

Tax Salience and Household Consumption in China: A Re-examination Based on the Nature of Taxation

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Abstract

The concept of tax salience—the extent to which a tax's visibility influences consumer behavior—has attracted increasing attention in behavioral economics. This study re-examines tax salience within the institutional context of China's distinctive tax structure. Using panel data from 31 provinces spanning 2015 to 2020 and applying a fixed-effects model, we assess the impact of value-added tax (VAT), consumption tax, and individual income tax on per capita household consumption expenditure. The empirical results reveal a nuanced pattern: VAT and consumption tax are significantly and positively associated with consumption, whereas individual income tax exerts a significant negative effect. Notably, the influence of tax salience is found to be secondary to the intrinsic economic attributes of the taxes themselves. Taxes embedded in prices—such as VAT and excise taxes—tend to elevate expenditures, especially on inelastic necessities, due to price increases. In contrast, taxes that directly reduce disposable income—such as individual income tax—curtail consumption capacity. The study argues that for most consumers, decision-making is guided primarily by final prices and available income, with the specific tax component often overlooked. These findings challenge the prevailing emphasis on tax salience as an independent determinant and contribute to a more nuanced understanding of tax policy design, particularly in the context of developing economies such as China.

Keywords: tax salience; household consumption; tax policy; panel data analysis; indirect taxation; price elasticity

Evidence for Practice

- VAT exerts the strongest and most consistent influence on household consumption among all tax types analyzed, suggesting that tax policies targeting essential goods should prioritize rate reduction over visibility enhancement.

- The insignificant standalone effects of Consumption Tax and Individual Income Tax imply that their influence is more pronounced when assessed within the broader tax system, highlighting the need for integrated fiscal design.
- Tax Salience does not operate as an independent behavioral driver in the Chinese context; rather, its effects are mediated by price inelasticity and the structural embedding of taxes in final prices.
- Policymakers should focus on protecting and expanding disposable income—especially for low- and middle-income households—by adjusting income tax thresholds and minimizing indirect taxes on necessities.
- Reforms aimed at boosting domestic consumption should complement tax design with welfare policies, including targeted subsidies or essential goods pricing mechanisms, to maximize impact and equity.

In economic theory, investment, consumption, and exports are widely recognized as the primary engines of GDP growth. Among these, consumption—being the core component of final demand—plays a more pivotal role in driving sustained economic expansion than either investment or exports. Despite its strategic importance, China’s consumption rate remains comparatively low relative to that of developed economies. In response to the economic slowdown intensified by the COVID-19 pandemic, the “14th Five-Year Plan” re-emphasized the expansion of domestic demand, underscoring the dual objectives of stimulating investment and boosting household consumption. Against a backdrop of industrial overcapacity and the maturation of infrastructure development, invigorating consumer demand has become increasingly urgent.

Among the multitude of factors that shape household consumption behavior, taxation stands out as particularly influential. Prior research suggests that taxation directly affects consumer awareness and willingness to spend (Baye and Black 2012; Gelardi 2013; Alm and El-Ganainy 2013; Einav et al. 2014; Olivola and Sussman 2015; Levine-Schayowitz 2017). In the Chinese context, however, the complexity of tax system design and generally low levels of tax awareness among consumers contribute to wide disparities in tax perception. Consequently, the behavioral impact of taxation on consumption is often underappreciated. For the average consumer, taxes such as the value-added tax (VAT) and excise taxes are embedded in the final price of goods, rendering the tax component largely invisible. Accordingly, household consumption tends to respond more directly to changes in retail prices than to the explicit burden of taxation.

This study examines the influence of taxation on consumption behavior through the lens of tax salience—a concept rooted in behavioral economics that posits a tax’s visibility influences consumer responsiveness. Existing literature suggests that low-salience taxes tend to produce limited behavioral effects, whereas high-salience taxes elicit more pronounced responses (Goldin 2012, 2015; Hayashi et al. 2013; Chang 2020; Ishida and Nakazono 2022).

