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# Can the Fall of Saving Rates Increase Chinese Urban and Rural Residents' Demand?

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**Abstract:** The rise of China's national saving rate reflects increases in the saving rates of residents (RSR), enterprises (ESR) and the government (GSR). Among these rates, the RSR plays the key role. This paper constructs a social accounting matrix for the consumption of China's urban and rural residents and develops a recursive dynamic CGE model based on a prototype from the World Bank. The model is used to analyze several scenarios where shocks alter the three types of saving rates and thereby affect the consumption demand of China's urban and rural residents. This analysis leads to five major conclusions. First, changes in RSR and ESR have larger impacts on consumption demand than changes in GSR. Declines in RSR and GSR lead to increased consumption demand, but the fall of ESR does not have similar effects. Second, decreases in RSR and GSR, as well as increases in ESR, facilitate upgrading of consumption structure by both urban and rural residents. Third, rural residents are more sensitive to changes in RSR and GSR than urban residents. Therefore, increases of government consumption (which lower GSR) will help expand consumption of rural residents. Fourth, lowering ESR can stimulate housing demand in the short run, but this will reduce consumption demand in the long run because incomes of residents will fall as a result of declines in the investment of enterprises. Urban residents are more affected by changes in ESR than rural residents but low-income urban households and high-income rural households are both sensitive to change of ESR. Fifth, in the short run, demand for transportation and communication, education and recreation, and especially housing, is sensitive to changes in RSR and GSR. However, in the long run, RSR and GSR have larger effects on the demand for education and recreation and transportation and communication.

**Key words:** Saving rates, shock analysis, residential consumption, China, dynamic CGE model

**JEL Classification:** C68, E21, E27, H31, P36

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## **I. Introduction**

China has pursued a national policy aiming at promoting consumption since 1998, but the results have not been as desired. China's economic growth suffers from serious structural imbalances, overdependence on exports and investment, and a low consumption rate. According to Kuijs (2006), the imbalance has its roots in high saving rates and the increasing current account surplus because savings grows faster than investment. By the end of 2006, China had a foreign exchange reserves worth US\$ 1,066.3 billion, the world's largest<sup>1</sup>. As indicated by figure 1, China's final consumption rate has been going down, while the capital formation rate has been rising. As indicated by figure 2, China's domestic outstanding deposits were 1.57 times larger than its GDP in 2005, compared to 75 percent of GDP in 1990. The country's current saving rate and capital formation rate are high when compared to historic averages in China or with other major countries in the world. Tang (2006) from Asian Development Bank held that China should handle the problem from the perspective of savings, i.e. reduce the government savings rate (GSR) and the enterprises' saving rate (ESR) to facilitate expanded consumption rates among residents and realize a balanced economy.

**(Figure 1 China's Final Consumption and Capital Formation: 1978-2005)**

**(Figure 2 Total Deposits to GDP of China: 1990-2005)**

Saving is dual of consumption, so saving rates play an important role in influencing consumption. As shown by Solow (1965), consumption levels vary with saving rates, and consumption can be maximized if the saving rate is equal to the well-known golden saving rate. Further, a country's saving rates can be decomposed into the residents' savings rate (RSR) and the aforementioned ESR and GSR. Residents' savings refer to the part of residents' disposable income that is not spent on consumption. As indicated in figure 3, Chinese urban and rural RSRs are high and a major reason for China's high overall saving rates. The major reason for such high RSRs is uncertainty related to China's economic reforms, which have amplified uncertainty related to employment, medical expenditures, the one-child policy, retirement provisions, and education costs. High RSRs are a natural reaction to such uncertainty (Luo, 2004; Sun, 2001; Kraay, 2000; Long & Zhou, 2000; Horioka & Wang, 2007). In addition, high saving rates are common in eastern culture (Kwack & Lee, 2005; McKenzie, 2006; Modigliani and Cao, 2004). China's individual saving rates have continued at high levels, about 16% of its

GDP, much higher than the USA's 4.85%, Japan's 8.2% and France's 10.8%<sup>2</sup>.

Figure 3 indicates that China's high saving rate also results from the high ESR. ESR was high and stable from 1991 to 2005. According to research by the World Bank, China's enterprises spend their saving on reinvestment<sup>3</sup>. Because dividends are generally small, high ESR results in high proportions of self-funded reinvestment and explains why Chinese enterprises tend to fund investment from their own resources. Considerable increases in profits of state-owned and non-state-owned enterprises is also evidence of strong economic growth, low interest rates, declining unit labor costs, reduced expenditures for worker welfare and increasing wholesale commodity prices. High ESR is also related to the underdeveloped capital market (including stock and bond markets). Since 1994 when China reformed its taxation system, enterprises have retained dividends that should be allocated to state-owned equity, most of which have become enterprises' savings and reinvestment funds<sup>4</sup>. Based on estimates in the *China Financial Yearbook 2005* and data from National Statistical Bureau of China, profit-making state-owned enterprises (exclusive of state-owned financial institutions) made profits in excess of RMB4,000 billion from 1998 to 2005. As state-owned enterprises didn't allot dividends to the state during this period, profits were transformed into owners' equity, as most of the net profits (profits after deduction of contributions to working capital, dividends distributed to overseas shareholders, and worker welfare) were used to fund new investment. For example, China National Petroleum Corporation registered net profits of RMB95.4 billion from 2000 to 2003 (the net profits totaled RMB167.886 billion plus the figure of 2004), while its fixed assets were RMB93.4 billion higher in 2004 than in 2000. State-owned sectors of Chinese Mainland reported a total fixed asset investment of RMB13,100 billion from 1998 to 2004, with an average of RMB1,813.15 billion per year, of which a considerable part was sourced from investment by profit-making state-owned enterprises<sup>5</sup>. High ESR result in a low return on investment and potential overcapacity. Rise of enterprises' savings lead to investment increases, including those in state-owned enterprises<sup>6</sup>. IMF estimates suggest that investment by state-owned enterprises (including state-controlled enterprises) still accounted for 60% of urban fixed assets investment in 2004. In recent years, enterprises' investment has focused on infrastructure, manufacturing (especially electrolytic aluminum, steel, automobile and cement) and real estate. Although China need infrastructure construction, especially in the underdeveloped central and western regions, overinvestment may result in overcapacity and increased bad debts in banks as many enterprises face weak budget constraints and distorted factor prices.

**(Figure 3 Net Amount of Three Savings to GDP: 1991-2005)**

Increases in GSR have also contributed to increases in China's aggregate saving rates. As indicated in figure 3, GSR has risen steadily since 1999. In 2005, China's GSR was 6.98%, compared with 0.03% for France, 1.5% for India, -0.9% for the USA and -2.2% for Japan. High GSR also resulted in high government investment. According to the *China Statistical Yearbook (2006)* from National Statistical Bureau, the Chinese government spent RMB3,393,028 million in 2005, or 18.53% of its GDP. The rise of GSR can be related to two phenomena. On the one hand, government investment accounts for a large portion of government saving as the government spent RMB931,696 million on economic development in 2005. On the other hand, distribution favors the government as fiscal policies prioritize investment over consumption. In short, the high propensity of the government to save is an important factor underlying China's high overall savings.

High saving and investment rates create challenges for China's economy because it must increase returns on investment and divert domestic demand from investment to consumption. Therefore, it is important to study the relationships among various saving rates (RSR, ESR and GSR) and the consumption behavior of Chinese urban and rural residents.

CGE model is doubtlessly the most popular and effective policy analysis tool to analyze external shock on private consumption. For example, Ghosh & Rao (2005) studied the impact of A Canda-U.S. customs union on the two countries' private consumption using a CGE model, finding that consumption will be appreciably increased by the process. Ezaki & Sun (2000) established a dynamic CGE model to analyze the impact of trade liberalization, devaluation of RMB (Chinese yuan) and increase of personal income tax rate on China's private consumption, drawing a conclusion that trade liberalization has position effect on both urban and rural households consumption, devaluation of RMB and increase personal income tax rate would lead both urban and rural households consumption to decrease. Anderson, Huang & Ianchovichina (2004) made use of CGE models and GTAP version 5 to study the shock of China's WTO accession on China's rural residents' income distribution and consumption. The conclusion was that income distribution can be expected to slightly worsen as between farm and non-farm households. The effects of household consumption are uncertain. Most of consumption has gotten negative effects, but some luxurious products, such as beverages and tobacco, autos, gotten positive effects. In addition, the VAR model and neoclassic model are also applied to the problem. For instances, Blanchard & Perotti (2002) used a mixed structural VAR/ event study approach to study the impact of tax and government spending on private consumption. As

shown by the simulation results, private consumption is consistently crowded out by taxation, and crowded in by government spending. With a basic neoclassical model that permits a variety of financial interventions, Baxter & King (1993) studied the impact of permanent and temporary increases in government purchases on private consumption. According to their conclusions, government purchases predict a negative effect on private consumption, and permanent changes in government purchases have induce larger effect than temporary purchases.

The paper chooses a CGE model to study consumption of China's urban and rural residents for the following two reasons:

On the one hand, the CGE model has systematic theory basis. The CGE model has become an important tool for policy analysis as it features "rigorous theoretic linkages, concerted impact mechanism, substitution possibility and non-linear relations, and endogenous pricing and mixed economic mechanism" (Zheng, Fan, 1999; Ginburgh, Keyzer, 1997). The CGE model is good at scenario analysis and shock analysis. In recent 30 years, constructing a large-scale CGE model has come into true thanks to emergence of software with powerful calculation capability such as GAMS, MPSGE, MINOS, GENPACK and GAUSS. The CGE model has become a common policy analysis tool, widely applied in the fields of trade, taxation, energy, environment, economic development and economic growth, etc.

