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MASTERS RESEARCH DISSERTATION

The effects of a flat income tax on inequality: The case of Kazakhstan

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Economic Policies in the Age of Globalization Master Program

Option C – Development Policies

ABSTRACT

A flat tax is a single-rate tax on all types of income with a minimum tax-free bracket. In theory, such a tax can improve the efficiency, effectiveness, and simplicity of a system, while the distributional effects vary depending on the tax and exemption structure. This dissertation analyses the effects of the flat tax reform introduced in Kazakhstan in 2007, through the review of the major tax changes in the country and a tax simulation exercise. Kazakhstan is a particular case because of a large number of taxes and contributions levied on income and a maximum-earnings bracket above which an individual is not taxed. The analysis of macroeconomic data over two decades suggests that the benefits in efficiency, effectiveness, and simplicity are marginal, as well as debatable. The simulation analysis, based on 2007 data, shows that redistribution happened at the expense of the middle-income group as a result of the flat tax reform. The results show that while the flat tax system, along with other factors such as the general trend in the poverty reduction, the imperfect tax schedule of the preceding system, and pro-poor public expenditures, contributed to the improvement of equity overall, the results might be reversed once there is a higher share of the high-income earners.

RÉSUMÉ

Une taxe forfaitaire est une taxe à taux unique sur tous types de revenus avec une fourchette minimale d'exonération d'impôt. En théorie, une telle taxe peut améliorer l'efficacité et la simplicité d'un système, tandis que les effets de distribution varient en fonction de la structure d'imposition et d'exemption. Cette thèse analyse les effets de la réforme fiscale uniforme introduite au Kazakhstan en 2007, à travers l'examen des principaux changements fiscaux dans le pays et à un exercice de simulation fiscale. Le Kazakhstan est un cas particulier en raison d'un grand nombre d'impôts et de cotisations prélevés sur le revenu, et d'une fourchette de gains maximum au-dessus de laquelle une personne physique n'est pas plus imposée. L'analyse des données macroéconomiques sur deux décennies suggère que les avantages en termes d'efficacité et de simplicité sont marginaux et discutables. La simulation effectuée sur les données de 2007 montre que, à la suite de la réforme fiscale uniforme, la redistribution s'est réalisée au détriment des classes moyennes. Les résultats montrent que si le système d'imposition uniforme, ainsi que d'autres facteurs tels que la tendance générale à la réduction de la pauvreté, les problématique du calendrier d'imposition du précédent système et les dépenses publiques en faveur des pauvres ont contribué à l'amélioration de l'équité dans l'ensemble, les résultats pourraient changés dès qu'il y aura une part plus élevée de personnes à revenu élevé.

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LIST OF ABBREVIATIONS:

ACI	Annual calculation index
ADB	Asia Development Bank
CIT	Corporate income tax
IMF	International Monetary Fund
KZT	Kazakh tenge
MCI	Monthly calculation index
MMW	Monthly minimum wage
PFC	Pension fund contribution
PIT	Personal income tax
RK	Republic of Kazakhstan
SSC	Social security contribution
SSPC	Social security professional contribution
ST	Social tax
TC	Tax Code
WB	World Bank

1. INTRODUCTION

The end of the twentieth century was marked by what many economists called a great natural experiment. After the collapse of the Soviet Union, the newly formed countries had to break from the socialist legacy, with its traditional central government-led approach, and redirect their economies towards a market-oriented system. One by one countries implemented bold reforms, which the economists in the advanced countries considered effective but too radical to be performed within a short timeframe and therefore largely unattainable due to the anticipated public resistance.

One of the big novelties was the introduction of the flat tax. Developed by the American economists Hall and Rabushka (1985, 1995), the flat tax was a single rate tax on all types of labour income and capital earnings after investment deductions, which provided a minimum tax-free exemption and eliminated double taxation on corporate and personal income. Given the complexity of the US income tax calculations, the new tax was believed to be close to optimal – effective, efficient and simple, though possibly unfair due to the potential for large accumulations of untaxed wealth. While in the US and other advanced countries this extensive tax reform did not take place, the newly established post-soviet countries implemented it, motivated by the need to broaden their tax bases and signal their commitment to the free market (Appel and Orenstein, 2013). To date there are thirty-nine countries (including post-soviet countries and some in Latin America) that have implemented the flat tax, although none has done it in its original form proposed by Hall and Rabushka (Harremi, 2013). The general consensus is to call a flat tax any single rate tax applied to all taxpayers regardless of the level of income with a certain non-taxable minimum income bracket. The exemption relieves the burden on the poorest population and imposes a constant marginal rate for the population of all other income groups.

The biggest opposition to the new tax system was in the political struggle between the political right, focused on competitiveness and growth, and the Keynesian/social-democratic movement aimed at achieving development through redistribution. Rabushka himself took an active role as a government consultant during the wave of flat tax system reforms. Many Eastern-European countries like Estonia, Romania, Latvia, Lithuania, and Russia were initially indicated as success cases due to the positive changes in tax revenue and economic growth before 2007. However, the recovery from the global economic crisis was slow and the revenues in the region weakened, which was later partially offset by expenditure cuts (IMF, 2014a). As a result, many countries experienced a slowdown in revenues and growth, which

put the flat tax system experiment under question, even introducing the possibility of reversal.

There are a limited number of studies about the flat tax, mostly due to the novelty of the issue and the relatively small number of countries that have implemented such tax reform. Most studies are concentrated on the post-socialist states as a group in the transition period and the reasons for the spread of the tax reform across these countries. The effects for individual countries are largely understudied. The diversity of parameters of the flat tax implemented across countries will have an effect on the outcomes of the tax system in any particular country, therefore a separate study of each country is necessary. Out of the available in-depth country research, most work focuses on the European countries, and there is no study of the distributional effects of income-related taxes in the Central Asian region to my knowledge.

The literature on the flat tax identifies three main benefits from the introduction of the tax: 1) increase in tax revenues through broadening of the tax base, 2) improvement in incentives to work, save and invest due to elimination of double taxation of corporate and personal earnings, and 3) simplification of the system with lower administrative and compliance costs. The (in)equality effect of a flat tax is unclear, because to understand the distributional effects one would need to examine also the taxpayer's ability-to-pay, the effective tax rate and the nature of exemptions and deductions, which could produce diverse income distribution effects. Motivated by its ambiguity, the proposed research will concentrate on the distributional effects of the flat tax in Kazakhstan.

In 2007, Kazakhstan eliminated its progressive system with a basic exemption for the poorest and rates ranging from 0-20% for five different income groups, and replaced it with a single 10% flat income tax while introducing an increase in the number of exemptions and deductions (Grabowski, 2005). It is argued that the reasons for the implementation of the tax were both economic – raising larger tax revenues - and political, namely gaining electoral success (Mitu, 2015). The country presents an interesting case because of the large number and complex structure of the income-related taxes and contributions. The official data on income inequality in the form of the Gini coefficient shows a decline from 0.309 in 2007 to 0.278 percent in 2010 (IMF, 2014b). However, the declining trend started in 2001, suggesting other factors may have been responsible for the fall in inequality. A closer look at the effects of the income tax reform is therefore warranted.

The research objective of this study is to analyse the effects on the income distribution arising from the introduction of the flat income-related taxes in Kazakhstan. The study fills

the gap in the existing literature by providing 1) a comprehensive guide to the income-related taxes and deductions structure in Kazakhstan through the exploration of the legal and public finance documents and 2) an empirical study of the distributional effects of the flat income tax on the case of a Central Asian state. Precisely, it has two directions of inquiry: 1) mapping out the design of the flat taxes and other income-related obligatory contributions, the structure of deductions and changes in tax legislation, and 2) analysing the distributional and inequality effects of income-related taxes and contributions. The hypothesis is that the introduction of the flat tax system in Kazakhstan benefitted the poorest and the richest and increased the tax burden on the middle-income group, potentially increasing inequality overall. The methodology consists of two parts: 1) the descriptive part that provides background to the tax structure and incidence, which has not been done before in the case of Kazakhstan and 2) the simulation exercise, which is a common methodology for countries with limited data.

The structure of the research report is as follows. Section 2 presents the theoretical framework, covering the purpose and properties of taxation, and describing different tax systems and their effects on inequality. Section 3 links the relevant theoretical works on the flat tax with empirical evidence and investigations from different countries and regions, with a brief overview of available work on Kazakhstan. Section 4 draws on the methodologies from the literature and describes the design, techniques and limitations of the study. Section 5 describes the main features of the income tax legislation, its changes and effects on taxpayers in Kazakhstan. Section 6 presents the results of the tax simulation analysis and the equity effects of the flat tax system. Section 7 summarizes the work and provides possible policy recommendations.

2. THEORY

2.1. Purpose and properties of taxation

Taxation is a good indicator of a state's political and ideological priorities, because it links policy and interest groups, builds fiscal capacities, increases the territorial reach of a state, contributes to constructing necessary institutions, and achieves the expected levels of functionality (Di John, 2009). There are three commonly accepted principles of taxation: it must be effective in collection, efficient and non-distortionary, and equitable. Besides its primary fiscal function, taxation may have a distortive effect on human behavior through providing incentives or disincentives and changing the balance of time spent on work and leisure. Optimally, a taxation system should raise an adequate amount of funds needed for

government spending while being the least distortionary. Additionally, the equity issue is considered to ensure that the tax burden is equally distributed.

Equity can be separated into two types: horizontal and vertical (Stepanyan, 2003). The horizontal equity relates to the theory of benefits, which states that a person should pay taxes in return for the benefits received from a state, such as protection and insurance, and therefore people should be treated equally and have the same tax rate. The vertical equity refers to the theory of ability suggesting that a person should pay taxes according to his/her contributive capacity (Seligman, 1893). Because the latter requires some sacrifice of consumption because of the tax, in order to create equality, the rich should be taxed not only absolutely but relatively more than the poor.

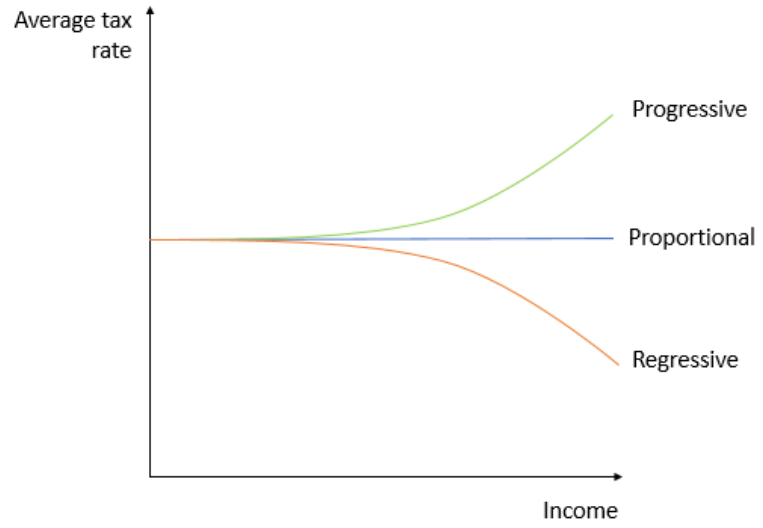
Being directly linked to a person's earnings, income tax in particular serves the equity purpose in addition to its fiscal function. Here, equity can be either horizontal or vertical, with every state making a separate decision as to which one to prefer. In addition to the income tax, some states also implement other income-related taxes. Generally, these taxes are payments to the government in order to (partially) finance the social security system including medical benefits, pension, maternity, unemployment insurance, and occupational accident payments. Such taxes normally have higher rates compared to income tax with a minimum contribution to avoid under-reporting and a maximum threshold after which no social contributions are taken. In most countries, these taxes do not meet much resistance because they are veiled as 'contributions' rather than taxes and are distributed between employer and employee (Mccaffery and Baron, 2002).

2.2. Tax systems

Historically taxation has experienced an evolution between several tax systems (Mitu, 2015). Before the 18th century, there was some form of regressive taxation, with heavily-taxed industrial laborers, and bourgeoisie and the aristocracy who paid almost no taxes. In the beginning of the 20th century after the two world wars, economic crises, and fast-paced changes in industry and infrastructure, the introduction of new taxes was reasoned by a greater need for bigger budgets. The focus was placed on proportional taxation since it was seen as equitable. In the 1950s, unions and liberal political powers started lobbying for tax participation in relation to the ability to contribute of different social classes, shifting the focus towards redistribution and development. This led to the introduction of progressive taxation, non-taxable minimum income brackets, tax exemptions and social security payments. However, after the crisis of the 1970s, attitudes radically changed towards

competitiveness and growth in the form of proportional taxation, reduction of tax rates and less state intervention. As a result of these historical developments, three types of tax with respect to percentage rates can be identified: proportional, progressive and regressive (Figure 1).

Figure 1. Progressive, proportional and regressive tax



Source: Author's representation

Progressive tax of personal income is identified with a tax rate that is lower for low-income earners and increases with higher incomes. It normally consists of graduated rates, meaning that the income distribution of the entire population is divided into brackets for which different (marginal) tax rates apply. There are three theoretical arguments that support progressive tax: socialistic, compensatory and economic (Seligman, 1893). The first idea suggests that after initial state-building people tend to favor equitable wealth distribution due to some ethical and social reasoning. The compensatory argument advocates that other taxes and state decisions result in an income gap, which should be counterbalanced by an appropriate tax system. For instance, when indirect taxation places more burden on the poor, in order to have equality of treatment progressive income taxation should be implemented. The economic argument states that at higher incomes the intensity of wants goes down and the final utility, or usefulness of the last unit to satisfy wants, should be equalized. Although all three arguments are not without criticism, the main idea is that progressive taxation is a representation of the vertical equity, in which people with higher incomes can contribute proportionately more and the collected amount can be redistributed to low-income earners.

The progressive taxation system has certain drawbacks. First, the efficiency – the tax discourages competition and productivity, because it punishes high-income earners. Second, the effectiveness, because calculating different tax rates makes it complicated for both tax administration officials and taxpayers and can result in tax avoidance. Third, the equity – depending on the social and political preferences, redistribution might not be seen as a fair policy.

Regressive taxation, on the contrary, places a higher percentage tax burden on low-income earners and the tax burden decreases with rising incomes. Originating in the theory of benefits, such tax is a representation of horizontal equality, where everyone has the same tax obligation (Salis, 2007). A typical example is a lump-sum tax – a fixed-amount tax that is levied on everyone. It places a heavier burden on low-income earners, because the tax takes a larger proportion of their incomes compared to high-income earners. Such a tax system is rarely considered, because it cannot raise a large amount of revenues and can have political resistance. However, in terms of the taxation principles of efficiency and administrative effectiveness, regressive taxation is maximally simple, cheap to administer and has little possibility for tax avoidance (Dabrowski and Tomczynska, 2001).

Proportional taxation takes the same fraction of income despite the level of income earned. Unlike progressive and regressive tax systems that create non-neutral tax burdens and may disturb the work effort, the proportional system is considered to have relatively neutral effects (Bankman and Griffith, 1987). Another argument in favor of a proportional system is that high-income earners have more income that can be saved and invested to improve the economy. However, following the same logic, a regressive system should provide even more incentives to save, because it taxes both high and middle-income earners less. The last argument is that a proportional tax is efficient because it reduces the tax avoidance due to its simplicity. However, a regressive tax system could be even simpler, because it uses one tax for all instead of calculating the percentage of incomes. Since all arguments in favor of a proportional system can be debated, the system can be considered at the middle ground between the previous two systems, involving a trade-off between efficiency and equity.