Reassessing the notion of tax salience from the perspective of fundamental economic principles may yield new analytical insights. First, consumer goods vary by price elasticity: while demand for inelastic goods remains relatively stable amid price changes, elastic goods are more sensitive to price fluctuations. Given that taxes such as VAT and excise tax are incorporated into commodity prices, one might assume a uniform impact across goods categories—an assumption that contradicts empirical observations. Second, tax systems are contextually embedded, with jurisdictions designing tax structures that reflect local economic and policy conditions. Some economies impose taxes on inelastic goods, while others exempt them, highlighting the need for context-specific tax policy analysis.

Building on these considerations, this study posits that tax salience may not always be the principal determinant of household consumption behavior. Regardless of visibility, the tax burden is ultimately transmitted through the final price and its impact on disposable income—factors that consumers primarily consider in their purchasing decisions. In this sense, it is the economic nature of taxation, rather than its psychological salience, that exerts a dominant influence on consumption patterns. This perspective stands in contrast to some strands of the behavioral literature. Nevertheless, the concept of tax salience remains analytically valuable for elucidating the channels through which taxation affects consumption, and for informing tax policy design. Although empirical studies in this domain remain limited, their conclusions frequently align with those of traditional economic analyses. As such, tax salience should be viewed as a heuristic device for exploring tax-consumption linkages, rather than as an isolated behavioral driver.

This study seeks to investigate the extent to which tax salience independently influences household consumption. Given the lack of direct metrics for salience, we operationalize the concept by distinguishing between taxes included in prices (e.g., VAT, excise tax) and those excluded (e.g., individual income tax). Using panel data from 31 Chinese provinces between 2015 and 2020, we employ a fixed-effects model to estimate the impacts of different tax types on per capita household consumption. The findings suggest that both tax-inclusive and tax-exclusive instruments significantly affect consumption, but in ways that reflect the structural attributes of the tax itself. We argue that tax salience is more accurately understood as an inherent feature of tax design rather than as an independent variable. This interpretation enhances our understanding of taxation's real effects and offers practical implications for tax reform and policy innovation, particularly in emerging economies.

Literature Review

Tax Salience

Tax salience, as defined by Varela (2016), is a relatively recent concept in economic research that emphasizes the manner in which taxes are presented and perceived, and how this presentation influences behavioral responses. The core premise is that individuals are more likely to alter their consumption behavior when a tax is highly visible or salient.

Rather than reacting solely to the magnitude of a tax liability, consumers respond to the mode of tax disclosure and the mechanism of payment. This concept reflects the integration of behavioral insights into the study of taxation.

A seminal study by Chetty, Looney, and Kroft (2009) demonstrated that low tax visibility leads consumers to underreact to sales taxes, resulting in weaker price sensitivity compared to equivalent price increases. Importantly, the study found that this effect is not driven by ignorance or confusion; most consumers were able to identify taxable items and estimate tax rates accurately. Instead, the lack of tax disclosure at the point of sale—such as shelf price tags—led to incomplete integration of tax information into purchase decisions.

In the case of income tax, however, consumers are generally well-informed. They can clearly distinguish between pre-tax and after-tax income and are typically aware of how their income tax is calculated. This suggests that income tax is characterized by high salience, with consumers factoring it into their financial planning and consumption decisions. In high-salience contexts, price elasticity of demand may increase, potentially leading to reduced consumption.

Conversely, taxes such as VAT or excise taxes are embedded within product prices and not itemized at the point of purchase. Consumers seldom inquire about the structure or rate of VAT when shopping, and consequently, often overlook its presence. As a result, consumption decisions tend to be less responsive to these taxes. Low salience thus implies that the demand elasticity for taxed goods remains largely unchanged, diminishing the behavioral impact of such taxes on household consumption.

The Relationship Between Taxes, Tax Salience, and Consumption

The literature on the relationship between taxation and consumption broadly follows two analytical approaches. The first focuses on the impact of tax reforms or reductions on consumption, while the second directly examines the effects of various tax instruments on household expenditure.

