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TAX REGULATION OF THE HOUSEHOLD SECTOR IN KAZAKHSTAN: AN ANALYTICAL ASSESSMENT OF THE RESOURCE BASE AND TAX BURDEN

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The article provides a comprehensive analysis of tax regulation of the household sector in the Republic of Kazakhstan, taking into account the current tax system, regional resource base, and income structure of the population. Based on statistical data for 2019–2024, an assessment of direct and indirect taxes that form the tax burden on households is carried out, broken down by region and taxpayer category. The author proposes an approach to calculating the absolute and relative tax burden based on the division of taxes by source of payment - income and consumption. The results of the study indicate significant regional differences in the tax burden and highlight the need to improve monitoring and the methodological basis for regulating the household sector. The study revealed significant differences between regions in terms of the level of tax burden on the population. It was found that indirect taxes account for a high share of household expenditures, which exacerbates interregional imbalances. Insufficient detail in data on consumer structure limits the ability to accurately model the tax burden. As a result, the calculated tax burden indicators are conditional and dependent on the assumptions made. This underscores the need to further improve the assessment methodology and the system for collecting statistical information.

Keywords: tax regulation, household income, tax burden, direct taxes, indirect taxes, tax residents.

ҚАЗАҚСТАНДАҒЫ ҮЙ ШАРУАШЫЛЫҒЫ СЕКТОРЫНЫҢ САЛЫҚ РЕТТЕУІ: РЕСУРСТЫҚ БАЗА МЕН САЛЫҚ ЖҮКТЕМЕСІН АНАЛИТИКАЛЫҚ БАҒАЛАУ

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Мақалада қазіргі салық жүйесін, өңірлік ресурстық базаны және халықтың табыс құрылымын ескере отырып, Қазақстан Республикасындағы үй шаруашылығы саласын салықтық реттеуге жан-жақты талдау жасалған. 2019-2024 жылдардағы статистикалық деректер негізінде үй шаруашылықтарына салық жүктемесін қалыптастыратын тікелей және жанама салықтарды өңірлер мен салық төлеушілердің санаттары бөлінісінде бағалау орындалды. Салықтарды төлем көздері - кірістер мен тұтыну бойынша бөлуге негізделген абсолютті және салыстырмалы салық жүктемесін есептеуге авторлық тәсіл ұсынылды. Зерттеу нәтижелері салық жүктемесіндегі айтарлықтай аймақтық айырмашылықтарды көрсетеді және үй шаруашылығы секторын реттеудің мониторингі мен әдіснамалық базасын жетілдіру қажеттілігін көрсетеді. Зерттеу халыққа салынатын салық жүктемесінің деңгейі бойынша аймақтар арасындағы айтарлықтай айырмашылықтарды анықтады. Үй шаруашылықтарының шығындарында жанама салықтар жоғары үлесті алатыны анықталды, бұл аймақаралық теңгерімсіздіктерді күшейтеді. Тұтынушы құрылымы туралы мәліметтердің жеткіліксіз егжей-тегжейлері салық ауыртпалығын дәл модельдеу мүмкіндіктерін шектейді. Нәтижесінде салық жүктемесінің есептік көрсеткіштері шартты және қабылданған болжамдарға тәуелді болады. Бұл статистикалық ақпаратты жинау жүйесін бағалау және жақсарту әдістемесін одан әрі жетілдіру қажеттілігін көрсетеді.

Түйін сөздер: салықтық реттеу, үй шаруашылықтарының табысы, салық жүктемесі, тікелей салықтар, жанама салықтар, салық резиденттері.

НАЛОГОВОЕ РЕГУЛИРОВАНИЕ СЕКТОРА ДОМАШНИХ ХОЗЯЙСТВ В КАЗАХСТАНЕ: АНАЛИТИЧЕСКАЯ ОЦЕНКА РЕСУРСНОЙ БАЗЫ И НАЛОГОВОЙ НАГРУЗКИ

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В статье проведен комплексный анализ налогового регулирования сектора домашних хозяйств в Республике Казахстан с учетом действующей налоговой системы, региональной ресурсной базы и структуры доходов населения. На основе статистических данных 2019–2024 гг. выполнена оценка прямых и косвенных налогов, формирующих налоговую нагрузку на домохозяйства, в разрезе регионов и категорий налогоплательщиков. Предложен авторский подход к расчету абсолютной и относительной налоговой нагрузки, основанный на разделении налогов по источникам уплаты - доходам и потреблению. Результаты исследования указывают на существенные региональные различия в налоговой нагрузке и подчеркивают необходимость совершенствования мониторинга и методологической базы регулирования сектора домашних хозяйств. Исследование выявило значительные различия между регионами по уровню налоговой нагрузки на население. Было установлено, что в расходах домашних хозяйств высокую долю занимают косвенные налоги, что усиливает межрегиональные дисбалансы. Недостаточная детализация данных о потребительской структуре ограничивает возможности для точного моделирования налогового бремени. В результате расчётные показатели налоговой нагрузки оказываются условными и зависимыми от принятых допущений. Это подчёркивает необходимость дальнейшего совершенствования методологии оценки и улучшения системы сбора статистической информации.

