Fiscal decentralization and fiscal transfers in post-socialist China and Russia

The effects on economic interregional inequality

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1. Introduction

Since the death of Mao Zedong in 1978 and the dissolution of the Soviet Union in 1991, China and Russia both changed their planned socialist economies to capitalist market economies. Both states realized high economic growth rates during this period. According to the World Bank, the Chinese Gross Domestic Product (GDP) was 70 times higher in 2014 than in 1978. The Russian GDP grew from 1991 to 2014 to more than 3,5 times the starting point (World Bank, 2016). This growth was accompanied by multiple side effects in both states, from environmental damage to increased corruption (Huang, 2013; Chrissikos, 2014).

Another negative effect that occurred in both China and Russia was the increase in income inequality. Today, the countries are both among the states with the highest score in the Gini index[1]. In 2009, Russia scored 0.4 as China scored 0.42 where other big states as the United States scored 0.41 and Germany 0.31 (Quandl, 2015). As economic inequality is a broad subject with many causes, I will focus on only one part of economic inequality: interregional economic inequality in post-socialist China and Russia. Economic interregional inequality is economic inequality between regions, some regions are richer than others. Interregional inequality is a problem for China and Russia as civilians in the poorer regions will not accept this situation and will demand a bigger share of the national pie, this situation could easily lead to conflict and that is something that the leaders in Russia and China want to prevent (Remington, 2015, p. 1). Within-regions inequality will be ignored in this research as this paper only focuses on interregional inequality.

Interregional inequality is commonly researched by looking at the Gross Regional Product (GRP), and occurs when one region has a higher GRP growth then another. GRP is comparable with GDP but is adjusted to a region. To compare bigger and smaller regions, the per capita GRP is a more useful tool. An important stream of thinkers within the inequality thinkers argues that poor regions will grow towards the rich regions. This process is called '*the iron law of convergence'* by the American economist Robert Barro (Barro, 2015; Barro & Sala-i-Matin, 1991). To come to this iron law, Barro researched regions in the United States

[1] The Gini index is made up by the Italian statistician Gini (1912). It shows the variation in income in a state. When a state has a Gini score of 0 there is perfect equality, everybody has the same income. The closer the score gets towards 1, the more unequal the income in a state is distributed. The score is based on the ratio given in the Lorentz index which maps cumulative share of people with a high income and cumulative share of total earned (Ceriani & Verme, 2011).

and Western Europe. By comparing the β-convergence for regions Barro found that regional GDP tend to grow towards each other with a speed of 2% per year. β-convergence is calculated by taking the economic growth that a region makes into account. When the poor region X has a higher growth rate than the rich region Y, there is β-convergence (Korotayev, Goldstone & Zinkina, 2015). For regions in poorer countries, Barro argued that "*regions will have problems with converging if key underlying valuables, such as the quality of human capital and institutions are not changed*" (Barro, 2015, pp. 911-912). Remington adds to this that when *"political institutions are weak, the central government will be unable to enforce laws uniformly (…) as a result, rates of development would diverge"* (Remington, 2015, p. 2).

1.2 Empirical evidence for regional divergence

There has been extensive research on Barro's statement that regions tend to grow towards each other. Remington (2011, 2015) is the only author who performed statistical research on both China and Russia and there is little evidence that supports Barro's claim that regions tend to grow towards each other in China and Russia. In my literature review it is shown that economic interregional inequality can be measured in many different ways, where some authors prefer to take the Gini score into account, others prefer the Inter Quartile Range[2] (IQR) or other ways to measure interregional inequality. In this overview will be stated which methods the authors used to come to their conclusion that interregional inequality increased. Most of the measurement methods are focusing on the GRP per capita. Some authors, however, chose to pay attention to the wages in a region.

Remington used official data from the Russia bureau of statistics (Rosstat) and data that was estimated by Brandt & Holtz (as the official data from the Chinese government is often seen as inflated) to show that in China, among other things, the wages and mean incomes in some regions have risen faster than the standard deviations (Remington, 2015, p. 6**).** This means that there are regions that grew economically faster than others. In Russia, the salient factor for Remington was the growth in IQR in current prices, which shows that "*inter-regional inequality has risen with no indication of a reverse trend"* (Remington, 2015, p. 6). Remington puts more weight on his claim that regions in China and Russia are not converging by calculating the previously mentioned β-convergence. Where Barro would have expected to

[2] IQR is a measurement for inequality by dividing the total population (or the regions) into 2 groups. The means of the two groups are compared to be a useful tool for showing inequality (Khan Academy, 2015).

find a β-convergence in China and Russia, Remington showed that "*for both Russia and China there is weak evidence of beta convergence (...) and there is no evidence for a long-term decline in interregional inequality*" (Remington, 2015, p. 7).

Candelaria (2013) used data from the Chinese statistical bureau to find out if there is a relation between migration and interregional inequality in China. He found no correlation, but he did find evidence that the interregional inequality has been persistent in the last two decades and argued that the interregional inequality is not likely to disappear in the near future (Candelaria, 2013, p. 15). Candelaria proved this by taking the wage and real wage[3] into account. Candelaria concluded from this data that richer regions had a faster growth rate in wages than the poorer regions and this caused interregional inequality.

Kanbur & Zhang (2004) did a survey on 50 years of regional inequality in China. Even though their dataset stopped in 2000, they used national and provincial data to map the regional Gini index and the general entropy (GE). The GE is a formula created by the economist Anthony Shorrocks that takes, next to the Gini score, the population subgroups into account (Shorrocks, 1980). In figure 1 the results of their findings are shown. From the 1978 breakpoint in the data, a clear drop of interregional inequality can be noticed, to be followed by a steady increase afterwards. Kanbur and Zhang also noticed that interregional inequality went up every time after a big policy shock, for example during the great leap forward or the end of socialism (Kanbur & Zhang, 2004).