On the other hand, data of China's macroeconomy, especially time series data concerning consumption suffers from accuracy problem. Holz (2004) estimated consumption of China's residents based on officially released data and explanation thereof, finding "Not only do the various official explanations offered between 1997 and 2001 differ from each other, but none allows the researcher to accurately reconstruct household consumption. Furthermore, the relationship between the GDP component household consumption and the underlying data varies from year to year, which suggests that time series comparisons of Chinese GDP may be invalid." The cause for the above-mentioned problem, we think, mainly lies in original statistic omission in addition to institutional factors. Newly-released *China Statistic Yearbook 2006* has revised data from 1993 based on results of China's first economic census conducted in 2004. For example, "the proportion of the agricultural sector declines from 19.5% in 1993 to 13.1% in 2004; the proportion of the industrial sector maintained stable, with the highest of 47.5% in 1996 and 1997 and the lowest of 44.8% in 2002, and; the proportion of the service sector increased from 33.9% in 1993 to 40.7% in 2004."<sup>7</sup> In addition, *China's Input-Output Table of 2002* released in August 2006 have also made some modifications based on the results of China's first economic census (National Economic Accounting Department of National Statistic Bureau of China, 2006).

S. Devarajan of the World Bank proposed three reasons to develop the CGE model from static to dynamic. Firstly, static CGE models contained an analytical inconsistency; Secondly, many of the questions that these models were designed to answer were dynamic questions; Thirdly, static modelers were faced with a dilemma.<sup>8</sup> Currently, intertemporal CGE models can be classified into two categories: recursive models (e.g. van der Mensbrugghe, Roland-Holst, 2004; Dixon, et al, 2003; Lofgren, El-Said, Robinson, 1999) and fully dynamic models (e.g. Schmidt, 1997). Ruocco(1996) compares the two categories. The former maintains the disaggregation of the standard static models but are generally based upon myopic or adaptive expectations, while the latter are based upon the perfect foresight hypothesis and describe the transition path to the new equilibrium point. Since these models require a great computational effort, they usually represent just one productive sector. The paper needs to compare different income groups of China's urban and rural residents in terms of different commodities, therefore a recursive dynamic CGE model based on rational expectation or forecast will be the technical tool for the study.

Establishing CGE models for China is one of the hot fields of research. After more than ten years' efforts, achievements have been made on CGE models special for China such as Zheng & Fan (1999), Li, Zhai, Xu (2000), Zhai, Li, Feng (1997), Ezaki, Sun(2000), Diao, Fan, Zhang (2003), Anderson, Huang, Ianchovichina (2004), Wang, et al.(2004), Thomas, Zhai (2005, 2006). Researchers have made studies on potential impact of policies and measures of China's accession into the WTO, environment, tax reform, trade liberalization, pension insurance on China's economy and society. Most of the models take the recursive dynamic form. In recent years, researchers began to pay much more attention to residents' heterogeneity such as income gap and regional gap, e.g. Anderson, Huang, Ianchovichina(2004), Wang, et al.(2004), Thomas, Zhai(2005, 2006). However most of the literatures skip over private consumption, lacking systematic and in-depth analysis. Especially literatures studying impact on China's residents of different income groups from the perspective of the saving rate are scarce.

The structure of the paper is organized as follows. Part II illustrates the model and data sources of the paper. Short-term and long-term impact of the change of RSR on Chinese urban and rural residents' consumption demand will be given in Part III. Part IV is about short-term and long-term impact of the change of GSR on Chinese urban and rural residents' consumption demand. Part V gives short-term and long-term impact of the change of ESR on Chinese urban and rural residents' consumption demand. Part VI compares impacts of changes of the three types of saving rates on residents' consumption demand. Part VII concludes the paper.

## **II. DRC-CGE Model and Data Sources of Chinese Urban and Rural Residents' Consumption**

The dynamic recursive CGE model in the paper originates from Vietnam CGE prototype developed by van der Mensbrugge & Roland-Holst (2004) and China's multiregional DRC-CGE model developed by Li et al (2005)<sup>9</sup>. The model inherited basic structure of the prototype one:

Firstly, labor markets disaggregated by skill level;

Secondly, a production structure which differentiates the substitutability of unskilled labor on the one hand, and skilled labor and capital on the other hand;

Thirdly, intra-household transfers (e.g. urban to rural), transfers from government, and remittances;

Fourthly, Internal domestic trade and transport margins;

In the end, various potential factor mobility assumptions.

In the model for this paper, we make the following revises to reflect consumption development of Chinese urban and rural residents:

First, we classify Chinese urban and rural residents into the following groups based on their income: lowest-income urban households, low-income urban households, lower-middle-income urban households, middle-income urban households, upper-middle-income urban households, high-income urban households, highest-income urban households, low-income rural households, lower-middle-income rural households, middle-income rural households, upper-middle-income rural households, high-income rural households.

Second, industrial classification standards used in *China Statistic Yearbook* are used for commodity and activity classification. Based on industrial classification of IO tables, commodity and activity accounts are categorized into the following eight sectors: food, clothing, household appliances and services, medicine and medical services, transportation and communication, education and recreation, housing, and miscellaneous.

Third, to incorporate the effect of receipts and expenditures of extra-budget, we add the item into social accounting matrices to reflect revenues and expenditures of government at all levels other than tax.

Fourth, as for exogenous variables such as capital stock, population increasing rate and TFP, we estimate using econometric models with data from *China Economic Census Yearbook 2004*, and *China Statistic Yearbook*, and *China Input-output Table of 2002*, and *The Eleven-fifth Plan of PRC*, Li (2003), Islam, Dai & Sakamoto (2006) et al..



Fifth, as for important parameters in the model, we also estimate using econometric methods with data from *China Economic Census Yearbook 2004* and *China Statistic Yearbook*, and conduct sensitivity analysis to make sensitive test.

### ***II.1 Model structure***

The basic thoughts of Dynamic Recursive CGE model of China (DRC-CGE hereafter) are as follows: simulate the cycle process in the macroeconomic operation, i.e. production incurs income, income produces demand and demand brings about production. All economic agents meet the following behavior assumptions: producers maximize their profits under a certain production technologies; consumers maximize their utility through selecting commodity mixes based on their preferences subject to given income, imported goods and domestic goods maximize their revenues through price transmission mechanism subject to given total output. Factor supply and demand achieves optimized allocation in the process of production. Above-mentioned assumption on behavior optimization are reflected in DRC-CGE models by four equation modules, production, residential consumption, import and export and factor supply, demand and supply modules. In addition to the modules, the model also includes a distribution module to depict macroeconomic operation and a recursive dynamic module to reflect structural change.

(1)Production module. The module is displayed by nested constant elasticity of substitution (CES) production functions, as shown in figure 4. Constant return on scale is assumed in the module. At the first layer, the final output is combination of intermediate input and added value. At the second layer, the aggregate intermediate input is described as demands on intermediate demands on various sectors using Leontief function. The bundle of added value is decomposed into the bundle of labor input and that of capital. At the third layer, the total labor demand is decomposed into three types of labor with different degrees of skills, and the bundle of capital is decomposed into various capital demands. The degrees of substitution among production factors depend on their substitution elasticities and their shares in the production process of a base year.

#### **(Figure 4 Nested Structure of Production in DRC-CGE Model)**

(2)Trade module. Armington assumption is adopted to describe imperfect substitution between imported commodities and domestic commodities. Final consumption is disaggregated into demand for domestic and imported commodities under the principle of cost minimization, while products are allocated among export and domestic markets under the principle of revenue

maximization. Small country assumption is made in the model, i.e. the change of international market price is not influenced by China's export and import. Constant elasticity demand is applied to depict China's export demand, i.e. exponential function of the proportion of international commodity price to the FOB price of China's exported commodity. Figure 5 illustrates total Armington demand and total supply of products.

**(Figure 5 Armington Demand and Supply in DRC-CGE Model)**

(3)Income distribution module. National income produced in the process of production and trade is distributed to three parts: enterprise, residents and government. Income distribution includes primary distribution and secondary distribution. Owners of production factors obtain income based on factor contribution in the production process, which is called the primary distribution. Laborers obtain labor income, capital owners obtain capital income and governments impose indirect tax on productive activities. In the process of income redistribution, parts of enterprises' income are distributed to residents, with the remaining parts as enterprises' savings for investment in expansion and reproduction. The main sources of residential income are factor remuneration, i.e. income from capital and labor. In addition, residents obtain transfer payment and subsidies from the government. Residents gain fixed proportions in enterprises' income and capital gains. Government's revenues include direct tax, residents' income tax, tariffs and indirect tax, with subsidies treated as negative income of the government. The process is depicted as Figure 5 and Figure 6.

**(Figure 6 Income Distribution in DRC-CGE Model)**

**(Figure 7 Government Revenues and Expenditures in DRC-CGE Model)**

(4)Consumption demand module. Residents' demand function is expressed by extended linear expenditure system (ELES). It is deduced via Stone-Geary utility function subject to income budget constraint and minimum consumption of commodities. The model assumes that residents' marginal propensity of consumption doesn't vary with their incomes, which is treated as a fixed ratio of residents' disposable income. Other final demands such as government current account expenditure, investment, demand of stock change are depicted using linear expenditure system (LES), i.e. their demands for commodities determined as fixed ratios of total expenditures. Subject to the constraint of given commodity prices, they are deduced from Cobb-Douglas utility function. The model adopts Armington assumption to describe imperfect

substitution between imported and domestic products. Demand on imported and domestic products are determined based on cost minimization in light of relative price conditions.