A flat tax, a proportional tax with a minimum income exemption, can be a sub-category of a proportional system. In the 1960s, the idea was introduced by Friedman and Hayek, who started arguing against progressive taxation (Mitu, 2015), and was later formalized in the seminal works of Hall and Rabushka (1985, 1995). In the context of the US in the 1980s with a highly complex progressive tax system, they proposed that income should only be taxed once with the same tax rate for all individuals. The optimal tax was set at 19%

with a minimum tax-free allowance and was argued to be simple, efficient and progressive. The simplification of the tax procedure was expected to increase compliance, reduce the shadow economy and limit tax evasion, since people with the highest incomes would not have the motive to hide their incomes at a flat tax rate. The efficiency was driven by the argument that the flat tax eliminated double taxation on corporate and personal income, increasing the incentives for investment, capital accumulation and entrepreneurial efforts. A lower tax rate was expected to increase working hours, employment and therefore general economic growth. The tax revenues were argued to increase due to the Laffer-type response and broadening of the tax base. Finally, the tax was argued to be progressive in nature, because of the inclusion of the minimum exemption that reduced the burden for the poorest in the population. However, despite appealing logical conclusions, the authors based their arguments on oversimplified numerical examples and logical arguments with little reference to actual economic theories and explanations of the mechanism driving the effects.

3. LITERATURE REVIEW

The literature on flat tax systems is not vast due to the limited application in current times, and the relatively limited data in countries that have implemented the reform. The review of the literature below is separated into two parts. The first part compares the characteristics of the flat tax to an optimal tax and discusses the possible rationale behind the implementation of flat tax reforms. The second part focuses on the empirical findings on the flat tax in terms of effectiveness, efficiency, and equity.

3.1. Rationale for the introduction of the flat tax

In order to situate the work in a theoretical framework, the literature on public economics of taxation, especially with regards to the different tax systems, was consulted. The paper by Bird and Zolt (2011) has a comprehensive summary of the distributional effects of different types of income taxes. The authors argue that the progressive tax system is costly, therefore it should be replaced with a broad-base, low-rate tax that is mildly progressive or proportional and non-distorting to the market. To counter the adverse distribution effects, such a tax should be coupled with a well-targeted expenditure policy. The authors identified that in developing countries the features of an optimal tax appear to be similar to the flat tax. Conesa and Krueger (2006) in a dynamic general equilibrium analysis of the US came to similar conclusions and found that a flat tax can achieve the steady state of social welfare and also provide welfare gains to more than half of the population. Keen, Kim, and Varsano (2007) also proved that the flat tax is close to optimal, however they presented evidence that

a progressive tax can also be optimal. In their view, the tax system by itself does not make as much difference as lowering the tax rates in general.

Although the flat tax was implemented in some Latin American countries earlier, the spread of the flat tax in post-soviet states started in the early 2000s and involved almost all the countries in the region. An important cause for the widespread introduction of the flat tax in post-soviet countries might lie in political reasoning. Most likely, the diffusion of the flat tax in the Eastern-European countries was a neoliberal reform aimed at increasing tax revenue and incentives to pay and reducing tax processing costs. In some countries, the tax reform was dismissed because of political resistance due to the perceived regressive nature of the flat tax and the fear of a race to the bottom between the newly-formed states through competing to attract investment with lower tax rates (Baturo and Gray, 2009).

Post-soviet countries, however, experienced high fiscal pressures due to the sudden transition to independence, weak debt sustainability, macroeconomic vulnerability, poor administrative capacity and other institutional factors, as well as social challenges including aging populations and rising health expenditures (Shabunina, 2013). Thus, the reasons for introducing the flat tax were largely dominated by political interests (Voinea and Mihaeschu, 2009), electoral success (Mitu, 2005), and signaling about shifting towards a market-oriented system (Keen, Kim, and Varsano, 2007). Such decisions, coupled with cuts in the amount of social and health spending and the number of social support programs, indicated a particularly weak preference for a redistributive role for the state prevalent in most post-soviet countries (Myant and Drahokoupil, 2015). International organizations, such as the World Bank (WB), International Monetary Fund (IMF) and USAID, seemed to play a significant role in the transition of the region by actively intervening in fiscal stabilization policies and changes in legislation, such as pension saving (Appel and Orenstein, 2013).

Another pressure was coming from within the states by a group of high-income earners who had a possibility to benefit from lower taxes and privatization of public service provision. In Central Asia, where the tax legislation was quite underdeveloped, tax laws were reformed by people who held an interest in the private sector and, it has been suggested, exploited the imperfect laws to personal advantage (Mokhtari and Ashtari, 2012). The authors also state that the poor knowledge of tax legislation and administration coupled with a shortage of revenues resulted in spontaneous amendments, unstructured tax breaks, exemptions, and institutionalization of corruption.

Unlike other countries, Kazakhstan has managed to achieve a relatively high degree of development due to its advantageous geographical position and abundance of mineral

resources. The reports sponsored by the state show that the results of the flat tax reform in Kazakhstan seem to be highly successful (Nurumov, 2013). Driven by the necessity to create a competitive tax system and integrate into global markets, the country has focused on attracting capital to the extractive and financial sectors through the reduction of CIT, easier procedures and tax preferences for foreign investment. Although the report only covered the 2010-2012 period, nominal tax revenues are stated to increase every year, despite the effects of the global financial crisis. The tax reforms were argued to create an environment for growth and diversification, an increase in foreign capital, a reduction of the shadow economy, and a decrease in taxes in the non-extractive sector. Independent studies, however, indicates that there was no significant reduction in the shadow economy as a result of the tax reform and no sharp increase in tax collection (e.g. Kanseitova et al., 2012). The study also highlights the efficiency-fairness debate in the legislation of Kazakhstan between 1990-2010 and reveals the taxpayers' preference for fairer income redistribution. In 2010, there was a proposition to go back to progressive taxation with three tax brackets attracting rates of 10, 15 and 20%[1]. However, the decision was postponed to 2013 and has not been implemented as of today.

3.2. Effects of the flat tax

Although in theory the flat tax seems to be highly beneficial in terms of efficiency, effectiveness, and simplicity, the empirical evidence does not confirm and even challenges the expected effects. A flat rate system is considered effective due to the simplification of the system and tax administration by eliminating exemptions, special tax regimes and setting a flat rate tax (Brook and Leibfritz, 2005). However, there are mixed theoretical and empirical findings on the relationship between taxation and income concealment (see Keen, Kim, and Varsano, 2007). Although, Ivanova, Keen, and Klemm (2005) in their empirical study of the effects of the flat tax reform in Russia showed evidence that there was a significant improvement in compliance and reduction of the shadow sector, the results of this study are questionable because the calculation of compliance was based on the official Russian statistics which included estimates on hidden wages, which might not be very reliable.

There is more variety in views about the efficiency of the flat tax. Analysing the general effects of the flat tax, Peichl (2014) in a simulation study of the labour market effects in the developing European countries partly confirmed the benefits of the flat tax. These included the broadening of the tax base and an increase in labour supply and employment due

[1] Press release regarding the introduction of progressive personal income tax scale. Ministry of Finance of the Republic of Kazakhstan. Retrieved from www.minfin.kz/?uin=1119500881&chapter

to the decrease of the marginal tax rates. However, the increase in tax revenue due to the Laffer-type response was rejected in the case of a theoretical investigation by Keen, Kim, and Varsano (2007), as well as in the empirical cases of Croatia and South-East Europe (Blazic, 2009), and Slovakia (Brook and Leibfritz, 2005). Stepanyan (2003) found no evidence of the expected expansion in economic activity in post-soviet states. Ivanova, Keen, and Klemm (2005), analysing the 13% increase in tax revenues after the flat tax reform in Russia, found little evidence of labour supply-side effects and concluded that the cut of the top marginal tax rates did not pay for itself through increased work effort and compliance. In a later study on how labour supply responded to a flat tax reform in Russia, Duncan and Peter (2010) found that the tax reform led to an increase in working hours for men and increased the probability of finding a job, but that the change of the tax system had no relation to the increase in PIT revenues that followed.

Considering the distributional effects of the flat tax, a small group of studies have found that the flat tax has no effect or mixed effects on income distribution. Davies and Hoy (2002), in a simulation study, found that inequality in the US is reduced if the flat tax is relatively low. Davies, Hoy, and Linch (2003), in a simulation based on Canadian data, confirmed the reduction in inequality in the case that the tax results in a broadening of the base, and a neutral effect when no broadening of the base happens. Surprisingly, the chosen tax rate in the latter study was set at around 40%, which contradicted the results from Davies and Hoy (2002). A simulation study of the Netherlands found that the flat tax caused relatively small changes in the income distribution due to the presence of tax deductions (Caminada and Goudswaard, 2001).

However, the majority of studies find that there is an increase in inequality after the introduction of the flat tax and a significant shift in the tax burden towards the large middle-income group, while favouring the poorest in the population earning below the monthly minimum wage (MMW) and the richest. A theoretical simulation study for the US showed worsened Gini and Murphy inequality indicators and concluded that the flat tax leads to a higher concentration of income and wealth (Ventura, 1999). Another developed country case study of Spain, using a general equilibrium evaluation, calculated that although there is a reduction of the tax burden due to reduced deadweight loss for up to 60% of the poorest in the population depending on the tax rate, the inequality index still increases because of the gains made by people from the richest quantiles (Gonzales-Torrabadella and Pijon-Mas, 2006). Appel and Orenstein (2013) analysing the Eastern-European post-communist states indicated enormous tax cuts for the richest, but neutral effects on the poorest and the middle-

income earners. A simple simulations study using UK data found that there is a redistribution in favour of high-income earners in case of a flat PIT and an income redistribution from high-income earners without kids to low-income earners with kids in case both PIT and social security tax are flat (Adam and Browne, 2006).

Out of the countries that actually have implemented the tax reform, only the eastern countries of the Soviet bloc have been analyzed. In a policy recommendation paper, based on the data for Bosnia and Herzegovina, the flat rate tax was indicated as the best alternative, motivated by the objective of expanding the "middle" and "upper middle" income class under lower tax rates (Lazovic-Pita, 2014). However, most empirical studies found the opposite distributional effects placing more burden on the middle class after the introduction of the flat tax. Paulus and Peichl (2008) analysed ten countries in Western Europe through the Euromod tax simulations tool and showed more inequality, poverty and earnings polarization in the case of the flat tax. A later study by Peichl (2014) on an expanded set of European countries confirmed the previous findings and specified that the flat tax shifts the tax burden to the middle class, which might cause political opposition. He concluded that the effects of the flat tax depend on the tax specification and the institutional setting of a country. Blazic (2009) in a study of the flat tax in South-East Europe and Croatia in particular stated that the distributional effects depend on the level of tax and basic personal allowance, though the middle class remains the loser in a switch from progressive to flat systems. In the case of specific countries, Voinea and Mihaeschu (2009) in a simulation study based on the national household survey data of Romania, analyse several inequality indicators and the income elasticity of consumption, and conclude that the flat tax increases inequality and stimulates household consumption among the rich. Lelkes and Benedek (2008) in a similar study of Hungary based on the Euromod tax simulation model, found that 70% of the population (with the minority from the top of the income distribution) become worse off when compared with a progressive system, inequality rises, and redistributive efforts from the government become necessary. The work by Brook and Leibfritz (2005) analyses the employment effects in Slovakia and, unlike other studies, considers both taxes and obligatory contributions. The study reveals unequal distributional effects across income groups with a smaller redistributive effect and more inequality relative to a progressive system.

The key finding from the review of the empirical literature on the distributive effects of the flat tax system is that the selection of the tax rate and base are indeed crucial. Table 1 shows that most countries only made the personal income tax (PIT) flat while keeping the corporate income tax (CIT) proportional with no minimum exemptions. On average,

countries slightly decreased PIT rates below the top rates of their previous progressive systems. However, the tax rates, as well as the scope and structure of exemptions vary significantly across countries. As most flat taxes are structurally different, there is a gap in the literature in terms of in-depth empirical analyses for particular countries.

Table 1. Countries with flat tax reform - PIT, CIT, exemptions by country

Country	Year of reform	PIT, % rates		CIT, % rates		Exemption
		Before	After	Before	After	
Estonia	1994	16-35	26	35	26	modest increase
Lithuania	1994	18-33	33	29	29	substantial increase
Latvia	1997	10-25	25	25	25	slight reduction
Russia	2001	12-30	13	30	35	modest increase
Georgia	2005	12-20	12	20	20	eliminated
Romania	2005	18-40	16	25	16	increase
Kyrgyzstan	2006	10-20	10	20	10	unchanged
Macedonia	2007	15-24	12	15	12	unchanged
Kazakhstan	**2007**	**5-20**	**10**	**30**	**30**	**increase**
Mongolia	2007	10-30	10	15/30	10/25	substantial increase
Albania	2007	1-20	10	20	20	increase
Montenegro	2007	15-23	15	15/20	9	increase
Czech Republic	2008	12-32	15	24	22	substantial increase
Bulgaria	2008	10-24	10	10	10	eliminated
Belarus	2009	9-30	12	24	24	increase
Bosnia	2009	10-15	10	10	10	unchanged

Source: Author's representation and Peichl (2014, pp: 4-7)

Summing up, there is scarce and inconclusive evidence on the distributional effects of the flat tax due to the lack of high quality micro-level data for many of the countries where the flat tax has been implemented. Although most of the studies provide evidence in favour of increased inequality, it is stressed that the effects differ from country to country depending on the overall structure of the flat tax and its deductions. Moreover, no empirical studies on any Central Asian country (neither in the English or Russian language) have been published. Most studies analyse the effects of policy experiments and potential reforms rather than the actual reforms. The limited empirical evidence makes it difficult to identify the effects of a particular tax design on specific outcomes. Furthermore, little analysis on the cumulative effect of income-related taxes *and* contributions has been done. The present study aims to help fill these gaps by providing an after-reform analysis of a country from an under-researched region.

4. METHODOLOGY

4.1. Objective 1

The first part of the methodology reflects the first aim of the research, i.e. identifying the tax and deductions structure of income-related taxes in Kazakhstan and their changes, which will form the subject of Section 5. To give context and further develop this issue, Section 5 is separated into two parts: 1) the evolution of the tax legislation, and 2) the evolution of income-related taxes.

The analysis covers all available periods – from gaining independence in 1991 to 2016, which is the last year with complete tax records. Such complete coverage includes the years of all major tax reforms and the introduction of flat taxes. Due to the large number of changes and amendments in the studied period, only the most significant changes in income-related taxes are discussed.

To date, there are five income-related taxes in Kazakhstan: personal income tax (PIT), social tax (ST), pension fund contribution (PFC), social security professional contribution (SSPC), and social security contribution (SSC). PFC, SSC, and SSPC, are personalized accumulative schemes for the social protection of individuals in case of a job loss. PIT and ST are taxes raised to the state budget for further redistribution, the latter collected specifically for the social transfers from the state. Three legal documents are used as sources for tracing the relevant changes in income-related taxes (Table 2). Each tax and contribution is described in a separate sub-section in Section 5, which contains a brief overview and description of the characteristics and major changes of each tax/contribution, based on information in the source documents listed below.