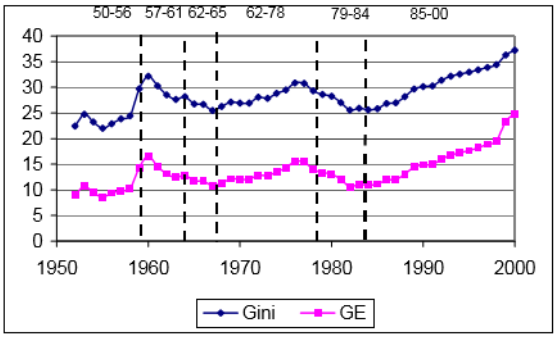


Figure 1: GINI and GE scores in China. (Kambur & Zhang, 2004, p.8).

Another research from Kanbur and Zhang (1999) investigated the influence of labor migration on interregional inequality. Kanbur and Zhang did not find evidence for this statement but when they calculated the Gini score and the GE index from the *Chinese Statistical Yearbooks*

[3] Real wage is wage adjusted to regional price levels

and compared this over a period of ten years, Kanbur and Zhang found that *"the overall trend in this period has been one of sharply increase regional inequality in China"* (Kanbur & Zhang, 1999 p. 688-692).

Zhang (2006) researched the impacts of several policies on one eastern and one western province in China. He found that the per capita gross value of industrial and agricultural output (GVIAO) in the eastern region was more than 3 times as high as in the western region. This led to a situation whereby the eastern region was able to achieve a higher economic growth than the western region. It is arguable that this situation occurred nationwide, causing interregional inequality.

In 2011, Remington examined interregional inequality in Russia. In this research, Remington used Rosstat data to map the max:min score (the difference between the richest and the poorest region), the Coefficient of Variation (CV) that shows sub-national differences from the mean and the previously mentioned IQR and Gini score. As shown in table 1, all the four factors that show divergence between regions (based on the GRP) increased in the period 1990-2009. Remington compared the rise in interregional inequality with, among other countries, China. When he used provincial yearbooks, he found that in China these four factors also increased in the period 1990-2009 (Remington, 2011, p. 14). For China the results are shown in table 2.

	max:min ratio	CV	IQR	Gini
1990	5.15	.44	3066.6	22
1995	17.8	.54	4518.4	26
2000	19.5	.77	17199.5	31.4
2005	43.3	.86	56105.6	34.3
2009	25.4	.82	84667.1	33

Table 1: Interregional inequality in regional GDP per capita in Russia (Remington, 2011, p. 14)

	max:min ratio	CV	IQR	Gini
1990	7.3	.56	846	.26
2009	7.7	.59	18555	.30

Table 2: Interregional inequality in regional GDP per capita in China (Remington, 2011, p. 14)

Bradshaw and Vartapetov (2013) took a range of different factors for interregional inequality in account (economic and social). One of the factors Bradshaw and Vartapetov considered was the per capita GRP. They mapped the per capita GRP for Russian federations in the period 1990-2001 and found that *"a number of wealthy regions were able to improve their relative position significantly, while the rest of the country lagged behind*" (Bradshaw and Vartapetov, 2013, p. 408-409). Even when Bradshaw and Vartapetov excluded the three richest regions in Russia (Moscow, Tyumen and Ingushetia) there is little evidence for a regional convergence between regions, based on the CV.

2. Methodology

In this research, I will investigate two possible factors that influenced the increase in interregional inequality in Russia and China. I selected these two states for three reasons:

- Both Russia and China are known for their high economic inequality.
- Russia and China recently changed their economies from socialist to capitalist. This process created a unique opportunity to research their change in fiscal policies as both states had to come up with a complete new fiscal system.
- Both states have a large surface area. The relative seize of the countries made it necessary to decentralize some powers to sub-national governments. In Russia this was done to the 83 federations (89 in 1993 but there were some mergers) (Bradshaw 2006). In China there are no federations but the 31 provinces behave like fiscal federations (National bureau of statistics of China, 2014).

As interregional inequality is a subject that can have many possible explanations, I chose two factors that are relevant for China and Russia: fiscal decentralization and fiscal transfers. As it was impossible to get access to valid data from the Chinese and Russia government, I will use researches, books and data collected by other authors on fiscal decentralization and fiscal transfers in general and applied to China or Russia to answer the main question: "How did fiscal decentralization and fiscal transfers affect interregional inequality in China and Russia after opening up?".

After a literature review, there will be two chapters focusing on this main question. The first chapter focuses on the hypothesis 'Fiscal decentralization caused interregional inequality to grow in both China and Russia after opening up'. In this chapter I will give a theoretical

framework of fiscal decentralization, based on work of Treisman (2002). Later, I will present trends in fiscal decentralization in China and Russia based on previous literature on this subject. To conclude the chapter, I will summarize researches that show that fiscal decentralization caused interregional inequality to grow and give arguments that are specific for China and Russia for why fiscal decentralization in these two states caused an increase in interregional inequality

The next chapter will focus on the hypothesis 'Fiscal transfers in China and Russia after opening up did not cause interregional economic convergence'. This chapter will be built up the same way as the previous chapter. After giving an explanation of what fiscal transfers are (based on literature by Bird and Smart, 2002), I will use researches done by other authors to show that fiscal transfers became more important in China and Russia. To conclude this chapter, I will show that fiscal transfers did not work equalizing in China and Russia and give arguments why fiscal transfers were not equalizing factors.

This paper will be closed with a discussion and conclusion. In the discussion I will give the strengths and weaknesses. In the conclusion there will be an answer to the main question and I will give the most important findings of the paper.