Ключевые слова: налоговое регулирование, доходы домохозяйств, налоговая нагрузка, прямые налоги, косвенные налоги, налоговые резиденты.

Introduction. The household sector plays a key role in the sustainable socio-economic development of Kazakhstan, as it is the main taxpayer of both direct and indirect taxes, which form a significant part of state and local budget revenues. In the context of increasing uncertainty, accelerating inflationary processes and changes in the income structure of the population, there is a growing need to develop and improve tax regulation mechanisms that ensure a balance of public and private interests.

However, despite the importance of the sector, Kazakhstan still lacks a methodologically sound system for assessing household participation in tax relations, as well as a systematic database on the tax burden of the population. In this regard, the study of the tax burden and the resource base of the household sector is an urgent area of scientific analysis.

The relevance of the study lies in the growing role of households in generating tax revenues, coupled with the lack of effective systems for monitoring the actual tax base of the population. Increasing income differentiation and the need to assess the impact of taxes on consumption patterns require the development of a unified methodological approach to analyzing the tax burden. This makes the study important for improving tax policy and adapting it to socio-regional conditions. Thus, the study aims to fill the gaps that hinder the development of an economically sound tax policy for the household sector.

In the world of literature, the issue of household tax burden is explored through the lens of concepts such as tax burden (Musgrave, 1980), optimal tax system (Mirrlees, 2011), consumer behavior (Becker, 1996), and income distribution (Piketty, 2014) [1-4]. Researchers from the EU, the United States, and the OECD focus on comparing the tax burdens of households with different income levels, examining the impact of indirect taxes on consumption and inequality, and assessing the effectiveness of current tax benefits and deductions

[5-7].

In Kazakhstan, theoretical foundations of taxation have been explored in the works of A.A. Nurumov, M.K. Kozhakhmetova and M.S. Dosmanbetova. However, there has been no comprehensive assessment of household tax burdens. Additionally, there are no studies that compare regional resource bases and tax revenues while considering socio-demographic factors [8-10].

Modern global discourse on household taxation increasingly focuses on the actual distribution of the tax incidence. Bachas et al. (2024), writing in the Review of Economic Studies (h-index > 170), highlight the complexities of consumption taxes in developing economies, noting that the real burden is often distorted by consumption patterns and informal sectors [11]. In the context of resource dependency and regional development, the work of Li Hong (2019) in the Journal of Cleaner Production (h-index > 200) is particularly relevant. The author proposes an ”environmental scarcity tax” model that utilizes a compensation system for ecosystem services to balance the fiscal load in resource-intensive regions. This approach correlates with the disparities identified in Kazakhstan’s Atyrau and Mangistau regions, where fiscal indicators require a more nuanced interpretation than standard direct income taxation [12]. Furthermore, research by Benzarti and Carloni (2019) in the American Economic Journal (h-index > 180) emphasizes that VAT reforms are unevenly translated into consumer welfare, supporting our hypothesis regarding the hidden effects of indirect taxes on the budgets of Kazakhstani citizens who spend over 90% of their income on goods and services[13].

To move beyond a descriptive analysis, this study addresses the following research questions:

RQ1: How does the regional specificity of the resource base and household consumption structure affect the actual distribution of the tax burden in Kazakhstan?

RQ2: To what extent do indirect taxes create hidden imbalances in the tax system?

Hypothesis: The current system of tax monitoring in Kazakhstan fails to fully account for the high share of indirect taxes in household expenditures (reaching up to 92.8%), leading to a ”hidden regressivity” of the tax system and significant regional disparities, particularly in cities of republican significance and resource-rich regions.

The proposed work expands on existing research and is one of the first integrated approaches to assessing the resource base of the household sector.

The purpose of the study is to develop a methodological approach for assessing the tax burden of households in Kazakhstan and analyzing their resource base, taking into account regional specifics. To achieve this goal, the mechanisms of tax regulation and the structure of existing taxes are being studied, regional differences are being identified, a methodology for calculating the tax burden is being developed, and conclusions and recommendations are being formulated to improve monitoring of the sector.

Materials and methods. This study is a quantitative empirical and analytical analysis, including a descriptive study of tax revenues and the resource base of households, the use of economic and statistical methods and modeling the tax burden. The work has an applied socio-economic character and is aimed at assessing the level of the tax burden of households in Kazakhstan and the factors influencing its formation. The object of the study is the household sector of the Republic of Kazakhstan, which is a collection of individuals involved in the formation of tax revenues. These include payers of individual income taxes, indirect taxes included in the cost of goods and services, as well as property taxes such as taxes on property, land, and transportation.

The work uses data from the Bureau of National Statistics of the Republic of Kazakhstan, including indicators of population, employment, as well as the structure of income and expenses for 2019-2024. Additionally, information from the Ministry of Finance of the Republic of Kazakhstan on regional income tax receipts, VAT, excise taxes and property taxes for 2019-2024 has been applied. The data of the Agency for Strategic Planning

and Reforms on the distribution of the population by income groups and regulatory rates from the Tax Code of the Republic of Kazakhstan were also used. The information was selected using a targeted and continuous method, covering all regions of Kazakhstan, including Astana, Almaty and Shymkent.