Table 2. Source documents for income-related taxes in Kazakhstan

Tax	Significant changes made in	Source document
PIT	1991, 1995, 2001, 2007	The code of RK on taxes and other obligatory payments to the budget - the "Tax Code"
ST	1995, 2001, 2007, 2009, 2013, 2015	
PFC	1991, 1997, 2013	Law on pension provision of the citizens of RK
SSPC	2014	
SSC	2005, 2015	Rules for the calculation and transfer of social contributions

Source: Author's representation based on the State Revenues Committee of the Republic of Kazakhstan (RK)

4.2. Objective 2

Section 6 develops the second objective of the research, i.e. analysing the distributional effects of income-related taxes in Kazakhstan. The section is separated into two parts: 1) trends in tax revenue, efficiency, and equity and 2) simulation analysis.

As background to the simulation exercise, the first part considers various macroeconomic trends with respect to the changes in the effectiveness (through analysing the tax/GDP ratio and tax revenues), efficiency (through the employment statistics, changes in the number of legal entities, and investment), and equity (through poverty trends, income distribution dynamics, Gini index, and public spending).

To calculate tax revenues the data is taken from the State Revenues Committee under the Ministry of Finance of the Republic of Kazakhstan (RK). The data[2] is available on a monthly basis for the period 2002-2016. The data for all income-related taxes was collected from tax declarations, however it is not available for all periods due to changes in the reporting style (Table 3).

Table 3. Data on taxes with specification

Tax	Tax declaration number	Specification	Period
PIT	101201	Employer's withholding	Since 01/2002
	101202	Income not taxable at the source of payment	Since 01/2002
	101203	Natural person with special tax regime	Since 01/2002
	101204	Withholding for non-residents	Since 01/2008
	101205	Income not taxable at the source of payment for non-residents	Since 01/2008
ST	103101	Receipts of the social tax	Since 01/2002
PFC	901101	Receipts to the pension fund	Since 01/2002 until 01/2015
SSC	902101	Receipts of social contributions	Since 04/2005 until 01/2015
SSPC	903101	Receipts of compulsory pension professional contributions	Since 07/2014 until 01/2015

Source: Author's representation based on the State Revenues Committee of RK

The data for other macroeconomic indicators is taken from credible international sources, such as IMF, WB, ADB, and local sources from Kazakhstan, such as the State Revenues Committee, the Statistics Committee and the Ministry of Finance. The local sources provide only raw data, so simple computations were performed in order to present

[2] Actual income from taxes and payments to the state budget for 2002 – 2017, last modified 9/03/2017, retrieved from http://kgd.gov.kz/ru/content/fakticheskie-postupleniya-po-nalogam-i-platezham-v-gosudarstvennyy-byudzhet-za-2002-2017-gg

data in graphical form. The trend data is highly aggregated and might omit some important changes in the economy, however, due to the scarcity of data in Kazakhstan, it is the most relevant way to assess the non-equity factors of a flat tax.

The second part aims to empirically investigate the effects on inequality. Similar studies for other countries have used a general equilibrium evaluation, a comparative analysis between two years (before and after the flat tax reform), or most commonly, a micro-level data analysis using one year of data with tax simulations. The latter is the best option for this particular study because there is not enough quality data to conduct a general equilibrium analysis, and a comparative analysis of two years might be affected by other changes in the economic conditions, in particular the economic crisis of 2007-2008. Thus, for the present study the analysis will be conducted in the form of tax simulations based on the micro-level data for 2007. The year of 2007 is chosen for the analysis in order to capture the gross income distribution in Kazakhstan exactly at the time of the PIT reform.

The analysis is presented as a hypothetical and simplified situation, where a set of taxpayers achieve different net incomes after paying the tax obligations for all income-related taxes. The methodology for the simulation analysis is similar to the simulation studies conducted for other countries (e.g. Caminada and Goudswaard, 2001; Voinea and Mihaeschu, 2009). The main steps include: 1) constructing a set of taxpayers based on the income data that is consistent with the available aggregated data from other sources, 2) dividing the population into income decile groups based on gross income, 3) calculating fixed personal exemptions for each taxpayer under the two regimes, namely the current flat tax regime and the previous progressive tax regime, 4) constructing the old tax base under the progressive tax system and applying the old tax rates, 5) constructing the new tax base and applying the flat tax rates, 6) comparing the income distribution by decile and inequality indicators between the two regimes. The rates used for the progressive tax system are explained in detail in Section 5.2. The procedure for calculating the tax payments and net income for the flat tax system is explained in Section 6.2.

The simulation is based on the data from the Statistical Bulletin on Employment from the National Statistics Committee of RK[3]. The bulletin provides information on employment and remuneration for employees in different sectors. The data is collected from the individual tax declarations filed on behalf of employees by registered legal entities and self-employed persons on a monthly basis with annual aggregations and is publicly available for 1998-2016.

[3]http://www.stat.gov.kz/faces/wcnav_externalId/homeNumbersLabor?_afrLoop=23603908050015650#%40%3F_afrLoop%3D23603908050015650%26_adf.ctrl-state%3Da2dm30u7l_75

In 2007, the number of individuals in the annual bulletin is 2.6 million, however, the data is aggregated providing the monthly gross income in instalments of 1000 KZT that range from below 2000 KZT to above 36000 KZT[4] and percentage shares of the population per instalment. Based on this data, a simulated set of 100 taxpayers who represent 34 groups (from 1 to 6 people in each) was constructed. Since income was given in ranges, the gross income for taxpayers in each group was constructed as either the minimum, maximum or average value of the range with all three values being equally represented.

Inequality is measured with the Lorenz curve and Gini coefficient. The Lorenz curve indicates the degree of dispersion by analysing cumulative information. The following steps are performed in order to construct the curve: 1) construct a table with net individual incomes under a flat system and arrange in ascending order, 2) calculate the percentage of total income that each individual receives, 3) construct cumulative income table in percentage terms from step (2) ranging from the share of the lowest income to 100, 4) construct the cumulative frequencies table expressed in percentage of the total population, 5) plot (3) over (4) and add a diagonal perfect equality line, 6) repeat for the progressive system. A flatter Lorenz curve indicates higher equality.

The Gini coefficient is calculated using the same data as the Lorenz curve, the areas are estimated as line segments of data between observations. The values are in a range between 0 and 1, representing perfect income equality and inequality respectively. The following formula is used:

$$Gini\ coefficient = \frac{Area\ between\ the\ line\ of\ equality\ and\ the\ Lorenz\ curve}{Area\ below\ the\ line\ of\ equality}$$

4.3. Limitations

There are several limitations of this study. First, the study is concerned with only one effect of the tax, i.e. equity. A simplified analysis of other effects, i.e. efficiency, effectiveness, and simplicity, is presented in the first part of Section 6. However, the trend analysis of the macroeconomic data over the period of the reforms is only suggestive because of omitting the effects of other factors, like the effects of the financial crisis of 2007-2008. The analysis could be expanded and improved in future work when sufficient good quality data for Kazakhstan is available.

Second, even for the equity analysis, the study provides only a static simulation analysis with no behavioural responses and dynamic effects incorporated. However, a

[4] The average annual exchange rate for 2007 was 122.55 KZT to 1 USD. Thus, the instalments are in the amount of approximately 8 USD and range from 16 USD to 300 USD per month.

broader picture of the overall effect of the tax is captured in the first part of Section 6 and discussion of the equity/efficiency debate is provided in Section 7 of the dissertation.

Third, only the mandatory personal deductions are used to calculate the tax burden for the analysis. Since there is no data that describes individual conditions for each taxpayer that can lead to other exemptions (see Appendix 1 and 2), it is impossible to construct a complete tax burden for each individual in this work. However, Section 5 discusses the relevant changes of the tax legislation with regards to exemptions and finds no significant changes for a typical taxpayer; therefore, this limitation should not significantly affect the results of this study.

Fourth, the data does not provide enough information to construct the capital income and calculate SSPC. Section 5 indicates that the capital income was not separated from the gross income before 2007, therefore, it can be seen as a separate flat tax on dividends, which should not affect the results. SSPC is not included in the calculations due to the data limitations, such as individual job titles and work schedules for employees, however, it is expected to be the same under both systems because this tax was flat from its introduction, having no effect on the results.

Finally, the dissertation only considers the effects of the flat tax system reform with respect to the personal income-related taxes. Additional analysis that includes the effects of both PIT and CIT could be conducted, however, it is of less interest because the CIT rate did not change as a result of the reform (see Table 1).

5. THE TAX STRUCTURE IN KAZAKHSTAN

This section provides a comprehensive guide to the income-related taxes in Kazakhstan. The first part starts by providing the background with a general overview of the tax system, the periods in the country's tax history and the underlying economic conditions in each period. The second part presents a detailed description of all five income-related taxes, their economic rationale and evolution. The section ends with a summary of the main findings, highlighting how the indicated changes, as well as the transition to a flat tax system, affect a typical taxpayer.

5.1. Overview of the tax system

The tax history of Kazakhstan can be separated into four periods. The first period (1991-1994) was associated with increased economic and social pressures due to gaining independence and the collapse of the previous system. The major principles of the Soviet tax approach included: redistribution through centrally-planned prices and wages, allocation of

resources and appropriation of profits by the state, obligatory tax compliance, negotiated tax liabilities for specific companies, lack of transparency and taxpayer awareness (Martinez-Vazquez and McNab, 2000). After gaining independence, the newly formed states had to face the imperfections of the previous system, as well as internal problems, such as corruption, underdeveloped industry focused on a limited number of products, a large shadow economy, and a hard-to-tax agricultural sector (Mokhtari and Ashtari, 2012). Thus, the main taxation strategy in this period was directed at crisis management of the pressing and short-term issues (Nurumov, 2014). In 1991, Kazakhstan introduced its first decree "On Taxes from Enterprises, Associations and Organizations" (the "Decree"). This document consisted of only 23 articles and identified the existing taxes, i.e. 16 national taxes, 10 obligatory local taxes, and 19 local taxes and contributions (e.g. contributions for parking, for having a dog). The majority of taxes were levied on luxury items (e.g. immovable property, cars), excise products, and profits from business and trade. The Decree was a combination of the Soviet and Western tax practices (Mokhtari and Ashtari, 2012), and only briefly explained the main principles of tax administration, without providing any specification about the tax calculation and rates.

Among the biggest problems that Kazakhstan had to face in this period was the inadequate tax administration, which did not have the capacity to register and process the large number of new taxpayers, had flawed collection methods, and lacked trained personnel and internal control (Martinez-Vazquez and McNab, 2000). Concerned with the problem of non-payment, the state introduced a number of tax offsets, holidays, and exemptions for industry, which were targeted at increasing investment, but in fact, stimulated corruption (Mokhtari and Ashtari, 2012). Important benchmarks of this period include the first steps towards a market-oriented transformation through the creation of the national taxation system in 1991, the introduction of the new tradable currency – Kazakh Tenge (KZT) in 1993, liberalization and privatization of industry, telecommunication, and energy sectors in 1994, and the elimination of production subsidies in 1994 (Bhuiyan, 2010).

The second period (1995-2000) was aimed at achieving macroeconomic stability and stimulating companies with a high-revenue potential and a possibility to compete on the international level (Nurumov, 2014). Unlike other post-soviet countries, Kazakhstan swiftly reformed its tax administration with the assistance of the International Tax and Investment Center - a U.S.-based non-profit organization. Before drafting the actual tax code, they first set the objectives for the new tax system, which corresponded to the optimal tax specifications in Western practices, i.e. revenue adequacy, economic neutrality,

encouragement of savings and investment, horizontal and vertical equity, simplicity, and low tax rates (Witt and McLure, 1999). In 1995, the second decree - "On Taxes and Other Obligatory Payments to the Budget" came into force. This version of the Decree eliminated the ambiguity and inconsistency of the previous practices, such as tax offsets and holidays, and unified separate amendments that were issued in the previous years. The new Decree was deeper in scope and included 8 sections, 46 chapters and 179 articles. Among the important changes were the significant decline of the number of taxes from 45 to 11, the transition from taxing profit to taxing income, and the switch to a single tax base for legal entities and individual entrepreneurs. The new Decree aimed at stimulating business activity through the reduction of the tax burden, enhancing taxpayers' responsibility and conforming with the international principles of taxation (Donskih and Konopiyanova, 2005). However, the new Decree still contained some limitations; for example, it did not make a special provision for non-residents and did not define the taxation of social benefits for temporary foreign workers. Tax collection remained a big problem –tax revenue in 1995 accounted for only 20% of GDP, and continuously declined until 1997 (Sabonis-Helf, 2004).

The third period (2001-2008) marked a significant economic upswing after Kazakhstan positioned itself on the extractive industries market. In 2001, the Code of RK "On Taxes and Other Obligatory Payments to the Budget" or the Tax Code (TC) was introduced and enforced in 2002. The introduction of the new modern tax system based on Western practices was aimed at overcoming the previous flaws and increasing revenues to the state budget (Nurumov, 2014). This version included 18 sections, 101 chapters, 568 articles, which more than doubled the scope of the last Decree and contained 30 major amendments. Unlike the previous Decrees, TC 2001 regulated the relationship between the state and the taxpayer, separated CIT and PIT, and provided procedures for the calculation of taxes and filing of tax declarations. Objectives for this period included: a simplification of the tax system through eliminating low-performing taxes, an expansion of the tax base by increasing the number of taxpayers, a shift of the tax burden from enterprises to natural persons, and an improvement in tax collection and compliance (Donskih and Konopiyanova, 2005). However, the problem with low tax collections, especially from income-related taxes, remained and in 2007, the new TC introduced the flat tax on income and labour in order to broaden the tax base and collect income taxes from the large and hard-to-tax agricultural sector through simplified and special regimes (Mokhtari and Ashtari, 2012).

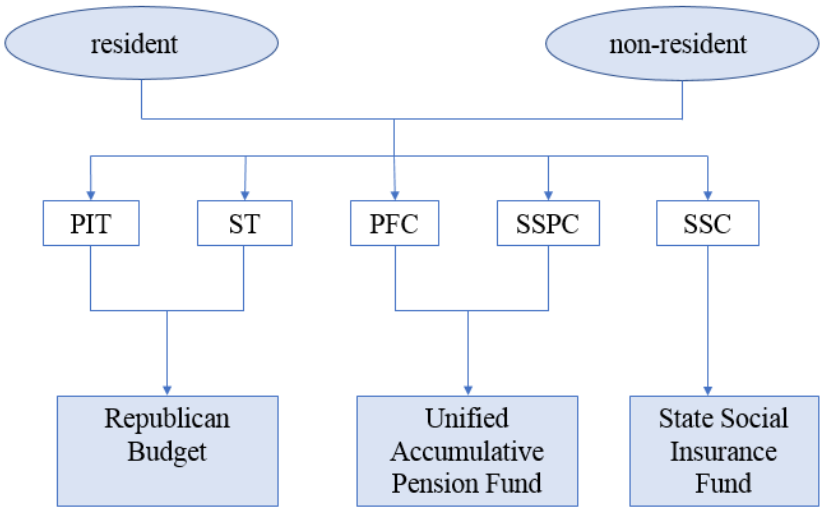
The fourth period (starting 2009) focuses on medium and long-term strategic objectives, such as the increase in financing of the socio-economic national programs and

maximizing state revenues through increasing the capitalized value of tax subjects (Nurumov, 2014). The period started with the introduction of the new TC 2009. The aim of the new TC was in lowering the tax rates, simplifying the tax administration, and increasing compliance (Kanseitova et al., 2012). The next significant change is expected to take place in 2020, with the introduction of the universal reporting on assets, liabilities, and incomes in order to further improve tax compliance[5].