Representative of the first approach, Marvão (2011), Agarwal (2013), and Adiego (2015) have explored how tax cuts influence consumer behavior. Marvão employed a VAR model on Portuguese data (1977–2004), finding that a 1% tax reduction led to a 0.63% increase in household consumption. Agarwal used transaction-level data in Singapore and a Difference-in-Differences (DID) methodology, observing that each \$10 increase in post-tax income led to an \$8 rise in consumption. Adiego's analysis of Spain's 2015 personal income tax reform found that reduced tax burdens fostered redistribution and helped narrow poverty gaps, thereby stimulating consumption—especially among low-income households.

The second line of research analyzes the direct effects of tax types. Alm (2013) used panel data from EU countries (1961–2000) to assess how income and consumption taxes affect household saving and spending, concluding that

income taxes tend to encourage consumption at the expense of savings. Macek (2014), drawing on OECD data (2000–2011), found that higher income tax burdens suppress consumption and recommended shifting to indirect taxation to bolster disposable income. YILDIZ (2016) emphasized that different tax instruments (income tax, VAT, excise tax) have distinct effects on private consumption and should be designed accordingly. Falbe et al. (2016) assessed the introduction of a sugar-sweetened beverage (SSB) tax in Berkeley, California, finding a 21% drop in SSB consumption and a 63% increase in water consumption—highlighting the tax's behavioral effectiveness.

Research specifically addressing tax salience includes Chetty et al. (2009), Ruffle and Feldman (2012), Goldin and Homonoff (2013), Finkelstein (2009), and Perkins (2014). Chetty et al.'s experimental findings revealed that shelf price tags displaying tax-inclusive prices led to an 8% decline in demand. In another case, increases in alcohol taxes had a stronger impact when reflected in posted prices rather than applied at checkout. Ruffle and Feldman found that consumers purchased significantly more cigarettes under low-salience tax conditions. Goldin and Homonoff demonstrated that excise and sales taxes have differing impacts across income groups, with low-income consumers more sensitive to both high- and low-salience taxes. Finkelstein, examining toll collection under electronic systems, found toll revenues rose by 20–40% after the introduction of E-ZPass, attributing the change to reduced salience. Perkins (2014) further argued that consumers base their decisions on shelf prices when taxes are not immediately visible, leading to under-adjustment in demand.

In China, some researchers have sought to assess the salience-consumption nexus through survey experiments that distinguish between tax-inclusive and tax-exclusive pricing formats. However, the reliability of such experiments remains debatable. Theoretically, under standard demand models (e.g., $Q = a - bP + cY$), a rational consumer maximizes utility based on affordability and utility, regardless of tax visibility. For example, in choosing between a pre-tax Coca-Cola at ¥6 and a Pepsi at ¥4.80, both subject to the same excise tax, a consumer's decision is more likely influenced by income and price preferences than by salience per se.

Cross-national comparisons also underscore systemic differences. The U.S. largely relies on sales taxes, which are often excluded from shelf prices, whereas China applies VAT and excise taxes, usually embedded in final prices. Moreover, essential goods like agricultural products are tax-exempt in many U.S. states but subject to a 13% VAT in China. Given their price inelasticity, demand for such necessities remains relatively unaffected by tax salience.

Scholarly focus on highly elastic goods—such as tobacco, alcohol, and road tolls—has yielded valuable insights, but these goods are not representative of daily consumption patterns. While taxes can influence prices, whether tax salience independently affects price perception or demand remains an open and underexplored question.

In the Chinese context, recent literature has begun to explore the unique behavioral consequences of its tax regime. Liu (2022) emphasized the role of the consumption tax in promoting common prosperity and called for reforms to enhance its redistributive effects. Yang (2022) compared VAT rates internationally to contextualize China's tax policy choices.

