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**"THE PEOPLE'S BANK OF CHINA AND THE EUROPEAN
CENTRAL BANK: A COMPARISON OF MONETARY
POLICIES"**

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Abstract (Italian)

L'elaborato mette a confronto le politiche monetarie della Banca Centrale Europea e della Banca Popolare Cinese dal 2002 (introduzione dell'euro) al 2017. La prima parte descrive cronologicamente l'operato della Banca Centrale Europea. La seconda parte tratta similamente la Banca Popolare Cinese. La terza parte ricapitola le maggiori differenze nella conduzione della politica monetaria, in particolare per quanto riguarda l'indipendenza ed i temi ad essa associati.

1. INTRODUCTION

Central banks are the institutions tasked with managing a country's money and credit supply, through instruments such as open market operations, lending, and changes in reserve requirement ratio. These tools determine the monetary base and short-term interest rate. Generally, the primary goal of central banks is to maintain price stability, viewed as consistently low inflation. Another objective is financial stability, interpreted as functional markets and efficient payment systems. Moreover, they support the goals of sustainable economic growth and low unemployment; the level of priority of these two varies across countries.

The first central bank to be established was the Swedish Riksbank, in 1668. It was given charge of government funds lending and served as a clearing house. The Bank of England followed a few decades later, and afterwards other European countries imitated the example, with the aim of stabilizing inflation. These banks began to hold deposits for other banks and becoming lenders of last resort in case of financial crisis (Bordo 2007). The gold standard was widespread until 1914, that is central banks would issue notes against a fixed quantity of gold, that they would convert when asked from their own gold reserves. This helped anchor expectations, solving the problem of a variety of commercial bank bills that were easier to counterfeit and less reliable. Convertibility was suspended in most countries with the beginning of the First World War (Capie et al. 1994). The war period and the Great Depression saw volatile policies and heavy direct control interventions. These waned with the application of the Bretton Woods agreements and a period of stability and growth, were central banks had the exchange rate peg constraint and business cycle fluctuations were mild. It was only with the Vietnam war and the necessity to adjust the value of the dollar (a move which sparked objections from other major economies), and academic opinion too started to veer towards free exchange rate preferability, that the system was abandoned. Another shift was in agents' inflation forecast: after years of

governments using inflation to promote high employment, they began to factor inflation in their price and wage setting behaviour, thus making an even higher inflation rate to obtain the same results. The years from 1970s to 1990s saw high inflation and volatility, together with real economy shocks. The European Exchange Rate Mechanism, where currencies were allowed to float within fixed margins, was one of the attempts to curb fluctuations and give weak currencies more credibility. Major economies saw overall lower inflation in the last decades, as central banks became generally more independent, and macroprudential stability acquired considerable weight after the 2008 crisis.

This essay will analyse two major central banks: the European Central Bank (ECB) and the People's Bank of China (PBC). They were chosen because they represent two diametrically different situations and modus operandi, both because of their institutional frameworks and the economic dynamics of their area of operation. On one side we have the Chinese case of strong output growth, financial markets that were not fully developed until recent times, and considerable state guidance over both economy and monetary policy, albeit with increasing liberalization. On the other, the European case where the central bank does not report to any single Member State, but to the Union, and where fiscal policies, transmission mechanism and output dynamics are fragmented at state level, but monetary policy is necessarily universal.

The first section will provide a chronological summary of ECB monetary policy from 2002, the year of the changeover to euro coins and banknotes, to 2017. The second section will do the same thing for the PBC. The third section compares key aspects of the two central banks and their monetary policy operations, as well as a brief literature overview on the topic of central bank independence, transparency and accountability.

2. THE EUROPEAN CENTRAL BANK

2.1 Establishment and functioning

The ECB was established on 1st July 1998 as part of Stage II of the European Monetary Union (EMU), taking the place of the European Monetary Institution (EMI). The Treaty of Maastricht, laying the foundations of monetary integration, established the European System of Central Banks (ESCB) and the European Central Bank (ECB), with the task of governing monetary

policy. Their Statute is part of the Treaty, which can only be modified by unanimous consensus of Member States, which grants the ECB strongly protected independence (Micossi 2015). On 1st January 1999, the ECB acquired full authority on monetary policy, replacing national central banks; each local currency was pegged irrevocably to the euro¹. On 1st March 2002, after a brief transitional period of dual currency, the euro became the sole legal tender for 12 EU countries. This changeover, the largest ever in the world, was regarded as an important technical achievement. Seven² other countries acceded later, once they joined the EU and satisfied the convergence requirements: Slovenia (2007), Cyprus (2008), Malta (2008), Slovakia (2009), Estonia (2011), Latvia (2014) and Lithuania (2015).

The ECB's monetary policy goal is to maintain inflation rates, defined as year-on-year change of the Harmonised Index of Consumer Prices (HICP), at values just under 2% in the medium term³. This value was chosen because it maintains a safe distance from deflation, a phenomenon which is harder to tackle than inflation. Furthermore, it accounts for the possible small upward bias in HICP, and for inflation differentials amongst the euro area countries. Figure 1 shows HICP inflation over the last two decades, which was on average around 1.71 %, albeit with fluctuations, some of which sizeable.



Figure 1 - HICP inflation, from European Statistical Data Warehouse
<http://sdw.ecb.europa.eu/> recovered on 01.08.2018

¹ https://www.ecb.europa.eu/press/pr/date/1998/html/pr981231_2.en.html

² <https://www.ecb.europa.eu/ecb/history/ec/html/index.en.html>

³ <https://www.ecb.europa.eu/mopo/strategy/html/index.en.html>

In order to reach that goal, the ECB observes five guiding principles in its strategy⁴: (i) maintain the functionality of the transmission mechanism, also through non-standard financial measures; (ii) be forward-looking, as monetary policy only shows its effect with considerable delay; (iii) focus on the medium term, as preserving short-term price stability in the face of unforeseeable shocks is impossible and attempting to do so would add unnecessary volatility to monetary policy; (iv) firmly anchor inflation expectations, which implies being transparent and reliable (v) be broadly based, that is use a variety of economic indicators and models in order to gain better insight and counter uncertainty. The two pillars of the ECB's monetary strategy formulation are economic analysis (data such as output, fiscal policy and macroeconomic projections) and monetary analysis (credit and monetary aggregates development), where the latter serves as a cross-check of the former from a longer-term perspective.

The primary policy tool⁵ of the ECB is the definition of the interest rates on main refinancing operations (MRO), deposit facility, and marginal lending facility. In difficult times, it has also employed a number of non-standard measures which will be seen in greater detail further on. Additionally, it relies on forward guidance to firmly anchor future expectations.

2.2 An overview of ECB monetary policy 2002-2017⁶

2.2.1 Before the financial crisis: 2002-2006

The beginning of 2002 saw the introduction of the euro coins and banknotes and the switch to euro as the legal currency for all euro area countries. Accordingly, monetary policy was in the hand of the ECB. As the then-president of the Bank W. Duisenberg states, the euro changeover absorbed an unwarranted part of the blame for inflationary pressures in the first quarter and unsatisfying economic growth throughout 2002, which featured modest GDP growth of 0.8% and a generalised increase in budget deficit across European countries. Adverse weather conditions and geopolitical tensions, affecting food and oil respectively, put upward pressure on prices, which together with wage and monetary developments gave concerns for price stability in the medium term. However, these pressures abated later in the year, and economic growth continued to be subdued. This prompted the Governing Council to reduce key interest rates by 50 basis points in December 2002 (bringing the main refinancing rate to 2.75% after keeping it unchanged at 3.25% since October 2001. Prior to this stasis period, the rates had seen a substantial decrease, of a total 150 basis points, due to the forecasted slowdown in economic

⁴ <https://www.ecb.europa.eu/mopo/strategy/princ/html/index.en.html>

⁵ <https://www.ecb.europa.eu/mopo/implement/html/index.en.html>

⁶ Where not otherwise specified, the source material for this chronology were the European Central Bank's *Annual Reports, 2002-2017*

activity, particularly after the September terrorist attacks. The growth of M3 (defined as currency, overnight deposits, deposits with maturity of up to two years, marketable instruments with certain price and high liquidity) had been slowing down in the first months of 2002, but this trend halted in the second quarter, when the low opportunity cost of holding money strengthened demand for M1 (currency and overnight deposits). Overall, liquidity in the euro area was seen as more than abundant, but the risk of excess liquidity translating into inflationary pressures was considered small. As per economic growth, it was expected to continue, albeit as a slow pace, with concerns stemming mostly from global political uncertainty and its effect on oil prices. Inflation started relatively high, at 2.7%, and stayed erratic in the first quarter due to temporary factors such as weather conditions and an increase in indirect taxes. In the second half of the year, it hovered around 2%. Furthermore, the Governing Council decided that henceforward it would only take decisions on interest rates at its first meeting of the month, to reduce uncertainty.

The following year, the presidency of ECB went to Jean-Claude Trichet, who held the position until 2011. Before his arrival, the Governing Council had undertaken a major review of the ECB's monetary policy since its inception and renewed the commitment to medium term price stability. Economic activity was weak in the first half of 2003, but improved after summer, resulting in an overall growth of 0.5%, with HICP inflation declining only slightly to 2.1%. One reason for this result was the euro area's scarce flexibility when confronted with external shocks, such as geopolitical tensions and the prevailing uncertainty in financial markets. Another reason for concern was found in the increasing fiscal deficits of several governments, which failed to meet their consolidation targets. Liquidity continued to be ample, but unlikely to threaten price stability as medium-term inflationary pressures were very moderate. These considerations lead the Governing Council to further bring interest rates to new historical lows, cutting 25 basis points in March and 50 more in June. GDP was still expected to grow from the second half of 2003, but downside risks were seen as prevailing, thus validating a reduction in interest rates, with the appreciation of the euro and low growth deterring high inflation.

Aided by export growth, in 2004 economic growth picked up the pace, standing at 1.8% overall, with a relatively favourable first half of the year (quarter-on-quarter growth of 0.6%) but a sluggish second half. The ECB maintained interest rates constant through the year, with the aim to safeguard price stability against a background of volatility in financial markets, renewed increases in commodities and energy prices, persistent global imbalances and the highest global growth rate in decades, sustained by the extraordinary performance of developing countries, first of all China. Subdued increases in labour compensation and the slight appreciation of the euro in nominal effective terms contributed to maintaining inflation unchanged from the

previous year, at 2.1%. As to monetary aggregates, M3 growth subsided as the stark liquidity preference which had driven it began to diminish. Nonetheless, liquidity levels remained higher than warranted and that was perceived as possibly leading to unsustainably high prices, especially in real estate. The Governing Council stressed that it would continue to monitor inflationary risks and reiterated its readiness to act against any significant threat to price stability. The credibility of its forward guidance contributed to maintain medium-long term expectations on levels generally consistent with the ECB's goal of just under 2%.