(5) Closure module. The module includes supply and demand equilibrium in factor and commodity markets, including labor, capital and import and export markets. The model clears labor markets through exogenizing average salary of labors and endogenizing demand quantity of labor. The model assumes that laborers are perfectly migratory among sectors, while capital are non-migratory among sectors in the short run. Commodities flow within regions of China, imports and exports are cleared via endogenous relative commodity prices. The macroclosure of the model are depicted by three macro identities, i.e. balance between savings and investment, balance between government's revenues and expenditures, and trade balance. The model adopts "neoclassical closure principle"<sup>10</sup>, which means that savings drive investment; fiscal revenues and expenditures are balanced via endogenous governmental savings; international trade balance is achieved via endogenous trade surplus and foreign exchange savings.

The structure of static DRC-CGE model is given in Appendix A.

(6) Recursive dynamic module. The dynamic feature of the model is reflected by the following factors. First, labor salary and capital stock grow year by year; second, TFP increase and technical progress results in productive efficiency; final, the growth of total population leads to exogenous growth of labor supply. The structure of dynamic DRC-CGE model both in theoretical form and GAMS programming form is given in Appendix B.

## ***II.2 Data sources***

(1) Compilation of China's SAM<sup>11</sup>. The DRC-CGE model for Chinese urban and rural residents is calibrated based on China's SAM of 2002. The SAM is compiled based on *China's input-output table of 2002*. It provides a consistent framework for accounting statistical indicators of economic flow, and provides a basic and equilibrium dataset for the CGE model.

**Commodity account.** Commodity account covers total supply and demand of domestic market commodities. From the perspective of income, commodity account registers total demand for domestic commodities, including intermediate demand, final consumption, exports and capital formation.

□ Intermediate input, residential consumption, fixed capital formation, net stock increase are directly from *China's input-output table of 2002*.

□ Governmental consumption is from national fiscal budget and final accounts of 2002 in *China Financial Yearbook 2003*.

□ Self-fund expenditures of public departments (extra-budget expenditures): the item reflects

parts of public expenditures not included in the budgetary system, which is difference between governmental consumption in *China's input-output table of 2002* and governmental budgetary expenditures in □.

□Exports. Export data is directly from *China's input-output table 2002*.

From the perspective of expenditures, they include total output of domestic manufacturers and imports.

□Total output of domestic manufacturers: directly from the sum of total output of industries from China input-output table of 2002.

□Tariffs: from national fiscal budget and final accounts of 2002 in *China Financial Yearbook2003*.

□Imports: directly from China's input-output table.

**Activities account.** Activities account focuses on total input and output of production activities of domestic manufacturers. The row of activities account reflects total output of domestic manufacturers, whose sources are the same as domestic total output in the commodities account.

The column of activities accounts reflects total input of domestic producers, including intermediate input and primary input, of which primary input includes factor input, production tax paid and obtained production subsidies. Their sources are as follows:

①Intermediate input: its source is as the same as intermediate input of commodity account;

□Factor input: it is from data in the third quadrant of China's input-output table of 2002. Labor remuneration is directly from the sum of labor remuneration of sectors; capital gains are the sum of fixed assets depreciation and business surplus in the input-output table.

□Net production tax: In general, net production tax is production tax minus production subsidies. In light of the fact that some production taxes have not been incorporated in the budget, we specially design an item of extra-budget revenues to reflect the phenomena. Therefore, net production taxes include three parts: production tax imposed by the government, production subsidies and extra-budget revenues.

Governmental production tax: sum of all production taxes which are from national fiscal budget and final accounts of 2002 in *China Financial Yearbook2003*. Production subsidies include three parts: grain, cotton and oil subsidies, enterprise loss subsidies and export rebates, all of which are from national fiscal budget and final accounts of 2002 in *China Financial Yearbook2003*.

Extra-budget revenues: difference between net production taxes and the two items mentioned above.

**Labor factor account.** The labor account records input of labor factors and its income distribution. Its row represents receipts of labor factor input, while its column represents the factor's income distribution. The account is the simplest one among all accounts, consisting of only two items. Compensation on employees equals to residents' income from labor input, following the principle of double entry accounting. The data is the sum of compensation on employees of industries extracted from China's input-output table of 2002. They are just two sides of a coin.

**Capital factor account.** Similar with the labor account, the account registers income and its distribution of the capital factor. As mentioned above in depiction of activity account, its row represents income of the capital factor<sup>12</sup>. The income distribution of the capital factor corresponds to the column of the account, including profit allocation to domestic residents and foreign investors, plus profits (inclusive of tax) retained by enterprises. In details, data are sourced from the flow of funds table and the international balance sheet.

Capital income of residents. It represents residents' income from capital gains, i.e. income of the capital factor distributed to domestic residents. The data is from the flow of funds table (physical transaction, 2002) in *China Statistic Yearbook 2005*, consisting of interest, dividend and others of household income from properties.

Investment gains of foreign investors: The item represents income of the capital factor distributed to foreign investors, extracted from investment income of the current account of the international balance sheet 2002 in *China Statistic Yearbook 2003*.

Capital income of enterprises: the item represents retained profits (including tax) after distributing income of the capital factor to domestic residents and foreign investors. Therefore, it is the balance of income of the capital factor minus the two items mentioned above.

**Household account.** The household account registers households' receipts and expenditures. Households' receipts include labor income, transfer payment from enterprises, payment from the government and income from foreign countries.

Transfer payment from the government:

□ Price subsidies: extracted from China's government budget and final account (2002) in *China Financial Yearbook 2003*.

□ In addition to price subsidies, the government subsidizes households in other forms, including pension, relief funds and interest payment (interest accrued on national bonds). The former two are extracted from China's government budget and final account (2002) in *China Financial Yearbook 2003*, the latter is obtained by estimation, i.e. interest paid by the government to households equals to government's total interest payment (exclusive of interest

paid to institutional parties) minus interest paid to foreign parties.

□ The data of interest paid by the government to foreign parties is extracted from the item of interest payment for foreign debts from China's government budget and final account (2002) in *China Financial Yearbook 2003*.

□ Enterprises' transfer payment to households: the item is used to balance the account.

From the perspective of expenditures, households' expenditures include consumption, taxes and savings<sup>13</sup>.

□ Households' consumption: the item is mentioned in commodity account.

□ Individual income tax: the item is extracted from the regional tax collection table (2002) in *China Tax Yearbook 2003*.

□ Households' savings: the item is from total savings of households from the flow of funds table (physical transaction, 2002) in *China Statistic Yearbook 2005*.

**Enterprise account.** The enterprise account also registers enterprises' receipts and expenditures. Enterprises' receipts refer to income after factor distribution or retained profits (including tax).

□ Capital income of enterprises: the item has been mentioned in the capital factor account.

□ Enterprises' expenditures include transfer payment to households and direct tax paid to the government, with enterprises' savings left.

□ Direct tax paid to the government: the item represents income taxes paid by enterprises and other charges in addition to tax. The data of the item is from China's government budget and final account (2002) in *China Financial Yearbook 2003*.

□ Enterprises' savings: the item is used to balance the capital account.

□ Transfer payment from enterprises to households: the item is used to balance the enterprise account.

**Government subsidy account.** The account is only a transitional account, which can be incorporated into the government account. It is separately given for emphasis on subsidies. Its data is extracted from China's government budget and final account (2002) in *China Financial Yearbook 2003*.

**Extra-budget account.** The account depicts receipts and expenditures of extra-budget account. The receipts of the account source from extra-budget income of enterprises, and its expenditures are self-fund consumption of public sectors. The gap between the two is the savings of the account. The former two have been mentioned in the activity account and the commodity account. The savings item is used to balance the account.

**Government account.** The account registers government's receipts and expenditures.

Government's receipts are mainly from taxes, including foreign transfer payment and debt income.

Government's expenditures include government's consumption, subsidies to enterprises and residents and payment to foreign parties, etc. The item of government's savings is used to balance the account.

**Rest of the World account.** The account registers China's economic linkage with the rest of the world. In addition to net savings of foreign countries, other items of the account have been mentioned above. Net savings of foreign countries are used to balance the account.

**Capital account.** The capital account registers total investment and savings. Savings represent balance of all accounts, which have been explained in above-mentioned accounts. Total investment is the sum of fixed capital formation and net increase of inventory, which both have been explained above.

**Inventory change account.** The account can be merged with the capital account. It is separately given to distinguish fixed capital formation from the net change of inventory in total investment.

For the purpose of the study, we further disaggregate commodities, activities, labor, households and production taxes on the basis of China Macrosam 2002. Through data collection and estimation, we obtain Chinese urban and rural households' Microsam of 2002 as shown in Table 1. The households in the Microsam include lowest-income urban households, low-income urban households, lower-middle-income urban households, middle-income urban households, upper-middle-income urban households, high-income urban households, highest-income urban households, low-income rural households, lower-middle-income rural households, middle-income rural households, upper-middle-income rural households, high-income rural households. Commodity and activity accounts are categorized into the following eight sectors: food, clothing, household appliances and services, medicine and medical services, transportation and communication, education and recreation, housing, and miscellaneous. Households' consumption data are disaggregated according to *China Price and Urban Households Statistical Yearbook 2003* and *China Rural Household Yearbook 2003*. The food includes cereal and oil, meat, poultry, eggs and aquatic products, sugar, tobacco, liquor and drinks, cakes, dried and fresh melon and fruit, milk and related products, other food and catering services. Clothing includes dress, clothing materials, shoes, other clothing related articles, and clothing processing expenses. Household appliances and services include durable goods, indoor decorations, beddings, daily groceries, furniture materials, households and services. Medicine and medical services include medical appliances, healthcare equipment, medicines, healthcare

products, medical treatment and others. Transportation and communication includes transportation and communication. Education and recreation includes cultural and recreational articles and services, and education. Housing includes houses, water, electricity and gas, etc. and residential service.

We adopt the method of cross entropy (Robinson et al., 2001) to balance the preliminary Microsam and obtain a balance table.