Government sources, including the 14th Five-Year Plan (2021–2025) and annual reports from the Ministry of Finance, have outlined strategies to expand domestic demand and adjust tax structures to stimulate household consumption. These domestic contributions underscore the importance of embedding tax salience analysis within China’s institutional and economic realities.

China’s Tax System

The structure and evolution of China’s tax system are closely aligned with the country’s overarching economic development objectives and social policy agenda. These priorities are articulated in major strategic documents such as the *14th Five-Year Plan for National Economic and Social Development* and the annual Work Reports issued by the Ministry of Finance. Within this framework, taxation is positioned as a key policy instrument for promoting equitable income distribution, stimulating domestic consumption, and advancing the goal of common prosperity. The subsections below provide an overview of three major categories of taxes that are most directly relevant to household consumption, contextualized within China’s broader fiscal and institutional landscape.

Value-Added Tax (VAT)

Value-Added Tax (VAT) is levied on entities and individuals engaged in the sale or importation of goods, as well as in the provision of services, labor services, intangible assets, or immovable property. For general VAT taxpayers, the tax liability is determined by the credit-invoice mechanism—specifically, by deducting input VAT (paid on purchases) from output VAT (charged on sales). This system ensures that VAT is collected incrementally at each stage of production and distribution without cascading effects. The scope of taxable items and their corresponding statutory rates are summarized in Table 1.

Consumption Tax

Consumption Tax is imposed on entities and individuals that produce, process, or import designated consumer goods within the territory of China, as stipulated in the *Interim Regulations of the People’s Republic of China on Consumption Tax*. In addition, other units and individuals authorized by the State Council to sell such goods are also subject to this tax. The tax is typically levied at the production, importation, or sales stage, depending on the specific classification of the goods. The list of taxable items and their corresponding rates is provided in Table 2.

Individual Income Tax (IIT)

Pursuant to the *Implementing Regulations of the Individual Income Tax Law of the People's Republic of China*, an individual is deemed a **resident taxpayer** if they have a domicile in China, or if they have resided in China for 183 days or more within a given tax year without having a domicile. Resident individuals are subject to Individual Income Tax (IIT) on their worldwide income. Conversely, **non-resident taxpayers**—those without a domicile who reside in China for less than 183 days in a tax year—are taxed only on income derived from sources within China.

Taxable income under the IIT system includes the following nine categories:

1. Income from wages and salaries
2. Remuneration for personal services
3. Author's remuneration
4. Royalties
5. Business income
6. Interest, dividends, and bonuses
7. Rental income from property
8. Income from the transfer of property
9. Incidental income

Among these, categories 1 through 4 constitute comprehensive income and are subject to a progressive tax rate ranging from 3% to 45%. Category 5, business income, is taxed separately under a progressive rate schedule from 5% to 35%. Categories 6 through 9 are generally taxed at a flat rate of 20%, unless otherwise stipulated by specific provisions.

The detailed IIT tax brackets are presented in Table 3.

Empirical Analysis

Analytical Methodology

Contemporary research largely identifies income as the primary determinant of household consumption. However, in addition to income, other structural and policy-related variables—such as taxation, public expenditure on social welfare, and income inequality—also exert measurable influence on consumption behavior.

In *The General Theory of Employment, Interest and Money*, Keynes asserted that “aggregate consumption is a function of aggregate income.” Accordingly, income levels directly shape consumption expenditures and, by extension, household consumption patterns. Nevertheless, it is essential to consider income distribution disparities, as both income and consumption levels vary considerably across income groups and geographic regions. Thus, analyzing aggregate income alone may yield an incomplete understanding of household consumption behavior. To address this, the present study employs per capita disposable income as a more nuanced measure of household financial capacity.

Another critical factor affecting consumption behavior is the price level of goods and services. In general, price increases tend to suppress consumption, while price reductions may stimulate it. Given the existence of regional variations in prices across China, a standardized price indicator is necessary. The Retail Price Index (RPI) is selected for this purpose, as it reflects average price changes in consumer goods across a broad spectrum of retail transactions.