Economic growth continued to be slow during the first half of 2005, but livened up in the second half thanks to robust global growth, favourable financing conditions and positive corporate earnings trends. Despite this, the growth rate amounted to a moderate 1.5% during the year, dampening the upward pressures on prices which originated from significant increases in commodities and oil prices. Moderate wage developments and favourable imported manufactured goods prices further helped containing inflation expectations. However, low interest rates, amongst other factors, contributed to strong monetary growth, in a scenario of already abundant liquidity in the eurozone. Credit continued to expand, especially mortgages, as did the demand for liquid assets, given the environment of relatively low interest rates. Taking into account the improvement of economic growth and forecasts in the last months of the year, the Governing Council deemed it necessary to slightly tighten its monetary policy stance, and in December 2005 raised key interest rates by 25 basis points, the first increase since March 2000. A gradual increase in interest rates was well justified, as in the second half of the year inflation had risen to 2.6%, compared with 2% in the first half, and was projected to be sustained in 2006 as well. In addition to monetary developments in the euro area, upward risks were identified in potential increases in oil prices and indirect taxation.

In 2006, expansion of the euro area's economy was robust, with a real GDP growth of 2.8%, almost double with respect to 2005. This growth was considered above potential, with the economy benefiting both from a stronger domestic demand and the continued expansion of world economy, driven by developing countries. The favourable environment allowed countries to consolidate their fiscal position, but this resulted from output increase rather than from the stability reforms that the ECB had been advocating. Against the backdrop of solid growth, the ECB continued to gradually but steadily tighten its accommodative policy, with a series of 25-basis-points increases in key interest rates. The main refinancing operations interest rate was thus brought from 2.25% in January 2006 to 3.50% in December. Micossi (2015) argues that while this restriction measure, operated only after credit in Germany started to grow, was probably delayed too long to stem excessive credit acceleration in peripheral countries. Inflation remained at 2.2%, unchanged from the previous year. It had increased up to August, then

subsided as oil prices fell and wage increases remained subdued owing to strong external competition in the manufacturer sector. Notwithstanding the assumption that wage increases would remain moderate in the medium term, second-round effects from past oil increases and announced increases in indirect taxes remained a concern for price stability. Monetary analysis, the second pillar in the ECB's strategy, confirmed that liquidity was ample by all relevant indicators, as a consequence of several years of strong expansion, and sustained credit growth persisted. The Governing Council continued to provide thorough communications to the markets, helping them to form their expectations and hence decreasing uncertainty.

2.2.2 Crisis and its aftermath: 2007-2010

2007 saw the entrance of Slovenia in the euro area, and its central bank joined the Eurosystem. Cyprus and Malta would follow in 2008 and Slovakia in 2009, bringing the number of countries in the euro area to a total of 16. The Treaty of Lisbon was also signed in this year, reiterating the ECB's independence as a Union institution and introducing the achievement of economic and monetary union with the euro as its currency as an EU objective. Real GDP continued to grow, showing an annual increase of 2.6% as gains in business efficiency and favourable financing conditions resulted in strong investment growth during the first of the year, but the outlook worsened because of heightened financial uncertainty in the second half of the year. The ECB continued to discourage countries from discretionary fiscal loosening and to stress the importance of the Stability and Growth pact; fearing the recent improvements in fiscal positions would be undone by the necessity of fiscal stimulus in the upcoming period. Given the prevalence of upward pressures on prices The ECB had increased rates by a total of 50 basis points in the first half of the year, but as financial markets experienced turbulence, it provided extra liquidity in August 2007, in coordination with the Federal Reserve Bank of New York, and as a result the overnight interest rate stabilized around the policy rate set by the Governing Council. The worldwide repricing of risk which followed put a considerable strain on the euro area financial system. The financial turmoil heavily affected global sentiment on growth, intensifying downward risks, but fundamentals in the euro area remained sound and money growth continued to be vigorous. Despite persisting concerns that inflation could remain higher than desired, it was decided that the exceptional level of uncertainty meant more information was required before further adjusting monetary policy.

The following year was a delicate period, characterized by high inflation in the first half, peaking at 4% in June and July, and financial turmoil in the rest of the year, after the Lehman Brothers bankruptcy set off the financial crisis which later spread to the real economy. In July,

sustained economic growth, high inflation and strong growth in M3 prompted the ECB to raise interest rates by 25 basis points, as risks to price stability were perceived to be strongly on the upside. After mid-September the outlook changed radically, with the financial turmoil causing severe liquidity shortages and worsening global economic conditions. Declines in commodities and oil prices led inflation to fall in the last months of the year, reaching 1.6% in December. Monetary growth dampened as well, lending support to the hypothesis that inflationary pressures were substantially weaker. Against this backdrop, the ECB cut interest rates by 50 basis points in October, accompanied by other major central banks, and did so again in November and December, for a total decrease of 125 basis points. Furthermore, the Governing Council warned governments against adopting protectionist measures and helped design the Paris Declaration of October 2008, which set up an action plan to restore confidence and favourable financing conditions.

2009 saw a marked contraction of GDP and annual inflation close to zero, even if long term expectations matched the 2% objective, which was seen as a sign that the ECB was credible. The financial crisis warranted extraordinary measures to restore stability. To counter the inflation contraction, MRO rate was cut by 150 basis points, to the level of 1%, liquidity was provided at fixed rate to full allotment, against eligible collateral (which was expanded to encompass a wider array of assets), with three Long Term Refinancing Operations (LTRO) with a 12 months maturity in 2009 and more in the following years. Furthermore, the ECB carried out assets purchases on the covered bond market for a total of €60 billion, starting from July 2009. The goal was to aid credit recovery through both the supply side (alleviating funding pressures) and the demand side (low interest rates). These measures provided banks with ample access to liquidity on an extended horizon, helping to ease credit conditions, and reduce volatility in the financial markets. Towards the end of the year began the winding back of non-standard measures, in order to avoid potential distortions that could result from their continuation. HICP inflation turned negative between June and October, but recovered towards the end of the year.

In 2010 the ECB aimed to scale back its role as intermediary, taking advantage of the recovery in real economy in the first months of the year, but was forced to resume it by the tension surrounding the growing fear that heavily indebted countries, especially Greece, could become unsustainable. These concerns affected deeply the sovereign bond markets, which became dysfunctional, and later spread over to banks as those which held significant amounts of sovereign bonds saw their assets downgraded, which sparked a negative loop of parallel downwards revisions by rating agencies, adding to market strains (Micossi, 2015). Another

factor to weigh in was the decision by EU Heads of State to raise the regulatory capital ratio to 9%, overall requiring about €100 billion of new capital. The Governing Council maintained the accommodative monetary policy, and in May 2010 began the Securities Markets Programme (SMP), which allowed for purchase of securities to restore the normal functioning of markets and thus preserve the monetary policy transmission mechanism. This programme was discontinued in 2012 as Outright Monetary Transactions were established⁷. In 2010, operations within the Programme amounted to €73.5 billion. The upward inflationary push of the Programme was offset by specific sterilising operations. Inflation in the euro area grew to 2.2% in December, amidst uneven recovery signs.

2011 saw increased inflationary pressure deriving from commodity prices, which prompted a raise of key interest rates by 50 basis points during the year, that was later winded back as growth momentum dampened in the face of continued concerns that government's response to the sovereign crisis was not going to be sufficient to restore confidence. A sign of this climate of mutual distrust was the fact Eurosystem banks choosing to hoard almost 600 billion in reserves with the ECB in order to maintain a liquidity safety buffer, instead of circulating it through lending (Micossi, *ibid.*). Financial tension had been high since summer, requiring a number of non-standard monetary policy measures. Italy and Spain became affected by sovereign debt sustainability concerns, like Greece, Portugal and Ireland had been. The Governing Council intervened reactivating the SMP (which had been temporarily suspended) against a commitment from governments to meet their fiscal targets, providing US dollar liquidity under repurchase agreements, continuing the fixed tender full allotment refinancing operations, purchasing covered bonds and conducting two more LTROs with one year of maturity and two with a maturity of three years.

2.2.3 Extraordinary measures: 2011 – 2014

Despite the measures enacted, financial markets continued to be distressed, in particular with sovereign bond risk premia with respect to the German benchmark rising for heavily indebted countries. The SMP was discontinued and substituted by the OMT programme in September 2012. In March 2012, euro governments signed the Treaty on Stability, Coordination and Governance in the Economic and Monetary Union (fiscal compact), whereby they committed to sustainable budgeting. Against this background, ECB President Mario Draghi declared that

⁷ https://www.ecb.europa.eu/press/pr/date/2012/html/pr120906_1.en.html

the ECB would do whatever it took to save the euro (Draghi 2012)⁸ and that it was prepared to intervene by purchasing sovereign debt securities in secondary markets, if monetary policy transmission were to be significantly hampered, but only after the national government agreed to an economic program with the European Stabilization Mechanism (ESM). The excessive risk premia on sovereign bonds began to reduce. Micossi (ibid.) considers this a turning point, and a confirmation that “the sovereign and banking crisis post-2010 really had been the product of ill-designed monetary institutions, rather than reckless budgetary policies of some member states”, whereas the ECB continued to underline the effect on the crisis of “perceived lack of determination on the part of governments to address the root causes” (ECB 2017 Annual report, p.14). HICP inflation stood at elevated levels above 2% throughout 2012, declining from 2.7% at the beginning of the year to 2.2% in November and December, with M3 growth moderately strengthening but growth rate of loans to private sector turning negative.

Market tensions receded in 2013, with excess liquidity declining as parties paid back early part of the large sums they had borrowed during the LTROs in 2011 and 2012, signalling a shift in demand for liquidity buffers. The ECB annual report attributes this also to the new regulations and build-up of higher capital buffers, which improved the banking system's resilience, despite relatively weak profitability. Financial fragmentation, though receding, persisted throughout the year, resulting in heterogeneous financing conditions across national borders, and despite the advancements credit supply remained unsatisfactory. The Governing Council began another round of cuts to interest rates, as inflation fell consistently over the course of the year. Moreover, it relied on forward guidance to help anchor expectations, leveraging ECB credibility, and announced that fixed rate refinancing operations would continue at least until mid-2015. This move produced some results: the yield curve flattened and excess liquidity kept short term rates extremely low, close to the deposit facility which was standing at 0.00%.