5.2. The evolution of income-related taxes and contributions

Currently, there are five income-related taxes in Kazakhstan (Figure 2) that are applied to both residents and non-residents under the same conditions. The payments of PIT and ST are recorded as revenues to the Republican Budget of RK and are used for public spending. PFC and SSPC payments are directed to the Unified Accumulative Pension Fund, where they are used for personal accumulation and social redistribution. SSC payments are collected by the State Social Insurance Fund and are redistributed to people in case of temporary/permanent incapacity for work. The Unified Accumulative Pension Fund and the State Social Insurance Fund are state institutions, which are separated from the state budget and raise their own payment funds from tax receipts.

Figure 2. The structure of income-related taxes in Kazakhstan



Source: Author's representation

[5] Baker McKenzie international law firm, article "Kazakhstan Amends Its Tax Code" by Masters, C. and I. Kolypayev from 12/2016 retrieved from http://www.lexology.com/library/detail.aspx?g=e4ad8e74-3be3-4b26-bae3-3193ed6d1981

– Personal Income Tax (PIT)

PIT is the most common tax on labour, which serves the purposes of raising tax revenues and achieving equity. In Kazakhstan, all legal entities and natural persons, with the exception of the National Bank and state institutions, who receive income within a tax year are subject to PIT. The object of taxation is taxable income measured in KZT, calculated as the difference between the total annual income and deductions provided by the actual TC. The taxable income includes the worldwide annual income (inside and outside Kazakhstan) for resident entities and total annual income from Kazakhstani sources for non-residents.

There have been four major changes in the legislation with regards to PIT. The Decree of 1991 did not separate CIT from PIT, combining them under a single Income tax. There was no information on the definitions of income, tax rates, and tax calculation. There are limited sources on the legislation of that period, but from 1992 Kazakhstan introduced progressive taxation with four tax brackets and a top marginal rate of 30%, which was increased to 40% in 1993 (Grabowski, 2005).

Table 4. The evolution of PIT rates in RK

1991	1995		2001		2007	
	Taxable income	Marginal rate	Taxable income	Marginal rate	Taxable income	Marginal rate
undefined	<15 ACI	5%	<15 ACI	5%	all income	10%
	15-30 ACI	10%	15-40 ACI	8%	compensations and winnings	10%
	30-65 ACI	20%	40-200 ACI	13%	dividends	5%
	>65 ACI	30%	200-600 ACI	15%		
	winnings and interest	5%	>600 ACI	20%		

Source: Author's representation based on the Decree (1991, 1995) and TC (2001, 2007)

Table 4 presents the evolution of the PIT rates. In 1995, the tax structure in Kazakhstan was progressive with four brackets expressed in ACI[6] and a separate rate for

[6] Annual calculation index (ACI) – is calculated as the monthly calculation index (MCI) multiplied by 12 times. Since 2010, there are three related indices: MCI, MMW and subsistence minimum (the latter two are equivalent). Before 1997, MCI and MMW were the same notion. However, according to the Decree of the President of the Republic of Kazakhstan from 21.12.95 No. 2700 "On the Republican Budget for 1996" for the calculation of pensions, allowances, other social payments, and penalties, tax and other payments on a monthly basis, they were separated. MCI is significantly lower than MMW. Before 1999 MCI ,was changed 3-4 times per year, however starting in 2000 the amount is established once a year according to the current law "On the Republican Budget". The rates for all available years are available from the information system "Paragraph": https://online.zakon.kz/Document/?doc_id=1026672#pos=68;-173

winnings and interest; the tax rates varied between 0 and 30%. PIT in 2001 remained progressive, although the number of tax brackets increased, the brackets widened and the top marginal rate was reduced from 30% to 20%. The special provision for winnings and interest was eliminated. Although PIT was levied for both residents and non-residents from the beginning, a clear definition of tax residency was given only in TC 2001. Since then, an entity/person who resides in Kazakhstan for more than 183 calendar days within a consecutive twelve-month period is considered a tax resident. Despite this legal separation, PIT rates for residents and non-residents remained the same. TC 2007 provides greater specification of non-residents' activities, including non-resident legal entities, and increases the scope of activities and income sources that are subject to taxation. Another major change was in the switch from a progressive to a flat system, where all types of income, except dividends, are taxed with a single rate.

The items of income on which PIT is not levied, can be separated into the following groups (Appendix 1): avoiding double taxation, investing in human capital, providing social assistance, covering the state's needs, stimulating business, and compensating for travel. In 1991, there were only 25 non-taxable income items with the majority in social assistance. In 2001, there were already 42 items, and in 2007 the number increased to 43. In 2001 and 2007, social assistance items increased in number and remained among the largest groups. However, compared to 1991, such expansion can be attributed to better specification, rather than an increase in the scope - only ecological disasters, different payments from the state, and small lottery winnings were added. The biggest expansion was related to stimulating business, which was in line with the tax goals for that period, and included many provisions for financial market participation. With respect to deductions, there has been a steady decrease in number from 8 in 1991, to 4 in 2001 and 3 in 2007. Generally, the coverage for social protection weakened, for example, a deduction for dependents and social risk situations related to the loss of income were eliminated.

– Social Tax (ST)

ST is a tax on income that was introduced with the reformed tax Decree in 1995. The subjects of ST include: individual entrepreneurs, employees under a patent system or a special tax regime, all resident legal entities and non-resident legal entities that operate in Kazakhstan through a permanent establishment. Summarizing, workers who receive incomes from any of the abovementioned institutions, or almost all workers, are subject to the tax.

Table 5. Evolution of ST rates

1995		…	2013		2015	
Taxpayer	Rate		Taxpayer	Rate	Taxpayer	Rate
Legal entities	21%		Legal entities	11%	Legal entities	11%
State institutions and specified social associations	7.5-20.5%		Companies employing disabled persons	4.50%	Companies employing disabled persons	4.50%
Companies employing >50 % disabled persons	6.50%		Self-employed, notaries, lawyers	2MCI + 1MCI e.e.	Self-employed, notaries, lawyers	2MCI + 1MCI e.e.
Self-employed except farming	60% of MCI e.e. +10% of income		Self-employed under special tax regime, farmers	20% of MCI	Self-employed under special tax regime, farmers	20% of MCI
Self-employed with a patent	49% of MCI e.e. + 5% of income by patent value				Producers of specified agricultural and aquaculture products (fish farming)	6.50%
Farmers	20% of MCI					

	2001		2007	2009
Taxable income	Rate	Companies with foreign management, engineering and technical employees	Rate	Rate
<15 ACI	20%	11%	13%	13%
15-40 ACI	15%	11%	11%	11%
40-200 ACI	12%	9%	9%	9%
200-600 ACI	9%	7%	7%	7%
>600 ACI	7%	5%	5%	5%
companies employing disabled persons	N/A	N/A	6.50%	4.50%

Note: e.e. stands for "each employee"
Source: Author's representation based on the Decree (1995) and TC (2001, 2007, 2009, 2013, 2015)

The majority of the changes in ST are related to the changes in the tax rates (Table 5). In 1995, there were six groups with varying rates that were often customized. With the tax reform of 2001, ST changed to a regressive system with five income brackets and rates from 7% to 20%, with lower rates for companies employing high-skilled foreign staff. The latter, most likely, is explained by the general tax goal of that period to increase the country's competitiveness. The regressive system remained until 2007, when the rates slightly

decreased and a special provision for companies employing people with disabilities was made. The only difference between TC 2007 and TC 2009 is a slight decrease in the tax rate for companies employing people with disabilities. However, in 2013 the country returned to the system similar to 1995, separating taxpayers into four groups and differentiating tax payments. In 2015, a special provision for producers of agricultural and aquaculture products was introduced. It is difficult to compare the rates structure due to the large number of (sometimes unmotivated) changes and various special provisions, but generally the tax rates were reduced compared to 1995. It is important to note that starting 2001, the structure of the tax was regressive with higher rates for the poor population, which was later changed to the flat tax. In 2017, Timur Suleimenov, the Minister of Economics of RK, stated that in the coming years it might be possible to reduce the rate of ST by half[7].

There has been much less change with respect to the non-taxable income items for ST (Appendix 2). The non-taxable items are similar to the non-taxable items considered for the calculation of PIT, however they are much smaller in number. In 1995, there were 17 items, which generally included the payments of some taxes and social assistance disbursements. In 2001, 2 of the payments were taken out. The assistance to the members of a trade union was eliminated, most likely, due to a decrease in the activity of the trade unions, which were more popular during the Soviet time. The social benefits for the temporary incapacity for work was also removed, but counterbalanced with 9 additional non-taxable items related to social assistance. No other changes to non-taxable items have been made since 2001.

ST is calculated on the base of taxable income that is not less than MMW and is subject to reduction by the amount of SSC. It is peculiar that the purpose of ST is not explained in any legal document, including the tax Decree of 1995, the subsequent TCs or any official document issued by the state. Judging by the name, it is a tax that is collected in the state budget and used for social purposes, such as provision of public services. However, there can be two objections to such a tax. First, provision of social services is a function of the state and creating an additional tax for raising funds might not be legally founded. Some independent analysts, including Murat Aleibekov, the Chairman of the public association "Union of Taxpayers" in RK, confirm that ST is not theoretically justified[8]. Second, ST and SSC are very similar in nature, and while for SSC a comprehensive structure and is provided

[7] Information portal "Zakon.kz", article "ST may be reduced" from 27/03/2017, retrieved from http://www.zakon.kz/4850483-socialnyjj-nalog-v-kazakhstane-mogut.html

[8] Newspaper "Ustinka-plus", article "ST and SSC: The opposing view", 2007, retrieved from http://www.yk.kz/news/show/1354%3Fprint

and its purpose explained, for ST no such information exists. Moreover, the efficiency is weak, because of the large number of changes in ST and the necessity for taxpayers to prove their category and income.

– Pension Fund Contribution (PFC)

After gaining independence, the Soviet system of pensions was destroyed and had to be replaced. Kazakhstan was among the first post-soviet states to undertake a pension reform (Appel and Orenstein, 2013). In 1995, the first voluntary pension fund was registered in Kazakhstan. In 1997, the Law "On Pensions in RK" was adopted by the parliament, which was followed by the creation of the State Accumulative Pension Fund and a pension reform in 1998[9]. The reformed pension system had three levels: minimum pension guaranteed from the state, accumulative individual funds, and voluntary pension contributions up to a certain amount that can be deducted from income without being taxed. Although PFC was mandatory, a taxpayer could choose between different registered pension funds. However, in 2013 all existing pension funds, including the State Accumulative Pension Fund, were unified into a new legal entity – the Unified Accumulative Pension Fund[10]. The Fund is responsible for collecting contributions, which are held in special accounts in state banks and can be reinvested under the conditions specified by law, and the social protection of citizens through providing pension disbursements.

There are two types of state pensions: occupational (by age, military service) and social. Social pensions are provided in cases that a person does not receive an occupation pension, and includes the following cases: disabled persons, loss of a caregiver, people affected by ecological disasters or nuclear tests, disabled children below sixteen. The list of subjects of social pensions has not been changed since 1991, indicating a stable commitment by the government towards the social protection of the specified groups.

More changes occurred with the occupation pensions (Table 6). The first increase of the pension age happened between 1997 and 2001, as a result of which the pension age for both men and women increased by three years. A few years after the pension reform it became clear that adopting the system that accumulates PFC puts women in an unfavourable position due to their lower pension age[11]. To give women equal opportunities, in 2013, the

[9] Accumulative Pension Fund of Kazakhstan, website, retrieved from http://halykfund.kz

[10] Information portal "Tengrinews", retrieved from https://tengrinews.kz/private_finance/pensionnyie-fondyi-kazahstana-obyedinilis-v-enpf-252755/

[11] Official government source "Kazakhstanskaya Pravda", retrieved from http://new.yk-news.kz/news/завтра-в-казахстане-вступает-в-силу-закон-предусматривающий-повышение-пенсионного-возраста-для-женщин

state announced the 0.5-year increase of the pension age for women for every year to be enacted from 2018 to 2027.

Table 6. Evolution of the pension age and PFC rates

	1991	1997	2001	2027
Male	60	60	63	68
Female	55	55	58	68
Tax rate	undefined	10%	10%	-

Source: Author's representation based on the Law "On Pensions in RK" (1991, 1997, 2013)

The first comprehensive description of the tax rate and PFC calculation became available in 1997 and has not been changed since. According to the law, each taxpayer who receives income in the territory of Kazakhstan (employee, self-employed under patent or special tax regime), must contribute 10% from the earned income, but not more than 75 times the MMW. The ceiling places a higher ultimate burden on the lower income population, however it can be explained by the fact that the pension from the Fund cannot exceed 39 times the MCI. Keeping in mind the difference between the ceiling for PFC and pension disbursements and the fact that MCI is much lower than MMW, it is clear that the taxpayers contribute much more than they can receive. Despite the tax being seemingly fair in application, efficient with respect to the tax collection, and non-distortive in nature, there are problems, like the lack of transparency and accountability of the Unified Accumulative Pension Fund and problems with raising adequate revenue. For example, in 2016, there was a three-fold excess of pension disbursements over PFC receipts, which is expected to grow further[12].

– Social Security Professional Contribution (SSPC)

SSPC was introduced in 2014 as a special clause of the Law "On pension provision of the citizens of RK". It is an obligatory contribution for workers, who spend up to 80% of their working time in harmful and critically harmful working conditions. The contribution is made on behalf of the employees by employers from company funds that can be deducted from CIT. The special list of professions[13] is developed by the Ministry of Healthcare, and

[12] Socio-political newspaper "Vremya", article "Our pension is doomed?" by I. Nevolin from 25/01/2017, retrieved from http://www.time.kz/articles/territory/2017/01/25/53294-nasha-pensija-speta

[13] Decree of the Government of the Republic of Kazakhstan from 10.12.2015 No. 988 "The list of industries, jobs, occupations of workers employed in jobs with harmful (critically harmful) working conditions in which the agents for the payment of mandatory professional pension contributions at the expense of their own funds are subject to compulsory professional pension contributions", retrieved from

includes more than 3000 professions in the following industries: mining, metallurgy, foundry, production of acid and inorganic chemistry products, atomic industry, radioactive elements, extracting, manufacturing of medical and biological products, and transportation. The tax rate is 5% and is applied to the taxable income of a worker used for the calculation of PFC.