The labor market also plays a vital role. While the employment rate positively affects consumption, its inverse—the unemployment rate—has a negative impact. Rising unemployment reduces disposable income and increases economic uncertainty, thereby dampening consumption. Psychologically, employed individuals typically exhibit a higher propensity to consume, which in turn elevates overall household consumption.

From a structural perspective, urbanization serves as an important proxy for regional economic development and consumption upgrading. First, rural-to-urban migration often leads to a shift in household consumption structures, reflecting higher consumption intensity. Second, urban households typically earn significantly higher incomes than rural ones, further influencing consumption behavior. For these reasons, the urbanization rate is included as a key control variable.

To assess the impact of taxation on household consumption expenditure, this study incorporates three explanatory variables representing the tax burdens of Value-Added Tax (VAT), Consumption Tax, and Individual Income Tax (IIT). These are analyzed alongside four control variables: per capita disposable income, retail price index, unemployment rate, and urbanization rate. Each control variable is selected based on its theoretical relevance and empirical significance in influencing consumption behavior.

For clarity and reproducibility, detailed definitions and measurement approaches for all variables are provided. The analysis utilizes panel data from 31 Chinese provinces covering the period 2015–2020, with data primarily sourced from the *China Statistical Yearbook* and the *China Tax Yearbook*. All monetary variables—such as tax revenues, consumption expenditure, and disposable income—are reported in nominal RMB, without inflation adjustment. The inclusion of the retail price index as a control variable adequately accounts for price level fluctuations.

This study seeks to empirically evaluate the effects of VAT, Consumption Tax, and Individual Income Tax on household consumption. Definitions, variable constructions, and descriptive statistics are summarized in Table 4 below.

Model Design and Results

The empirical model employed in this study is designed to assess the relationship between different forms of taxation and household consumption expenditure. In line with prior literature (Baye and Black 2012; Gelardi 2013; Alm and El-Ganainy 2013; Einav et al. 2014), the findings confirm that Value-Added Tax (VAT), Consumption Tax, and Individual Income Tax (IIT) exert measurable and differentiated effects on consumption behavior. These effects merit interpretation through key economic concepts such as tax incidence, price elasticity, and income effects (Chetty et al. 2009; Alm 2013).

Model (1) indicates that per capita VAT and per capita Consumption Tax are both positively and significantly associated with household consumption expenditure, with coefficients of 0.44 and 0.79, respectively. In contrast, per capita Individual Income Tax demonstrates a significantly negative association, with a coefficient of -1.04 . Interpreted in economic terms, a one-RMB increase in per capita VAT and Consumption Tax corresponds to a 0.44% and 0.79% increase in consumption expenditure, respectively, whereas a one-RMB increase in IIT is associated with a 1.04% decline.

The positive coefficients for VAT and Consumption Tax align with the theory of tax incidence and the characteristics of the goods they typically burden. Both taxes are indirect and embedded in the prices of goods. When these taxes increase, final consumer prices rise. Importantly, in the Chinese tax system, Consumption Tax is levied on a range of goods, including both luxuries and necessities with low price elasticity (e.g., fuel), while VAT applies to widely consumed essential goods such as food, clothing, and agricultural products. For such inelastic goods, the quantity demanded tends to remain stable despite price increases. Thus, as the tax burden is passed on to consumers, nominal consumption expenditure rises even when real consumption remains constant (Chetty et al. 2009). This mechanism explains the observed positive relationships.

In contrast, the significantly negative effect of Individual Income Tax reflects a classic income effect. As a direct tax, IIT reduces disposable income and, consequently, diminishes households' consumption capacity—affecting both basic and discretionary spending (Alm 2013).

Model (2) isolates VAT and reports a coefficient of 0.25, which remains positive and statistically significant, reinforcing the findings from Model (1). Models (3) and (4) examine Consumption Tax and IIT independently. While the coefficients remain directionally consistent with prior models, they are statistically insignificant when considered in isolation. These results suggest that the cumulative effects of multiple taxes, as they interact within the broader fiscal system, are more pronounced than the effects of individual tax instruments examined separately.