**(Table 1 Social Accounting Matrices (SAM) Structure of China)**

(2)Forecast of key exogenous variables. Dynamics of the model is driven by four factors: labor growth, capital accumulation, natural resources growth and productivity growth. Therefore, the capital stock, labor growth and productivity growth plays an important role in the dynamic model. Estimation and forecast of the exogenous variables are given as follows.

**Estimation of Chinese time series capital stock.** The perpetual inventory method pioneered by Goldsmith (1951) is prevailing in estimating capital stock. As China has never conducted large-scale assets census, the capital stock in the paper is estimated using a constant price based on the capital stock of a base year. The capital stock can be estimated by the following formula adopting a geometric descending model:

$$K_t = (1 - \delta) K_{t-1} + I_t \quad (1)$$

The capital stock of the base year can be deducted from the following formula:

$$K_0 = I_0 / [g_0 + \delta_0] \quad (2)$$

where  $I_0$  represents investment in the base year,  $\delta_0$  the depreciation rate and  $g_0$  capital growth rate of the base year.

According to Islam, Dai & Sakamoto (2006),  $g_0$  is set at 0.13, which is an average investment growth rate from 1952 to 1957.  $\delta_0$  is set at 0.03 from 1952 to 1957, 0.04 from 1978 to 1992 and 0.05 from 1993 to 2002. Finally we obtain China's capital stock data from 1978 to 2002.

**Estimation and forecast of China's total factor productivity (TFP).** Many scholars have estimated China's TFP. However substantial gaps exist among estimated results due to data sources, forms of production functions, assumption of technical change, estimation methods and selection of input and output deflation factors(Sachs, Woo, 2000). One of the most important reasons lies in problems about data of China's national economic accounts. It comprises of two aspects. One is about trueness of data. Although Chow(1993) held that China's official data is



comparatively true and enough qualified for empirical research, some scholars are suspicious about China's official data. For example, Young(2003) held that local governments may overestimate output and underestimate investment rates and birth rates. On the other hand, whether or not can China's national income data in the MPS system be compatible with those in the SNA system? Furthermore, national income and investment prior to the reform lacks corresponding deflator factors. To avoid above-mentioned problems, the dual method is adopted, which is able to minimize the impact of national income data on estimation. The method was initially proposed by Jorgenson & Griliches (1967), and Islam, Dai & Sakamoto(2006) summarized and developed the method. With reference to Islam, Dai & Sakamoto(2006), the paper estimates China's TFP.

**Estimation of China's population growth rates and labor growth rates.** As of the end of 2005, China's total population reached 1,307.56 million, increased by 7.68 million over the end of 2004, with a rate of natural increase of 5.89%. Urban population reached 562.12 million, accounting for 43.0%; rural population reached 745.44 million, accounting for 57.0%. At present, the reproduction type of Chinese population features by "low birth, low death and low growth". The future 15-25 years is "the population bonus period" which implies abundance labor, low social upbringing ratio, and high saving rates. According to estimation by National Population and Family Planning Commission of China and China Population Information and Research Center, China is to control its total population within 1.37 billion, and the labor-age population are to drop gradually because the decrease of children population slows down and the number of the aged rises dramatically. It is forecast that from 2004 to 2010 the labor-age population will increase by 1.1% annually<sup>14</sup>. DRC-CGE model disaggregates laborers into skilled and unskilled laborers. Therefore, we estimate growth of skilled laborers and unskilled laborers according to national number of employees by industries and national employment distribution of population by sectors in *China Statistic Yearbook*, and forecast the growth rate of skilled and unskilled laborers from 2006 to 2010.

**(Table 2 Forecast of Increasing Rate of Some Key Exogenous Variables)**

(3) Estimation of major elasticity parameters in the model. The DRC-CGE model involves production elasticity (including CES substitution of produced goods into commodities, CES elasticity between ND and VA bundles, CES elasticity between KL and T bundles, CES elasticity between USK and KS, CES elasticity between K and SKL, CES elasticity across unskilled labor, CES elasticity across skilled labor, CES elasticity across different types of land,

and CES elasticity across different types of capital), and demand elasticity (including household income elasticity and other final demand elasticity), and trade elasticity (including first level Armington elasticity, second level Armington elasticity, first level CET elasticity, second level CET elasticity, and export demand elasticity). Parts of elasticity are calibrated by the model, and parts are obtained by reference to other CGE models at home and abroad. Other elasticity are estimated based on data from *China Statistic Yearbook*, *China's Imports and Exports Statistical Yearbook*, *China Customs Statistic Yearbook*, *China Price and Urban Households Statistical Yearbook* and *China Rural Household Yearbook*.

(4) Model calibration and test. The DRC-CGE model is compiled using GAMS software (<http://www.gams.com>). We use China's social accounting matrix of 2002 mentioned above to calibrate the model, and test the model using estimated data of capital stock, labor growth and productivity growth.

Optimal solutions are found in the static model and dynamic model established. The static model has passed the price homogenous test and its Walras value is  $-7.1054 \times E-15$ , while the Walras value of the dynamic model is within the scope of  $\pm 1.00 \times E-7$ .

Values calculated of major economic indicators from the model are within 2% error compared with actual values, such as actual GDP, money supply and inflation rate. Therefore, Chinese urban and rural households' DRC-CGE model is reliable in general. We forecast consumption of Chinese urban and rural household in 2005 in light of the purpose of the paper, as shown in table 3. According to table 3, forecast errors are acceptable. Therefore, the DRC-CGE model established for studying Chinese urban and rural households' consumption can reflect the households' consumption behavior.

### **(Table 3 Error Test of Chinese Urban and Rural Households' DRC-CGE Model)**

### ***II.3 Scenario design***

The static model is based on China's input-output table of 2002. Through setting exogenous variables, the recursive dynamic model from 2003 to 2030 is driven, with the time series Microsam obtained. Thus we get the baseline scenario, as shown in Table 4.

### **(Table 4 Scenarios Design of Changes of Three Types of Saving Rates)**

The research thoughts of the paper are as follows. The short-term shock analysis changes values of exogenous variables such as RSR, GSR and ESR on the basis of the baseline scenario.

New equilibrium solution will be found for the consumption scenario. The static shock analysis changes values of exogenous variables such as RSR, GSR and ESR on the basis of the baseline scenario, and compares the results under new equilibrium with the results under the baseline scenario. The long-term shock analysis is similar with the static shock analysis. All static and dynamic shock process should pass the tests about optimal solutions and Walras error test.

In the middle and long term, China's saving rates are sure to fall. Cai & Wang (1999) forecasted that China's saving rates are to drop to 30% or even low in 2020 or so as the population ages. Chamon and Prasad (2005) had a broadly similar conclusion. They find that in the next decade the possible decline in saving resulting from the aging of the population and the rise in the population share of the elderly is likely to be more than offset by the increase in the share of workers in the latter half of their working life that they find to be particularly high savers. However the saving rates may even go up in the short term due to uncertain factors mentioned above. For example, some Chinese economists considered that China's saving rates may continue to rise in 2007<sup>15</sup>. In light of aforesaid possibilities, we design six scenarios in terms of the three types of savings, as shown in Table 4.

### **III. Analysis of Shock on Changes of RSR on Urban and Residents' Consumption Demand**

#### ***III.1 Shock analysis over a short-term period***

This part utilizes the static CGE model to analyze impact of RSR on consumption demand of urban and rural households. According to the six scenarios in table 4, we obtain the results of shock simulation in table 5 and table 6.

#### **(Table 5 Short-Term Shock Influence of RSR Change on Household's Demand)**

As shown by table 5 and table 6, China's RSR and consumption demand have the following linkage in the short run.

First, in general lowering RSR will lead to rise of households' consumption demand. As households' food consumption is least affected by RSR, lowering RSR will help upgrade households' consumption structure if Engel coefficient acts as a measure for households' consumption structure.

Second, RSR affect residents' demands for housing, transportation and communication, and education and recreation to a larger extent, especially the housing demand. As indicated by table

6, a 10% rise of RSR will lead to an 0.0894% fall of households' demand for housing. In recent years when the price of China's real estate has kept risen, poor consumption credit drives property buyers to increase savings for down payment<sup>16</sup>. In the sense, overheated real estate market in China is partly due to mortgages by households to a large extent. In the short run, the policy will definitely cool the overheated real estate market. In the meanwhile, the change of RSR has a stable impact on households' demands for food, clothing, and medicine and medical service.

Third, China's urban and rural households have similar sensitivity to the change of aggregate RSR. Rural households are more sensitive to the change of RSR. Therefore, lowering RSR and improving social security system will facilitate households' consumption, especially rural households' consumption.

Fourth, households with higher income are more sensitive to RSR. For example, highest income urban households and lowest income rural households will increase their demand for medicine and medical services by 0.044% and 0.0038% respectively responding to a 10% fall of RSR, while highest and lowest rural households will increase their demand for medicine and medical services by 0.0658% and 0.0269% respectively.

**(Table 6 Short-Term Shock Influence of RSR Change on Household's Demand by Income Groups)**

### ***III.2 Shock analysis over a long-term period***

The long-term impact of change of RSR on residents' consumption demand is analyzed for duration from 2005 to 2030. In light of possible change direction and degree of RSR, we also design six scenarios, as shown in table 4. Simulation results are given in Appendix Table A.

Appendix Table A indicates that Chinese RSR and their consumption demand have the following long-term linkage, also as an example in Figure 8.