Here as well, it has been said (Micossi, ibid) that while consistent with developments in Germany, the manoeuvres were too slow and ended up being pro-cyclical for the periphery, feeding into monetary imbalances. Of course, this is a reasonable stance given the weight that the core carries in European economy. In this period, the fear that some countries could become insolvent rose, as shown by the spread of sovereign bonds against German benchmark, as the willingness of the ECB to intervene to ensure liquid conditions was called into question. Where there is monetary union without fiscal union, as is the case with the Eurozone, national governments issue bonds in a currency that they have no control over, exposing sovereign bonds

⁸ <https://www.ecb.europa.eu/press/key/date/2012/html/sp120726.en.html>

markets to liquidity crises like private banking systems, as there is no lender of last resort (De Grauwe 2011).

Real economy recovery did not accelerate as expected through 2014, monetary growth was deemed insufficient, and credit continued its slow contraction. Inflation fell further towards the end of 2014, following the marked decrease in oil prices, and expectations for the longer term would begin to be affected if the level remained low for too long. In this context, the scope for traditional measures was very limited, since interest rates were already at the lower bound. Even then, key interest rates were pushed further down, introducing a negative interest rate on deposit facility. Unsurprisingly, the pass through of these measures was not complete, as banks were understandably reluctant to pass on a negative interest rate. While the market-based debt became cheaper, the benefits for non-financial corporations were counterbalanced by a marked rise in the cost of equity (risk premia). As the outlook for inflation continued to worsen, the Governing Council gave further stimulus through purchases of asset backed securities and covered bonds, which was later expanded to include public sector securities. The year 2014, with its variety of non-standard measures, marked a shift from the management of expectations through widely understood operations on the interest rate, to a less predictable mix of policies, with an increasing number of possible permutations. To steer expectations, no longer informed by policy response rules, the ECB relied further on forward guidance: for example, in 2014 it announced its intended reactions to three different contingencies, and as each manifested, followed the path it had outlined (Hutchinson and Smet 2017).

The reduction of interest rates was accompanied by a series of Targeted Longer-Term Refinancing Operations (TLTRO) and two purchase programmes: the Asset Backed Securities Purchase Programme (ABSPP) and the Covered Bond Purchase Programme 3 (CBPP3). These items worked together to ease credit conditions considerably through three channels: direct pass through, portfolio rebalancing and signalling (although there is scarce evidence of the effectiveness of the latter for the euro area, as stated in Altavilla et al. 2015).

2.2.4 Supporting the recovery: 2015-2017

After the measures adopted in 2014, with bank lending rates falling by around 80 basis points from mid-2014, 2015 was a year of recovery for eurozone economy. However, inflation remained subdued and the main focus was on strengthening confidence. In January the Governing Council announced an expansion in scope of the Assets Purchase Programme (APP),

which continued throughout the year, and in December deposit facility rates were further reduced. Eurosystem staff predictions showed inflation diving into negative territory without the APP, which was thus deemed necessary, and saw an increase in size and scope in March 2016. The other foremost contribution of the ECB to maintaining confidence was providing a lifeline to the Greek banking system, helping contain threats to the stability of the euro area. These operations were carried out only with solvent banks against eligible collateral, in accordance with the ECB's rule. For example, no Greek sovereign bonds were included in the Public Sector Purchase Programme, as they did not meet the safety threshold.

Figure 2 shows net assets purchases under the APP. As of June 2018, the Governing Council “anticipates that, after September 2018, subject to incoming data confirming the Governing Council’s medium-term inflation outlook, the monthly pace of the net asset purchases will be reduced to €15 billion until the end of December 2018 and that net purchases will then end”⁹. According to ECB forecasts, the stimuli in place before the expansion of the programme insufficient to push inflation to the target value of close to, but under, 2%; this was also due to falling oil prices and concerns that low inflation expectations would affect wage setting behaviour. Against this backdrop, the Governing Council sought to ease credit conditions further by another marginal cut in key interest rates and expanded the duration of the APP to the end of 2017 or more if necessary. During the year, deflation risks decreased through the year as confidence built up and bank lending rates decreased by 110 points between mid-2014 and December 2016. By the end of the year, Eurosystem balance sheet had shot up to a high of €3.7 trillion. Deutsche Bundesbank analysts (monthly report, June 2016, p.25) remark that “in addition to the risk of an increasing nexus between monetary and fiscal policy, possible side effects of quantitative easing in a low interest rate environment include risks to financial institutions’ profitability and a heightened propensity to run risks”, but they also find that it has brought positive real effects. Wieladek and Garcia Pasqual, (2016) find that its effect was to raise euro area GDP by 1.3% and core CPI inflation by 0.9%.

In 2017, asymmetries decreased and financing conditions stabilised around historical lows, leading to very strong credit growth. The real economy improved its performance, but underlying inflation was still considered unsatisfactory. The Governing Council announced a reduction of asset purchases from €60 billion to €30 billion a month, but extended the duration of the programme to September 2018 at least. Furthermore, it reiterated that it intended to maintain interest rates low for an extended period of time, and it would continue the fixed rate

⁹ <https://www.ecb.europa.eu/mopo/implement/omt/html/index.en.html>

full allotment tender procedures at least until 2019. Stronger nominal growth underpinned debt sustainability of firms and households, and euro banks markedly decreased the amount of Non-Performing Loans (NPL) in their balance sheet.

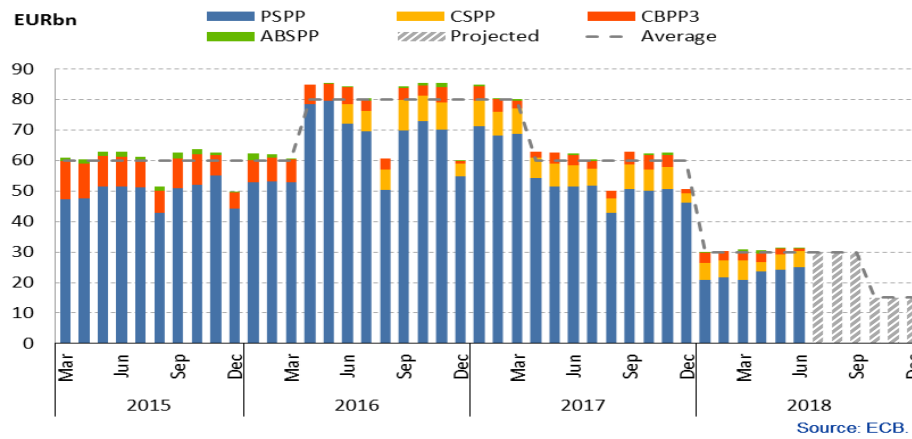


Figure 2 - Monthly net purchase under each segment of APP.

3. THE PEOPLE'S BANK OF CHINA

3.1. Establishment and functioning

The People's Bank of China (PBC) was founded in 1948 by bringing together four national banks. From its inception until 1993 it served both as a central bank and a commercial bank, with the task of supporting implementation of government policies. Until 1962 it acted directly under the State Council, which retained decision-making power on issuing currency and loans, and it was only after *Regulations on Improving and Strengthening Banking* were issued in 1977 that it became separated from the Ministry of Finance. This was part of a wider set of reforms of the banking sector which aimed to further a socialist market-oriented economy steered by government planning. The PBC's status as central bank was progressively strengthened through subsequent reforms, and its role as a policy bank consequently reduced. Yi (1992) argues that in the transitional stage, central bank independence was limited not by inherent design, but by its commingling with a policy bank, which also implied a degree of interference from local governments.

In 1993 the State Council emanated its *Decision on financial system reform* which separated fiscal policy from monetary policy and confirmed the PBC's duties as central bank. Accordingly, the PBC ceased to underwrite treasury bonds issued by the Ministry of Finance in 1995, and policy support was entrusted to purposely established commercial banks. The central bank's mandate was confirmed and enhanced by the *Law of the People's Republic of China on the People's Bank of China (2003 Amendment)* ("*PBC Law*" henceforward), which to day regulates its operations.

According to the latter, the mandates of the PBC no longer include financial regulation of the banking, securities and insurance system. Article 2 of the *PBC Law* states that "The People's Bank of China is the central bank of the People's Republic of China. The People's Bank of China shall, under the leadership of the State Council, formulate and implement monetary policy, prevent and resolve financial risks, and maintain financial stability". Article 3 further specifies: "The objective of monetary policy is to maintain the stability of the value of the currency and thereby promote economic growth." Hence, from the legal point of view price stability comes first, with the promotion of economic growth as a subordinate goal; nevertheless

Geiger (2008) disputes that as a non-independent central bank, the PCB could hardly ignore the second objective.

Until 1997, the main tool applied in monetary policy was the direct control of credit quota, but the system evolved in reaction to the massive expansion of the financial system, inching towards indirect control featuring open market operations (OMO), deposit reserve requirements ratio (RRR), the lending rate, and the rediscount rate. During the time period that shall be presented, China transitioned from quantity-based instruments to price-based instruments (Angrick and Yoshino 2018)

To determine its immediate actions, the PBC makes use of intermediate targets, most prominently money supply indicators (especially M2, given by money in circulation, deposits and quasi-money, but monitoring M0 and M1 as well). Money growth and inflation display high correlation on the longer term, and thus can be useful references in managing inflation, especially in those countries where monetary transmission is relatively less reliable (Goodfriend and Prasad, 2006). For daily operations, the PCB monitors excess reserves levels and monetary market interest rate. Laurens and Maino (2007) suggest that picking a monetary target helps strengthen transparency and credibility in monetary policy. Goldstein and Lardy (2007) argued that the exchange rate management regime of the RMB/USD may have reduced the controllability of monetary aggregates as it led to sizeable foreign exchange inflows, and that allowing flexibility on the exchange rate would support a wider range of domestic interest rates. Geiger (ibid.) holds instead that the PBC managed to effectively sterilize inflows and maintain unconstrained monetary policy

3.2 A chronology of the People's Bank of China's monetary policy

3.2.1 2002-2006, opening reforms

Geiger (2010), describes the changes in Chinese monetary policy during the 2000s. 2001 was the year of China's accession to the World Trade Organization, which led to the opening of financial markets, for example by allowing all banks – foreign and local – to lead operations

denominated in foreign currencies. RMB transactions would come in 2003, with geographical restrictions which were lifted only in 2006. In 2002, the PBC, together with the China Securities Regulatory Commission (CSRC), launched Qualified Foreign Institutional Investor (QFII) scheme, allowing foreign investors to enter China's capital market directly, up to a quota of 4 billion USD (increased later in multiple occasions).