With respect to the control variables, several expected relationships are confirmed:

- Per capita disposable income is positively and significantly associated with consumption expenditure, consistent with Keynesian consumption theory.
- Retail Price Index also shows a positive association, indicating that rising price levels increase nominal consumption expenditures, even when the consumption bundle remains constant.
- Unemployment rate exhibits a significantly negative relationship, reflecting the adverse effects of income loss and heightened uncertainty on consumption behavior.
- Urbanization level is positively correlated with consumption, capturing the impact of higher income levels and broader consumption opportunities available in urban areas relative to rural regions.

These findings collectively underscore the importance of both direct and indirect tax instruments, as well as structural socioeconomic factors, in shaping household consumption patterns in China.

Conclusion

This study has investigated the impact of three key tax instruments—Value-Added Tax (VAT), Consumption Tax, and Individual Income Tax—on household consumption expenditure in China. The empirical findings reveal that VAT exerts a statistically significant and consistent influence on consumption, while the effects of Consumption Tax and Individual Income Tax are not significant when examined in isolation. This suggests that the behavioral impact of these latter two taxes is most salient when considered within the context of the broader tax structure. Among the three, VAT demonstrates the strongest and most robust relationship with consumption, underscoring the need to critically reassess its coverage and distributional implications.

In China, VAT is levied at a standard rate of 13% on general goods and a reduced rate of 9% on essential commodities such as grain, water, and natural gas. This tax structure indicates that VAT predominantly targets goods with relatively low price elasticity of demand, meaning that consumption remains stable despite price changes. Yet, the empirical significance of VAT's impact—despite its low visibility—raises important questions about the mechanisms through which taxes influence behavior. The findings imply that tax saliency may not function as an independent behavioral determinant in the Chinese context; rather, its influence appears mediated by the economic characteristics of the taxed goods and the structural embedding of taxes in final prices.

Although treating tax saliency as a standalone analytical concept yields theoretical insights—particularly within behavioral public finance—it should be understood, from the consumer's perspective, as an inherent attribute of a tax, not an independent force. Consumers ultimately respond to the total cost of a good, as determined by the equation: $Price + Tax = Total\ Payment$. Overemphasizing tax saliency may therefore risk misrepresenting actual consumption behavior.

Consistent with the principle of tax incidence, the burden of all taxes is ultimately borne by consumers, regardless of their visibility.

Nevertheless, the academic discourse on tax saliency remains active and unresolved. This study does not seek to discount its analytical value; rather, it highlights its limited practical saliency in contexts where taxes are embedded in prices and goods are inelastic. As such, tax saliency may be better understood as a modulating factor rather than a primary driver of consumption decisions. Importantly, the insights derived from this study carry significant policy implications for tax reform in developing economies.

From a normative perspective, the ultimate objective of tax policy should be to protect and enhance household welfare, particularly for vulnerable populations. For example, as low-income households spend a disproportionately large share of their income on essential goods, lowering VAT rates on these items can preserve their consumption capacity. Similarly, increasing the progressivity of the Individual Income Tax—such as by raising the exemption threshold or adjusting marginal rates—can support the consumption levels of middle- and low-income groups while reducing income inequality.

In sum, while tax saliency offers a useful conceptual lens, its practical impact on consumption is secondary to the structural and economic characteristics of the tax system. Future tax reforms in China and comparable economies should thus prioritize enhancing disposable income and ensuring equitable tax burdens, alongside refinements in tax design. Beyond adjustments in statutory rates, policy innovations such as providing essential goods at subsidized prices or implementing targeted transfer schemes may yield more substantial gains in consumption and equity than visibility-based tax interventions.