3. Recent research on interregional inequality in China and Russia

There are numerous other studies that have focused on interregional inequality in China and Russia after their opening up. Where this study will focus on two possible explanations that prevented convergence, recent studies took another approach. Apart from Remington, other authors focused only on one of the two states. After a statistical research on interregional inequality each author gave one or two possible explanations for the increase in inequality without a further analysis on these explanations. In this research overview I will show the most important ideas on what caused interregional inequality in China and Russia. In this review, it can be seen that intensive research is already done on possible causes but there is hardly any research done on institutional factors that are relevant for both states.

Remington argued in his 2015 article that the main reason for the lack of convergence in China and Russia are existing legacies from the socialist eras in the both countries. In his article he focused on socialist legacies as the tax system (that is still partially intact), membership to trade unions and political participation.

Sun (2013) Wei and Fan (2000) and Fan, Kanbur & Zhang (2008) argued that the main reason for the increase in interregional inequality in China was the government's decision to instate *Special Economic Zones (*SEZs) during the transition process. These SEZs were attractive for foreign investments as in these SEZs there were favorable tax rates for foreign companies (Naughton, 2007). Provinces that had SEZs realized a higher economic growth than provinces without SEZs. Yao and Zhang (2001) continued on SEZs by stating that they expected to see *spillover effects* in economical performance from the SEZs to less developed regions but these *spillover effects,* however, did not take place so far.

Zhang, Xing, Fan & Luo (2007) argued that another cause for interregional inequality could be the fact that the Chinese government or State Owned Enterprises (SOEs) are the owner of the ground in China. They argued that in China most provinces without natural recourses are better off than provinces with natural resources. Not only do most gains go to the government or the SOEs, the prices for food and other products tend to go up as there is an increase in the demand for non-traded goods (Zhang, Xing, Fan & Luo, 2007, p. 17-18).

Jian, Sachs & Warner (1996) argued that interregional inequality increased because of increased horizontal mobility. Even though there were *hukou* restrictions[4], Chinese people traveled to better off places to work, leaving their former provinces with fewer workers. Fewer workers in a regions led to a decline of GRP.

Another institutional factor was geographical allocation of heavy industry during the socialist era in China. Almost all heavy industry was located in the North-East of the country (Naughton, 2007, p. 66). After the opening up, the regions that had to rely on heavy industry were not able to follow the rest of the country's growth. This caused high unemployment and distressed towns in some regions. The contrast between these poor and other richer regions caused a growth in interregional inequality (World Bank, 2005).

Buccellato & Mickiewicz (2009), Hahn (2005) and Bradshaw (2006) argued that the revenues that some Russian federations earned from oil and gas production were the most important factor for an increase in interregional inequality. Federations with these natural resources showed a higher economic growth rate. Fedorov (2002) claimed that it was not only the resources that a federation had but also the transportation possibilities. Some federations

[4] The hukou system made it harder for Chinese people to move to another place. People with a rural hukou were only able to receive social benefits in their own region (Cheng & Selden, 1994).

inherited a better infrastructure of railways and roads from the socialist period which caused them to do better trade with the rest of the country and led to a higher GRP. Fedorov also found that federations with a bigger capital city had better roads, so he argued that the size of the capital city correlated with the economic growth of a federation.

Dolinskaya (2002) found in a survey for the International Monetary Fund (IMF) that not only natural resources were of importance for increased interregional inequality in Russia but also the composition of industry in a federation. She argued that *"the less successful regions were trapped at relatively low income levels due to uncompetitive industries"* (Dolinskaya, 2002, p. 27). The lack of competitive industries in a federation is a legacy from the Soviet era when in the planned economy every region was assigned to produce a part of the supply chain.

Ahrend (2005) investigated federation-specific political institutions to explain the lack of regional economic convergence in Russia. He found that geographical factors play an important role in the lack of economic convergence. The expected political variables (in example the governors political preference) did not affect the federation's economic performance (Ahrend, 2005, p. 311).

Another explanation given for the divergence of Russian federations is given by Remington in his 2011 book. Remington searched for a correlation between the regime in a federation and intraregional inequality. He found that on the one hand, in the more democratic federations there is more within inequality. On the other hand, in the democratic regions, the government had closer ties with companies, which resulted in a better economic performance (Remington, 2011b). For the interregional aspect it is arguable that within-federation democracy can be seen as an important factor as federations with more democracy had a higher economic growth rate, causing a better economic performance than federations that had less democracy.

4. Results

4.1 Fiscal decentralization

Within the traditional literature for decentralization there are three important streams:

- Efficiency theory
- Decentralization theorem
- Leviathan hypothesis (Porcelli, 2009).

The efficiency theory is formulated by Tiebout (1956). He argued that there should be decentralization as local governments know best what the people need in their region. Oates (1972) came up with the decentralization theorem. He argued that when there are little differences in preferences between regions, there should be a tendency towards more centralization. However, when the preferences differ between the regions and there are few spillover effects from centralization, there should be more decentralization. Oates argued that the main goal of the government is to maximize social welfare (Oates, 1972). Another argument for decentralization comes from Brennan and Buchanan (1980). They did not see the government as a good thing but rather as a leviathan. In their Leviathan Hypothesis they claimed that the influence of this evil central governments should be as small as possible so there is more power in the hands of local governments.

As in this paper the focus will be on fiscal decentralization, it is important to get a clear definition. The definition which will be used in this paper is one given by Treisman (2002). Treisman stated that "*fiscal decentralization concerns the way tax revenues and public expenditures are distributed among the different tiers. Tax revenue decentralization is greater, the larger the share of total tax revenues the subnational tiers recieve" (*Treisman, 2002, pp. 11-12). Treisman argued that the way to measure this decentralization is by looking at the *"share of subnational governments in total tax revenues or public expenditures"* (Treisman, 2002, p. 14).