The analysis includes complete data on tax revenues according to the relevant budget classification codes. In addition, updated data on the structure of income and expenses of the population for the period 2019-2024 have been taken into account. The study uses a set of data processing methods, including statistical analysis of the dynamics of indicators, inter-regional comparisons and calculation of averages. The data was grouped by type of taxes, regions, and income levels of the population. Economic and mathematical models were also used to calculate the absolute and relative tax burden, supplemented by the author' s models for estimating indirect taxes. The results were visualized using graphs and diagrams, which made it possible to conduct a comparative analysis of regional differences and peculiarities of taxation of residents and non-residents.

The choice of methods is explained by the purpose of the study aimed at developing a model for assessing the tax burden of households. The aggregated statistical data used makes it possible to apply economic, statistical and analytical approaches. In addition, the specifics of Kazakhstan' s tax system, which includes both direct and indirect taxes, require the use of comprehensive analysis methods. In the absence of detailed statistics on consumption by product groups, the method of averaged calculated rates was chosen, which corresponds to accepted international practices for estimating indirect taxes (OECD Taxation Consumption Framework) [14].

In a narrow sense, tax regulation of the household sector is a purposeful government influence on the financial resources of households through the establishment and collection of taxes, supported by the institution of state coercion, in order to implement fiscal, regulatory, social and control functions. According to the authors, its purpose is twofold: to promote the strategic objectives of the country' s development and to ensure a balance between the private and public interests of taxpayers and consumers of public services. Tax regulation is carried out through a special mechanism that includes subjects and objects of taxation, forms of interaction, methods and instruments of influence (Figure 1). This mechanism ensures the coordination and harmonization of the functions of the tax system within the framework of the country' s development priorities.

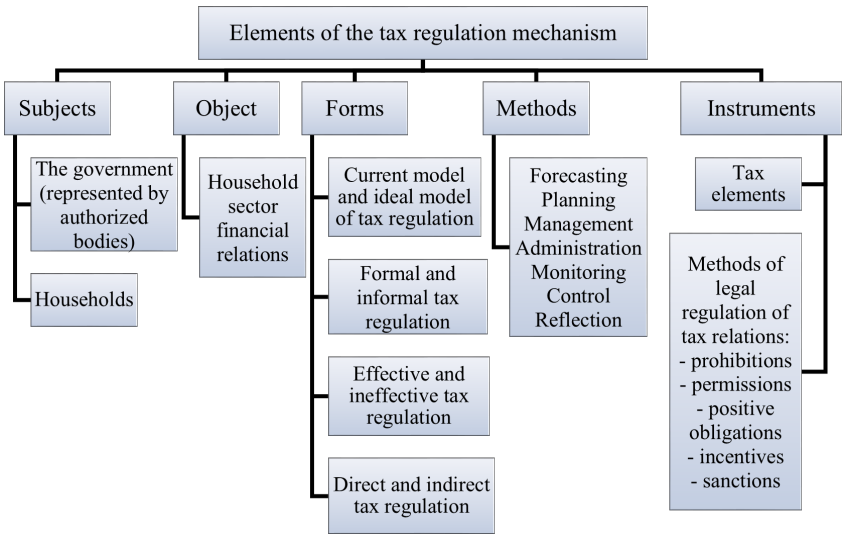


Fig.1 - The mechanism of tax regulation of the household sector

Note: compiled by the authors

An analysis of the current legislation on taxes and fees has shown that currently individuals are payers of taxes (fees) on income, property and actually payers of taxes on consumption (indirect or transferable taxes). At the same time, households pay an individual income tax, which reduces their disposable income, as well as indirect taxes such as VAT and excise taxes, which increase consumer spending. In addition, taxes on property, land, and transportation increase the cost of owning assets.

The methodology shifts from simple statistical reporting to analytical modeling of tax incidence. By employing an author-developed approach, the study distinguishes between taxes by source of payment (income vs. consumption). In the absence of detailed consumption data, the method of averaged calculated rates was adopted, aligning with the OECD Taxation Consumption Framework to estimate the actual burden on the population.

Results and discussions. For the budget system of Kazakhstan, the most significant taxes paid by households are personal income tax, vehicle tax on individuals, VAT, and excise taxes. According to the Ministry of Finance of the Republic of Kazakhstan, taxes on goods sold in the Republic in 2024 amounted to 32.2% of all state budget revenues, taxes on imported goods – 11.1%, which respectively amounted to 7.5% and 2.6% of Kazakhstan' s GDP in 2024.

In addition, 33.1% of all revenues of local budgets of the Republic of Kazakhstan' s constituent entities come from personal income tax (which is even more than income tax revenues, which account for only 21.1% of local budget revenues), 7.5% come from property taxes (transport tax and property tax), and 9.7% comes from excise taxes on goods produced in the Republic of Kazakhstan [15].