The National Bank motivates the introduction of SSPC by the idea that workers of harmful industries should receive higher pensions when reaching the pension age[14]. However, the extractive and heavy industries in Kazakhstan already provide salaries that are higher compared to other industries and the pension age of affected workers is 50 years, which is below the national pension age[15]. Therefore, the workers seem to already receive compensation for the harmful conditions. A more likely justification for creating a new contribution is in raising revenues from the people who stop contributing taxes because of an earlier pension age. Local economists, including Larisa Kharkova, the Chairman of the Confederation of Free Trade Unions of RK, and Aidar Alibayev, the Chairman of the Board of the Association of Pension Funds of RK, have raised concerns about the increased burden to employers, which might have negative business and economic outcomes[5]. Finally, there is a question of the non-distortionary nature of this contribution, since employers can respond to such additional costs by lowering wages, decreasing employment through increasing the work load for workers who receive the contribution, or shifting to unofficial employment.

– Social Security Contribution (SSC)

SSC is an obligatory contribution introduced in 2005 for covering the compulsory social insurance. Everyone engaged in activities that generate income on the territory of Kazakhstan are subject to paying SSC from their salary. The State Social Insurance Fund is a legal entity that is responsible for collection of SSC and disbursement to people in social risk. The risk cases include: disability, loss of a caregiver, unemployment, pregnancy/childbirth, and childcare. The compulsory social insurance is an individual accumulation system, which complements the state social benefits. The accumulated SSC can be transferred to family members in the case of death of the taxpayer. The amount of the SSC disbursements varies with the average wage of the taxpayer during the last 1-2 years of employment and the length of the participation in the system. The disbursements can be up to 60% of the average salary of the insured worker.

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https://zakon.uchet.kz/rus/docs/P1300001562

[14] News media portal "Total.kz", retrieved from http://online.zakon.kz/Document/?doc_id=31286035#pos=0;0

[15] Unified Accumulative Pension Fund, section "About the Pension System", Question-answer, retrieved from http://www.enpf.kz/ru/o-pensionnoy-sisteme/vopros-otvet/13-komu-perechislyayutsya-obyazatelnye-professionalnye-pensionnye-vznosy-v-kakom-razmere-i-kak-ikh-p.php

The gradual increase of SSC tax rates (Table 7) between 2005 and 2009 was defined by the Decree of the Government of RK #683 from 21/06/2004. Most likely, the progression was done in order to avoid public resilience to a single-time increase. Over the period 2005-2007 the rate for self-employed people was lower than for regular employees, because SSC for the former was calculated on the basis of MMW and not income. Since 2008, the rates for both employees and self-employed became equivalent and are applied to the taxable income of a worker used for the calculation of ST.

Table 7. Evolution of SSC rates

	2005	2006	2007	2008	2009	2015
For employees	1.50%	2%	3%	4%	5%	5%
For self-employed	1.5%*	2%*	3%*	4%	5%	5%

*Note: * calculated from MMW; unless specified - calculated from the ST base*
Source: Author's representation based on the Rules for the calculation and transfer of social contributions (2005, 2015)

At the same time, the monthly income used for the calculation should not exceed 10 times the MMW. Also, the maximum amount of SSC for the self-employed cannot exceed the ST for the reporting period, and the income used for the calculation for the self-employed under special tax regimes is equal to the MMW. The ceiling on SSC can be reasoned by the idea that people with higher incomes normally have other savings and, therefore, are less likely to request the social insurance disbursements. The ceiling for self-employed is lowered, most likely, to reduce the tax burden on people with lower expected earnings. However, in this case, it is unclear why the self-employed, who often do not have a stable income and depend on external economic conditions, contribute a lower amount.

The SSC has been critiqued on the basis of its efficiency.[16] Valentina Sivryukova, the President of the Civil Alliance of RK, states that despite the personalization of SSC the disbursements in case of an insured event are made according to the established rates, and not the accumulated amounts. There is also a concern about the non-distortionary nature of SSC, with some entrepreneurs frankly admitting that because of the extensive burden on payroll imposed by the state they are not interested in raising wages.

Summarizing this section, two conclusions can be made. First, the tax authorities in Kazakhstan had no experience and little understanding of taxation at the moment of the

[16] Newspaper "Ustinka-plus", article "ST and SSC: The opposing view", 2007, retrieved from http://www.yk.kz/news/show/1354%3Fprint

country's independence. A large number of amendments and changes to the tax legislation indicates that the country had to go with a trial-and-error path, with the biggest problems being low tax revenues and compliance, and poor tax administration. The tax Decree of 1995 was based on the best practices of the developed world and was progressive, but Kazakhstan was put in a situation where the old system could not provide attractive rates for investment, especially compared with its neighbours that already implemented the flat rates. In 2007, Kazakhstan also implemented the flat rate. However, it is debatable as to whether income-related taxes are truly flat since the PIT and CIT rates remained different, there has not been a significant reduction in exemptions, and some taxes, i.e. PFC and SSC, even have an upper limit. These factors may be related to why the expected base broadening did not occur and the inability to raise revenues, most likely leading to the introduction of the additional income-related taxes described above, some of which are hard to justify. Second, the particular type of flat tax system introduced in Kazakhstan in practice appears weak on several points. First, the simplicity was argued to be another major reason to adopt the flat tax. Indeed, with the elimination of the tax brackets, the calculation of PIT simplified, however, the definition of non-taxable income and the structure of deductions remained the same putting simplicity at question. Second, the flat tax structure was motivated by the state attempting to encourage the rich to invest and promote business activity on the territory of Kazakhstan. However, no official study was made to test this proposal before the tax was implemented.

6. ANALYSIS OF THE EFFECTS OF THE FLAT TAX SYSTEM

This section discusses the effects of a flat tax system with respect to income-related taxes in Kazakhstan. The first part describes some macroeconomic trends related to effectiveness, efficiency, and equity. Although the data does not allow one to conduct a thorough before-after analysis, it can still be helpful in terms of placing the reform in a broader context. The second part of this section proceeds with the results of the tax simulation analysis, which enriches and provides more insight into the aggregated data presented in the first part.

6.1. Trends

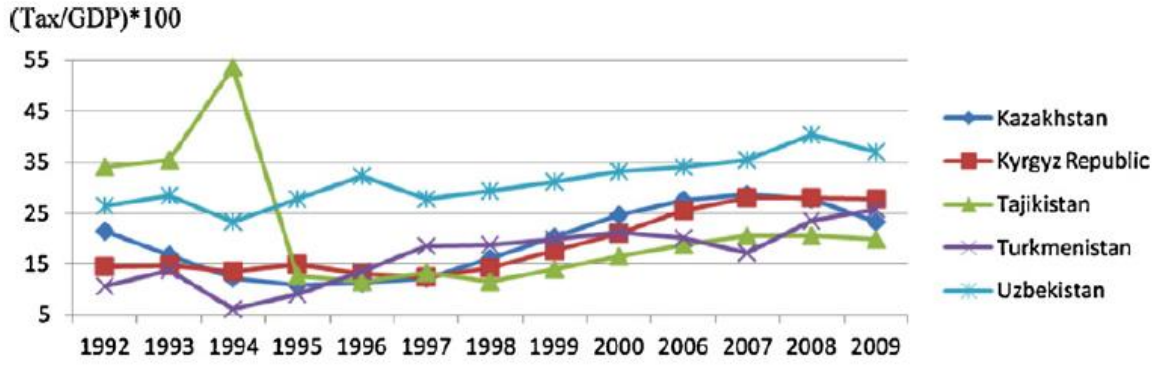
Different income-related taxes were introduced or were changed to a flat rate system in different years, i.e. PFC in 1995, SSC in 2005, PIT in 2007, ST in 2013, and SSPC in 2014. Therefore, the longest available periods are taken for consideration in order to provide enough observations to view trends before and after the changes to the flat tax system. The

data for the periods right after gaining independence is not always available and is also questionable, and therefore the first few years are normally omitted.

– Effectiveness

Tax collections have been a subject of concern throughout all periods of the tax history of Kazakhstan. Figure 3 indicates that since the collapse of the Soviet Union in 1991, Kazakhstan has had the same trend as other Central Asian countries. Generally, there is a steady increase starting from 1995, which coincides with the introduction of the reformed tax Decree and a slight decrease in the tax share to GDP starting 2007 – the year of PIT reform. However, the latter might not be related to the PIT reform because it also coincides with the start of the global economic crisis.

Figure 3. Tax/GDP ratio of the Central Asian region, 1992-2009



Source: Mokhtari and Ashtari, 2012 based on IMF data

There is a constantly decreasing trend in the total revenue from income-related taxes specifically as a proportion of GDP in Kazakhstan (Table 8). The period of 2002-2004 is the period with the highest share of tax to GDP, most likely because GDP is relatively smaller than in the next periods. In 2005, SSC is introduced in an attempt to increase revenues, but it does not affect the trend. The year of PIT reform also does not seem to have an impact on the trend. Not all data for the most recent years, i.e. 2015-2016, is available, therefore it is impossible to say if the introduction of SSPC affected the trend. Generally, the introduction of the flat tax system and a number of income-related taxes does not seem successful in improving tax revenues.

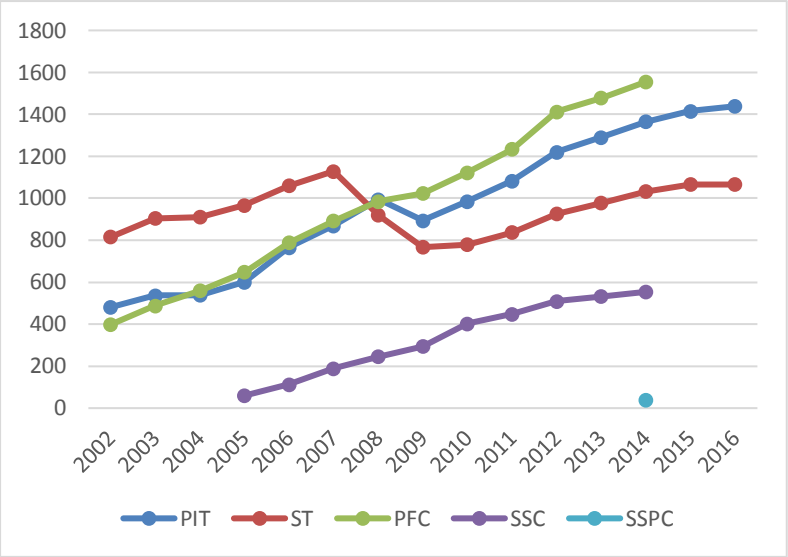
Table 8. Income-related taxes to GDP ratio in RK (%), 2002-2016

Tax	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
PIT	1.3%	1.2%	1.0%	1.0%	1.0%	1.0%	1.1%	1.0%	0.9%	0.8%	0.9%	0.9%	0.9%	0.9%	1.0%
ST	2.2%	2.1%	1.8%	1.6%	1.4%	1.3%	1.0%	0.8%	0.7%	0.6%	0.7%	0.6%	0.7%	0.7%	0.7%
PFC	1.1%	1.1%	1.1%	1.0%	1.0%	1.0%	1.1%	1.1%	1.0%	0.9%	1.0%	1.0%	1.0%		
SSC				0.1%	0.1%	0.2%	0.3%	0.3%	0.4%	0.3%	0.4%	0.4%	0.4%		
SSPC													0.0%		
Total	4.6%	4.4%	3.9%	3.7%	3.5%	3.5%	3.5%	3.2%	3.0%	2.6%	3.0%	2.9%	3.0%	1.6%*	1.7%*

*Note: * Calculations are incomplete, because data for PFC, SSC and SSPC is not available*
Source: Author's representation based on the State Revenues Committee of RK

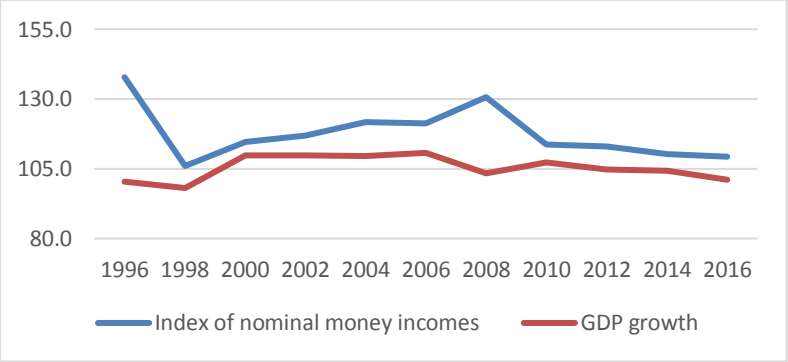
Disaggregated revenues from income-related taxes, expressed in 2000 prices, show a mixed picture (Figure 4). PIT steadily increased throughout the period, with the exception of the year 2008. Because the revenues quickly recovered to its previous values, it is unlikely that the decrease happened due to the introduction of the flat tax, but rather because of the world financial crisis. ST increased until 2007, experienced a sharp decline for 2 years and then started a slow recovery, though it never reached its pre-crisis values. There were no significant changes in the legislation during 2007-2009, therefore the decline cannot be linked with the change in the tax structure. There seems to be no significant change in 2013 connected with the ST flat reform. However, the slow recovery might be related to the big number of tax rate changes in ST. PFC and SSC have steadily increasing trends, which cannot be explained by any relevant changes in tax rates or the pension age. Nothing can be said about the effectiveness of SSPC since the data is only available for one year. Most likely, increasing trends for all income-related taxes and contributions are associated with the growth of working population and/or incomes. Indeed, Figure 5 shows that there has been a constant growth in both GDP and annual incomes, since the percentage change from the previous years is always above 100.

Figure 4. Tax revenues of income-related taxes (million KZT in 2000 prices), 2002-2016



Source: Author's representation based on the State Revenues Committee of RK

Figure 5. Nominal incomes and nominal GDP growth (% change from previous year), 1996-2016

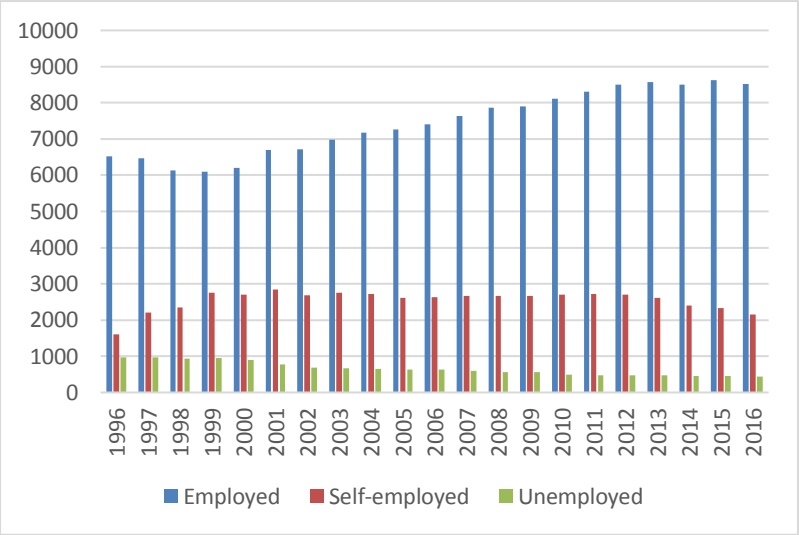


Source: Author's representation based on the Statistics Committee of RK

– Efficiency

Efficiency considers effects of a tax with respect to labour, savings, and investment. Lowering the tax rates and simplifying the tax structure is expected to improve the incentives for employment. The employment statistics (Figure 6) seem to indicate no significant changes related to the flat tax reforms in the years of interest – the number of employed has steadily increased, the number of unemployed has slightly decreased, and the number of self-employed seems to be relatively stable.