In 2002 monetary policy was oriented towards lending support to the recovery from the Asian crisis, and thus was fairly accommodative, with the declared goal of preventing further declines of prices and slowdowns of economic growth: accordingly, deposit rates were cut by 27 basis points and 1-year lending rates by 54 basis points (Shu and Ng 2010). As 2003 and 2004 saw a rapid increase of credit volumes, the policy stance became tighter, through the use of OMOs to drain liquidity and the implementation of credit quotas (id.).

2004 saw a continuation of this tightening, with a raise in benchmark interest rates. Before 2004 the interest rate charged by banks was not allowed to vary freely, but was instead confined to a bandwidth of 110% (ceiling) – 90% (floor) of the benchmark rate set by the PBC, with the upper limit increasing according to the type of institution, to a maximum on 150% for rural credit cooperatives. In 2004, ceilings were first raised to 170% for commercial and rural cooperative banks, and then abolished, while the lower boundary remained at 90% for all institutions. This was seen as major move. Deposit rates were allowed to go below the benchmark rate, but not above. During this reform period, many measures were first introduced for limited groups and later expanded once the authorities had had a feeling of their impact. In this period, the government was also very active in providing help to policy banks, which carried on from the planned economy period a sizeable batch of Non-Performing Loans (NPL); these were disposed of and banks adequately recapitalized. The share of NPL decreased quickly, also as a result of the extraordinary growth of total outstanding loans, which increased by almost 350% (id.). As per the exchange rate, it was under a de facto peg to the USD from 1997 to 2005, which allowed the RMB to become severely undervalued while foreign exchange reserves increased manifold. This helped Chinese economy through capital inflows and export support, while RRR adjustment helped sterilizing the inflationary pressure (Ma, Xiandong, Xi 2011). In 2005, a reform of the exchange rate was announced, which resulted in a crawling peg against a basket of currencies (based on the country's exposure to trade with China). Against the dollar, the RMB appreciated 2.1% outright, and was allowed to fluctuate up to 0.3% of the previous day's rate. As a result, the RMB underwent a significant shift in value over the following years, which furthermore eased the international concern about its unbalanced price, although limited convertibility because of capital controls still played a part in insulating

Chinese economy from the financial turmoil in 2008. Ultimately, the decisions regarding the exchange rate were taken by the Communist Party Council (CPC) through the State Council, but it was the PBC that carried them out operatively together with the State Administration of Foreign Exchange (SAFE).

Beginning in 2003, the RRR started to play a more active role in Chinese monetary policy, with very frequent changes to drain or inject liquidity (Ma, Xiandong, Xi *ibid.*). In 2008, a two-tier system was established where large commercial banks were subject to a higher RRR than smaller enterprises. In addition, rural cooperatives enjoyed further reductions. Excess reserves, which served as cushion against raises of the required ratio and liquidity shortages in general, decreased substantially in the early thousand, increasing the effectiveness of RRR changes as a policy instrument. Moreover, the PBC reduced drastically the interest paid on excess reserves, from 7-8% in the late 90s to 2% in 2010.

Central bank lending and rediscount rates were also an important policy instrument; however, these were not autonomously defined by the PBC (Allen et al. 2017). Since 1998, they had been jointly determined under State Council guidance, and it was only in 2004 that the central bank was given the freedom to change the central bank lending rate within a floating range around the discount rate (Xie, 2004).

3.2.1 2007 – 2011 Responses to the financial crisis

China's closed financial system largely shielded it from the effects of the 2008 crisis, avoiding the major disruptions that other countries experienced. As a result, China experienced only a minor slowdown in its impressive economic growth (Adas, Tussupova 2016). Nonetheless, it did learn some precious lessons from the event, and strengthened its macroprudential policies. Preserving financial stability is a key objective of the PBC, so it is naturally a protagonist in the efforts to avoid turmoil through macroprudential and monetary policies. Klingelhöfer and Sun (2017) find that monetary policy tools, such as reserve requirements and window guidance can be used to lean against credit bubbles and improve financial stability (in particular, that window guidance has been effective in curbing credit) and that both monetary and macroprudential policy are effective in restraining excessive credit expansion.

In the second half of 2007 and the beginning of 2008, inflation began to rise on account of increased housing and food prices, up until a peak of 8% in 2008 Q1. (Shu and Ng 2010). This occurrence prompted a decisive reaction, with several tightening actions. These included:

utilising OMOs to operate a significant withdrawal of liquidity from the market; raising RRR a striking 13 times, totalling 700 basis points of increase; increasing the one-year benchmark lending and deposit rate by 108 and 135 basis points each; carrying out targeted operations with selected banks (currency swaps, targeted bills, requiring the placement of special 3-years deposits), and credit controls such as the first quarterly credit quota in 2008 Q1. The interest rate tool could not be used further because of the fear of drawing in even more capital. These strict measures to curb credit growth began their full effect exactly as world economy was collapsing, causing an external demand to suddenly lose momentum and exports to contract abruptly. The result of this decline, together with abating food prices and plunging commodities prices worldwide, was to quickly dispel fears of inflation and warrant an immediate loosening of monetary policy stance at the end of 2008. The tightening measures put into place began to be quickly winded back, with RRR reduced by 4% for small banks and mandatory special deposits made available for early withdrawal. OMOs were also scaled down considerably, and key interest rates were cut by an average of roughly 200 basis points. A 4 trillion RMB stimulus package was announced in 2008 to further sustain economic growth.

During this period window guidance was exerted to strongly encourage bank lending, which went through a strong expansionary phase, issuing RMB 9.5 trillion of new loans in 2009. In late 2009, authorities began to be concerned about overheating, and took a U-turn on monetary policy leading to a second tightening phase and strong discouragement of bank lending, with emphasis on the role of banks in risk prevention (Chen, Chow and Tillmann 2017). Credit growth abated in 2010, which lead the PBC to soften its stance. Exchange rates were given more flexibility, which eventually brought to a 10% appreciation of the RMB from mid-2010 to end 2013 (Nuutilainen 2016).

In 2011 the policy was kept “prudent”, with inflation controls strictly monitored because of global instability and domestic price pressures; the RRR was once again used as an active policy tool with eleven increases in the second half of 2011; and lending and deposit rates were raised (id.). In this year the PBC introduced a pilot dynamic differentiated reserve requirements scheme, where RRR for individual banks varied on quarterly or monthly basis depending on its systemic importance, leverage ratio, compliance to policies, and contribution to deviation of aggregate credit growth from the historical trend (Ma et al, 2011).

3.2.3 2012-2017 Consolidating Growth

As reported in Chen, Chow and Tillman (ibid.), the time period between 2012 and 2014 was characterized by production growth slowdown on one side, and overcapacity concerns on the

other. In this scenario, the PBC's action of choice was to steer commercial banks through window guidance, remarking the importance of lending to policy sectors and warning against excessive credit growth in those segments where it saw unwarranted build-ups. Their study also proves window guidance to have some causal effect on credit dynamics, especially in the non-financial sector, but at the same time they observe that window guidance can be a double-edged blade, as it is effective to obtain short-term stabilization, but can create distortions on the long run. Furthermore, its effectiveness relies on China's financial system's condition of excess liquidity and deep banking system excess reserves.

To respond to the significant fluctuations experienced by financial markets, the PBC deployed new tools that enabled it to fine-tune its operations (Allen et al. 2017). The year 2013 saw the introduction of Short-Term Liquidity Operations (SLO), which are mainly repurchase operations with very short-term maturity (less than seven days) used to manage temporary fluctuations (similar to the ECB's Marginal Lending Facility), and their timing, scale and other operational characteristics can vary at the PCB's discretion. The counterparties are generally the primary actors in the OMO markets, with strong macroprudential evaluations and systemic importance. Another important innovation introduced during the same year (id.) was the Standing Lending Facility, an instrument with maturity of up to three months, extendable against posting of eligible high-quality collateral, which should serve to smoothen liquidity volatility by meeting large-scale demand by policy banks and commercial banks whose credit structure complies with government goals. In 2013, SLF operations were employed to bridge the sudden gap between demand and supply of liquidity, with the outstanding amount reaching 416 billion RMB as of end of June. Initially SLF operations were carried out only by the central office, but they were later extended to pilot branches and then to all branches in 2014 and 2015 respectively.

In 2014 two more instruments made their appearance in the PBC's toolkit. The first was Pledged Supplementary Lending (PSL), a means to promote structural adjustment and encourage credit to key areas of government policy intervention. For example, during 2015 the China Development Bank was granted 575.5 billion RMB while it was supporting shantytowns renovations. The pledged collateral comprises high quality bonds and assets. In 2014 and 2015 monetary policy was loosened and PSL enjoyed low interest rates. In September 2014, Medium-term Lending Facility (MLF) completed the tools package. RRR was reformed in 2014 too, with the addition of the criterion of "desirability lending", which was introduced as a

“transparent, rule-based macro-prudential policy tool based on capital requirements” (PBC 2014 Q3) but was essentially regarded by market participants as another form of credit quota (Casanova and Xia 2015).

During 2015, China took two major steps towards market liberalization, firstly by removing interest rate ceiling for commercial banks and rural cooperatives (Allen. Ibid.), and secondly by modifying the exchange rate determination mechanism to a system which takes into greater account market forces. In the aftermath of the August 11 announcement of the exchange rate reform, the RMB depreciated quickly, with falls not seen since the 90s (Monan 2015). Furthermore, the deposit insurance system was launched, which could better protect the rights and interests of depositors (PBC 2015 Annual Report). During the year the PBC continued to define its monetary policy as “prudent”, while implementing support measures in the face of downward economic pressures: it carried out several targeted RRR cuts in order to compensate for the long-term liquidity gap, and significantly lowering key interest rates. Foreign institutions were encouraged to issue RMB-denominated bonds in China, and a larger number of financial operations was allowed to them. CPI inflation was somewhat weak, rising 1.4% in 2015 compared with 2% in 2014, but monetary aggregates grew rapidly especially at the end of the year. The full set of instruments described in the previous paragraph was employed to provide timely liquidity to the banking system (id.). Moreover, in 2015 the PBC upgraded its dynamic provisioning system, where bank credit is linked to systemic importance, to a generalized Macroprudential Assessment (MPA) system, including leverage, debt, and assets indicators (PBC 2017).