The dynamics of personal income tax receipts to local (regional, district) budgets of the subjects of the Republic of Kazakhstan in 2019-2024 was stable (Figure 2).

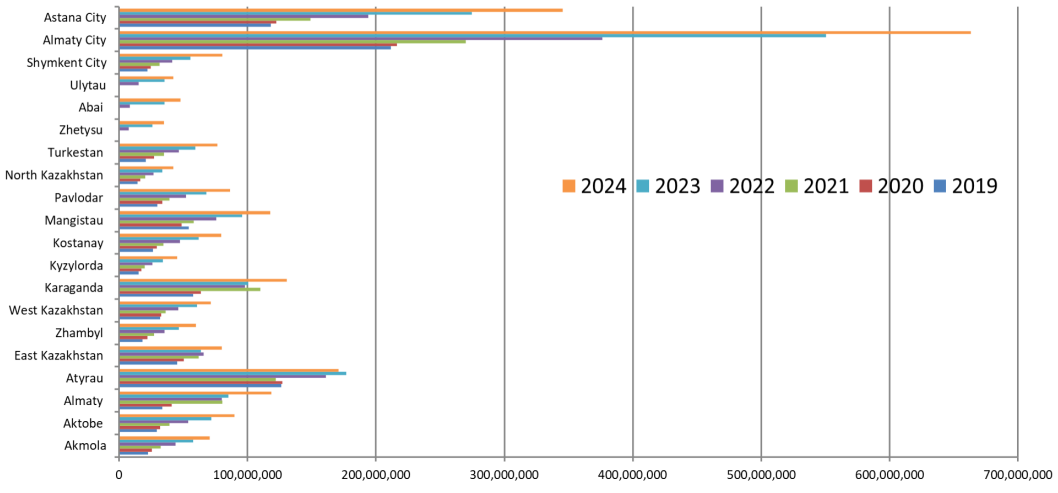


Fig.2 - Dynamics of personal income tax receipts to local (regional, district) budgets of the subjects of the Republic of Kazakhstan in 2020-2024, thousand tenge

Note: compiled by the authors

As shown in Figure 2, in terms of personal income tax, the highest revenues to local budgets in Kazakhstan' s regions come from Almaty, Astana, and the Atyrau region. The outsiders are the three new regions formed in 2022: Zhetysu, Abai, and Ulytau, as well as Kyzylorda and North Kazakhstan regions. It should also be noted that over the past six years, there has been an increase in tax revenues from personal income tax in all regions except the Atyrau region [16].

There are no discernible patterns in local budget revenues from personal income tax on vehicles.

Almost all regions show a clear downward trend in vehicle tax revenues in 2020 compared to 2019, but starting in 2021, there is a growth trend in revenues. In terms of the amount of vehicle tax revenue from individuals, the leaders are Almaty, Almaty Region, and Astana.

VAT revenues to the republican budget by province and region are shown in Figure 3. Of course, it should be noted that individuals were not the final payers of all VAT amounts. Determining the actual share of VAT revenues from Kazakhstanis' personal budget is not possible.

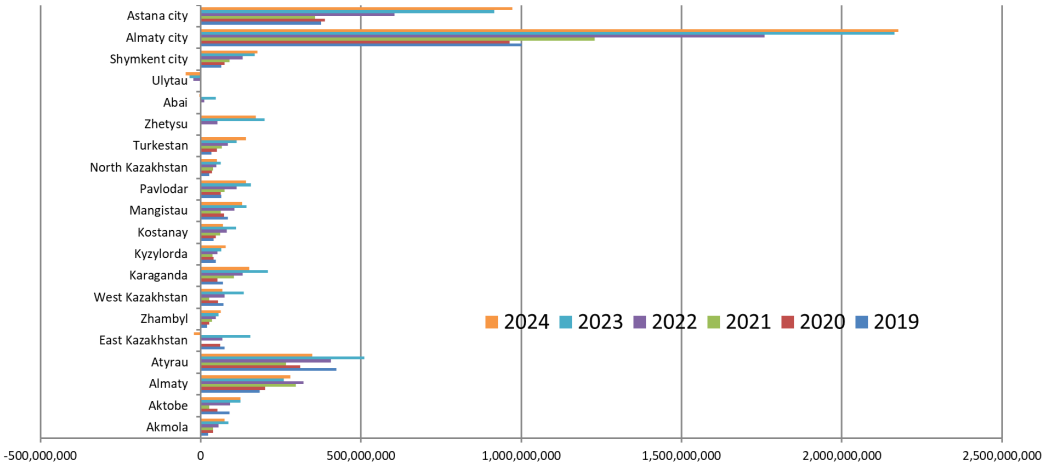


Fig.3 - Dynamics of VAT revenues to the republican budget of the republic's constituent entities in 2019-2023, thousand tenge

Note: compiled by the authors

There is a trend toward increased VAT revenues in the budget system (which, given the unchanged tax rates, correlates well with the growth in consumption by the population due to rising prices). Figure 3 shows VAT revenues by budget classification codes from "105101" to "105116" inclusive [16].