Tables and Figures

[Table 1 Value-Added Tax (VAT)]

<i>Industries</i>	<i>Applicable Tax Rate</i>
Sales or importation of goods	13%
Sales or importation of necessity goods (such as agricultural products, water and gas, etc.)	9%
Provision of repairs, replacement and processing services	13%
Tangible movable property leasing services	13%

Transportation services, postal services, basic telecommunications services, construction services, immovable property leasing services, sales of immovable properties, transfer of land use right	9%
Value-added telecommunications services, financial services, modern services (except for leasing service), consumer services, sales of intangible properties (except for land use right)	6%
Exportation of goods;	0%
Exportation of repair, replacement and processing services;	
International transportation service and spacecraft transportation services;	
Exported services that are completely consumed outside China, including:	
• Research and development services	
• Energy performance contracting services	
• Design services	
• Production and distribution services for radio, film and television programs	
• Software services	
• Circuit design and testing services	
• Information system services	
• Process management services	
• Offshore outsourcing services	
• Transfer of technology	

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[Table 2 Consumption Tax]

<i>Industries</i>	<i>Applicable Tax Rate</i>
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I. Tobacco	
1. Cigarettes	
(1) Class A Cigarettes	56% + 0.003 ¥/per piece
(2) Class B Cigarettes	36% + 0.003 ¥/per piece
(3) Wholesale	11% + 0.005 ¥/per piece
2. Cigars	36%
3. Cut Tobacco	30%
II. Alcohol	
1. White Spirit	20% + 0.5 ¥/500g (or 500ml)
2. Yellow Wine	240 ¥/ton
3. Beer	
(1) Class A Beer	250 ¥/ton
(2) Class B Beer	220 ¥/ton
4. Other Alcoholic Drinks	10%
III. Cosmetics	15%
IV. Precious Jewelry and Precious Jade and Stones	
1. Gold and Silver Jewelry, Platinum Jewelry, Diamonds and Diamond Products	5%
2. Other Precious Jewelry and Jade and Stones	10%
V. Firecrackers and Fireworks	15%
VI. Refined Oil	
1. Gasoline	1.52 ¥/liter
2. Diesel	1.2 ¥/liter
3. Aviation Kerosene	1.2 ¥/liter
4. Naphtha	1.52 ¥/liter
5. Solvent Oil	1.52 ¥/liter
6. Lubricating Oil	1.52 ¥/liter
7. Fuel Oil	1.2 ¥/liter
VII. Motorcycles	
1. Cylinder capacity $\leq$ 250 ml	3%
2. Cylinder capacity > 250 ml	10%
VIII. Passenger Cars	
1. Passenger Vehicles	
(1) Cylinder capacity $\leq$ 1.0L	1%
(2) 1.0L < Cylinder capacity $\leq$ 1.5L	3%
(3) 1.5L < Cylinder capacity $\leq$ 2.0L	5%
(4) 2.0L < Cylinder capacity $\leq$ 2.5L	9%
(5) 2.5L < Cylinder capacity $\leq$ 3.0L	12%
(6) 3.0L < Cylinder capacity $\leq$ 4.0L	25%

(7) Cylinder capacity > 4.0L	40%
2. Medium and Light-duty Commercial Passenger Vehicles	5%
3. Ultra-Luxury Passenger Cars	10%

(Retail price $\geq$ 1.3 million yuan (excluding VAT))

IX. Golf Equipment and Equipment	10%
X. High-End Watches	20%
XI. Yachts	10%
XII. Wooden Disposable Chopsticks	5%
XIII. Solid Wood Flooring	5%
XIV. Coatings	4%
XV. Batteries	4%

<Interim Regulations of the People's Republic of China on Consumption Tax>

[Table 3 Individual income tax]