**(Figure 8 Long-Term Shock Scenario of Ten Percent Fall of RSR on Household's Demand)**

First, in general RSR have distinct impacts on consumption demands of urban and rural households. The impacts on urban households' are weakening, while impacts on rural households are strengthening. The long-term impact of change of RSR on households' consumption structure features variation with time periods and income groups. From 2005 to

2010, the share of food, clothing, household appliances and service, medicine and medical services will decline with a fall of RSR, while that of transportation and communication, education and recreation, and housing ascends, especially housing consumption. From 2015 to 2030, the share of food will decline and that of housing will climb up with a fall of RSR, while that of clothing, household appliances and services, medicine and medical services, transportation and communication, and education and recreation maintain stable and go up slightly. Therefore, in general households give priority to housing demand when their RSR fall and they have more proportion of income spent on consumption. When RSR decline, low income rural households and the lowest income urban households will reduce their consumption share of commodities other than housing, and; the low income urban households will lower their consumption share of commodities other than transportation and communication, and housing. It reflects that when low-income groups increase their consumption capability, their consumption demand will focus on transportation and communication, and housing, totally different with the situation in the short run.

Second, as for urban and rural households' comparison, the change of RSR initially has larger impact on urban households than rural households. However, in the long run rural households are more affected by the change. Therefore insufficient domestic consumption demand, especially slack rural consumption roots in households' high RSR. Creating external environment to lower RSR is significant for expanding rural households' consumption.

Third, as for various income groups, the low income rural households and the lowest income urban households are quite different from other income groups. With RSR increasing, consumption of most of urban and rural households will decline, which will be strengthened over the time. It is because the rise of RSR restricts the part of consumption. But for low income rural households, when RSR rise, their consumption on food, clothing, household appliances and service, medicine and medical services, and transportation and communication will increase slightly from 2008 to 2012, vice versa. As for the lowest income urban households, when RSR increase, their consumption on food, clothing, household appliances and service, medicine and medical services, and transportation and communication will maintain stable and rise slightly from 2010 to 2025. By 2030 the lowest income urban households will witness an overall increase of consumption of food, clothing, household appliances and service, medicine and medical services, transportation and communication, and housing, especially food consumption by the lowest-income urban households. In the meanwhile, the low income urban households tend to increase their food consumption in 2030, which is totally different from consumption of other commodities.

Fourth, the change of RSR affects households' housing consumption most among all commodity consumption in the long term. The change of housing consumption is rather more than that of other commodity consumption. It is the same with the result of the short term, but the change is in the opposite direction. However the impact on housing consumption declines over time. For example, when RSR decrease by 20%, residents' housing consumption demand will increase by 10% in 2005, well above the growth of other commodity consumption. But growth of housing consumption declines to 0.0596%, 0.0467%, 0.0442%, 0.0456% and 0.0470% respectively in 2010, 2015, 2020, 2025 and 2030, a little more than growth of other commodity consumption. The growth of housing consumption in 2030 is even lower than that of education and recreation consumption. Therefore, the credit measures that lift the proportion of down payment in real estate purchase by urban households can only affect households' housing consumption in the short run rather than a long run. The change of RSR also affects transportation and communication, and education and recreation to a larger extent, and the size of the change stabilizes over time. The change of RSR has medium effect on medicine and medical service, household appliances and services, and clothing consumption, but the size of the change tends to increase over time. The change of RSR has the least effect on food consumption, which indicates that in the long run households' food consumption is irrelevant to RSR.

### ***III.3 Summary***

Based on aforesaid analysis on effect of change of RSR on Chinese urban and rural households' consumption, we can draw the following conclusions.

First, lowering RSR is sure to facilitate consumption demand of Chinese urban and rural households. In the meanwhile households' food consumption is less sensitive to change of RSR, so lowering RSR will help upgrade the consumption structure of Chinese urban and rural households.

Second, households' demand for housing is sensitive to change of their RSR. Therefore, recent measures by People's Bank of China that lift the proportion of down payment in real estate purchase aiming at curbing skyrocketing real estate prices will have some impact on cooling overheated real estate market in the short run<sup>17</sup>. In addition, the change of RSR also affects transportation and communication, and education and recreation to a larger extent.

Third, households' sensitivities to change of their RSR depend on urban or rural residence and vary with income groups. High income groups, either urban or rural residence, show higher sensitivities to change of RSR. Rural households are more sensitive to change of RSR.

Fourth, change of RSR has different and separate effects on consumption demand of households from various residence and income groups. Households' consumption demand for food is stable. The change of RSR has medium effect on medicine and medical service, household appliances and services, and clothing consumption in the short run, but the size of the change tends to increase over time.

#### **IV. Analysis of Shock on Changes of GSR on Chinese Urban and Residents' Consumption Demand**

##### ***IV.1 Shock analysis over a short-term period***

This part utilizes the static CGE model to analyze impact of change of GSR on consumption demand of urban and rural households. In light of possible change direction and degree of GSR, we design six scenarios as shown in table 4. The simulation results are shown in table 7 and table 8. The two tables indicate short-term linkages between GSR and consumption demand of Chinese urban and rural households.

##### **(Table 7 Short-Term Shock Influence of GSR Change on Household's Demand)**

First, in general lowering GSR will lead to rise of consumption demand of households. As households' food consumption is least affected by GSR, lowering GSR will help upgrade households' consumption structure if Engle coefficient acts as a measure for households' consumption structure. In the short run, lowering GSR will facilitate increase of households' consumption and upgrade of their consumption structure. As government's savings are from government's revenues, lowering GSR means rise of proportion of government' consumption in the revenues, and will lead to increase of total demands for most of commodities. In the sense, GSR complements RSR, so do government consumption and household consumption. It is the same as the conclusion of Pan et al(2006)<sup>18</sup>. Although China's proactive fiscal policy has not achieved desired outcome in recent years, the study indicates that implementation proactive fiscal policies and expanding government's purchase will help stimulate China's public consumption and promote private consumption. In the sense, increasing government's investment in public goods and creating consumption environment will facilitate expansion of households' consumption demands.

Second, households' housing demand is still the most susceptible to change of GSR in the short run. A 10% rise of GSR will cause a 0.0056% fall of households' housing consumption. In

addition, transportation and communication, and education and recreation are also susceptible to change of GSR. And above-mentioned commodities (services) are directly affected by consumption environment, which further demonstrates the research conclusion that increase of government's public investment and creating good consumption environment will facilitate expansion of households' consumption demand. Households' consumption demand for food, clothing and household appliances and services are less susceptible to GSR.

Third, when comparing urban and rural households, we find that Chinese rural households are more sensitive to change of GSR. Therefore, lowering GSR and increasing government's consumption will facilitate households' consumption, especially rural households' consumption.

Fourth, when comparing various income groups, Chinese urban and rural households is quite different. Rural households with higher income and urban households with lower income are more sensitive to GSR. Among others, the lowest and low income urban households suffer from less consumption demand due to decrease of GSR.

**(Table 8 Short-Term Shock Influence of GSR Change on Household's Demand by Income Groups)**

***IV.2 Shock Analysis over a long-term period***

The long-term impact of change of GSR on households' consumption demand is analyzed for duration from 2005 to 2030. In light of possible change direction and degree of GSR, we also design six scenarios, as shown in table 4. Simulation results are given in Appendix Table B, which shows the following linkage between GSR and Chinese urban and rural households' consumption demand, also as an example of a 10% fall of GSR in Figure 9.

**(Figure 9 Long-Term Shock Scenario of Ten Percent Fall of GSR on Household's Demand)**

First, in general impact of GSR on households' consumption tends to decrease year by year. For example, when GSR drop by 20%, growth of household's consumption demand will reach 0.0050%, 0.0025%, 0.0015%, 0.0011%, 0.0009% and 0.0008% in 2005, 2010, 2015, 2020, 2025 and 2030 respectively. It shows that although GSR can play a role in driving households' consumption in the long run, its function is getting weaker. In addition, lowering GSR will help improve Chinese urban and rural households' consumption structure in general in the long run.

Second, when comparing its effects on various commodities, we find that households



demand for housing are the most sensitive to change of GSR, which, however, plunge over time. For example, change of GSR has much greater effect on housing consumption than other commodities prior to 2010. However the change has larger effect on education and recreation than housing consumption after 2015. For example, when GSR drop by 20%, housing consumption demand will increase by 0.0107% in 2005, well above growth of other commodities, and education and recreation consumption increases 0.0019% in 2015, compared with a 0.0018% rise in households' housing consumption. From 2005 to 2030, GSR have the least effect on households' food consumption among all commodities, and its effects on clothing, household appliances and services, medicine and medical services and transportation and communication are comparable. In addition, GSR has a stable effect on households' demand for food over time.

Third, when comparing urban and rural households' consumption, we find that rural households' consumption demand are more susceptible to GSR, which is the same as the situation in the short run. In the long run, change of GSR has different effects on urban and rural households' consumption demand: lowering GSR has weakening effect on urban households' consumption, while its effect on rural households gets stronger after a gradual decline.

Fourth, when comparing its effects on various income groups, we find that urban and rural households respond differently. The lower income rural households earn, the more sensitive they are to GSR. On the contrary, the higher income urban households earn, the more sensitive they are to GSR. Among others, low income and the lowest income urban households will decrease their consumption demand slightly responding to fall of GSR.

### ***IV.3 Summary***

Based on aforesaid short-term and long-term shock analysis on effect of change of GSR on Chinese urban and rural households' consumption, we can draw the following conclusions.

First, from the perspective of total consumption demand, lowering GSR is sure to facilitate increase of households' consumption in the short run and upgrade their consumption structure. GSR complements RSR to a certain degree. In other words, lowering GSR implies increase of the proportion of government's consumption in the government's revenues, while increase of government's consumption will also lead to increase of households' total demand for commodities. Therefore increasing government's investment in public goods and creating good consumption environment will simulate households' consumption demand.

Second, change of GSR has a large impact on households' demand for housing, transportation and recreation, and education and recreation in the short run, especially housing

demand. In the long run, the change has a larger impact on education and recreation, transportation and recreation, and medicine and medical services than on housing.

Third, Chinese rural households are more sensitive to change of GSR in the long-run. Therefore, lowering GSR and increasing government's consumption will facilitate households' consumption, especially rural households' consumption. In the meanwhile, rural households with lower income are more sensitive to GSR, while urban households with higher income are more sensitive to GSR.