Excise tax revenues from excisable goods to the republican budget vary significantly across regions, demonstrating a high concentration of revenues in certain regions and cities of republican significance. The highest values are observed in the Atyrau region, where revenues significantly exceed those of other regions in all years, which is probably due to the concentration of the oil and gas industry. High levels of revenue are also characteristic of Almaty, Astana, and the Mangistau region, where steady growth can be seen from year to year.

Most other regions show relatively low tax revenues, but moderate growth can also be seen there, especially in the Karaganda, Akmola, Pavlodar, and East Kazakhstan regions. The different trends are not related to the consumption of excisable goods by the population, but to the territorial location of businesses whose goods (mainly alcohol and tobacco products) are subject to excise taxation. Nevertheless, in 2024, almost all regions will see an increase in revenues compared to previous years, reflecting the overall trend of growth in the tax base.

The analysis of the resource base for tax regulation of the domestic household sector in terms of taxation is not related to potential or actual entrepreneurial activity. The determination of the potential and actual number of taxpayers raises certain issues, since individuals have tax capacity (i.e., the ability to have tax rights and bear tax obligations) from birth. Consequently, the entire population of the country is potential taxpayers. In reality, however, those individuals who have a taxable object – income, property – become taxpayers, and the tax authorities keep records of the number of taxpayers in terms of taxes. Thus, the potential number of taxpayers

is the total population of Kazakhstan, while the actual number varies for each direct tax. Indirect taxes are paid by all individuals, since in a market economy it is impossible to live without entering into (personally or through representatives - legal and authorized) monetary and material exchange relations, i.e., without purchasing goods, works, and services.

According to data for 2024, the population of Kazakhstan (the potential number of taxpayers) was about 9.7 million people, of which 63% (6.1 million people) were urban residents and 37% (3.6 million people) were rural residents. At the same time, 76% of the working-age population aged 15 and above in 2024 was employed, and 24% of the population was self-employed. At the end of 2024, the largest number of Kazakhstani citizens were employed in the service sector (62.9% of all employed persons), the smallest number were employed in agriculture (only 9.3% of employed persons), and 27.8% were employed in industry [17].

In the most general terms, the structure of Kazakhstan' s population by income, according to data from the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan, is characterized by a predominance of the population with incomes of 256,000 tenge/month, with the smallest number (4.03%) earning up to 47,000 tenge/month (Figure 4).

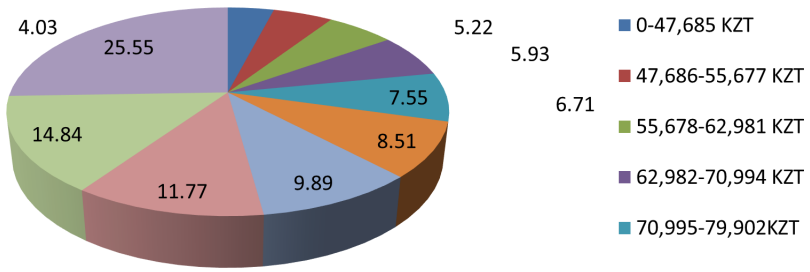


Fig.4 - Income distribution by 10% population groups
Note: compiled by the authors

The current resource base of tax relations of individuals by region in Kazakhstan (Table 1) is characterized by the following features:

Table 1 - Indicators of the resource base of tax relations of individuals by region in Kazakhstan

Region / area	Population, million people			Average per capita cash income	To local (regional) budgets of Kazakhstan's constituent entities, thousand tenge			Republican budget (VAT on goods sold in Kazakhstan)
	Econo-mically active	Emp-loyed	IE (self-employed)		PIT	Transport tax on individuals	Property tax on individuals	
Total for the Republic	9682380	9233828	2213679	210840	2213223059	95073209	19859134	2267018144
Abai	306551	292231	112578	182647	43116728	2349620	115158	-25905752
Akmola	422745	403771	105 020	190666	63156968	3342234	355603	44825849
Aktobe	483640	460959	78 576	184934	81344861	3524789	885514	38110486

Almaty	753824	718525	220 541	144226	106032426	8297866	435900	128823730
Atyrau	369964	351993	50 731	336743	155804752	2646698	691815	251616996
East Kazakhstan	385756	368032	67563	224625	72166368	3843257	321620	-115908026
Zhambyl	572030	544665	182281	141853	53166797	4605435	467273	38306399
Zhetisu	311475	296405	79074	141318	30953587	2984268	200104	25040653
West Kazakhstan	354286	337283	89371	193094	64597997	2285310	527708	1040821
Karaganda	575570	552089	67564	232251	119216623	5432972	671190	49624438
Kyzylorda	350954	334208	222548	150358	40387274	2436325	207793	65832711
Kostanay	463919	442714	113390	204853	72274399	3034383	331428	33803674
Mangistau	367053	348757	40422	243627	106229811	4482791	418627	91562764
Pavlodar	405054	385838	59461	223731	78155898	2954480	396833	61193645
North Kazakhstan	288221	275333	68780	202941	37444221	2280126	201804	24922718
Turkestan	849992	809375	374035	113566	67599205	5607273	413675	96043824
Ulytau	100687	96599	10002	284793	38601767	29826	1146236	-33261198
Shymkent city	468719	446299	147563	141625	71991747	5556809	2627634	95425575
Almaty city	1134959	1082982	129115	338663	600959288	18293411	5553138	891542015
Astana city	716981	685770	579818	296337	310022345	9968 927	5006491	504376824
Note: the table is based on the source 15,16								

According to Table 1, Almaty is the leader in all indicators considered – total population, working-age population, employed population, average per capita income, and income tax, vehicle tax on individuals, and VAT revenues. The newly formed regions of Ulytau and Zhetisu are the outsiders in all indicators.