4.1.1 Trends in fiscal decentralization in Russia

In the period 1991-2000, Russia shifted from a highly centralized socialist state towards a decentralized federal state. The main reason for this is often argued to be the Russian leader, Boris Yeltsin. Yeltsin was president of the Russian Federation between 1991 and 1999. Yeltsin gave federations more power to ensure himself of their support. However, Yeltsin did not take the economic implications of decentralization into account (Zhuravskaya, 2010, pp. 59 - 63). The trends in fiscal decentralization in Russia are described below. In this chapter it can be seen that authors used different methods to determine the amount of fiscal decentralization. Some authors looked at the share of local expenditure and revenues in the central government's budget whereas others looked at the relative increase of sub-national revenues and expenditures. The different methods occur in the China case study as well.

Andreeva and Golovanova (2003) argued that fiscal decentralization in Russia was a spontaneous process that lacked a clearly defined strategy, giving local authorities the right to independently plan their budgets (Andreeva & Golavanova, 2003 p. 2). They base their argument that Russia is a decentralized state in the 1990's on data from the Russian government to show that the central government in Russia was accountable for approximately 55% of the budgetary system expenditures where sub-national governments were accountable for the other 45%. Andreeva and Golovanova performed a survey on the percentage of fiscal decentralization in Russia as well. They found in a 4-year study on the expenditure ratio in Russia that there was a decline in sub-national spending in 2000 but rose steadily back to the level of the year before (Andreeva & Golavanova, 2003 pp. 7-8).

Lavrov, Litwack and Sutherland (2000) did a survey on how the regional revenues were composed. They found that in the period 1997-2000, the share of regional tax collection in the regional budget shifted from 69% to 76%. This increase is an indicator for the fact that the regional governments were given a bigger role in tax collection. This argument is supported by a survey by Norris, Vazquez & Norregaard (2000). They stated that "*In Russia (…) there has been a steady increase in the importance of 'own-revenues' in sub-national budgets. Own-revenues increased from 13.5% of sub national revenues in 1992 to over 45% in 1998*" (Norris, Vazquez & Norregaard, 2000).

However, since the end of the 1990s, a shift in Russia's fiscal policy can be seen. Figure 2 shows the percentage of revenues gained by sub national governments without extra budgetary funds included (these funds will be discussed in the next chapter). In this table, there can be seen a clear shift after 1998 in sub-national revenues. The share of sub-governmental revenues falls from 55% to 35% in the period 1998-2006 (De Silva, Kurlyandskaya, Andreeva & Golovanova, 2009). Remington (2015) also came to conclusion that at the end of the 1990s the center became more important by using data from the Russian ministry of finance to show that the central government increased its share in the total revenues from 45% to over 60% in the period 1998 – 2010. He argued that the election of Putin was an important factor for this recentralization (Remington, 2015 p. 9). Zhuravskaya (2010) argued as well that the shift in political power in Russia was the main cause for recentralization, as *"Boris Yeltsin's experiments with decentralization have been recognized not just as unsuccessful but also as leading to the very collapse of Russia"* (Zhuravskaya,

2010, p. 59). Vladimir Putin's appointment can be seen as a shift away from Yeltsin's unsuccessful fiscal policies.

The most compelling explanation that is given for the recentralization of Russian taxes is a new tax law from 1999. This tax law was aiming to bring more power back to the government. The reason for this law was the economic crisis that Russia went through in 1998. The central government would be better able to cope such a crisis the next time so it was given more power (Vasilev, 2000).

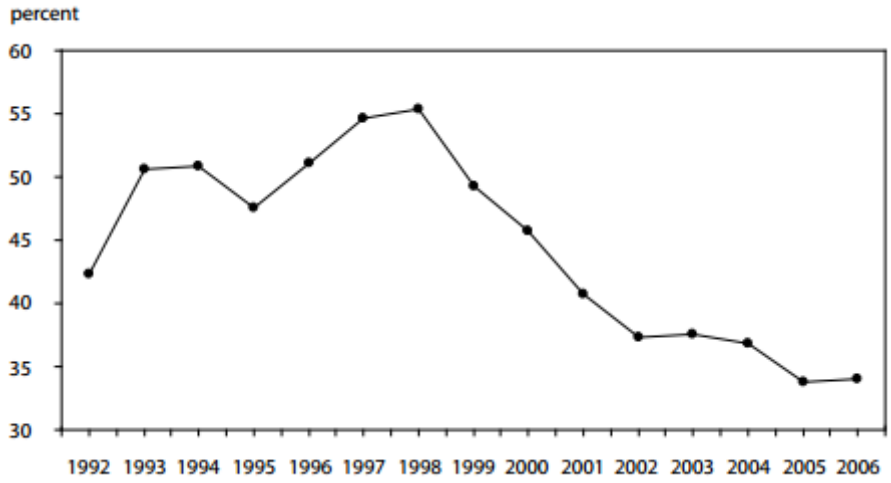


Figure 2: Percentage of revenues collected by local governments in Russia (De Silva, Kurlyandskaya, Andreeva & Golovanova, 2009, p.45)

4.1.2 Trends in fiscal decentralization in China

China started its reforming period, as well as Russia, as a highly centralized socialist state that was characterized by centralized revenue collections (Ma & Norregaard, 1998). In Russia, decentralization was mainly a political tool for Yeltsin to stay in power (Zhuravskaya, 2010, p. 62). Decentralization in China, however, was a more planned idea to get all the regions to support economic growth. Another difference between the two states is the fact that China went through a more regulated opening up. Where Russia opened almost overnight, China's opening up was a more continuous path that is still ongoing. Because of the gradual opening up in China, Chinese government officials were able to test new tax policies before they were implemented (Harford, 2011). Ma and Norregaard (1998) argued that the goal of

decentralization in China was to give local governments more authority but the central government kept some degree of control.

