algorithm to expand or contract a stablecoin's money supply. The advantages are the decentralisation, the absence of collaterals, stability. The main disadvantage is the complexity of the technology.

We concentrate on the stablecoins that are backed by commodities, gold in particular. As it has been mentioned, one of the most successful projects today is Digix Gold Tokens (DGX). It is a token backed by physical gold that has been fully audited. It is stored in a vault in Singapore.

What contributes to the project's success is that a coin is redeemable anytime. The rate of DGX is entirely dependent on the market price of gold. The token is based on the Proof-of-Provenance algorithm, i.e. each gold bar is secured, and its ownership/custodianship status is tracked on the blockchain. The storage, the company and their ledgers are audited each quarter.

Conclusion

In conclusion, it is necessary to list the main arguments of the current article. First, the Distributed Ledger Technology, on which cryptocurrencies are based, could increase efficiency and lower transaction costs, while giving access to finance for populations, who are currently outside the traditional financial system [7] (Natarajan *et al.*, 2017). Second, the stablecoins, a select group of digital currencies, are suggested to be used as an alternative to IMF SDRs. They may be pegged to the value of real assets held by the trusted third party. The regulator always has access to information about the current level of reserves so that it could issue or kill tokens. When the price of the currency goes beyond the required range, regulators use their reserves to maintain stability. Increasing the number of authorities associated with the regulation function would lower biasedness and increase common holdings making it easier to influence the rate. Notably, a significant advantage of a stablecoin backed by the gold is that the minimum price of the token will always be the same as the amount of gold in the vault. The value of the currency may rise but would not fall beyond the baseline.

On the other hand, when prices of alternative currencies rise rapidly, investors tend to dispose of stablecoins causing the price to drop massively. It was the case when NuBits crashed in 2016 because the Bitcoin's price started peaking. There are also some risks with gold-pegged digital currencies. The investors should examine who stores the gold for a particular cryptocurrency and where the vault is located before deciding to invest. The price of a token may drop substantially if the gold disappears from the storage. The transparency is essential among developers, regulators, third-party holders and investors.

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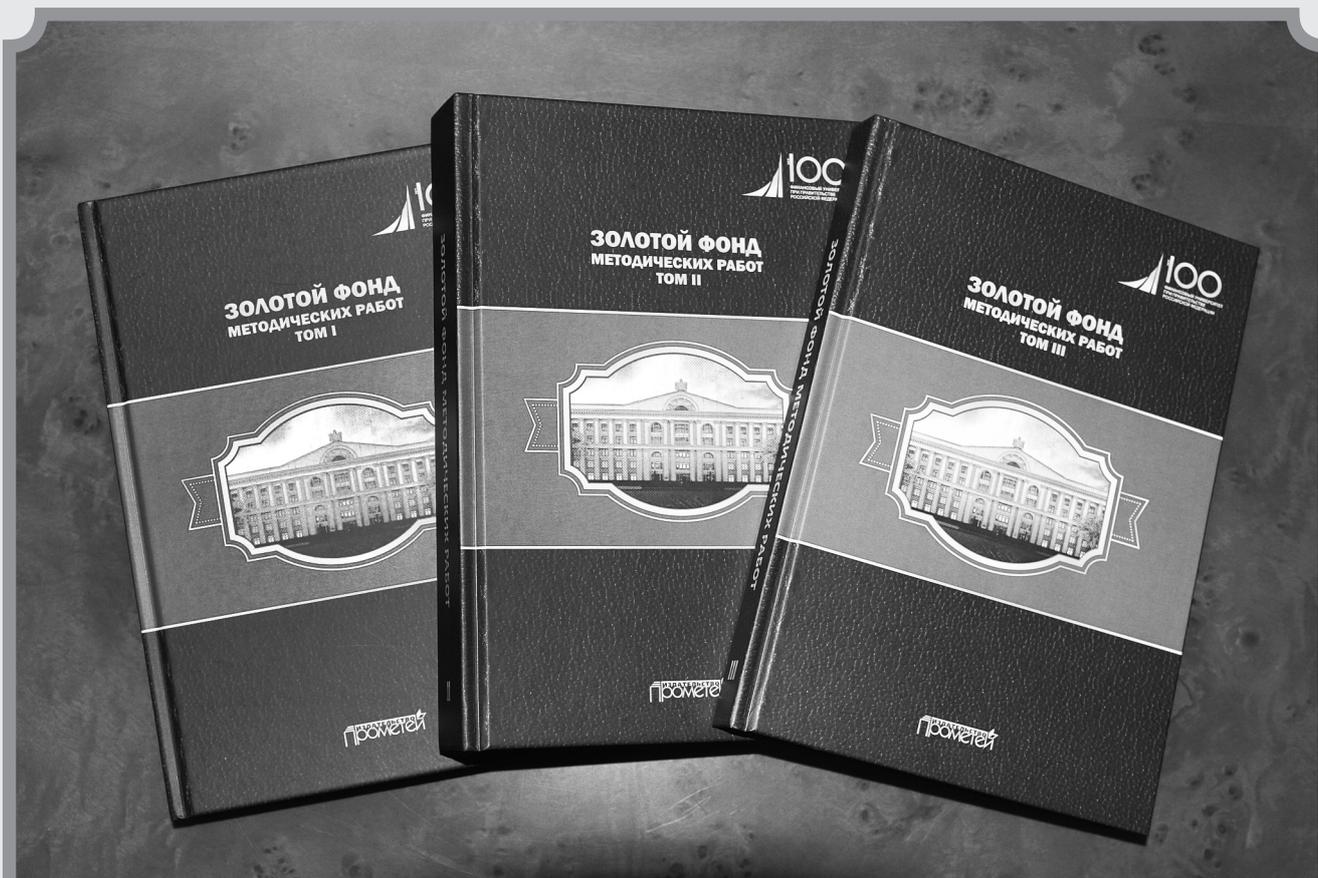
Применение stablecoins в качестве резервной валюты