According to data on the structure of the population by income group, the main taxpayers in terms of personal income tax and indirect taxes are undoubtedly families belonging to the group with an income of 256,000 tenge per month per family member (more than 25.55% of the total population in Kazakhstan).

The structure of Kazakhstani expenditures is characterized by a predominance of expenditures on the purchase of goods and payment for services (in 2024, these expenditures amounted to almost 91.8%), while the least amount of funds in 2023 was spent on paying taxes - only 0.2% of all income (Table 2).

Over the past six years, the structure of household expenditures has remained unchanged (Table 2). Kazakhstani citizens spend the most (49-54%) on food, with the remainder (23-26%) spent on non-food items.

Calculations show that, on average, about 92% of Kazakhstani citizens' budgets go toward purchasing goods and paying for services. It is these expenditures that contain the indirect tax component. This means that it is possible to calculate how much conditional taxes are paid by the average Kazakhstani citizen. In tax theory, the terms "tax burden" and "tax load" are used for such

situations.

This high concentration of expenditures on goods and services (over 90%) aligns with the findings of Bachas et al. (2024), who argue that in developing economies, consumption taxes represent the most significant fiscal interface between the state and households. Such a structure implies that the population' s tax burden is primarily driven by consumption rather than direct income, reinforcing the importance of modeling indirect tax incidence accurately [11].

Table 2 - Structure of household cash expenditures in Kazakhstan for 2019–2024, %

	Cash income - total	Including					
		Consumer spending	Of which			Tax payments	Other expenses
			Food products	Non-food products	Paid services		
2019	100	92,8	49,9	23,7	19,2	0,3	6,9
2020	100	92,8	54,3	23,8	14,7	0,3	6,9
2021	100	93,3	52,9	24,8	15,6	0,2	6,5
2022	100	92,7	50,8	25,4	16,5	0,2	7,1
2023	100	91,9	50,8	24,0	17,1	0,2	7,9
2024	100	91,8	50,0	24,0	17,8	0,2	8,0
Note: the table is based on the source 17,18							

According to the authors, the tax burden on households (consumers of goods, works, and services) can be calculated as follows:

$$ATB = \sum DT + \sum IT$$

$$RTB = \frac{ATB}{Income}$$

where ATB is the absolute tax burden (taxes paid by households). This indicator includes the amounts of direct taxes (DT) and indirect taxes (IT) (the burden of which is actually borne by individuals);

RTB - relative tax burden - is the ratio of the absolute tax burden to household income (or, in other words, the share of tax payments in an individual' s income).

Based on the proposed formulas, two options for calculating the tax burden on households can be considered.

The first option is from the perspective of the government (tax authorities):

$\sum DT$ - the amount of direct taxes collected by budgets at all levels from a given territory;

$\sum IT$ - the amount of indirect taxes collected by budgets at all levels from a given territory.

The second option is from the perspective of the household:

$\sum DT_1$ - the amount of direct taxes paid by households;

$\sum IT_2$ - the amount of indirect taxes paid by households when purchasing goods, works, and services [6].

The logic of the calculations is based on the fact that at the first stage (when disposable income is formed), gross income is reduced by the amount of income tax (in this case, by the amount of personal income tax withheld by the employer, who is the tax agent). There are two possible scenarios here: personal income tax is levied on the income of a tax resident or on the income of a tax non-resident. In the first case, the tax rate will be 10%, and in the second, 20%. We will not consider tax deductions

due to their insignificant multiplier effect.

Next comes the stage of spending disposable income, i.e., the income remaining to the population after taxation. As mentioned earlier, consumption currently accounts for about 90% of all income in Kazakhstan. Given that the consumption of goods and services by the population is subject to indirect taxation, which increases the price of goods, it can be assumed that the share of indirect taxes paid by the population will be proportional to the tax rate. However, without data on the structure of household consumption broken down by taxable groups of goods, we must proceed from the average estimated rates of indirect taxes included in the price of goods. Let us assume that the estimated average VAT rate is 12%. It is not yet possible to calculate the share of excise taxes and import duties in the total amount of household consumption expenditure, so we will not take them into account.

Thus, we obtain:

1) The amount of income tax for different groups of taxpayers is as follows:

$$\sum DT_r = \frac{0,1 \cdot TI}{1,1}; \quad \sum DT_{nr} = \frac{0,2 \cdot TI}{1,2};$$

where $\sum DT_r$ — amount of direct taxes for tax residents; TI — taxable income; $\sum DT_{nr}$ — amount of direct taxes for non-residents.