Ma and Norregaard distinguished three phases of decentralization that China went through in the period 1980 – 1998. The first period (1980-1984) was a dual system where the central government and local government were both active but 'ate in different kitchens'. There were central and local taxes. The second period (1985-1988) was a period in which poor regions were allowed to retain more of their collected taxes. The richer provinces were imposed more central government control. In the last period (1988-1998) there was more diversity in Chinese fiscal decentralization. There were given 6 possible methods for central-provincial fiscal relations, each method applied on a number of provinces (Ma & Norregaard, 1999, pp. 3-4). These methods ranged from provinces that had to pay a fixed sum every year to provinces that had to pay the central government payments that were depending on the growth rate of the province (Agarwala, 1992).

Where the share of sub-national revenue in the central government's budget in China was more fluctuant than in Russia (due to the different policies), Remington (2015) argued that it is around 75% of the total revenues. Shen, Jin and Zou came to approximately the same results by stating that the central government's share of total revenue shifted from 40.5% to 22% in the period 1984-1993, making the share of sub-national revenues increasing from 59.5% to 78%. (Shen, Jin & Zou, 2012, p. 28). Ma and Norregaard used data from the Chinese Statistical Bureau to show that in 1993 local government were accountable for 78% in local tax revenues and 72% in local expenditures (Ma & Norregaard, 1999, p. 5).

As in Russia, a shift back to more fiscal centralization can be seen in China. This centralization started in 1994 when *"there is introduced a new tax law, called the tax-sharing system (TSS) and implemented a sequence of fiscal recentralization measures"* (Huang, 2012, p. 1). As can be seen in figure 3, there is an increase in the ratio of local fiscal revenue to national fiscal revenue in the period 1983-1993 as argued before. However, in 1994 there can be seen a clear decrease (almost 40%) in the share of local fiscal revenue. According to the definition from Teisman, this means that there was more revenue collection by the central government, meaning more fiscal centralization. The expenditure part of the fiscal policy continued to be mainly a responsibility for local governments.

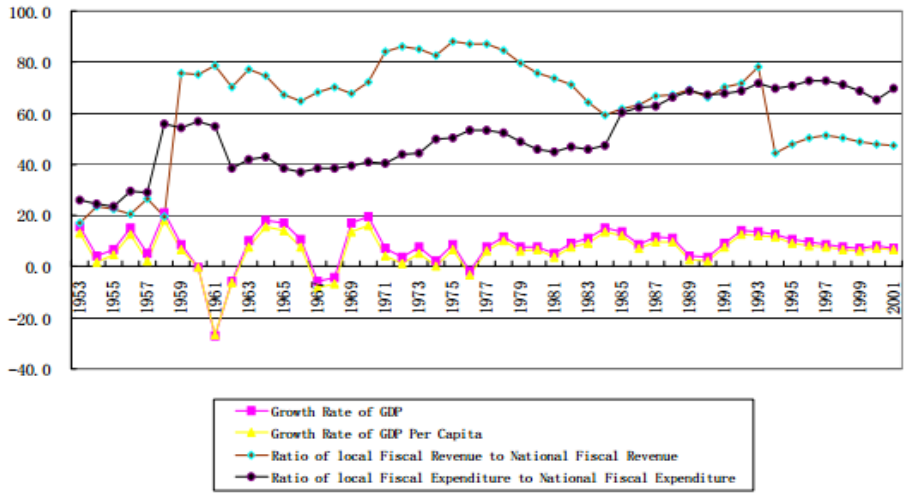


Figure 3: Ratio of local fiscal revenue and expenditure in China (Lin, Tao & Liu, 2003, p. 19)

4.1.3 Effects of fiscal decentralization on interregional inequality

Song (2011) used data from several sources to measure the relation between fiscal decentralization and regional inequality. Following Treisman's definition of fiscal decentralization, Song took revenues and expenditure into account. Song concluded that both revenue collection as expenditures did not converge interregional inequality but made regions grow further apart (Song, 2011, p. 305).

Zhang and Zou (2001) did a comprehensive study on how fiscal decentralization has effected regional economic growth in China after the fall of socialism. When they used a set of varying data sources, they found that there is a negative correlation between real GDP growth and fiscal decentralization.

Yushkov (2016) investigated the relation between fiscal decentralization and regional economic growth in Russia. Using data from Rosstat and the ministry of finance, he found that the expenditure part of fiscal decentralization negatively affected economic growth in Russia. These findings (a negative effect between fiscal decentralization) are supported, among others, by Davoodi and Zou (1997) Rodriguez-Pose and Kroijer (2009) and Rodriguez-Pose and Ezcurra (2011).

As we clearly see a trend towards fiscal decentralization and later towards fiscal centralization in both China and Russia, I will give in this part of this paper some different views on how the initial fiscal decentralization process enlarged interregional inequality.

Davoodi and Zou (1997) made some remarks on how decentralization caused interregional inequality in developing countries. They claimed that among other things, excessive spending by local governments and still existing restrictions (mainly on expenditures) from the government on sub-national governments are the most important causes for a lack of convergence.

Another argument for fiscal decentralization influencing interregional inequality is made by Zhang (2006) and Slinko (2002), they claimed that fiscal decentralization goes hand in hand with more local government. The poorer regions which mainly rely on agricultural revenues in China (Zhang, 2006) or on unprofitable factories in Russia (Slinko, 2002) did not have much of their revenues left after paying the expensive fiscal bureaucracy. The regions that did not have to rely on revenues from agriculture or unprofitable factories, had some money left which they could use to invest in the region. Due to fiscal decentralization, some regions were able to grow faster than other regions.

An additional trend that Zhang came across is the fact that when poorer regions are given more fiscal authority, the size of the bureaucracy in the region is growing, resulting in higher costs for the regions. This is according to Zhang due to the lack of other opportunities in the region so people in the bureaucracy will hire relatives or friends. These subsidies prevent local authorities from spending their revenues more efficiently (Zhang, 2006).