In 2016, the dynamic reserve requirement system was enhanced to the current Macro Prudential Assessment mechanism, and the PBC continued its moral suasion to modify credit structure from the supply side, steering away from overcapacity sectors such as steel and promoting lower costs for Small Medium Enterprises (SME) and poverty-reducing projects.

In a bid to lower financing costs for enterprises, the PBC decreased interest rates of the MLF operations, making use of it as a benchmark rate and of the SLF as a ceiling for the interest rate corridor. The RMB was included in the International Monetary Fund (IMF) Special Drawing Right (SDR) basket, which was an important recognition of the RMB’s role in worldwide financial dynamics¹⁰. During the year, it depreciated against major currencies. Credit volumes

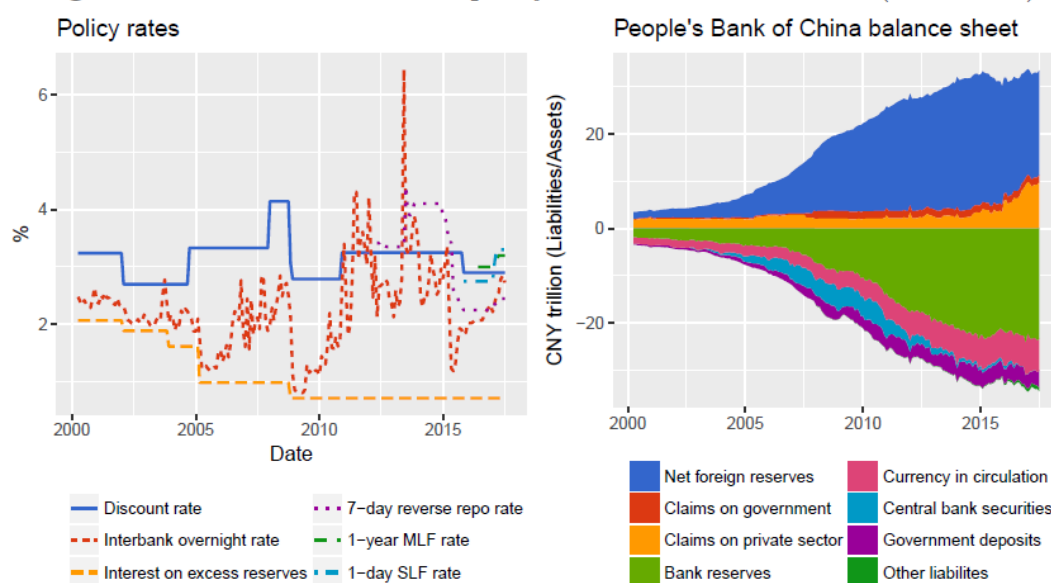
¹⁰ <<https://www.imf.org/en/About/Factsheets/Sheets/2016/08/01/14/51/Special-Drawing-Right-SDR>>

grew steadily, although at a somewhat slower pace with respect to the previous year. To aid in closing the liquidity gap, RRR was cut across all regimes by 0.5%, and MLF terms were increased, diversifying the maturity to 3-, 6- and 12-months.

A universal reserve requirement ratio cut of 0.5 percentage point was made in a bid to fill the long-term liquidity gap. Medium- term liquidity operations were conducted on a regular basis, and the terms of the MLF were diversified from 3-month to 6-month and 1-year operations. Additionally, starting from February OMOs were carried on daily in an effort to fine-tune liquidity management. For the following year, the PBC announced that it would lead a “prudent and neutral monetary policy” (PBC Annual Report 2016 p. 28)

The year 2017 saw a slight increase in key interest rates, which the PCB explained as market-drive, flexible use of OMOs, SLOs, MLOs to inject cash as needed, especially around holiday periods, and targeted RRR cuts aimed at promoting credit growth in key policy areas. CPI inflation was 1.6%, with M2 rising steadily, even if at a somewhat slower pace with respect to previous years. According to PBC analysts, “The slowdown in M2 growth mainly reflected the fact that as banks improved their fund operations in the context of deleveraging and tightening regulation” (PBC 2017 Q3 Report). The exchange rate formation mechanism was improved through the introduction of a “counter-cyclical factor” into the model of central parity, to reflect more accurately changes in economic fundamentals

Figure 4: Chinese central bank policy rates and balance sheet (2000–2017)



Note: CNY = Chinese yuan; MLF = Medium-Term Lending Facility, SLF = Standing Lending Facility

Sources: People’s Bank of China and IMF International Financial Statistics, via CEIC

From Angrick and Yoshino 2018

4. A COMPARISON OF SELECTED ASPECTS

This section will compare ECB and PBC frameworks and operations in the past fifteen years. Any judgement on relative effectiveness or “quality” would be debatable at best, as these two institutions operate according to different paradigms and in very different settings: their reference markets are subject to different economic dynamics and shocks, they abide by different laws and frameworks, they are populated with different actors. Therefore, the spirit of this analysis is purely positive. After a review of the framework, that is monetary policy objectives and instruments, this section will discuss independence, transparency and accountability in theory and in the practice of the two institutions.

4.1 Monetary policy objectives:

4.1.1 People’s Bank of China

The official definition of the PBC’s monetary policy objective can be found in its founding document, the *PBC Law*, which states: “The objective of monetary policy is to maintain the stability of the value of the currency and thereby promote economic growth.” This is an evolution of earlier versions where the prominence of price stability was less clear (Allen et al. 2017). However, these two goals can be conflicting, for example because the promotion of

economic growth may call for accommodative policies which jeopardize financial stability. How far the PBC is able to enforce price stability priorities over government pressure to enact growth-supportive policies, when these diverge, can depend also on the personal political power of top PBC officials versus that of State Council members (Geiger 2010). Bell and Feng (2014) focus on how agents of government and central bank, by interacting with each other and the institutional framework, shaped the current operative independence of the PBC. They observe how the broad consensus that was formed internationally on how central banks should operate spread through policy diffusion and elite networking; as well as how the changes in State Council leadership, coupled with the PBC's increasing value as an indispensable problem solver, lead to financial liberalisation reforms in China. They note that the challenges encountered during the phasing out of planned economy have helped empower those agents who possessed the specific technical expertise to steer the reforms, especially within the PBC. Given that "political and careerist incentives of top PBC officials mostly align with the longer-term institutional interests and clear performance criteria of the central bank, especially when dealing with inflation" (Bell and Feng, 2014 p. 203), agents would push against short-term, fiscal policy-supporting compromises.

A marked difference between the PBC and the ECB is the former's dedication to reallocating credit to specific sectors of the economy, through both moral suasion (window guidance) and incentives (targeted RRR reductions, for example). In this endeavour, it enjoys collaboration from big state-owned banks, which share its goal. This volume shift goal is often mentioned in PBC documents.

4.1.2 European Central Bank

As recites Art 127 of the Treaty on the Functioning of the EU, "The primary objective of the European System of Central Banks (hereafter referred to as 'the ESCB') shall be to maintain price stability. Without prejudice to the objective of price stability, the ESCB shall support the general economic policies in the Union with a view to contributing to the achievement of the objectives of the Union [...]". The ECB is part of the ESCB, which comprises all national central banks of Members of the European Union. For greater clarity and accountability, the Governing Council has further specified price stability as a year-on-year rise in HCPI inflation below, but close to, 2% in the medium term. The focus is on the medium term as short-term shocks can be unpredictable and excessive reactivity could more easily lead to confusion and heightened

volatility than¹¹ to actual control. Shifting to the medium term, instead, helps anchoring expectations while giving room for adjustments. The ECB does not abide by a formal inflation targeting rule – which would demand automatic reactions to deviations of forecast inflation from the target, as Taylor’s rule suggests. It rather remains flexible, reserving discretion over the response to different emerging threats, according to their nature. The monetary pillar of the twofold strategy allows the ECB to lean against the wind in the face of imbalances that might threaten price stability. In this light, the ECB does not aim to “prick” asset bubbles, but it still takes a more proactive stance than merely standing aside until bubbles form and burst, and then trying to clean up afterwards (Micossi 2015)

4.2 Instruments of Monetary Policy

4.2.1 People’s Bank of China:

As mentioned above, the PBC employs a set of diverse instruments to enact its monetary policy, which has varied through the years, and which will be briefly reviewed in this section. Open Market Operations are contracts on the open market, mostly repo agreements, which provide short term liquidity to banks or withdraw excess liquidity from the market; these operations are conducted with different maturities, and their frequency has been increasing in recent years.

RRR changes are a trademark tool of the PBC, favoured also because they do not fall into the categories of actions that have to be pre-agreed with the State Council, thus allowing easier and speedy deployment. Furthermore, the PBC grants RRR reductions (of 0.5-1.0 percentage points) to banks that comply with policy objectives such as increasing lending to Small Medium Enterprises SME and agricultural sector. This way, it is able to improve credit conditions for desired areas without easing them across the board, which would lead inflated sectors to increase their leverage further, potentially causing asset bubbles. RRR cuts also serve as signal for banks’ reliability and institutional favour, and that translates to increased stock value with respect to those banks which did not meet specifications Li (2016).

The MLF was introduced in 2014 and is used by the central bank to provide longer maturity loans, that help stabilizing market expectations by acting upon the further side of the yield curve, and providing investment funds to industries. Benchmark interest rates, while used less actively by the PBC than by other central banks, set the costs for retail credit; since 2015 credit

¹¹ <https://www.ecb.europa.eu/mopo/strategy/pricestab/html/index.en.html>

ceilings were removed as part of the liberalization process, giving markets greater weight in determining rates for individuals and companies. The PBC is also trying to establish an interest rates corridor, with the Standing Lending facility as ceiling; however, this move has not been completely successful, partly because the SLF is only available to larger lenders, and the short-term repo rate has sometimes exceeded the SLF rate. PLF is another system of loans against quality collateral, which has been used to support complying banks in increasing credit volumes to strategic sectors. Window guidance is another distinguishing feature of Chinese monetary policy: through benevolent moral suasion, the PBC indicates to commercial banks which economic areas should enjoy greater credit access, and where volumes should be decreased instead. Despite the different monetary policy framework, the transmission process has been found to be similar to advanced economies', in the sense that a tightening of monetary policy leads to a contraction in inflation and growth rates, while an easing yields the opposite. However, this does not hold true for stocks and housing prices: the first are boosted by both easing and contraction shocks, and the latter decline. This raises financial stability concerns since it implies monetary policy has no leverage to contain asset bubbles (Chen, Chow and Tillman 2016).