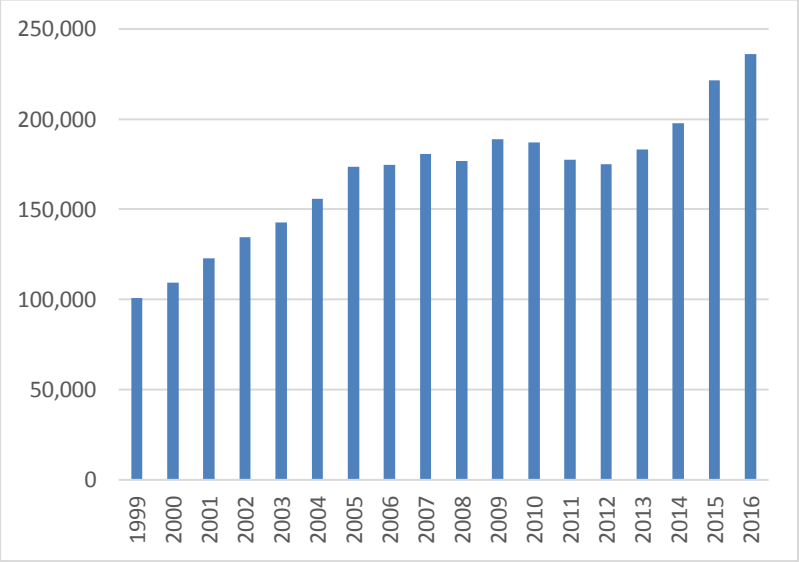
Figure 6. Employment statistics (thousands of people), 1996-2016



Source: Author's representation based on the Statistics Committee of RK

The introduction of the flat tax was expected to lower the tax for the rich in order to encourage investment and promotion of business activity in the territory of Kazakhstan. Indeed, the number of legal entities operating in Kazakhstan (Figure 7) has increased, however the timing of the flat rate system introduction, i.e. 2007 for PIT and 2013 for ST, does not seem to be related.

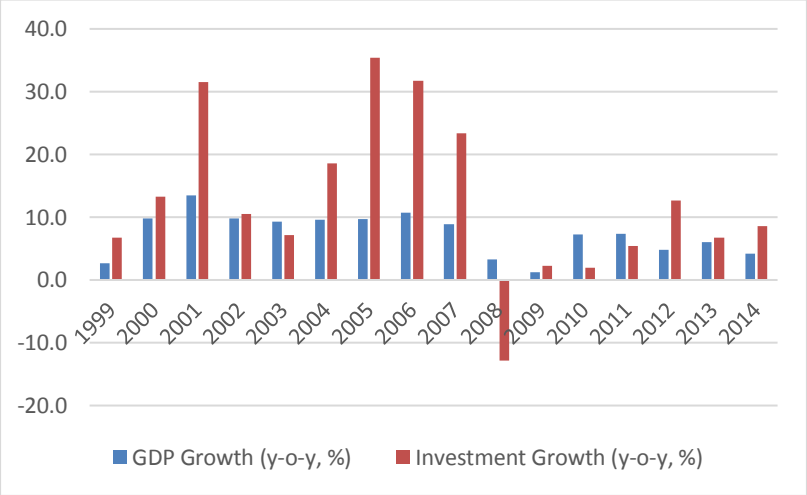
Figure 7. Number of legal entities in RK, 1999-2016



Source: Author's representation based on the Statistics Committee of RK

Figure 8 shows that the level of investment also increased steadily until 2007, after which growth slowed dramatically. Although it coincides with the year of the PIT flat reform, most likely the decrease in investment growth is associated with the global economic crisis. A more detailed analysis would be needed. Nonetheless, the general conclusion is that the flat tax reform seems to have had a small effect on the macroeconomic variables compared with other economic factors at the time.

Figure 8. Year-over-year change in GDP and Investment in RK (%), 1999-2016



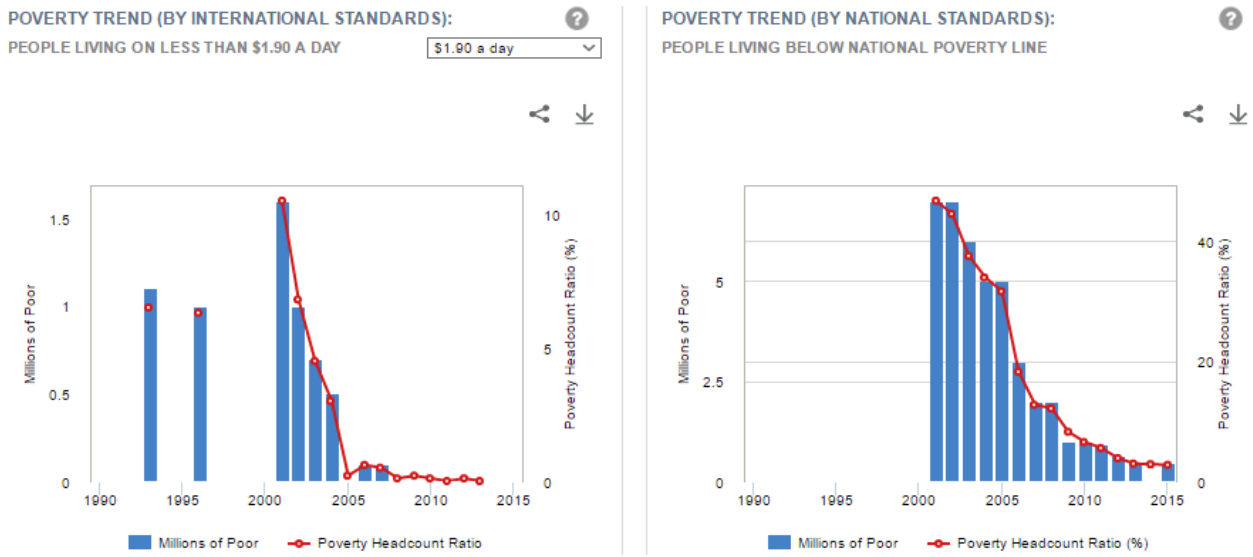
Source: Author's representation based on Asia Development Bank – CEIC database[17]

– Equity

The issue of equity can be considered from two sides: 1) the statistics on poverty, income distribution, and inequality and 2) state social transfers to the poor. Figure 9 shows that the number of individuals in Kazakhstan living below the international poverty line, i.e. 1.90 USD per day, has reduced by almost three times over the 2000-2005 period. The national poverty line in Kazakhstan corresponds with the MMW and in 2016 is equal to approximately 70 USD per month. The statistics show that the number of people below the national poverty line has decreased by two times during the 2000-2007 period, after which the decrease continued but at slower rates. According to both poverty measures, the declining poverty trend slowed down after 2007, when the flat PIT was introduced.

Figure 9. Poverty trends in RK, 1993-2013

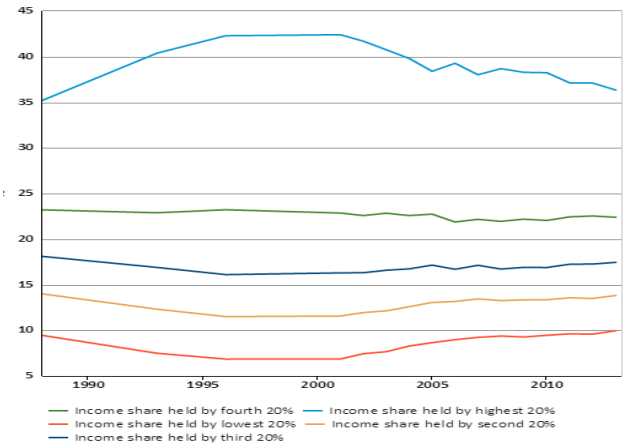
[17] Retrieved on March 22, 2017 from https://aric.adb.org/macroindicators/predefinedresult?category=15&sel_country=69&frequency=5



Source: WB[18]

Based on the primary household surveys presented by the WB (Figure 10), the income share held by the first, second and third quintiles, or the lowest 60% of the population, has increased over the period 2002 to 2013, while the income share of the fourth and fifth quintiles, or the richest 40% of population, has decreased. Keeping in mind the economic growth of the country over that period, the increasing trend of incomes for the lower quintiles is not surprising, however the reduction in incomes of the richest 20% seems to indicate some income redistribution in the country, which seems to start in 2002 and does not directly correspond to any of the income-related flat tax reforms.

Figure 10. Income distribution dynamics in RK (quintiles), 1988-2013



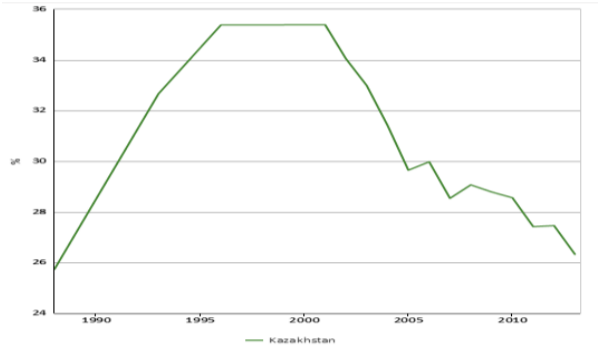
Source: WB[19]

[18] Retrieved on March 22, 2017 from http://povertydata.worldbank.org/poverty/country/KAZ

[19] Retrieved on March 22, 2017 from https://knoema.com/WBPED2016/poverty-and-equity-database

As expected from the previous graph, there has been a convergence of the incomes of the top and bottom quintiles since 2002, which is associated with more equality (Figure 11). The period between 2002 and 2005 saw inequality, as measured by the Gini, decrease at a fast pace, which slowed slightly in the next period. There seems to be no significant change in 2007 or the other years associated with the introduction of the flat system.

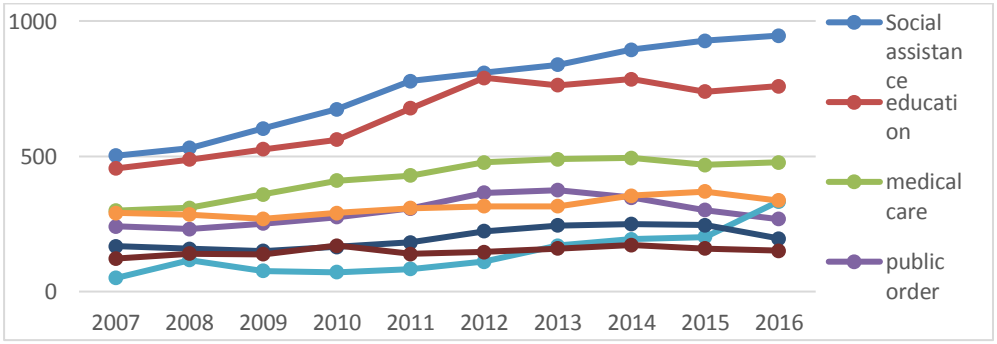
Figure 11. Gini index for Kazakhstan (%), 1988-2013



Source: WB[20]

Public spending is another important tool of redistribution and inequality reduction. The data before 2007 is not available, however it is still possible to see the general trends (Figure 12). In Kazakhstan, social assistance, education and medical care take the biggest and rising shares of budget expenditures, which can help explain the poverty reduction and increased incomes of the poor. The provision of other public services has been approximately unchanged. Since there is no data about public spending before 2007, it is difficult to infer whether the flat tax reform had this effect. However, the figure indicates the government's priorities, which clearly lean towards inequality reduction through benefitting the poor.

Figure 12. Dynamics of the state budget expenditures in RK (billion KZT in 2005 prices), 2008-2014



Source: The Ministry of Finance of RK[21]

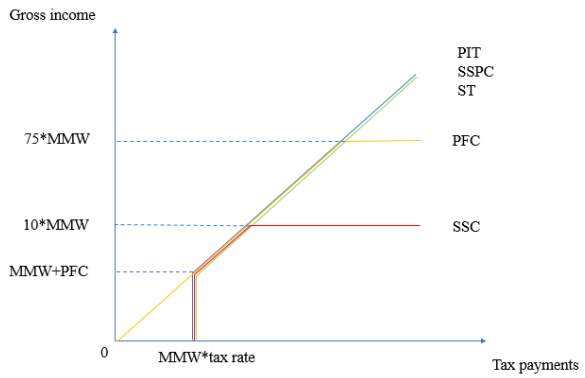
[20] Retrieved on March 22, 2017 from https://knoema.com/WBPED2016/poverty-and-equity-database

Summarizing all three effects, the macro-level statistics show little evidence that the introduction of the flat tax with respect to any of the income-related taxes and contributions were correlated with either effectiveness or efficiency. However, there has been a notable improvement in equity, although this seems to have begun before the tax change. Clearly, the trend analysis can only have a suggestive nature and cannot identify the direction of causality, therefore, a deeper investigation of whether the improvement in equity can be attributed to the flat tax reform is undertaken in in the next section based on a simulation analysis.

6.2. Simulation analysis

Figure 13 demonstrates the relationship between gross income and the tax payments for all five income-related taxes in Kazakhstan, where a diagonal line originating from zero income represents a purely proportional system. PIT, SSPC, ST, and SSC are clearly flat taxes – they are proportional and have a minimum exemption to the value of MMW plus PFC contributions. It is questionable whether PFC can meet the definition of a flat tax, since it has no minimum exemption. However, it also cannot be considered a purely proportional tax because PFC, as well as SSC, have a maximum exemption bracket. Based on this figure, it can be concluded that the combination of flat taxes in Kazakhstan has a relatively neutral effect, with a smaller tax burden on low-income earners, i.e. incomes close to MMW, and high-income earners, i.e. more than 75 times MMW. It is not clear, therefore, whether a flat tax brings more or less equality, since the rate of change of the population size in both the lowest and highest income brackets (i.e. below MMW and above 75 times MMW) needs to be determined.

Figure 13. Distributional effects of income-related taxes

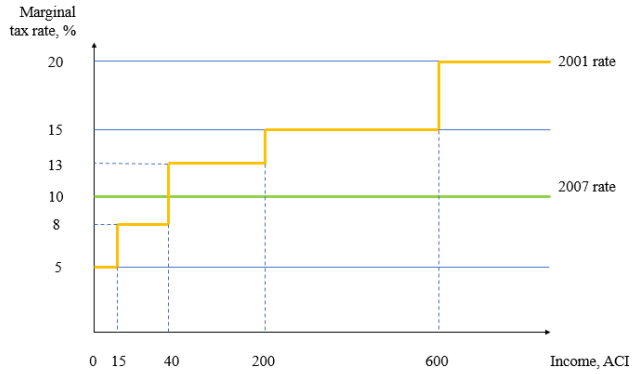


Source: Author's representation

[21] Retrieved on April 11, 2017 from http://www.minfin.gov.kz/irj/portal/anonymous

Figure 14 graphically represents the flat PIT reform: the yellow line indicates the graduated progressive system that was in place since 2001 and the green line shows the flat tax introduced in 2007. The new TC of 2007 aimed to tax the people with incomes below the green line, on a higher rate while lowering the marginal rate for the taxpayers above the line. Thus, it is expected that the flat rate reform made the ultimate tax burden regressive, because the poor tend to spend a higher proportion of income on paying the tax than the rich. Although it is not analysed here due to data limitations, a lower tax burden on capital income (only 5%) can be another indication that the tax is favouring the rich, because the poor normally do not have extra income to invest in financial capital.