Another argument for how fiscal decentralization effected interregional inequality is the fact that decentralization can be dangerous due to changing circumstances (Prud'homme, 1995). Prud'homme argued that if the economic situation changes (for example an economic crisis), federal governments are mostly unable to cope with these changes. This situation is applicable to the economic fall that Russia went through in 1998. The regions that were richer at the time of the crisis were in a better situation to cope with these negative effects.

An additional argument against fiscal decentralization is the fact that officials at lower levels are often less competent than officials at the central level. Yushkov argued that *"it is questionable whether subnational authorities can achieve high efficiency in the public production"* (Yushkov, 2015, p. 2).

To come back to the first hypothesis: 'Fiscal decentralization caused interregional inequality to grow in both China and Russia after the opening up', I argue that fiscal decentralization did cause interregional inequality to grow after opening up. In both China and Russia, there was a clear tendency towards fiscal decentralization in the years after opening up. Fiscal decentralization affected interregional inequality mainly because of the high costs of fiscal bureaucracy that regions had to pay, causing regions that had to rely on revenues from the agricultural industry (in China) or unprofitable Soviet-legacy factories (in Russia) had less financial resources left for investing in their economy.

4.2 Fiscal transfers

As stated in the previous chapter, in both China as Russia a tendency towards more centralization can be seen. In China this was caused by tax reforms in 1994, in Russia this was caused by the election of Vladimir Putin as president and a tax reform in 1999. This renewed fiscal power in the capitals was "*aimed in part at giving the central government greater capacity for redistribution of transfer (…) funds across regions*" (Remington, 2015, p. 9).

Fiscal transfers can be seen as a solution to the problem fiscal policy makers stumbled across since poorer regions were lagging behind as they had too few revenues. The difference between fiscal decentralization and fiscal transfers is the fact that fiscal decentralization is the way sub-national governments collect and spend their taxes where fiscal transfers are payments made by the central government towards sub-national governments.

According to Schroeder and Smoke (2002) the goal of fiscal transfers is to bring more equity. This can be done by vertical (central government to local) or horizontal (rich local government to poor local government) payments. Bird and Smart (2002) argued that fiscal transfers are *"how most countries achieve vertical fiscal balance, that is, ensure that the revenues and expenditures of each level of government are approximately equal*" (Bird & Smart, 2002, p. 901). Bird and Smart argued that there are three possible ways for central governments to compensate local governments:

- A fixed proportion of the budget every year
- Ad hoc; the budget can change every year
- Formula basis; local governments can get some money for specific expenditures (Bird & Smart, 2002, p. 2).

Broadway and Shah (2007) argued, summarizing an earlier article by Broadway, that next to the equity argument, an important argument for fiscal transfers is the influence that the central government gains over the local government. Central governments gain more influence over a local government as local governments are dependent on the central government for a part of its budget. Alongside that is the fact that the central government is better able to control the local governments budgets.

Besides vertical transfers there are also horizontal transfers. According to Bird (1986) there is no clear interpretation of horizontal transfers and every country has different preferences in horizontal fiscal transfers. The biggest argument against horizontal, and to a lesser extent vertical, transfers is the disincentive that regions have to collect taxes. This disincentive comes from the fact that in the horizontal fiscal transfer system, *"those with the highest expenditures and lowest taxes get the largest transfers"* (Bird and Smart, 2002, pp. 901-902).

As in this chapter the emphasis will be on central-local taxes and there is little literature about horizontal transfers, the stress will be on vertical fiscal transfers in China and Russia in the rest of the chapter. The definition that will be used in this paper for vertical fiscal transfers is: Payments made by the central government to local governments to ensure that the revenues and expenditures of every region are approximately equal (Bird and Smart, 2002, p. 901).

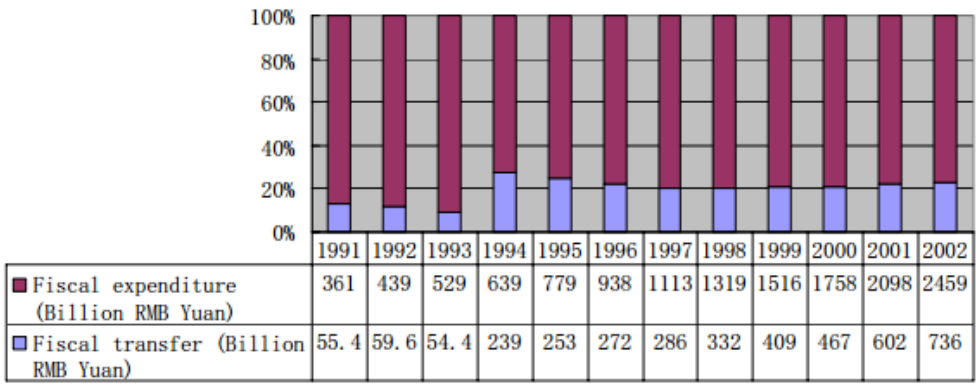
4.2.1 Fiscal transfers in China

According to the World Bank (2001), one of the reasons for the fiscal reforms in 1994 in China was to renew the central-local revenue sharing arrangements. (World Bank in Gan, Wan & Chen, 2005). In these reforms four different grants for local governments were created, together making up the total fiscal transfers for the Chinese central government:

- Tax rebate (a transition arrangement)
- Earmarked grants (grants for local governments if they imply central governmental policies)
- Equalization grants (grants to equalize the regions)
- Final account settlement grant (deals with transaction costs) (Gan, Wan & Chen, 2005).

In figure 4, that is composed of data from the Chinese ministry of Finance by Wan, Chen and Fan, it can be seen that from 1993 to 1994 there is an increase of more than 4 times the amount of fiscal transfers in billion RMB. After 1994 the amount of fiscal transfers continued to increase with almost 20% annually.