Despite not explicitly targeting inflation, the PCB has delivered overall low CPI inflation (2% on average) while China enjoyed extraordinary growth rates. Girardin, Lunven and Ma (2014) constructs and analyses a composite monetary policy index for China, deriving the observation that during 2002-2013 the PBC gave a large weight to inflation, making its policy style similar to informal flexible inflation target, with small and frequent steps. Yet, the weight assigned to output was still rather large with respect to developed economies, in line with emerging countries.

4.2.1 European Central Bank

The ESCB Statute allows the ECB to:

- i) buy and sell outright (spot and forward) or under repurchase agreements and lend or borrow any type of marketable instruments (therefore including sovereigns) in any currency as well as precious metals; and
- (ii) conduct credit operations with credit institutions and other market participants, with lending based on adequate collateral¹².

¹² Art. 18 Statute of the ESCB

In addition, credit institutions of the euro area are required to maintain a given level of reserves on their current accounts, and the Governing Council has the possibility to implement other operational monetary policy methods, with a majority of two-thirds.

The bulk of ECB operations takes the form of bank refinancing facilities: MROs for the short term, LTRO for longer maturities, fine tuning operations of varying duration, issuance of bills to drain liquidity. Marginal lending is available for unlimited amounts against eligible collateral, and its interest rates is taken as ceiling for the overnight money market interest rate corridor – the interest paid by the standing deposit facility being the floor. Furthermore, there is an Emergency Liquidity Assistance available for solvent yet illiquid banks (Micossi 2015). After conventional monetary policy measures proved insufficient to propel prices out of the deflation risk area, security purchase programmes were introduced with the aim to restore the proper functioning of markets and transmission channels, which was impaired by the climate of distrust and heightened uncertainty. Currently these programmes concern covered bonds (CBPP3), assets-backed securities, (ABSPP), public sector securities (PSPP). These purchases also serve as signalling device and strengthen the forward guidance tool (Hutchinson and Smets, 2017).

There has been debate on whether or not the ECB was entitled to carry out unconventional policies. Gren (2017) puts the issue in these terms: the principal-agent contract that the ECB is under is essentially incomplete, not defining limits for every possible scenario (as it is impossible to foresee all the circumstances). The matter of admissibility of OMT was brought before the CJEU, which stated that, where in ambiguity, ECB operations should be evaluated according to their objectives; as such the OMT programme was admissible as its aim was to restore adequate functionality in distressed markets, ultimately protecting financial stability and a smooth transmission process. Thus the CJEU gave added definition to the contract, and empowered the ECB – however, not more than other central banks around the world are (Gren, *ibid*).

4.3 Independence

This section will give a brief review of recent literature regarding central bank independence. The matter is very relevant as the ECB and the PCB are quite different in this regard, the first being highly independent and the latter taking direct instructions from the State Council. There is no intention here to give any normative consideration, as each institution plays its role in its unique environment and therefore an “effectiveness” comparison would be extremely difficult.

Central bank independence indicates that the bank operates without influence from the government in any form (such as control over bank capital or bank officials' retribution and security of tenure). There is strong empirical evidence of central bank independence lowering inflation. This is because a government has strong incentives to renege its low inflation promises: either to support output ahead of election period, or by issuing money to finance government spending, being time-inconsistent (de Haan and Eijffinger 2016). A purely technical central bank, instead, can be more easily trusted to abide by its purpose of curbing inflation, especially if it's a precise, narrowly defined goal. While there is a general consensus that central bank independence is desirable, many agree that it should be limited to policy and not extended to goal-setting, as unelected central bankers are not accountable to the people, going against the principles of democracy. So, it should be the government prerogative to decide what the monetary policy goals are, while the central bank has freedom to carry out its operation independently and benefit from higher credibility. Furthermore, an independent central bank should be strongly accountable: the government and the general public should be able to form an accurate opinion on its performance, through disclosures and clearly defined objectives and rankings (de Haan 2012). On the matter of who bears responsibility, it is important that the central bank reports to another institution such as parliament. Sanction mechanisms could be for example changing the law, removing ex-post central banks officials, or even overriding monetary policy; all these measures need to be extremely transparent and the conditions for its use be laid out in detail (de Haan et al. 2017).

Martin (2013) proposes the view that while socially beneficial, Central Bank Independence would fail to lower inflation permanently. Taking a government that currently authorizes excessive public expenditure, but knows that in the future the central bank will not be as willing to finance debt after becoming independent. With future policy distortions decreasing, current policy distortions would become relatively too high, prompting the government to decrease distortions (lower taxes) at the cost of increased distortions later (higher debit burden). If the central bank remained somewhat accommodative, inflation would rise as debt increased, nullifying the initial effects of the reform. On the other hand, a central bank which strictly adhered to inflation targeting, independently from the level of debt, it would achieve lower inflation. Therefore, to make them effective in controlling inflation, central banks should be insulated not only from direct government intromission, but also from indirect pressures through public debt; the ECB with its single mandate is an example of this, as opposed to the Federal Reserve's dual goals of high employment and price stability.

Central bank independence is commonly measured through various indicators¹³, including governors' appointment and tenure, counselling or decisional power of the government, how specific and independently achievable its goals are, financial independence. It was shown that central bank independence leads to lower inflation, without increasing unemployment or volatility in turn. However, in recent years and particularly after the financial crisis, central banks have been called upon to perform additional roles in macroprudential policymaking and preservation of financial (rather than just price) stability. This requires greater cooperation with other institutions, potentially pressuring central banks to become less independent. Furthermore, there has been a surge in populist governments criticizing, rightfully or not, central banks for advocating tighter fiscal constraints (Masciandaro and Romelli 2018). Furthermore, western countries are facing a period of low inflation, where the effectiveness of central bank policies has undergone a tough trial.

De Haan et al. (2017) analyse the changes in perception and practice before and after the financial crisis. During that period of extreme uncertainty and market volatility, central banks had to enact “quasi-fiscal” policies such as buying sovereign debt or non-traditional assets (Blinder 2017). With this expansion of political influence, central banks have also been the object of more intense public scrutiny and criticism. Their study takes as reference the Cuckierman index of central bank independence, which evaluates central bank charters according to: governor appointment and dismissal, government's influence, monetary policy goal, and the government's ability to borrow from central banks. They find that overall central bank independence rose steadily and sharply from the 1990s to the mid-2000s, then stabilized. Since the crisis, many central banks payed increased attention to macroprudential supervision, either because it was formally added to their charges, or because of the role it has in managing inflation. Also, most major economies now witness inflation levels below, not above, the desired ones, thus warranting a change in policy instruments as the effective lower bound was hit. The wider range of instruments and objectives imply stronger distributional effects of the policies, especially macroprudential ones (Vujčić 2016). An example of this would be a real estate bubble, where output is influenced by how much it is allowed to grow, and consequently burst, and prudential policies could contain both effects, but that would initially hurt homeowners. Because of these distributional consequences, whether such policies should be in

¹³ <http://blogs.lse.ac.uk/businessreview/2017/01/10/is-the-era-of-central-bank-independence-drawing-to-a-close/>

the hands of unelected officials becomes a matter of debate. Another difference is that with debt levels rising, central banks may be forced to ultimately lend their support, especially to avoid vicious circles where commercial banks holding large shares of government securities see their assets devalued, need to deleverage and create dysfunctional market situations ultimately requiring outside intervention.

As mentioned, the ECB is considered highly independent, by some even too much so given its growing political role: its Statute prohibits direct government influence; the members of the Executive board have long, secure, non-renewable tenure; it cannot grant loans to governments or public institutions; and any dispute is referred to the Court of Justice of the European Union¹⁴. The PBC on the other hand, works by entirely different rules: the PBC Law clearly states that the central bank works under the direct guidance of the State Council, which has to approve all measures regarding money supply, exchange and interest rates. It is, however, independent of local government influence, and does not provide loans to Ministries. Harcourt, Kriesler and Halevi (2018) raise the point that central bank independence clashes with the philosophy of a democratic government: it moves a very important tool to the hands of unelected officials. In this view, government control makes the central bank more accountable to the people of the country. Moreover, it facilitates coordination between fiscal and monetary policy as well as reforms, as the former PBC governor stated, and a fast-developing economy like China's has different needs from the Eurozone.¹⁵

4.4 Transparency

Transparency in monetary policy usually indicates the level of informational symmetry between the central bank and the public. For the central bank, the benefits of high transparency come from increased credibility, as it makes its actions observable. In turn, credibility offers important advantages: monetary policy actions are more effective, so volumes can be reduced, expectations are anchored more firmly in the medium and long term, and risk premia are reduced, benefitting the general level of interest rates. Higher transparency means that monetary policy actions and intentions will be clearer, and also that the bank has to impose self-discipline to show that it matches its operations to its commitments and gain favourable reputation¹⁶. Various studies show that it helps strengthen macroeconomic stability (for example Crowe and

¹⁴ <https://www.ecb.europa.eu/ecb/orga/independence/html/index.en.html>

¹⁵ <https://blogs.wsj.com/chinarealtime/2014/09/16/why-chinas-central-bank-is-ok-being-dependent-on-the-government/>

¹⁶ <https://www.ecb.europa.eu/ecb/orga/transparency/html/index.en.html>>

Meade 2008). A current of thought prefers opacity over transparency so that the central bank can preserve possible inflation surprises to stabilize the real economy, according to expectations augmented Philips curve (Cuckierman 2001). Rhee and Turdaliev (2013) further this point by showing the trade-off between predictability and welfare levels. However, more recent studies strongly favour transparency because of its credibility effects. Transparency seems to be positively correlated with independence (Crowe and Meade, *ibid.*), an observation which fits our example well: the most independent one, the ECB, is also the most transparent one. Horváth and Vaško (2015) find that central bank transparency has increased recently, although disparities remain, and that a bank which is more transparent with regard to monetary policy is going to be transparent also in their activities in financial stability, and that those tasked with macroprudential supervision tend to be more transparent. Moreover, they argue that there might be an “optimal level” of transparency.