## **V. Analysis of Shock on Changes of ESR on Chinese Urban and Rural Residents' Consumption Demand**

### ***V.1 Shock analysis over a short-term period***

This part utilizes the static CGE model to analyze impact of change of ESR on consumption demand of urban and rural households. In light of possible change direction and degree of ESR, we design six scenarios as shown in table 4. The simulation results are shown in table 9 and table 10. The two tables indicate short-term linkages between ESR and consumption demand of Chinese urban and rural households.

#### **(Table 9 Short-Term Shock Influence of ESR Change on Household's Demand)**

First, in general lowering ESR will lead to decrease of households' demand for all commodities except for housing in the short run. In other words, lowering ESR and increasing dividends can only lead to increase of households' demand for housing over a short-term period. The possible reason is given as follows. According to Appendix A, enterprises' expenditures include enterprises' savings, corporate tax, transfer payment to households and transfer payment to ROW. In the short run when enterprises' income is assumed to be constant, lowering ESR can only be realized by increasing corporate tax, transfer payment to households and transfer payment to ROW. However, it is impossible for Chinese enterprises to increase their transfer payments to ROW in the short run due to the institutional constraints that China's foreign exchange market is not open to the outside world completely. It can only be realized by increasing corporate tax, which is fully supported by the evidence that the state has not participated in dividend allocation of state-owned enterprises since 1994. In the short run increasing corporate tax with enterprises' income unchanged will only result in enterprises' reduction of employees' income or cutting down the number of employees, which will low total

income of residents, and thus will low residents' consumption. The possible reason for increase of housing demand lies in that government spends increased corporate tax on households' housing consumption.

Second, when comparing effects on commodities (services), we find that households' consumption demands for transportation and communication, education and recreation, and clothing are more sensitive to change of ESR, while their demand for food is the least sensitive. Increasing GSR will help upgrade households' consumption structure in the short run if Engel coefficient acts as a measure for households' consumption structure. Vice versa.

Third, when comparing urban and rural households, we find that Chinese urban households are more susceptible to change of ESR, and the lower income of households, the more susceptible. The possible reason is that investment by China's enterprises is concentrated on cities and towns. Lowering ESR directly leads to decrease of enterprises' investment. Obviously lower income urban groups are the most susceptible in light of the low level of domestic industrial structure.

Fourth, when comparing various income groups, we find that high income households' demands for clothing, household appliances and services, and transportation and communication are more sensitive to short-term change of ESR. The higher income households earn, their demand for food is less sensitive to short-term change of ESR. Middle-income households' demand for medicine and medical services is less sensitive to short-term change of ESR, while low income and high income households' demands for medicine and medical services are sensitive. Urban households' demands for education and recreation rise with income, and their sensitivity to ESR experience fall at first and rise later.

**(Table 10 Short-Term Shock Influence of ESR Change on Household's Demand by Income Groups)**

***V.2 Shock analysis over a long-term period***

The long-term impact of change of ESR on households' consumption demand is analyzed using the DRC-CGE model for duration from 2005 to 2030. In light of possible change direction and degree of ESR, we also design six scenarios, as shown in table 4. Simulation results are given in Appendix Table C, which shows the following linkage between ESR and Chinese urban and rural households' consumption demand, also as an example of 10% fall of GSR in Figure 10.

**(Figure10 Long-Term Shock Scenario of Ten Percent Fall of ESR on Household's Demand)**

First, impact of ESR on households' consumption demand gets stronger at first and weaker later in the long run. Lowering ESR will lead to decrease of households' total consumption demand and downgrade of their consumption structure. For example, a 20% decrease in ESR will result in a 0.0621%, 0.0808%, 0.0863%, 0.0845%, 0.0769% and 0.0635% drop in households' consumption in 2005, 2010, 2015, 2020, 2025 and 2030 respectively. It reflects that ESR can play a role in adjusting households' consumption in the long run. In the sense China's current high ESR support urban and rural households' consumption, opposite to Tang (2006) which concluded that lowering ESR could expand households' consumption<sup>19</sup>. The reason may be that lowering ESR will lead to decrease of enterprises' investment and consequently cause decrease of corporate income as most of enterprises' savings are channeled to enterprises' investment. According to Appendix A, enterprises' expenditures include enterprises' savings, corporate tax, transfer payment to households and transfer payment to ROW. Obviously, decrease of enterprises' income will lead to decrease of households' income and decrease of private consumption consequently.

Second, ESR has similar impacts on urban and rural households' consumption demand for commodities (services).

Third, when comparing impact on consumption of urban and rural households, we find that urban households are more sensitive to change of ESR than rural households. The reason may lie in that most of enterprises' savings are channeled into investment<sup>20</sup> which promotes employment and increase of households' income. According to simulation and estimation of the DRC-CGE model, a 10% rise of ESR will lead a 0.001% increase of households' income as a whole, which can be disaggregated into a 0.0018% decrease in income of skilled employees and a 0.0026% rise of unskilled workers. A rise of ESR can't lead to an increase of households' demand for housing. The reason may lie in that China's investment concentrates in cities and towns. Lowering ESR directly leads to decrease of enterprises' investment. Obviously lower income urban groups are the most susceptible in light of the low level of domestic industrial structure.

Fourth, when comparing its effects on various income groups, we find that urban and rural households respond differently. The lower income urban households earn, the more sensitive they are. The higher income urban households earn, the more susceptible they are. The reason is the same as aforesaid. Lowering ESR will lead to decrease of investment by enterprises. Most of

enterprises in China are located in cities and towns. Unskilled workers are mostly from lower income urban households and high income rural households. Fall of enterprises' investment and profits will directly lead to decreasing income of and less consumption the group.

### ***V.3 Summary***

Based on aforesaid short-term and long-term shock analysis on effect of change of ESR on Chinese urban and rural households' consumption, we can draw the following conclusions.

First, Chinese high ESR play an important role in supporting urban and rural households' consumption. Lowering ESR will lead to decrease of households' consumption, which is completely opposite to effects of change of RSR and GSR. In the meanwhile, lowering ESR will help improve Chinese urban and rural residents' consumption structure either in the short run or in the long run.

Second, in the short run lowering ESR can only promote households' housing demand. Low income urban households and high income rural households are susceptible to change of ESR either in the long run or in the short run. Urban households are more susceptible to change of ESR than rural households. In the short run, the lower income households earn, the more susceptible they are. In the long run, however, the lower income urban households earn, the more susceptible they are, while the higher income rural households earn, the more susceptible they are. The reason may lie in the following fact that decrease of ESR will lead to decrease of enterprises' investment. Most of enterprises in China are located in cities and towns. Unskilled workers are mostly from lower income urban households and high income rural households. Fall of enterprises' investment and profits will directly lead to decreasing income and less consumption of the group.

Third, although households have different demands for various commodities (services) in the short run, especially impact of change of ESR on housing is opposite to its impact on other commodities. In the long run, however, ESR has similar impacts on households' consumption demands for various commodities (services).

## **VI. Analysis on Sensitivity of Households' Consumption Demand to RSR, GSR and ESR**

Although change of ESR affects households' consumption in a direction opposite to a direction of an effect of change of RSR and GSR, we can compare sensitivity of households' consumption demand to RSR, GSR and ESR, as shown in table 11 and table 12.

**(Table 11 Sensitive Compare of Short-Term Shock Influence among RSR, GSR and ESR on Household's Demand)**

**(Table 12 Sensitive Compare of Long-Term Shock Influence among RSR, GSR and ESR on Household's Demand)**

First, either in the short run or in the long run, RSR and ESR have a larger impact on households' consumption demand than GSR. However, lowering RSR and GSR will lead to increase of households' consumption demand, while lowering ESR will result in decrease of households' consumption demand except housing demand in the short run. In the short run, RSR has the largest impact on households' consumption. However, in the long run ESR has the largest impact on households' consumption demand.

Second, in the short run households' consumption of housing is the most sensitive to RSR and ESR, and increase of saving rates will lead to increase of households' consumption demand. In the meanwhile, increase of GSR will also result in rise of households' demand for housing. Therefore, in the short run the housing hot results from functions of RSR, GSR and ESR, among which ESR has the largest impact and GSR has the least impact. In addition, households' consumption demand for education and recreation, and clothing in the short run is also sensitive to change of RSR and GSR in direct proportion. Households' demand for transportation and communication is sensitive to change of ESR in inverse proportion.

Third, in the short run, RSR has the largest impact on households' consumption. However, in the long run, ESR, whose impact has opposite direction compared to impacts of RSR and GSR, has the largest impact on households' consumption. Therefore, from the perspective of increasing internal demand, lowering ESR to expand households' consumption is not feasible at the present stage of China.

## **VII. Conclusions**

The rise of Chinese saving rates is related to increased saving by residents, enterprises and the government. The saving rates of residents (RSR) play a key role. Savings of enterprises were more stable but the ESR was also at a high level from 1991 to 2005. In contrast, China's GSR has increased steadily. Based on a Microsam for studying Chinese urban and rural households, we develop a DRC-CGE model. As indicated by the results of simulating the model, the model describes China's macroeconomic characteristics well and can depict critical features of China's macroeconomic development and social transformation.

When performing shock analyses for both the short-term and the long-term period, changes of RSR is seen to have the following effects on household consumption in China's urban and rural areas. First, lowering the RSR leads increased consumption by China's urban and rural households' consumption and facilitates an upgrading of their consumption structures. Second, households' demand for housing is very sensitive to changes in their saving rates. Similarly, households' demand for transportation and communication as well as education and recreation are also sensitive to changes in RSR. Third, high income households are more sensitive to changes in RSR than other households, both in urban or rural areas. However, high income rural households are more sensitive than high income urban households.