Huang (2012) showed in his article that the share of the earmarked grants and equalization grants (he calls them 'specific-purpose grants') became more important over the years. The specific-purpose grants grew from 22% to over 70% of the total fiscal transfers in the period 1995-2009. Together these specific-purpose grants were in 2009 responsible for over 1900 billion RMB on fiscal transfers. In figure 5, one can see the latest official determination of the fiscal transfers in China beginning in 2011. In the figure it can be seen that the earmarked transfers by themselves became accountable for 42% of the total fiscal transfers. The equalization transfers fall in this figure under the general transfers and cover less than 20%. All these findings clearly point to an increase in fiscal transfers in China since 1994.



	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Fiscal expenditure (Billion RMB Yuan)	361	439	529	639	779	938	1113	1319	1516	1758	2098	2459
Fiscal transfer (Billion RMB Yuan)	55.4	59.6	54.4	239	253	272	286	332	409	467	602	736

Figure 4: amount of vertical fiscal transfers in China (Wan, Chen & Fan, 2005, p. 29).

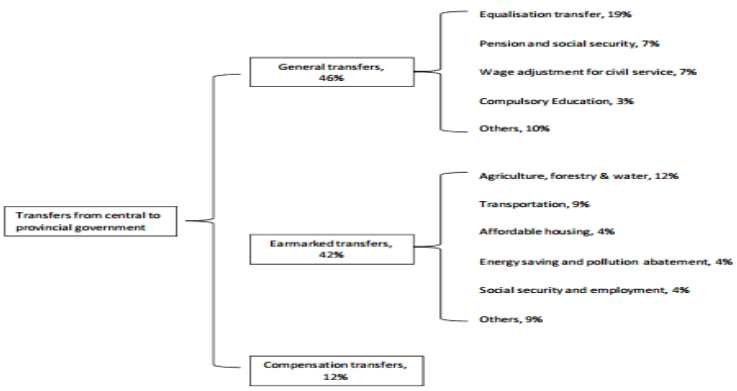


Figure 5: official taxation determination of Chinese fiscal transfers (Wang & Herd, 2013, p.18).

4.2.2 Fiscal transfers in Russia

As in China, there was a tax reform in Russia after almost a decade of fiscal decentralization. However, in Russia there was already a system in operation for fiscal transfers in the 1990's. Treisman (1996; 1998) argued that this system was not working as the fiscal agreements between the centre and local governments were not based on the economic situation of the federation but on political motives from Yeltsin, if Yeltsin economically supported a federation he expected political support in return. In this period the fiscal transfers were mostly ad-hoc and non transparent. Lavrov (1996) claimed that the centre-local relation was unstable as local governments were responsible for a disproportionate amount of resources. In the tax reform of 1999 was stated which tax revenues were part of the central budget and which tax revenues were part of local budgets.

Bikalova (2001) argued that after the reforms *"Revenues actually raised by regional and local governments account for less than 15 percent of their expenditures"* (Bikalova, 2001). These numbers show that Russian federations became more dependent on fiscal transfers as these fiscal transfers compromise almost all of a federation's budget.

As was the case in China, in Russia there are mainly vertical transfers in place. There are 5 types of transfers in the Russian Federation:

- general (unconditional) grants
- subsidies (conditional)
- subventions (conditional)
- grants for reforming housing
- other transfers (Ermasova & Mikesell, 2016).

Vartapetov (2010) claimed that the Russian fiscal transfers were aiming less at equalization since the beginning of 2000. In table 3, one can clearly see that the share of formula driven equalization transfers went down in the period 2001-2012 where the share of (conditional) earmarked grants went up (Vartapetov, 2010, p. 473). It must be stated that Vartapetov argued that according to their statements, the Russian government is planning to increase the amount of equalization transfers to 43% (Vartapetov, 2010, p. 473). A trend can be seen in Russia towards more vertical fiscal transfers but these fiscal transfers are not unconditional any more. Federations can use the earmarked grants only for specific expenditures.

	1999	2001	2003	2005	2007	2009	2010	2011	2012
Equalisation formula grants	71.3	47.8	44.6	43.2	30.6	28.5	35.2	38.8	43.1
Earmarked grants	10.5	32.9	38.4	33	60.1	49.9	51.3	51.6	52.6
Compensation payments	4.1	17.2	13.6	23.8	9.2	15.7	8.8	7.0	1.6
Other	14.1	2.1	3.4	0	0	5.8	4.7	2.6	2.7

Source: Author's calculations based on figures from Federal Treasury (2009); figures for 2010–12 come from Russia's law on the federal budget. Note that actual figures in 2010–12 may differ from those budgeted.

Table 3: determination of fiscal transfers in Russia (Vartapetov, 2010, p.473).

4.2.3 Effects of fiscal transfers on interregional inequality

We see in both China (since 1994) and Russia (since 1999) a shift from fiscal decentralization towards fiscal centralization that includes more vertical fiscal transfers. To answer the second hypothesis 'Fiscal transfers in China and Russia after opening up did not cause economic interregional convergence' I will discuss in this part of the chapter why fiscal transfers did not cause economic convergence across regions in Russia and China.

The most important argument of why fiscal transfers are not leading to convergence is given earlier in this chapter and is the argument that fiscal transfers do not give incentives to regions to stimulate good performances in both revenue collection and economic change since they get the transfers they need from the central government if their own budget is not sufficient. This phenomenon is, among others, described by Zuravskaya (2000) and Bird and Smart (2002).

Another argument of why fiscal transfers are not converging regions is made by Huang (2012). He argued that the Chinese tax system in general is anti-equalizing. There are some equalizing elements in the tax system but the biggest part of the fiscal transfers consist of earmarked transfers. Huang claims that these transfers do not cause convergence as "*earmarked transfers often require matching funds which deprive poor regions from receiving them"* (Huang, 2012, p. 549). With only the richer regions being able to receive some of the earmarked transfers, interregional inequality went up.