2)

$$\sum IT = 0,8 \cdot I_{AT} \cdot 0,12; \quad I_{AT} = TI - T_i,$$

where I_{AT} is income after taxation, T_i — income tax.

Therefore, indirect tax amounts can be calculated using the following formulas:

$$\sum IT_r = \frac{0,8(TI - 0,1 \cdot TI)}{1,13}; \quad \sum IT_{nr} = 0,8 \left(TI - \frac{0,2 \cdot TI}{1,3} \right) \cdot 0,12.$$

3) ATB consists of:

$$ATB_r = \frac{0,1 \cdot TI}{1,1} + 0,8 \cdot I_{AT} \cdot 0,12 = \frac{0,1 \cdot TI}{1,1} + 0,8 \left(TI - \frac{0,1 \cdot TI}{1,1} \right) 0,12;$$

$$ATB_{nr} = \frac{0,2 \cdot TI}{1,2} + 0,8 \cdot I_{AT} \cdot 0,12 = \frac{0,2 \cdot TI}{1,2} + 0,8 \left(TI - \frac{0,2 \cdot TI}{1,2} \right) 0,12.$$

If we take the average per capita income of the population as the taxable income, we can calculate the absolute and relative tax burden for tax residents and non-residents of the Republic of Kazakhstan. The results of the calculations are presented in Tables 3 and 4. As the calculations show, the tax burden differs from the perspective of the state and individual taxpayers. The highest tax burden is on residents of Almaty (79.6%), and the lowest is in the Ulytau region (3.3%). This indicates a significant difference in the consumption of goods and services by the population of these regions.

The stark regional disparities in tax burden-reaching 79.6% in Almaty compared to 3.3% in Ulytau -necessitate a more nuanced approach to fiscal monitoring. This correlates with the ' environmental scarcity' and resource-based tax models proposed by Li Hong (2019) [12]. Much like the regional ecological footprints studied by Li, Kazakhstan's industrial regions (e.g., Atyrau and Mangistau) show high indirect tax potential that requires a specialized compensation system to balance regional social development with fiscal extraction.

Calculations show that the tax burden on tax residents and non-residents differs in the following areas:

- the tax burden on income tax is higher for non-residents, while the tax burden on indirect taxes is higher for residents;

- overall, the tax burden (both absolute and relative) is higher for non-residents and lower for residents.

In their average calculations (for the average taxpayer), the authors used an average estimated personal income tax rate of (20 + 10) / 2 = 15%.

Table 3 - Tax burden on households (from government perspective)

Regions	Direct taxes, thousand tenge		Indirect taxes, thousand tenge	Remuneration, thousand tenge	Absolute tax burden, thousand tenge	Relative tax burden, %
	PIT	Transport tax	VAT			
Akmola	57 696 793	2 698 159	86 183 319	540 558 392,1	120 723 275	22,33
Aktobe	71 801 508	2 524 931	124 880 322	738 017 212,6	161 742 664	21,92
Almaty	85 030 922	6 953 927	259 907 517	581 733 120,0	273 920 111	47,09
Atyrau	176 724 848	2 105 293	510 816 901	1 513 836 076,4	536 401 972	35,43
East Kazakhstan	63 550 133	3 130 117	154 404 721	671 679 073,3	174 763 555	26,02
Zhambyl	46 482 259	3 556 980	56 586 304	560 033 372,9	89 649 652	16,01
West Kazakhstan	60 446 743	1 783 768	134 302 619	529 979 578,0	156 242 344	29,48
Karaganda	100 657 785	4 464 760	208 881 980	1 055 964 178,3	251 339 931	23,80
Kyzylorda	34 223 426	2 060 722	64 274 062	559 412 725,4	81 275 991	14,53
Kostanay	62 045 659	2 429 879	110 444 310	615 444 480,0	141 786 555	23,04
Mangistau	95 760 861	3 592 700	143 378 655	1 004 617 916,4	199 718 620	19,88
Pavlodar	67 868 655	2 415 002	156 664 009	729 197 218,0	179 948 463	24,68
North Kazakhstan	33 665 852	1 785 494	63 242 077	342 072 696,0	79 720 800	23,31
Turkestan	59 251 623	4 587 864	112 122 541	804 988 149,2	142 325 266	17,68
Zhetysu	25 930 316	2 624 607	199 383 808	320 360 450,6	168 123 589	52,48
Abai	35 508 593	1 863 386	46 628 382	432 616 630,1	70 011 846	16,18
Ulytau	35 167 663	903 658	-34 306 175	363 962 348,2	12 056 999	3,31

Shymkent city	55 307 321	4 736 210	168 298 785	574 604 184,0	177 852 681	30,95
Almaty city	550 653 936	14 727 956	2 164 042 653	2 611 728 011,3	2 080 211 749	79,65
Astana city	274 609 956	7 876 752	916 571 353	1 802 515 527,5	924 086 655	51,27
Note: the table was compiled by the authors based on source [16]						