Likewise, lowering GSR also increases of household consumption and facilitates upgrading of consumption structure. Increasing government's investment in public goods to reduce GSR and creating good consumption environment will stimulate households' consumption demand. Changes in GSR also have a large impact on households' demand for housing, transportation and recreation, and education and recreation in the short run, especially housing. In the long run, however, changes in GSR have a larger impact on education and recreation, transportation and recreation, and medicine and medical services than on housing. China's rural households are more sensitive to change of GSR than urban households. Lower income rural households are particularly sensitive to changes in GSR, while higher income urban households are relatively sensitive to such changes.

In some contrast, the high level of ESR is an important factor supporting consumption in urban and rural households. Thus lowering ESR tends decrease of household consumption. However, lowering ESR does stimulate improvements in consumption structure for both urban and rural residents in both the short run and in the long run. More specifically, in the short run, housing demand is the only demand component that increases when ESR is lowered but in the long run changes in ESR have similar impacts on all demand components. Low income urban households and high income rural households are particularly sensitive to changes in ESR in both the long run and in the short run. In the short run, lower income households in both urban and rural areas are highly sensitive, but in the long run, lower income urban households and higher income rural households are very sensitive. Urban households are generally more sensitive to changes of ESR than rural households.

By comparing the sensitivity of household demand to changes in the three saving rates, we can draw the following conclusions. Either in the short run or in the long run, changes in RSR and ESR have larger impacts on households' consumption demand than changes in GSR. However, lowering RSR and GSR will increase of households' consumption demand, while

lowering ESR will result in decrease of households' consumption demand for all components except housing in the short run. In the short run, changes in RSR have the largest impact on households' consumption. However, in the long run ESR has the largest impact. This suggests that lowering RSR and maintaining an appropriate ESR would consumption demand in households.

## Notes

1. Data source: Website of the PBOC, <http://www.pbc.gov.cn/diaochatongji/tongjishuju/gofile.asp?file=2006S09.htm>
2. Data source: Liu Wei(2006), Report on China's Economic Growth (2006)- Economic Growth in Opening to Outside, China's Economic Publishing House, pp.248. [刘伟等(2006), 中国经济增长报告(2006)-对外开放中的经济增长, 中国经济出版社, pp.248。]
3. Hofman & Kuijs (2006). A Note on Saving, Investment, and Profits of China's Enterprises. [http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/EASTASIAPACIFICEX/T/CHINAEXTN/0,,contentMDK:21095495~menuPK:50003484~pagePK:2865066~piPK:2865079~theSitePK:318950,00.html#\\_ftnref2](http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/EASTASIAPACIFICEX/T/CHINAEXTN/0,,contentMDK:21095495~menuPK:50003484~pagePK:2865066~piPK:2865079~theSitePK:318950,00.html#_ftnref2).
4. Ton & Lin(2005), through simulation using a CGE model, found that China's taxation reform led to fall of households welfare in the process of redistribution as a result of more proceeds flowing into government departments.
5. Kong, S.G., Does the Return to Investment Ratio Really Steadily Go Up? <http://blog.sina.com.cn/u/4b2c44aa010006dc> [孔善广, 投资回报率是真正节节攀升吗? ]
6. Based on Quarterly Update of China on May 2006 by the World Bank, "The return on capital has increased steadily over time for both the state-owned enterprises (SOEs) and the non-state-owned enterprises (Non-SOEs). The return on equity, measured by the ratio of net profits to owners' equity, has increased from 2 percent in 1998 to 12.7 percent in 2005 for SOEs, and 7.4 percent to 16 percent for non-SOEs."
7. Data source: China's first economic census data from the website of State Statistic Bureau; [http://www.stats.gov.cn/zgjpc/cgfb/t20060307\\_402309437.htm](http://www.stats.gov.cn/zgjpc/cgfb/t20060307_402309437.htm)
8. S. Devarajan, Notes on Dynamics in CGE Models; [http://www.iadb.org/int/Trade/1\\_english/4\\_SpecialInfo/Conference/2002/a\\_Nov601-ImpactsTradeLiberalization/cgedynamics.pdf](http://www.iadb.org/int/Trade/1_english/4_SpecialInfo/Conference/2002/a_Nov601-ImpactsTradeLiberalization/cgedynamics.pdf)
9. Prof. D. Roland-Holst of University of California at Berkeley, Dr. D. van der Mensbrugge and Prof. Li Shantong from the Development Research Center of China's State Council made cooperation in developing a multiregional dynamic recursive CGE model with finance granted by AEAN Fund of the World Bank. ([http://are.berkeley.edu/~dwrh/DRC\\_ASEM\\_Web/](http://are.berkeley.edu/~dwrh/DRC_ASEM_Web/)). The project has witnessed completion of compiling regional SAMs and developing CGE models based on China's national and regional input-output tables of 1997. The authors of the paper participated in developing the CGE models for Jiangsu, Zhejiang and Shanghai.
10. Macroclosure was initially proposed by Sen(1963) in study of income distribution. He



identified over-determinations in macrosystem models. It refers to that the number of equations exceeding that of variables will cause difficult in solving equations. Considerable research has been made on the problem, such as Kilkenny & Robinson(1990), Lysy (1982), Ratts(1982). Lysy(1982) classified closure rules into four types: Keynes closure, Kaldorian closure, Johansen closure and neoclassical closure.

11. For compilation of China's SAM, readers can refer to Li, et al (1996). <http://www.drcnet.com.cn/temp/20051228/hsjz/index4-2.html>. We adopt the framework of Li's work in SAM compilation. In addition, we have also compiled China's regional SAM (Fan, Zheng, 2003), and completed SAMs of Jiangsu, Zhejiang, Shanghai, Guangdong, Liaoning, Shandong and Shanxi province for 2002. In the latter papers, a financial section has been added up to.
12. There are two approaches dealing with income distribution of capital factors in compilation of SAM. One is to directly distribute to the capital factor account. The other is to distribute all factor income to enterprises at the first step, and then redistribute to domestic households, foreign investors, and enterprises in the form of retained earnings. Although the two approaches are different in forms, they reflect the same economic fundamental. The paper adopts the former approach in SAM compilation.
13. Households' saving can also be regarded as some consumption, but expected consumption.
14. New target for China's population: 1.37 billion in 2010, extracted from Strait Urban News of January 8 2006; <http://news.infocom.cn/html/2006-1-8/157449.html>. [中国人口控制新目标: 2010年人口总量 13.7 亿, 海峡都市报, 2006-1-8.]
15. Reporter Li Fangfang and Yao Wei from People's Daily interviewed three experts on China's financial markets: Zhao Xijun from Remin University, Zhang Biqiong from Central University of Finance and Economics and Wang Songqi from Financial Research Center of Chinese Academy of Social Sciences. They all held the view that China's saving rates would go up next year. The news quotes from overseas version of People's Daily on November 3 2006; [http://news.xinhuanet.com/fortune/2006-11/03/content\\_5283280.htm](http://news.xinhuanet.com/fortune/2006-11/03/content_5283280.htm). [中国储蓄率明年仍有可能提高, 人民日报(海外版), 2006年11月3日]
16. According to stipulations of Circular on Proposals about Adjusting Housing Supply Structure and Stabilizing Housing Prices by the Ministry of Construction Reissued by the Office of the State Council (No. OST37), the proportion of down payment for housing mortgage should not be less than 30% from June 1, 2006; <http://www.pbc.gov.cn/detail.asp?col=340&ID=652>. [根据《国务院办公厅转发建设部等部门关于调整住房供应结构稳定住房价格意见的通知》(国办发〔2006〕37号)规定: 从2006年6月1日起, 个人住房按揭贷款首付款比例不得低于30%。]
17. As 16.
18. Luo et al (2006) demonstrated that purchase expenditures by China's government complements households' consumption using time series data and household cross-section data. The conclusion is contrary to Barro(1981), which held that government purchase and household consumption are indivisible in utility function and have substitution relationship, i.e. government spending reduces marginal utility of households' consumption.
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20. As 3.

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**Table 1 Social Accounting Matrices (SAM) Structure of China**

Account		1	2	3	4	5	6	7	8	9	10	11	12	Total
1	Commodity		8×8			8×12			8×1	8×1	8×3	8×1	8×1	
2	Activity	8×8												
3	Factor	Labor	3×8											
4		Capital	1×8											
5	Household			12×3	12×1		12×1	12×1		12×1	12×1			
6	Enterprise				1×1									
7	Government Subsidy		1×8							1×1				
8	Extra-budget		1×8											
9	Government	1×8	3×8			1×12	1×1				1×1	1×1		
10	ROW	1×8			1×1					1×1				
11	Capital					1×12	1×1		1×1	1×1	1×1			
12	Inventory Change											1×1		
Total														

**Table 2 Forecast of Increasing Rate of Some Key Exogenous Variables Unit: %**

Year	GDP	Population	Depreciation Rate*	TFP**	Unskilled Worker	Skilled Worker
1998	7.8	1.317	8.231	0.8	0.6342	0.3658
1999	7.6	1.293	8.160	0.8	0.6151	0.3849
2000	8.4	2.306	8.353	0.8	0.5962	0.4038
2001	8.3	1.189	8.415	1.6	0.5768	0.4232
2002	9.1	0.504	8.248	1.6	0.5534	0.4466
2003	10.0	0.388	8.392	1.6	0.5400	0.4600
2004	10.1	0.589	8.300	2.892	0.5093	0.4907
2005	10.2	0.589	8.300	2.892	0.5002	0.4998
2006	10.0	0.587	8.300	2.892	0.4000	0.6000
2007-2010	9.5	0.587	8.300	2.892	0.4000	0.6000
2011-2020	8.0	0.527	8.300	2.892	0.4000	0.6000
2021-2030	7.5	0.527	8.300	2.892	0.3000	0.7000

Source: Data between 1998 and 2005 are from *China Statistic Yearbook*, Data between 2006 and 2030 are from *The Eleven-fifth Plan of PRC*, Li (2003), Islam, Dai & Sakamoto (2006) et al.