Vartapetov (2010) argued that in Russia, the equalization transfers had some positive economic effects on interregional inequality as the economic weakest federations got the biggest parts of these funds. The effects of the equalization transfers were measurable in Russia but small. Vartapetov calculated that these funds reduced the gap in inequality to only

9-10 times instead of 12-13 times. However, the fact that the earmarked transfers, as was the case in China, increased in importance in the fiscal budget and the fact that the equalization transfers don't have a big impact, makes the total of the fiscal system in Russia not-equalizing.

Another negative effect that vertical fiscal transfers cause is the fact that the central governments imposes more restrictions on local governments. Since the central government wants local governments to use the budgets they receive in a efficient way, they will impose more restrictions on local governments. Rodden compared this situation with a parent who takes away his children's credit cards (Rodden, 2002, p. 673). When central governments impose more restrictions on local governments, local governments are less able to pursue a growth model that fits their needs (Rodden, 2002, p. 673).

A last reason for why fiscal decentralization did not cause convergence across regions is one that was not mentioned in other literature on the subject of fiscal transfers. As the biggest part of funds in Russia and China is not clear formula driven anymore but the funds are for the biggest part assigned by the central government, there will be a struggle amongst regions for these funds. Richer regions will possibly have better (for example, politically) sources for lobbying so the richer regions will receive a relatively bigger share of the funds than poorer regions.

To come back to the second hypothesis, it can be stated that fiscal transfers do not have a converging effect on interregional inequality. In both China and Russia there was a tendency towards more centralization in the 1990's. One of the features of this fiscal centralization were vertical fiscal transfers. These fiscal transfers do not have a converging effect on interregional economic inequality, mainly because of the fact that local governments had fewer incentives to perform well on their own as they received grants from the central government. Another argument of why fiscal transfers do not bring convergence is the fact that in both China and Russia the government increased the amount of earmarked transfers over time, causing the amount of, moderate converging, equalisation transfers to decrease.

5. Discussion

The main findings in this paper were quite surprising to me as I expected that particularly fiscal transfers would have a converging effect on regional inequality. This paper, however, showed that fiscal transfers did not have a converging effect in Russia and China. I think that

this paper is a fine contribution to the current literature as it is the first one to go into depth regarding two possible explanations for the divergence of regions in Russia and China. Next to that is the fact that this study is not just focusing on one case but covers both Russia and China. As the results for China and Russia are almost the same, comparing the two states gave a good overview on the effect and problems of fiscal decentralization and fiscal transfers in big former socialist states.

However, there are some limitations in this paper. Firstly, it was impossible for me to get access to (reliable) data from the Chinese and Russian government. I tried to work around this problem by using research done by other authors who were able to get excess to data or created their own data based on empirical findings. It would give a next research on this topic more strength and validity if I would be able to collect data so I can prove myself that interregional inequality is growing in Russia and China and fiscal decentralization and fiscal transfers are not converging factors. Secondly, the fixed amount of words I was allowed to write was a limiting factor, in a next paper with a higher word limit I would be able to go deeper into the topic. As I was bound to a world limit, I was only able to focus on two institutional aspects. In a next study with more words, it would be possible to focus on more aspects to see if they influenced interregional inequality in China and Russia. Examples of other institutional aspects that are not mentioned in this paper but are worth investigating are intraregional tax laws and horizontal fiscal transfers. A higher word limit would also give the option to go deeper into the effects of the different fiscal transfers.

Another follow up study on this topic one could investigate how China and Russia could organize their fiscal policies without causing interregional economic inequality. Such a study could compare other big federations that have a longer history of a non-planned economy and compare them to China and Russia.

For the Chinese and Russian governments, it will be a difficult task to come up with a solution for the fiscal policies as it is shown that fiscal decentralization and fiscal centralization both cause interregional economic divergence when not executed thoughtfully. The Russian government already responded on interregional inequality this by stating that they are increasing the share of equalizing transfers in the total share of fiscal transfers (Vartapetov, 2010). Results of a tendency towards more equalizing fiscal transfers can be subject of a follow up study on this paper.

6. Conclusion

The goal of this paper was to answer the question 'How did fiscal decentralization and fiscal transfers affect interregional inequality in Russia and China after opening up?' I tried to answer this question by using general theories and state specific findings in recent literature. As the main question consists two factors, I broke down the question into two parts: fiscal decentralization and fiscal transfers.

The hypothesis for fiscal transfers was that 'Fiscal decentralization caused interregional inequality to grow in both China and Russia after opening up'. After identifying a trend towards fiscal decentralization in China after 1978 and in Russia after 1991, there were given explanations of why fiscal decentralization did not cause convergence. The most compelling argument is that fiscal decentralization gave high bureaucratic costs for the poorer regions leading to the fact that the poorer regions had less money left for investing in their economy.

The second hypothesis was 'Fiscal transfers in China and Russia after opening up did not cause interregional economic convergence'. The approach to this hypothesis was the same as the first hypothesis. Firstly, there was identified a trend towards recentralization and vertical fiscal transfers secondly there were given empirical findings and explanations of why these fiscal transfers did not cause convergence. The most compelling argument for the fact that fiscal transfers did not cause economic convergence across regions is that fiscal transfers do not give incentives for revenue collection as the regions will receive grants to cover for deficits in their revenue-expenditure budget. Another argument for regional divergence is the fact that in China and in Russia less and less of the fiscal transfers are equalization transfers. In China and Russia, after the tax reforms of 1994 and 1999, a trend towards more earmarked grants can be noticed which are only applicable to specific policies and are dependent on central government arbitrariness.

To come back to the main question of this paper, I argue that fiscal decentralization and fiscal transfers caused regional economic divergence as fiscal decentralization brought too high bureaucratic costs to the poorer regions and fiscal transfers did not bring enough incentives to regions to collect revenues and fiscal transfers are subject to the central governments arbitrariness.

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