Eijffinger and Geraats (2006) construct an index of central bank transparency, which encompasses five different yet interrelated aspects:

- i) political transparency: clarity about goals (both qualitative and quantitative) and interaction with the governments
- ii) economic transparency: this refers to the models and data that the central banks relies upon, especially because the time lag between monetary policy deployment and effectiveness means that operations are carried out based on expectations about future developments
- iii) procedural transparency: records of meetings, clearly defined process through which decisions are taken
- iv) policy transparency: timely announcements about current and future operations, including how the central bank intends to react to contingencies
- v) operational transparency: this last aspect refers to information about how operations will be carried out, their results, and the impediments to transmission.

Ma and Li (2015) analyse the level of PBC transparency and find it to be quite low, be it in term of policy objectives, the way it forms its forecasts and takes its decisions, or their application and results. They also compare the transparency levels for the PBC and other central banks, according to the Eijffinger and Geraats index, and find the PBC to be rather opaque, while the EBC ranks higher – although still surpassed by some. This is consistent with the

stability-growth trade off, where the Chinese government leans decidedly in favour of the latter. In this light, opaqueness and scarce independence of the central bank could be seen as two aspects of the government's growth-oriented strategy, in a way removing the PBC from the pair high independence – high public scrutiny that is common in developed economies. Nonetheless, both saw an increase in recent years. In particular, the PBC has expanded the frequency and scope of its reports, also in English language.

4.5 Accountability

An issue closely related to transparency is accountability. Disclosing information can force institutions to behave properly, as deviation from mandate and inefficiency would be more easily detectable. However, information is not enough by itself, as it has to be accompanied by the power to act upon it. From the link between information and reactions, derives accountability. This is at odds with independence: it has often been remarked that central banks face a trade-off in this domain, at least in the short term. In the long term, laws can be changed, but that is a rather weak constraint, especially for example for the ECB, where it takes unanimity of EU Member States to change the law, since its Statute is part of EU Treaties (Williams 2015). Accountability becomes a problem particularly when central bank operations have significant distributional effects, as is the case with some unconventional policies, targeted monetary policy, and macroprudential policy; another example could be the ECB's commitment to employ monetary stimulus conditional on countries adopting certain fiscal policies. While central banks are supposedly removed from politics, the individuals working in them can have preferences, and can sometimes enforce them. A review of the subject (Braun 2017) defines three levels of accountability: politicians who are held directly accountable by the people; administrative officials who answer to politicians who appoint, direct and can dismiss them; and thirdly unelected officials who enjoy political and operational independence. Central bankers are the perfect example of the latter. Further, accountability is divided into answerability and enforcement (id.). The former refers to having to justify and explain the actions taken, while the second is about facing consequences. In the case of the ECB, accountability is mostly limited to answerability, in the form of reports and questions from the European Parliament, while enforcement is de facto rare as it depends on referring to the Court of Justice of the European Union or Member States taking unanimous decisions to change the Treaties. In the case of the PBC, accountability is not a widely discussed issue, since direct government control largely removes the relevant concerns. It reports to the State Council, to

which it has to explain and justify all decisions and the way it carries out monetary policy strategy, and its officials are appointed, and can be removed, by the President of the People's Republic of China¹⁷.

BIBLIOGRAPHY

ADAS, C., TUSSUPOVA, B., 2016. Effects of the Global Financial Crisis on Chinese Economy. *International Journal of Social Science Study* Vol. 4 No. 4, 2016 pp. 136-150. Available at <http://redfame.com/journal/index.php/ijsss/issue/view/63> [Access date 2/08/18]

ALLEN, F., GU, X., KUANG, H., QIAN, J., 2017. *The People's Bank of China: From 1948 to 2016*. s.n. 10/10/2017. Available at: <https://ssrn.com/abstract=3018506> [Access date: 15/05/2018]

ALTAVILLA, C., CARBONI, G. and MOTTO, R. (2015). *Asset Purchase Programmes and Financial Markets: Lessons from the Euro Area*. ECB Working Paper Series, 1864. In: HUTCHINSON, J., and SMETS, F., 2017. Monetary Policy in Uncertain Times: ECB Monetary Policy Since June 2014. *The Manchester School*, Vol. 85, pp. e1-e15, 2017. Available at <<https://ssrn.com/abstract=3083229>> [Access date 02/08/2018].

ANGRICK, S., and YOSHINO, N., 2018. *From Window Guidance to Interbank Rates: Tracing the Transition of Monetary Policy in Japan and China*. BOFIT Discussion Paper No. 4/2018. Available at: <https://ssrn.com/abstract=3128148>. [Access date: 03/08/2018]

Anon, 2016. The macroeconomic impact of quantitative easing in the euro area. *Deutsche Bundesbank Monthly Report*, June 2016, Vol 68, No 6

BELL, F., FENG, H., 2014. How Proximate and 'Meta-institutional' Contexts Shape Institutional Change: Explaining the Rise of the People's Bank of China. *Political Studies* 2014 VOL 62, 197–215. University of Queensland.

¹⁷ PBC Law, art. 10

BLINDER, A., et al., 2017. *Necessity as the mother of invention: monetary policy after the crisis*. ECB Working Paper Series No. 2047, April 2017. Available at <https://www.ecb.europa.eu/pub/research/working-papers/html/papers-2017.en.html> [Access date: 31/7/2018]

BORDO, M., 2007. [A brief history of central banks](#). *Economic Commentary*, Federal Reserve Bank of Cleveland, December 2007

BRAUN, B., 2017. *Two Sides of the Same Coin? Independence and Accountability of the European Central Bank*. Brussels: Transparency International EU.

CAPIE F. et al., 1994. *The future of central banking: the tercentenary symposium of the Bank of England*. Cambridge: Cambridge University Press.

CASANOVA, C. and XIA, L., 2015. PBoC announces launch of new macro-prudential assessment system to curb risks. *BBVA Research, Economic analysis* [online] (30/12/2015). Available at <<https://www.bbvaresearch.com/en/publicaciones/china-pboc-announces-launch-of-new-macro-prudential-assessment-system-to-curb-risks/>> [Access date: 30/07/2018]

CROWE, C., and MEADE, E., 2008. *Central Bank Independence and Transparency: Evolution and Effectiveness*. IMF working paper 08/119

CHEN, H., CHOW, K., TILLMANN, P., 2017. The effectiveness of monetary policy in China: Evidence from a Qual VAR. *China Economic Review*, 2017, vol. 43, issue C, 216-231. Available at: https://econpapers.repec.org/article/eechieco/v_3a43_3ay_3a2017_3ai_3ac_3ap_3a216-231.htm [Access date 04/08/2018]

DE GRAUWE, P., 2011. *Governance of a Fragile Eurozone*. CEPS Working Documents. Available at <https://www.ceps.eu/publications/governance-fragile-eurozone> [Access date 02/08/2018].

DE HAAN, J., BODEA, C., HICKS, R., et al. 2017. Central bank independence before and after the crisis. *Comparative Economic Studies* 60: 183. S.l.: Palgrave MacMillan UK. Available at <https://doi.org/10.1057/s41294-017-0050-4> [Access date 07/08/2018]

DE HAAN, J., EIJJFINGER, S., 2016. The Politics of Central Bank Independence. CentER Discussion Paper Series No. 2016-047. Available at: <https://ssrn.com/abstract=2887931> [access date 08/08/2018]

DE HAAN, J., HOUBEN, A., and VAN DER MOLEN, R., 2012. Governance of macroprudential policy. *Zeitschrift fuer Oeffentliches Recht*, 67(2), 283-302. In: DE HAAN, J., BODEA, C., HICKS, R., et al. 2017. Central bank independence before and after the crisis. *Comparative Economic Studies* 60: 183. S.l.: Palgrave MacMillan UK. Available at <https://doi.org/10.1057/s41294-017-0050-4> [Access date 07/08/2018]

DEUTSCHE BUNDESBANK, 2016. The macroeconomic impact of quantitative easing in the euro area. *Deutsche Bundesbank Monthly Report*, June 2016, Vol 68, No. 6, p.25, Available at https://www.bundesbank.de/Redaktion/EN/Downloads/Publications/Monthly_Report/2016/2016_06_monthly_report.html [Access date 31/7/2018]

DRAGHI, M., 2012. Speech at *Global Investment Conference*. London 26/07/2012. Available at <https://www.ecb.europa.eu/press/key/date/2012/html/sp120726.en.html> [Access date: 29/07/2018]

EUROPEAN CENTRAL BANK, 2003, *ECB Annual Report 2002*. Available at <https://www.ecb.europa.eu/pub/annual/html/index.en.html> [Access date: 10/05/2018]

EUROPEAN CENTRAL BANK, 2004, *ECB Annual Report 2003*. Available at <https://www.ecb.europa.eu/pub/annual/html/index.en.html> [Access date: 10/05/2018]

EUROPEAN CENTRAL BANK, 2005, *ECB Annual Report 2004*. Available at <https://www.ecb.europa.eu/pub/annual/html/index.en.html> [Access date: 10/05/2018]

EUROPEAN CENTRAL BANK, 2006, *ECB Annual Report 2005*. Available at <https://www.ecb.europa.eu/pub/annual/html/index.en.html> [Access date: 10/05/2018]

EUROPEAN CENTRAL BANK, 2007, *ECB Annual Report 2006*. Available at <https://www.ecb.europa.eu/pub/annual/html/index.en.html> [Access date: 10/05/2018]

EUROPEAN CENTRAL BANK, 2008, *ECB Annual Report 2007*. Available at <https://www.ecb.europa.eu/pub/annual/html/index.en.html> [Access date: 10/05/2018]

EUROPEAN CENTRAL BANK, 2009, *ECB Annual Report 2008*. Available at <https://www.ecb.europa.eu/pub/annual/html/index.en.html> [Access date: 10/05/2018]

EUROPEAN CENTRAL BANK, 2010, *ECB Annual Report 2009*. Available at <https://www.ecb.europa.eu/pub/annual/html/index.en.html> [Access date: 10/05/2018]

EUROPEAN CENTRAL BANK, 2011, *ECB Annual Report 2010*. Available at <https://www.ecb.europa.eu/pub/annual/html/index.en.html> [Access date: 10/05/2018]