<i>Individual income tax rates for comprehensive income</i>	
<i>Annual comprehensive taxable income* (RMB)</i>	<i>Tax Rate</i>
0 to 36,000	3%
Over 36,000 to 144,000	10%
Over 144,000 to 300,000	20%
Over 300,000 to 420,000	25%
Over 420,000 to 660,000	30%
Over 660,000 to 960,000	35%
Over 960,000	40%
<i>Non-resident Individuals</i>	
<i>Taxable income per month or transaction* (RMB)</i>	<i>Tax Rate</i>
0 to 3,000	3%
Over 3,000 to 12,000	10%
Over 12,000 to 25,000	20%
Over 25,000 to 35,000	25%
Over 35,000 to 55,000	30%
Over 55,000 to 80,000	35%
Over 80,000	45%

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[Table 4 basic statistical analysis]

Var	Obs	Mean	Min	Max
<i>Per capita consumption expenditure</i>	186	18989.01	8245.80	45605.10
Total household consumption expenditure divided by the year-end population of each province.				
<i>Per capita VAT burden</i>	186	5136.19	1058.23	33994.56
Total Value-Added Tax revenue collected in each province divided by the year-end population.				
<i>Per capita consumption tax burden</i>	186	771.20	0.12	4316.71
Total Consumption Tax revenue collected in each province divided by the year-end population.				
<i>Per capita individual income tax burden</i>	186	968.93	159.85	8322.26
Total Individual Income Tax revenue collected in each province divided by the year-end population.				
<i>Per capita disposable income</i>	186	27087.54	12254.30	72232.40
Total disposable income of households divided by the year-end population.				
<i>Retail Price Index</i>	186	101.18	98.10	103.20
A macroeconomic measure reflecting price changes in retail commodities, with the prior year as the base period (prior year = 100).				
<i>Unemployment rate</i>	186	3.17%	1.30%	4.60%
The proportion of the urban registered unemployed population to the total urban population.				
<i>Urbanization rate</i>	186	60.37%	28.87%	89.30%
The proportion of the urban population to the total year-end population.				

[Table 5 Model Specification]

$Y_{i,t} = \beta_0 + \beta_1 Tax_{i,t} + \beta_2 x_{i,t} + \mu_{i,t} + \epsilon_{i,t}$		
<i>Dependent Var</i>	<i>Independent Var</i>	<i>Control Var</i>
$(Y_{i,t})$	$(Tax_{i,t})$	$(x_{i,t})$
<i>Per capita consumption expenditure</i>	<i>Per capita VAT burden</i>	<i>Per capita disposable income</i>
	<i>Per capita consumption tax burden</i>	<i>Retail Price Index</i>
	<i>Per capita individual income tax burden</i>	<i>Unemployment rate</i>
		<i>Urbanization rate</i>

[Table 5 Result]

(1)	(2)	(3)	(4)
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<i>Per capita VAT burden</i>	0.44*** (7677.93)	0.25*** (0.05)	-	-
<i>Per capita consumption tax burden</i>	0.79*** (0.29)	-	0.54 (0.32)	-
<i>Per capita individual income tax burden</i>	-1.04*** (0.24)	-	-	0.06 (0.21)
<i>Per capita disposable income</i>	0.31*** (0.02)	0.30*** (0.02)	0.40*** (0.02)	0.38*** (0.02)
<i>Retail Price Index</i>	288.76*** (82.43)	298.68*** (87.81)	387.60*** (91.30)	390.72*** (93.18)
<i>Unemployment rate</i>	-50690*** (15632)	-56211*** (16594)	-69743*** (17505)	-68311*** (17639)
<i>Urbanization rate</i>	178.59*** (39.02)	224.59*** (38.85)	124.33*** (41.71)	155.50*** (40.42)
<i>C</i>	-29955*** (7677)	-32714.63*** (8136)	-37132*** (8626)	-38442*** (8686)
<i>Adjusted R²</i>	0.993	0.992	0.991	0.990

Notes:

1. Model (1) employs VAT, Consumption Tax, and Income Tax as explanatory variables to examine the collective impact of these three taxes on consumption expenditure.

2. Models (2), (3), and (4) introduce VAT, Consumption Tax, and Income Tax individually to investigate the effect of each single tax on consumption expenditure.

3. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Conflict of Interest

The authors declare no conflict of interest.

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