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Аннотация. В статье рассматриваются слабые стороны фиатных резервных валют и предлагаются современные технологии распределенного реестра (DLT) как способ снижения транзакционных издержек и продвижения цифровых платежей для населения. Дана характеристика и оценка криптовалюты stablecoins, которая предназначена для поддержания стабильности и использования в качестве средства обмена и хранения стоимости. Результаты исследования позволяют сделать вывод, что токены, обеспеченные сырьевыми товарами, могут быть глобально реализованы в платежах с минимальными затратами и временем обработки.

Ключевые слова: технологии распределенного реестра; stablecoin; токен; криптовалюта; золото; COFER



К 100-летию Финуниверситета вышел трехтомник «Золотой фонд методических работ»

Издательство «Прометей» по заказу Финансового университета издало три тома работ, сформированных на основе материалов университетской библиотеки рабочей группой по развитию методик преподавания. Актуализация методического наследия Московского финансового института – Финансовой академии – Финуниверситета позволяет восстановить преемственность педагогических исканий, что дает возможность не только лучше понять наших предшественников, но и опереться на жизнеспособные элементы этого наследия в поисках решений новых проблем, возникающих в цифровую эпоху.

В трехтомнике представлены методические разработки преподавателей С.Б. Барнгольц, Л.Н. Красавиной, М.С. Атлас, М.З. Бора, И.Д. Мамоновой, О.И. Лаврушина, Б.Е. Ланина, Т.Г. Семенковой, З.Д. Бабаевой, П.С. Никольского Н.Э. Соколинской, Н.Н. Думной, В.К. Поспелова, М.А. Эскиндарова, И.Ю. Беляевой, П.В. Тальминой, Я.А. Пляйса, Н.А. Розмановой, Б.М. Смитиенко, М.А. Пивоваровой и многих других. Данные работы известных специалистов наглядно демонстрируют их высокий профессионализм и педагогическое мастерство, которые позволяли им не только умело увязывать идеологические задачи с экономическими проблемами современности, но и делать это интересно и увлекательно.

В первый том вошли методические указания и рекомендации; во второй – учебно-методические комплексы и разработки; в третий том – научно-методические и учебные публикации 1970–2010 гг.