Table 4 - Tax burden on households (from the household perspective)

Tax-payer status	Average per capita income, tenge/month per person	Income tax, tenge / month per person	Income after tax, tenge/month per person	Disposable income, tenge/month per person	Consum-ption tax, tenge	Absolute tax burden, thousand tenge	Relative tax burden, %
Tax resident	210 840	21 084	189 756	170 780	20 493,6	41 577,6	19,7
Tax non-resident	210 840	42 168	168 672	151 804	18 216,5	60 384,5	28,6
Averade taxpayer	210 840	52 710	179 214	161 292	19 710,1	50 981,1	24,2
Note: the table was compiled by the authors based on source [16]							

The calculated higher burden on non-residents reflects a fiscal strategy that prioritizes immediate revenue collection from mobile labor resources. This phenomenon is discussed by Benzarti and Carloni (2019), who emphasize that the benefits of tax structures are rarely distributed evenly across all demographic groups. In the Kazakhstani context, the discrepancy between resident and non-resident burdens underscores the need for a tax policy that better balances fiscal goals with the need to attract international human capital [13].

Table 5 - Key Analytical Indicators of the Household Tax Burden in Kazakhstan

Indicator	Value / Result
Maximum relative tax burden (by region)	Almaty city (79.65%)
Minimum relative tax burden (by region)	Ulytau region (3.31%)
Share of expenditures on goods and services	91.8% – 92.8% (Base for indirect taxes)
Tax burden on non-residents	28.6% (vs. 19.7% for residents)
Note: Compiled by the authors based on modeling results	

The empirical data presented in Table 5 illustrates the profound structural and regional imbalances within Kazakhstan’ s tax system. The transition from a descriptive approach to analytical modeling allows for a deeper understanding of the ”hidden” mechanisms of tax regulation:

Evidence of Regional Tax Polarity: The staggering difference between the relative tax burden in Almaty (79.65%) and the Ulytau region (3.31%) reflects a high concentration of tax capacity in urban centers and a significant deficit in the tax resource base of newly formed regions. This confirms the hypothesis that uniform national monitoring tools are insufficient for such a heterogeneous fiscal landscape.

Confirmation of Hidden Regressivity: The fact that household expenditures on goods and services remain consistently high (91.8% – 92.8%) proves that the population acts as the primary de facto payer of indirect taxes. Since these taxes (VAT and excises) are not adjusted for income levels, they create a regressive effect where the relative burden is higher for low-income groups.

Analysis of Residency Impact: The calculated burden on non-residents (28.6%) versus residents (19.7%) reveals that the current tax policy is primarily revenue-driven in its treatment of foreign labor, which may create barriers to international human capital mobility.

These findings move beyond standard statistical reporting by quantifying the actual tax incidence. By linking regional disparities to consumption structures, the study provides a scientifically grounded basis for the proposed methodological modernization of the state' s fiscal monitoring system.

Conclusion. This study provides a comprehensive analytical assessment of the tax regulation system within the household sector of the Republic of Kazakhstan. The results confirm the initial hypothesis regarding the existence of profound regional and structural imbalances that remain obscured by aggregated national statistical averages. By transitioning from a purely descriptive narrative to analytical modeling, this research has identified several critical issues that necessitate immediate methodological and policy intervention.

Firstly, the identified colossal disparity in the relative tax burden - ranging from a peak of 79.65% in Almaty to a mere 3.31% in the Ulytau region - indicates that the current tax framework fails to account for the actual geography of consumption and the concentration of financial flows. Such high variability suggests that the application of uniform tax monitoring tools across the entire national territory is inefficient and fails to capture the true fiscal capacity of diverse regions. This research demonstrates that establishing a fair system for distributing the fiscal burden is impossible without considering the regional specificity of the resource base and the environmental "footprint" of industrial zones.

Secondly, the analysis of household expenditure structures confirmed that Kazakhstani households allocate up to 92.8% of their income toward goods and services. This effectively positions the population as the primary bearer of indirect taxes, such as VAT and excises. In the absence of a progressive income tax scale, this creates a "hidden regressivity" effect, where low-income groups bear a proportionally higher burden through their daily consumption. This finding aligns with the global discourse provided by Bachas et al. (2024) and Li Hong (2019), who emphasize the vulnerability of households in resource-dependent economies to consumption-based taxation.

Thirdly, the differentiation of the tax burden by residency status - 28.6% for non-residents versus 19.7% for residents - demonstrates that fiscal policy regarding foreign citizens remains primarily revenue-driven rather than regulatory. This disparity creates additional barriers to attracting high-quality international human capital and necessitates a revision of tax deduction mechanisms to foster a more competitive labor market.

Based on these findings, we recommend that state planning systems integrate a "full tax incidence" accounting methodology. This approach must move beyond direct payments to include the calculated share of indirect taxes relative to the consumer baskets of various social groups. Furthermore, the digitalization of monitoring through electronic invoicing should be leveraged to form a detailed database of household behavior, allowing for more accurate, adaptive, and socially oriented tax regulation in Kazakhstan.

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