EUROPEAN CENTRAL BANK, 2012, *ECB Annual Report 2011*. Available at <https://www.ecb.europa.eu/pub/annual/html/index.en.html> [Access date: 10/05/2018]

EUROPEAN CENTRAL BANK, 2013, *ECB Annual Report 2012*. Available at <https://www.ecb.europa.eu/pub/annual/html/index.en.html> [Access date: 10/05/2018]

EUROPEAN CENTRAL BANK, 2014, *ECB Annual Report 2013*. Available at <https://www.ecb.europa.eu/pub/annual/html/index.en.html> [Access date: 10/05/2018]

EUROPEAN CENTRAL BANK, 2015, *ECB Annual Report 2014*. Available at <https://www.ecb.europa.eu/pub/annual/html/index.en.html> [Access date: 10/05/2018]

EUROPEAN CENTRAL BANK, 2016, *ECB Annual Report 2015*. Available at <https://www.ecb.europa.eu/pub/annual/html/index.en.html> [Access date: 10/05/2018]

EUROPEAN CENTRAL BANK, 2017, *ECB Annual Report 2016*. Available at <https://www.ecb.europa.eu/pub/annual/html/index.en.html> [Access date: 10/05/2018]

EUROPEAN CENTRAL BANK, 2018, *ECB Annual Report 2017*. Available at <https://www.ecb.europa.eu/pub/annual/html/index.en.html> [Access date: 10/05/2018]

EIJFFINGER, S., and GERAATS, P., 2002. How Transparent Are Central Banks?. *European Journal of Political Economy*. 22. 1-21.

GEIGER, M., 2008. *Instruments of Monetary Policy in China and Their Effectiveness: 1994-2006*. UNCTAD Discussion Paper No. 187. Available at SSRN: <https://ssrn.com/abstract=1148292>. [Access date: 03/08/2018]

GEIGER, M., 2010. *Monetary Policy in China: Institutions, Targets, Instruments and Strategies*. Wirtschaftswissenschaftlichen Fakultät der Bayerischen Julius-Maximilians-Universität Würzburg doctoral thesis.

GIRARDIN, E., LUNVEN, S., MA, G., 2014. *Inflation and China's monetary policy reaction function: 2002-2013*. BIS Paper No.771. Available at: <https://ssrn.com/abstract=2474036> [Access date 16/05/2018]

GOLDSTEIN, M., and LARDY, N., 2007. *China's Exchange Rate Policy: An Overview of Some Key Issues*. Peterson Institute for International Economics, Conference on China's Exchange Rate Policy (19 October), Washington, DC. In: GEIGER, M., 2010. *Monetary Policy in China: Institutions, Targets, Instruments and Strategies*. Wirtschaftswissenschaftlichen Fakultät der Bayerischen Julius-Maximilians-Universität Würzburg doctoral thesis.

GOODFRIEND, M., and PRASAD, E., 2006. *A Framework for Independent Monetary Policy in China*. IMF Working Paper, Vol., pp. 1-52, 2006. Available at: <https://ssrn.com/abstract=910676>. [Access date: 04/08/2018]

GREN, J., 2017. *How did the ECB become a fully-fledged central bank of the eurozone?*. Robert Schuman Institute of European Affairs (1st February 2017). Available at: <http://orbilu.uni.lu/handle/10993/29543> [Access date 08/08/2018]

HARCOURT, G.C., KRIESLER, P., HALEVI, J. 2018 *Central Bank Independence Revisited*. UNSW Business School Research Paper No. 2018-01. Available at: <https://ssrn.com/abstract=3120107> [Access date 24/08/2018]

HORVÁT, R., and VAŠKO, 2013. *Central bank transparency and financial stability: Measurement, Determinants and Effects*. FIW Working Paper series 113, FIW. Available at: <https://ideas.repec.org/p/wsr/wpaper/y2013i113.html> [Access date 24/08/2018]

HUTCHINSON, J., and SMETS, F., 2017. *Monetary Policy in Uncertain Times: ECB Monetary Policy Since June 2014*. The Manchester School, Vol. 85, pp. e1-e15, 2017. Available at: <https://ssrn.com/abstract=3083229> [Access date 02/08/2018].

KLINGELHÖFER, J., and SUN, R., 2017. *Macroprudential Policy, Central Banks and Financial Stability: Evidence from China*. MPRA Paper 79033, University Library of Munich, Germany. Available at <<https://mpra.ub.uni-muenchen.de/79033/>> [Access date 2/08/2018]

LAURENS, B., and MAINO, R., 2007. *China: Strengthening Monetary Policy Implementation*. IMF Working Paper No. 07/14. Available at: <https://www.imf.org/en/Publications/WP/Issues/2016/12/31/China-Strengthening-Monetary-Policy-Implementation-20230> [Access date 04/08/2018]

Law of the People's Republic of China on the People's Bank of China, 27.12.2003. Available at http://www.npc.gov.cn/englishnpc/Law/2007-12/12/content_1383712.htm [Access date: 15/05/2018]

LI, W., 2016. *Does targeted monetary policy matter?*. 6th December 2016. Available at: <https://ssrn.com/abstract=2881528> [Access date 20/07/2018]

MA, G., XIANDONG, Y., XI, L., 2011. *China's Evolving Reserve Requirements*. BOFIT Discussion Paper No. 30/2011. Available at: <<https://ssrn.com/abstract=1973525>>. [Access date 04/08/2018]

MA, Y., and LI, S., 2015. Bayesian estimation of China's monetary policy transparency: A New Keynesian approach. *Economic Modelling*, Volume 45, 2015, Pages 236-248, Available at: <http://www.sciencedirect.com/science/article/pii/S0264999314004684> [Access date 24/08/2018]

MARTIN, F., 2013. *Debt, inflation and central bank independence*. S.I. Federal Reserve Bank of St. Louis, 12th December 2013.

MASCIANDARO, D., and ROMELLI, D. 2018. *Beyond the central bank independence veil: new evidence*. BAFFI CAREFIN Centre Research Paper No. 2018-71. Available at: <https://ssrn.com/abstract=3126179> [Access date 28/07/2018]

MICOSSI S., 2015. The Monetary Policy of the European Central Bank (2002-2015). *CEPS Special Report*, 109 (May 2015)

MONAN, Z., 2015. New RMB exchange rate reform must obtain international credibility. *China Focus* (28 August 2015). Available at: <https://www.chinausfocus.com/finance-economy/new-rmb-exchange-rate-reform-must-obtain-international-credibility> . [Access date: 03/08/2018]

NUUTILAINEN, R., 2016. *Essays on monetary policy in China*. Oulu : University of Oulu, 2016. Available at <<http://urn.fi/urn:isbn:9789526212333>> [Access date 20/04/2018]

OJ C. 326/230 26.10.12 *Protocol (no 4): On the statute of the european system of central banks and of the European Central Bank*

PEOPLE'S BANK OF CHINA, 2014. *China Monetary Policy Report Quarter Three, 2014*.

Available at <http://www.pbc.gov.cn/english/130727/130879/130907/index.html>

PEOPLE'S BANK OF CHINA, 2016. *Annual Report 2015*. Available at:

<http://www.pbc.gov.cn/english/130739/index.html> [Access date 21/07/2018]

PEOPLE'S BANK OF CHINA, 2017. *Annual Report 2016*. Available at:

<http://www.pbc.gov.cn/english/130739/index.html> [Access date 21/07/2018]

PEOPLE'S BANK OF CHINA, 2017. *Macprudential goals, implementation and cross-border communication*. BIS paper no. 94, Dec 2017, pp. 103-106

PEOPLE'S BANK OF CHINA, 2018. *China Monetary Policy Report Quarter Four, 2017*.

Available at: <http://www.pbc.gov.cn/english/130727/130879/3322165/index.html> [Access date 21/07/2018]

RHEE, H., TURDALIEV, N. 2013. Central bank transparency: does it matter? *Int. Rev. Econ. Financ.* 27 (3), 183–197. In: MA, Y., and LI, S., 2015. Bayesian estimation of China's monetary policy transparency: A New Keynesian approach. *Economic Modelling*, Volume 45, 2015.

Available at: <http://www.sciencedirect.com/science/article/pii/S0264999314004684> [Access date 24/08/2018]

SHU, C., and NG, B., 2010. Monetary Stance and Policy Objectives in China: A Narrative Approach. *Hong Kong Monetary Authority China Economic Issues* 1/10. Available at www.hkma.gov.hk/eng/publications-and-research/research/china-economic-issues/2010/>.

[Access date 04/08/2018]

VUJČIĆ, B. 2016. The role of central banks and how to insure their independence. Speech by Mr Boris Vujčić at the Symposium on “Central Banking in Central and Eastern Europe: Policy Making, Investment and Low Yields”, organized by the Czech National Bank and OMFIF (Official Monetary and Financial Institutions Forum), Prague, 10 June 2016. In: BLINDER, A., et al., 2017. *Necessity as the mother of invention: monetary policy after the crisis*. ECB Working Paper Series No. 2047, April 2017. Available at <https://www.ecb.europa.eu/pub/research/working-papers/html/papers-2017.en.html> [Access date 31/7/2018]

WIELADEK, T., and GARCIA PASCUAL, A., 2016. *The European Central Bank's QE: a new hope*, CESifo Working Paper 5946. In: BLINDER, A., et al. *Necessity as the mother of invention: monetary policy after the crisis*. ECB Working Paper Series 2047. Available at <https://www.ecb.europa.eu/pub/research/working-papers/html/papers-2017.en.html> [Access date 31/7/2018]

WILLIAMS, A., 2015. A global index of information transparency and accountability. *Journal of Comparative Economics*, Volume 43, Issue 3, 2015, Pages 804-824. Available at: <https://doi.org/10.1016/j.jce.2014.10.004>.

XIE, P., 2004. *China's Monetary Policy: 1998-2002*. Stanford Center for International Development Working Paper No. 217. Available at <https://globalpoverty.stanford.edu/publications/chinas-monetary-policy-1998-2002> [Access date 16/08/2018]

YI, G., 1992, The money supply mechanism and monetary policy in China. *Journal of Asian Economics* Volume 3, Issue 2, Autumn 1992, Pages 217-238. Available at <https://www.sciencedirect.com/science/article/pii/104900789290014P> [Access date: 27/07/2018]¹⁸

¹⁸ Word Count: 13885