Figure 14. PIT rates before and after the flat tax reform



Source: Author's representation based on TC (2001, 2007)

The simulation exercise is conducted in order to test the distributional effects of a flat system. The procedure for calculating the tax payments and net income for the flat tax system is explained in Table 9, and the relevant tax rates are taken from Section 5.2. According to the TC of Kazakhstan, SSC, ST, and SSPC are withheld from an employer/firm at the source of payment. Therefore, the tax burden from these taxes does not fall on the individuals; therefore, these taxes can be omitted from the analysis since they do not have direct distributional effects. However, PIT and ST are of special interest because these two taxes were changed to the flat system. Thus, the first part of the analysis considers the distributional effects of the flat tax on the net income (gross income less PIT and PFC), and the analysis of the tax revenues for all income-related taxes except SSPC is presented at the end of this section in order to account for the effects of the flat system reform. SSPC is omitted from the analysis, because the data does not contain information on the job title and

work schedule for each individual, which makes it impossible to construct the tax payments (refer back to Section 5.2.).

Table 9. Calculation of the income-related flat taxes based on TC 2007

Tax	Calculation	Paid by
PFC	gross income * rate	employee
PIT	(gross income – PFC) * rate	employee
SSC	(gross income – PFC) * rate	employer
ST	(gross income – PFC) * rate – SSC	employer
SSPC	gross income * rate	employer
Net income	gross income - PFC - PIT	

Source: Author's representation based on RK TC (2007)

The figures in Table 10 are constructed based on a simulation exercise using Kazakhstan income statistics for 2007. The decile groups are based on the gross monthly income of individuals. The distribution of income before tax and the Gini are similar to the official income statistics presented in the previous section. All income-related taxes except SSPC, are applied to the gross income figures based on the two systems, i.e. the flat tax system and the preceding progressive tax system. There is no simulated base broadening expected under the flat regime, because the dataset already presents data on the people below MMW (decile 1-3) and, unlike the classical flat tax, there were no significant changes in the amount of exemptions in the tax legislation of Kazakhstan. The table shows very marginal changes in the income share distribution, with some movement at the top end of the income distribution, and only a slightly improved Gini under the flat tax system.

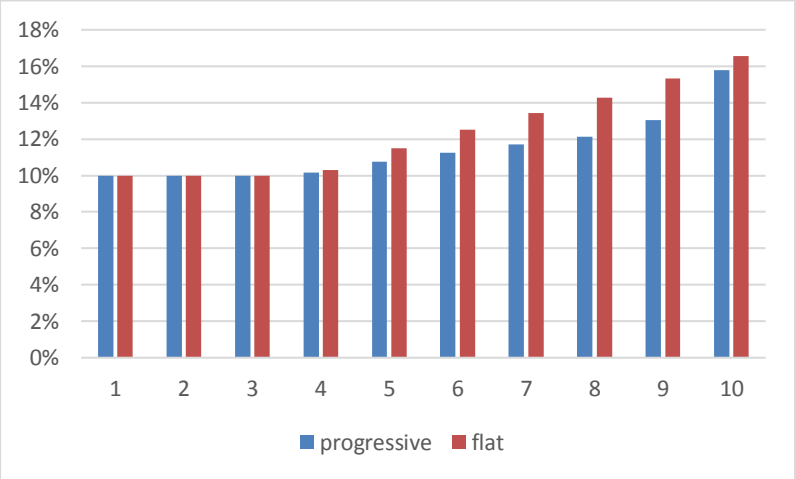
Table 10. Income share distribution in RK by decile, 2007

Decile	Income share		
	before tax	progressive	flat
1	3.0%	3.1%	3.1%
2	4.6%	4.7%	4.7%
3	5.7%	5.8%	5.9%
4	6.7%	6.8%	6.9%
5	7.8%	8.0%	8.0%
6	9.1%	9.2%	9.2%
7	10.6%	10.7%	10.6%
8	12.5%	12.5%	12.4%
9	16.1%	16.0%	15.8%
10	24.1%	23.2%	23.3%
GINI	**0.3171**	**0.3057**	**0.3028**

Source: Own calculations based on the State Revenues Committee of RK

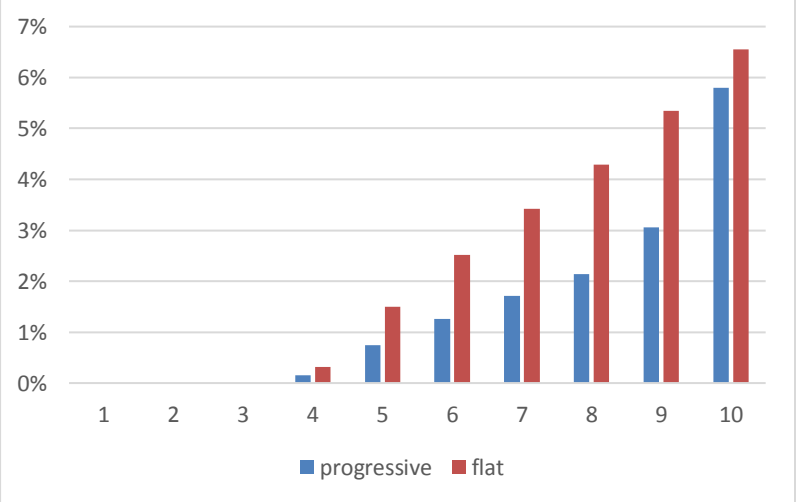
Figure 15 compares the net incomes (gross income less PIT and PFC) under the flat and progressive systems. The figure shows that deciles 1-3 ultimately contribute 10% of their gross income to the income-related taxes, and there is no significant difference between the two systems. Deciles 4-10 indicate higher shares of gross income that are paid as income taxes under a flat system, with a smaller spread between the systems for the 10th decile. A combination of the income-related taxes paid by an employee ranges from 11-15% under the progressive system and 11-17% under the flat system. Figure 16 confirms that the spread is mostly attributed to the PIT payments as a result of the flat system reform. The steady increase in PIT over deciles 4-10 shows that the tax is distributed proportionally, which can contribute to the improvement in equity.

Figure 15. Income-related taxes paid by an employee as a share of gross incomes, 2007



Source: Own calculation based on the State Revenues Committee of RK

Figure 16. PIT payments compared to gross income in RK, 2007



Source: Own calculation based on the State Revenues Committee of RK

It is normally expected that the share of income paid as taxes should be higher for the high-income earners under the progressive system compared to the flat system; however, it is not the case for the present dataset. The reason why the presented results do not correspond to the general effects expected from a move from a progressive to a flat tax lies in the income distribution of Kazakhstan in 2007. Table 11 shows that the population corresponded only to the lowest three income brackets of the progressive system that was in place at the time. Therefore, the equity improvement is attributed to the fact that more tax payments were collected from a population that was relatively poor as a whole under the new flat tax system (recall that for the lowest two taxable income brackets the PIT rate went from 5% and 8% respectively to the flat rate of 10%; see Figure 14).

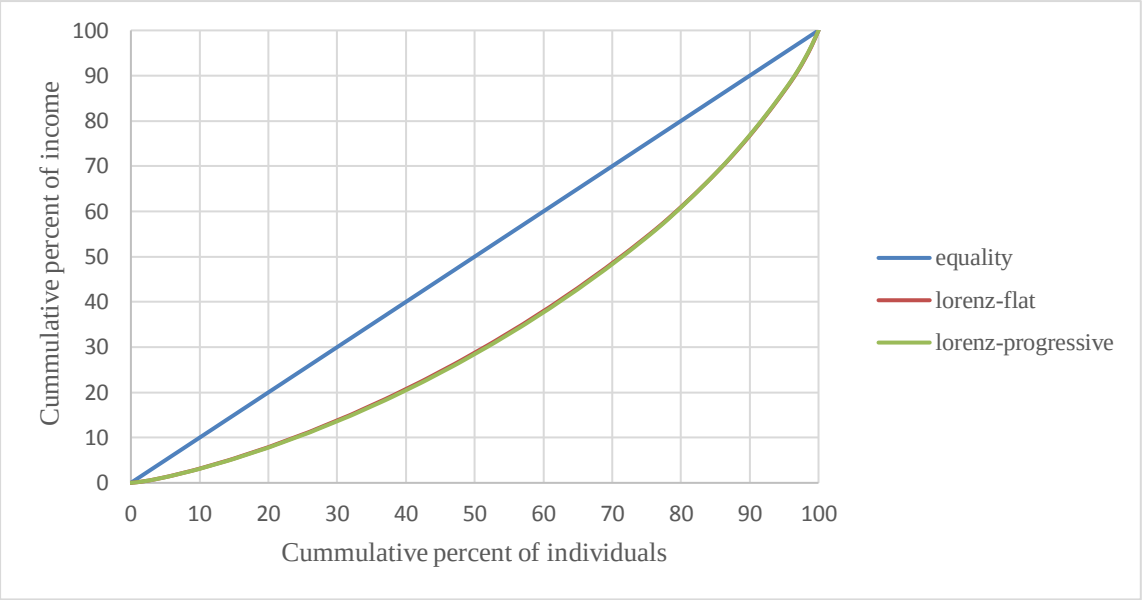
Table 11. Taxpayers in RK by income bracket, 2007

Income bracket	Monetary value per month, KZT	Percentage of population
<15 ACI	<16,380	61
15-40 ACI	16,380-43,680	36
40-200 ACI	43,680-218,400	3
200-600 ACI	218,400-655,200	0
>600 ACI	>655,200	0

Source: Own calculation based on the State Revenues Committee of RK

Considering the inequality indicators, Figure 17 shows that the 2007 dataset is relatively equally distributed. The difference between the Lorenz curves under a progressive and flat tax system is almost insignificant. Such small differences under both systems can be explained by the fact that the population has relatively small incomes overall and that the net income considered for the Gini only accounts for PIT and PFC, disregarding all other income-related taxes (refer back to Table 9). In terms of Gini coefficients, the numbers are also very similar (Table 10), however in the 2007 dataset the flat system has a slightly more equal coefficient.

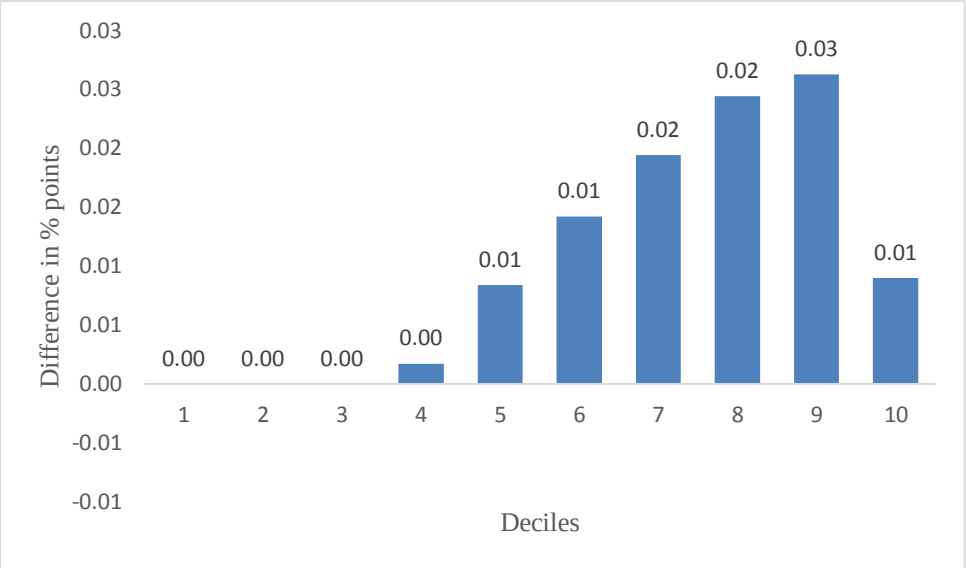
Figure 17. Lorenz curves for the 2007 (above) and hypothetical datasets (below)



Source: Own calculation based on the State Revenues Committee of RK

Thus, the distributional effects under both systems are relatively similar. However, the switch from one tax system to another can also create costs for specific income groups. Shifting from a progressive to a flat tax, for example, might reflect in an increased tax burden for low and middle income earners and a decrease for those at the top of the income distribution. Figure 18 shows the tax burden by decile through comparing the net incomes under the flat and progressive tax system based on the data for 2007. It shows that deciles 1-3 are unaffected by the reform, because they represent population with incomes below MMW who were tax exempt under both systems. Under the flat system, the tax burden is placed on deciles 4-10, who have to contribute progressively bigger shares of income as taxes leading to the equalization of net incomes within the population. The flat tax system is clearly beneficial for the 10th decile which has to contribute relatively less tax with respect to other deciles. In terms of the distributional effects, there seems to be a redistribution in favor of the low-income earners (deciles 1-3) and the top earners (decile 10) at the expense of deciles 4-9 which can be roughly identified as the middle class. The results from this simulation are also consistent with the hypothesis and other empirical works (e.g. Ventura, 1999; Gonzales-Torrabadella and Pijon-Mas, 2006; Appel and Orenstein, 2013).

Figure 18. Impact of a flat system compared with a progressive system in RK, 2007



Source: Own calculation based on the State Revenues Committee of RK

Figure 19 considers tax revenues for all income-related taxes (except SSPC). Revenues from PFC and SSC (and SSPC if it was included) are the same for both systems, because these taxes were flat since their introduction. The total revenue from all taxes is higher under the progressive system mostly due to the difference in ST. The difference appears because the tax was regressive before the flat reform (see Table 5). Since most of the population was in the lower tax income brackets, it was taxed more heavily under the regressive system. Under the flat tax system, the tax rates were reduced and an ST exemption appeared, which resulted in a decrease of tax revenues from ST. Nevertheless, ST is withheld from an employer and therefore, it has no direct distributional effects. The other major difference is represented in the PIT tax revenues. As a result of the reform, the revenues under a flat system appeared to be higher in total and for every decile, which is consistent with the stated benefits of a flat tax and the real trends in Kazakhstan described in the previous section.

Figure 19. Simulated tax revenues from income-related taxes in RK, 2007

decile	progressive				flat			
	PIT	ST	PFC	SSC	PIT	ST	PFC	SSC
1	-	6,501	5,000	1,350	-	-	5,000	1,350
2	-	9,816	7,551	2,039	-	-	7,551	2,039
3	-	12,221	9,400	2,538	-	-	9,400	2,538
4	172	14,366	11,050	2,984	344	-	11,050	2,984
5	974	16,901	13,000	3,510	1,948	-	13,000	3,510
6	1,897	19,566	15,051	4,064	3,793	7,776	15,051	4,064
7	2,999	22,371	17,501	4,725	5,998	12,600	17,501	4,725
8	4,439	22,770	20,700	5,589	8,878	14,904	20,700	5,589
9	8,151	29,315	26,650	7,196	14,233	19,188	26,650	7,196
10	23,139	41,690	39,900	10,773	26,158	28,728	39,900	10,773
Subtotal	41,771	195,515	165,804	44,767	61,353	83,197	165,804	44,767
TOTAL				**447,857**				**355,121**

Source: Own calculation based on the State Revenues Committee of RK

Summarizing, the flat tax reform in Kazakhstan seems successful in terms decreasing inequality. The improvements in equity resulted from the unaffected lowest deciles (through the minimum income exemptions) and a reduction of after-tax incomes for middle- and high-income earners. However, the flat tax reform benefited the top income earners, which were taxed relatively more than under the previous system.

The increase in the tax revenue from PIT under a flat system is attributed to the fact that the majority of the population was in the lower income brackets and had to pay a higher tax rate after the reform. However, the PIT revenue increase could have been outweighed by ST revenues, if ST remained regressive. Moreover, the data did not contain a lot of people with high incomes, who could benefit from the maximum earnings exemption. Thus, if there were more higher income earners, the progressive tax system could have brought larger PIT, PFC and SSC revenues than the flat system (refer back to Figure 13).

Thus, once the economy grows and the share of the population with higher incomes increases, a flat system loses some of its benefits compared to the progressive tax: tax revenues from the higher-income deciles decrease and the income gap increases due to the higher after-tax income of higher-income earners. It is possible that if the tax brackets under the progressive system better reflected the actual income distribution of the population, an improvement in equity could have also been achieved. Thus, if before-tax income distribution was different and/or more diverse, the effects of the flat tax would not be so advantageous.

7. CONCLUSION / DISCUSSION

In tax design, there will always be a tension between growth and equity objectives, with each state choosing its own rationale for implementing a specific tax system. The

previous sections show that there is no optimal tax with each system having advantages and drawbacks. In this light, a flat system seemed extraordinary, because it promised simultaneous improvements in efficiency, effectiveness, and simplicity. As a result, a system, initially introduced in theory, quickly became a large-scale natural experiment undertaken by many developing countries.

The experiment, however, was not entirely pure, since not a single country implemented the flat system in its original form. In the case of Kazakhstan, the rates for CIT and PIT did not harmonize as a result of the flat tax system reform, and income sources remained separated into labour income and dividends, the latter taxed at a lower rate. No tax base broadening happened, because the hard-to-tax agricultural sector remained undertaxed, despite the new system introducing simplified and special regimes. Generally, Kazakhstan simplified the rates structure only, making no significant changes in the structure of deductions. This leads to the question of whether the tax system in Kazakhstan in fact became flat. However, based on more generic definitions, a proportional system with a minimum income exemption, which corresponds to most of the income-related taxes in Kazakhstan, can be considered flat.

There was clearly a mix of reasons for the introduction of a flat tax system in Kazakhstan. The country had no experience in managing its taxes independently and little understanding of taxation in general, when gaining independence. The political pressures, such as internal pressures from high-income earners lobbying to benefit from lower taxes, and external pressures to create competitive tax incentives and rates compared with the neighbouring countries in order to attract investment, pushed the country towards introducing the flat tax system. In the hope of overcoming the big problem of unsatisfactory tax collection, Kazakhstan implemented the new system as a mix of practices and ideas from more advanced states, which were not always well adapted to the country. That explains the discrepancy between the classical and actual flat tax system implemented in Kazakhstan, as well as a large number of income-related taxes, some of which are quite unmotivated.

There is too little data to have an in-depth examination of the non-equity effects of a flat tax. A simplified analysis showed that improvements in simplification, effectiveness, and efficiency are debatable. Simplification happened only due to the elimination of tax brackets, while there has been almost no decrease in non-taxable items and the number of deductions between TC 2001 and TC 2007, meaning that the PIT calculation remained as complex as before. Other benefits from a flat tax, including the increase in labour supply, capital formation, incentives to work, save and invest, as well as lower compliance costs are

disputable, because these relationships have not been checked in any previous literature for the case of Kazakhstan. For example, a related study for Romania (Mitu, 2015) disproved the idea that higher-income earners tend to invest the untaxed income within the state, but rather use it for personal consumption including shopping abroad, international holidays, and migration, leading to higher inequality and social polarization. The macro-level trend data in Kazakhstan also indicates little evidence to support the improvement in effectiveness with respect to any of the income-related taxes and contributions. The analysis also shows that although the main purpose of the reform, i.e. raising more revenue, was achieved at the time of the reform, however the revenues are expected to decrease once there is a larger group of high-income earners who can benefit from the maximum exemption. Additionally, the presence of ST, SSC, and SSPC places the tax burden on employers/firms, who can respond by lowering wages, increasing the work load, or shifting to unofficial employment, hampering the efficiency of the tax and the economic development of the country.

The main objection to the flat tax system is the problem of inequality of the income distribution, which has the potential to create political and social unrest, as well as to slow down economic growth. Redistribution through taxation, social transfers and government expenditure is central for a reduction of inequality in developing countries (Prasad, 2008). While it is argued that the latter two have a larger effect on reducing inequality (Di John, 2009), these concepts are relatively straightforward and can be easily traced in public spending. In the case of Kazakhstan, social assistance, education and medical care have taken the largest share of public expenditure and have been increasing since the reform of 2007, contributing to the decrease in inequality. Different tax systems, on the contrary, have less evident effects and require more investigation.

Theoretically, the effect of a flat tax on income inequality is difficult to predict. While progressive, proportional, and regressive systems provide some clear expectations about the distribution of a tax burden, a flat tax can have either of the three effects because of the structure of its tax exemptions and deductions and because of the differences between the effective tax rates for different population deciles (Blum and Kalven, 1952). Based on the available literature, the hypothesis was that the introduction of the flat tax system (or the flat tax reform) would benefit the poorest and the richest while increasing the tax burden on the middle-income group. In the case of Kazakhstan, the hypothesis was generally supported with the neutral effect on deciles 1-3, tax cuts for decile 10 and the increase in the tax burden for deciles 4-9 who have to pay a higher share of their income in income-related tax payments as a result of the reform. The simulation showed that there was no base broadening

under a flat system, but simply a redistribution of the tax burden at the expense of the middle class. Nevertheless, based on data on the Gini coefficient over the period, overall inequality was reduced under the new system compared to the preceding one, due to the poor schedule for the progressive which failed to capture the actual income distribution in the society.

Summing up, the benefits of the flat tax system in Kazakhstan appear under question. There seems to be little change in effectiveness related to the switch to the flat tax system for either of the income-related taxes. As seen from Section 5, the structure of flat taxes did not significantly simplify the tax system and administration, keeping a number of exemptions, special tax regimes and although flat, but different tax rates for the specific income-related taxes. This might help explain the marginal changes in the effectiveness and efficiency associated with the flat tax reform. Considering the equity effect of income-related taxes, the flatness of the tax schedule itself was not a "magic bullet" for achieving positive results. Unlike the advanced countries with the complex and costly income tax procedure under the progressive tax system, Kazakhstan had a relatively simple, mildly progressive system from the start. Coupled with a well-targeted pro-poor expenditure policy, that seems to be in place, it is possible that a progressive system can achieve similar levels of equity improvement and even higher levels of tax revenue, if the taxable income brackets and related rates are chosen more carefully. Therefore, it is not surprising that ten years after the reform, the issue of going back to progressive rates is being debated. While this study made a first attempt to understand the effects of the flat rate income tax in Kazakhstan, and particularly the distributional effects of the tax, there are possibilities for further research once more data becomes available. In particular, there is a need to examine the behavioral responses and dynamic effects of the flat tax system, and the effects of the combination of a flat rate PIT and CIT on the economy.

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9. APPENDIX

Appendix 1. Changes in PIT: non-taxable income and deductions

	1995	2001	2007
Non-taxable income	avoiding double taxation		
	dividends, remunerations, winnings previously taxed	dividends, remunerations, winnings previously taxed	compensation for material damages, awarded by a court decision
	insurance remunerations	official income of foreigners already taxed in a foreign state	dividends, remunerations, winnings previously taxed
	official income of foreigners already taxed in a foreign state	pension from the pension funds and life insurance	obligatory insurance payments
	pension from the pension funds and life insurance	pension payments from the state pension fund	official income of foreigners already taxed in a foreign state
	pension payments from the state pension fund	social payments from the State Social Insurance Fund	pension from the pension funds and life insurance
	sale of a shares of a legal entity by individuals previously taxed	voluntary professional pension contributions	pension payments from the state pension fund
	voluntary pension and insurance payments from already taxed income		social payments from the State Social Insurance Fund
	winnings, withheld at the source of payment		voluntary professional pension contributions
	investing in human capital		
	expenses for advanced training or retraining in conformity with the specialization	expenses for advanced training or retraining in conformity with the specialization	expenses for advanced training or retraining in conformity with the specialization
	expenses for education	expenses for education	expenses for education
		expenses for life support of persons working under a rotation system	expenses for life support of persons working under a rotation system
		field allowances	field allowances
		given special clothing, means of individual protection and first aid, disinfectants, food for therapeutic and preventive nutrition	given special clothing, means of individual protection and first aid, disinfectants, food for therapeutic and preventive nutrition
		insurance payments connected with an insurance case which occurred in the period of a contract's operation	
	providing social assistance		
	alimonies received for children and dependents	alimonies received for children and dependents	alimonies received for children and dependents
	compensation for harm, caused to life and health of an individual	compensation for harm, caused to life and health of an individual	compensation for harm, caused to life and health of an individual
	incomes of the World War II veterans and equivalent persons, the disabled persons of I, II, III groups within 480-fold of MCI	incomes of the World War II veterans and equivalent persons, the disabled persons of I, II, III groups within 27-fold of the minimum amount of the salary	incomes of the World War II veterans and equivalent persons, the disabled persons of I, II, III groups within 27-fold of the minimum amount of the salary
	direct and indirect income of employees of non-profits	insurance remunerations performed in case of death	insurance payments connected with an insurance case
	material aid for members of the trade union from the fund of the trade union budget	payments from obligatory insurance contracts	payments from obligatory insurance contracts

	payments for medical services (except for cosmetology), childbirth, burial within 50-fold of the minimum wage	payments for social security of the citizens, who suffered from an ecological disaster or nuclear tests at a nuclear test site	payments for social security of the citizens, who suffered from an ecological disaster or nuclear tests at a nuclear test site
	property received as gift, inheritance or humanitarian aid	property received as a gift or inheritance	property received as a gift or inheritance
	simultaneous payments and material aid from the budget	property received as humanitarian aid	property received as humanitarian aid
	student scholarships	route vouchers to summer camps for children under sixteen	route vouchers to summer camps for children under sixteen
	targeted social assistance, allowances and compensations paid from the budget	simultaneous payments from the budget (except for salaries)	simultaneous payments from the budget (except for salaries)
		student scholarships	student scholarships
		targeted social assistance, allowances and compensations paid from the budget	targeted social assistance, allowances and compensations paid from the budget
		payments for medical services (except for cosmetology), childbirth, burial within 8-fold of the minimum wage	payments for medical services (except for cosmetology), childbirth, burial within 8-fold of the minimum wage
		winnings within 50% of the minimum wage rate	winnings within 50% of the minimum wage rate
	covering the state's needs		
	all of payments to military servicemen when performing duty of military service	all of payments to military and internal affairs servicemen when performing duty of military service	all of payments to military and internal affairs servicemen when performing duty of military service
	official income of diplomatic or consular officials who are not citizens of RK	official income in a foreign currency of the citizens of RK and who serve in diplomatic and equivalent representative offices of RK abroad	official income in a foreign currency of the citizens of RK and who serve in diplomatic and equivalent representative offices of RK abroad
		official income of diplomatic or consular officials who are not citizens of RK	official income of diplomatic or consular officials who are not citizens of RK
	stimulating business		
	entrepreneur's income not exceeding the non-taxable annual income	debt securities issues by the special financial trading platform in Almaty	contributions to housing building savings paid from the budget
	interest on deposits and debt obligations in banks licensed by the National Bank	deposits in banks	debt securities issues by the special financial trading platform in Almaty
		fines, charged for the delayed withholding and transfer of obligatory pension contributions in the amounts	deposits in banks
		income from the increase of the cost in open market operations at the Stock Exchange	fines, charged for the delayed withholding and transfer of obligatory pension contributions in the amounts
		income from the increase of the cost when selling securities through the special financial trading platform in Almaty	income from the increase of the cost in open market operations at the Stock Exchange
		income legalized in accordance with the legislative act on amnesty in connection with the legalization of property	income from the increase of the cost when selling securities through the special financial trading platform in Almaty

		income on shares of mutual investment funds	income legalized in accordance with the legislative act on amnesty in connection with the legalization of property
		payments from a grant (except for salaries)	income on shares of mutual investment funds
		contributions to housing building savings paid from the budget	payments from a grant (except for salaries)
		state issue-grade securities, agency bonds	state issue-grade securities, agency bonds
	compensating for travel		
	travel, accommodation allowances, and daily subsistence allowances	compensations for business trips	compensations for business trips
		compensations for relocation to employees	compensations for relocation to employees
		compensations to employees for work connected with traveling within the service area	compensations to employees for work connected with traveling within the service area
Deductions	compensation for harm caused to life and health	one minimum wage rate for each month employed	compensation for death
	compensation for the loss of caregiver	obligatory and voluntary pension contributions	obligatory and voluntary pension contributions
	expenses for pension contributions	compensation for death	one minimum wage rate for each month employed
	expenses for social contributions	repayment of interest on loans in housing construction savings banks	repayment of interest on loans in housing construction savings banks
	one minimum wage rate for each month employed	money of individuals legalized in accordance with the amnesty	
	one MCI for each dependent		
	payment of temporary incapacity for work		
	travel and representation expenses		

Source: Author's representation based on TC 1995, 2001, 2007

Appendix 2. Changes in ST: non-taxable items

1995	2001
1) mandatory and voluntary pension contributions	same as before, except
2) compensation for unused vacation	
3) compensation upon termination of labor contract for reasons beyond the control of an employee	Eliminated:
4) field allowance	1) social benefits for temporary incapacity for work
5) surcharges to the wages of workers performing shift work or work related to a mobile character	2) financial assistance for members of the trade union from the means of the trade union budget
6) cost of the given out work inventory	
7) compensation for injury or other damage to health at work	Added:
8) cash prizes awarded for prizes in sports competitions, shows, contests	1) targeted social assistance, benefits and compensations paid by the state
9) all types of payments received for military and internal affairs service duties	2) simultaneous payment from the state (except for salaries)
10) material assistance for the birth of a child, medical operation, burial	3) expenses for training and professional development related to specialty
11) reimbursement of travel expenses	4) benefits for employees, e.g. travel to and from work, on-site meals
12) social benefits for temporary incapacity for work	5) social payments from the State
13) payments for social protection of citizens affected by an ecological disaster or nuclear tests at a nuclear test site	6) stipend for students
14) financial assistance for members of the trade union from the means of the trade union budget	7) property received as humanitarian aid, charity or sponsorship
15) grants provided by states, governments and international organizations	8) route vouchers to summer camps for children under sixteen
16) state prizes and scholarships	9) payments for public works and vocational training
17) insurance premiums	

Source: Author's representation based on TC 1995, 2001