Note: \* Depreciation Rate is Depreciation Rate of fixed capital annually, not increasing rate. \*\* TFP is total factor productivity annually, not increasing rate.

**Table 3 Error Test of Chinese Urban and Rural Households' DRC-CGE Model**

Commodity	Urban Household's Consumption of 2005			Rural Household's Consumption of 2005		
	Real Value (ten thousand RMB)	Value Forecasted (ten thousand RMB)	Error (%)	Real Value (ten thousand RMB)	Value Forecasted (ten thousand RMB)	Error (%)
Food	1162.16	1171.34	0.79	2914.39	2915.85	0.05
Clothing	148.57	149.09	0.35	800.51	801.55	0.13
Household Appliances and Services	111.44	110.27	-1.05	446.52	443.17	-0.75
Medicine and Medical Services	168.09	171.10	1.79	600.85	606.98	1.02
Transportation and Communication	244.98	242.21	-1.13	996.72	996.52	-0.02
Education and Recreation	295.48	294.39	-0.37	1097.46	1101.19	0.34
Housing	370.16	374.27	1.11	808.66	824.27	1.93

Source: The real value comes from *China Price and Urban Households Statistical Yearbook 2006* and *China Rural Household Yearbook 2006*. The value forecasted is calculated by the authors based on DRC-CGE model.

**Table 4 Scenarios Design of Changes of Three Types of Saving Rates**

Scenario	I	II	III	IV	□	□
Changes for RSR	10%	5%	-5%	-10%	-15%	-20%
Changes for GSR	10%	5%	-5%	-10%	-15%	-20%
Changes for ESR	10%	5%	-5%	-10%	-15%	-20%

**Table 5 Short-Term Shock Influence of RSR Change on Household's Demand Unit: %**

Commodity	Baseline (ten thousand RMB)	Proportion	I	II	III	IV	V	VI
Food	18566.39	39.68	-0.0092	-0.0046	0.0047	0.0094	0.0141	0.0189
Clothing	3881.77	8.30	-0.0192	-0.0097	0.0097	0.0196	0.0294	0.0394
Household Appliances and Services	2747.23	5.87	-0.0216	-0.0109	0.0110	0.0220	0.0332	0.0444
Medicine and Medical Services	3114.05	6.66	-0.0198	-0.0100	0.0100	0.0202	0.0304	0.0407
Transportation and Communication	4464.68	9.54	-0.0348	-0.0175	0.0177	0.0355	0.0536	0.0718
Education and Recreation	6516.99	13.93	-0.0303	-0.0152	0.0153	0.0307	0.0462	0.0617
Housing	5825.60	12.50	-0.0895	-0.0448	0.0449	0.0899	0.1350	0.1801

**Note:** Six scenarios are shown in Table 4.

**Source:** Author's calculation based on CGE model.

**Table 6 Short-Term Shock Influence of RSR Change on Household's Demand by Income Groups Unit: %**

Commodity	Baseline (ten thousand RMB)	Proportion	I	II	III	IV	V	VI	Commodity	Baseline (ten thousand RMB)	Proportion	I	II	III	IV	V	VI
low-income rural households	1	880.01	55.88	-0.0009	-0.0005	0.0006	0.0012	0.0028	1	1045.75	44.73	-0.0020	-0.0010	0.0011	0.0023	0.0035	0.0048
	2	88.8	5.64	-0.0016	-0.0009	0.0010	0.0021	0.0048	2	222	9.49	-0.0041	-0.0021	0.0022	0.0046	0.0071	0.0097
	3	60.95	3.87	-0.0033	-0.0017	0.0019	0.0039	0.0083	3	103.77	4.44	-0.0058	-0.0030	0.0031	0.0064	0.0098	0.0133
	4	90.04	5.72	-0.0022	-0.0011	0.0013	0.0027	0.0059	4	161.88	6.92	-0.0046	-0.0024	0.0025	0.0051	0.0079	0.0108
	5	65.35	4.15	-0.0063	-0.0033	0.0035	0.0073	0.0112	5	184.8	7.9	-0.0101	-0.0052	0.0054	0.0111	0.0170	0.0231
	6	152.35	9.67	-0.0027	-0.0014	0.0016	0.0034	0.0075	6	305.1	13.05	-0.0064	-0.0033	0.0035	0.0072	0.0110	0.0150
	7	199.61	12.68	-0.0606	-0.0302	0.0299	0.0596	0.0889	7	254.73	10.89	-0.0616	-0.0307	0.0305	0.0608	0.0909	0.1207
lower-middle-income rural households	1	1074.66	52.41	-0.0044	-0.0022	0.0023	0.0047	0.0096	1	1271.71	42.15	-0.0053	-0.0027	0.0027	0.0055	0.0083	0.0112
	2	116.16	5.66	-0.0067	-0.0034	0.0035	0.0072	0.0148	2	314.46	10.42	-0.0107	-0.0054	0.0055	0.0111	0.0168	0.0226
	3	82.67	4.03	-0.0088	-0.0045	0.0046	0.0093	0.0191	3	162.41	5.38	-0.0127	-0.0064	0.0065	0.0132	0.0200	0.0269
	4	117.17	5.71	-0.0073	-0.0037	0.0038	0.0078	0.0160	4	205.55	6.81	-0.0111	-0.0056	0.0057	0.0116	0.0176	0.0236
	5	105.86	5.16	-0.0146	-0.0074	0.0076	0.0154	0.0317	5	263.77	8.74	-0.0207	-0.0104	0.0107	0.0215	0.0326	0.0438
	6	227.68	11.1	-0.0107	-0.0054	0.0056	0.0114	0.0233	6	413.68	13.71	-0.0166	-0.0084	0.0085	0.0172	0.0260	0.0349
	7	273.45	13.34	-0.0695	-0.0347	0.0345	0.0689	0.1369	7	302.63	10.03	-0.0722	-0.0361	0.0360	0.0720	0.1078	0.1435
middle-income rural households	1	1265.92	49.18	-0.0072	-0.0036	0.0037	0.0074	0.0150	1	1535.3	39.25	-0.0070	-0.0035	0.0035	0.0071	0.0107	0.0144
	2	147.06	5.71	-0.0114	-0.0057	0.0058	0.0118	0.0239	2	409.72	10.47	-0.0152	-0.0077	0.0078	0.0156	0.0236	0.0316
	3	106.05	4.12	-0.0137	-0.0069	0.0070	0.0142	0.0288	3	237.82	6.08	-0.0175	-0.0088	0.0089	0.0179	0.0271	0.0363
	4	141.98	5.52	-0.0120	-0.0060	0.0062	0.0124	0.0188	4	274.61	7.02	-0.0157	-0.0079	0.0080	0.0161	0.0243	0.0326
	5	157.26	6.11	-0.0221	-0.0112	0.0114	0.0230	0.0467	5	362.8	9.28	-0.0280	-0.0141	0.0143	0.0288	0.0435	0.0585
	6	302.45	11.75	-0.0180	-0.0091	0.0092	0.0186	0.0377	6	572.07	14.63	-0.0238	-0.0119	0.0121	0.0243	0.0366	0.0490
	7	382.04	14.84	-0.0777	-0.0389	0.0388	0.0775	0.1546	7	404.07	10.33	-0.0797	-0.0399	0.0399	0.0799	0.1198	0.1597

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Commodity	Baseline (ten thousand RMB)	Proportion	I	II	III	IV	V	VI	Commodity	Baseline (ten thousand RMB)	Proportion	I	II	III	IV	V	VI
upper-middle-in	1	1485.83	45.51	-0.0097	-0.0049	0.0049	0.0099	0.0149	1	1862.83	37.42	-0.0070	-0.0035	0.0036	0.0072	0.0108	0.0145
	2	192.25	5.89	-0.0166	-0.0083	0.0084	0.0169	0.0255	2	528.8	10.62	-0.0166	-0.0083	0.0084	0.0170	0.0256	0.0343
	3	146.03	4.47	-0.0192	-0.0097	0.0098	0.0197	0.0296	3	330.67	6.64	-0.0188	-0.0094	0.0096	0.0193	0.0291	0.0390
	4	182.29	5.58	-0.0172	-0.0087	0.0088	0.0176	0.0265	4	365.94	7.35	-0.0170	-0.0086	0.0087	0.0175	0.0264	0.0353
	5	240.42	7.36	-0.0306	-0.0154	0.0156	0.0314	0.0474	5	515.69	10.36	-0.0302	-0.0152	0.0155	0.0311	0.0470	0.0631
	6	386.21	11.83	-0.0262	-0.0132	0.0133	0.0266	0.0401	6	750.64	15.08	-0.0259	-0.0130	0.0132	0.0264	0.0399	0.0534
	7	526.01	16.11	-0.0866	-0.0434	0.0434	0.0868	0.1303	7	461.34	9.27	-0.0817	-0.0409	0.0410	0.0820	0.1231	0.1642
come rural households	1	2119.25	38.69	-0.0314	-0.0157	0.0156	0.0312	0.0467	1	2274.86	35.55	-0.0119	-0.0060	0.0060	0.0120	0.0180	0.0240
	2	311.23	5.68	-0.0652	-0.0326	0.0325	0.0649	0.0972	2	621.47	9.71	-0.0304	-0.0152	0.0153	0.0306	0.0460	0.0614
	3	263.69	4.81	-0.0698	-0.0349	0.0349	0.0697	0.1045	3	463.18	7.24	-0.0330	-0.0165	0.0166	0.0333	0.0500	0.0669
	4	315.66	5.76	-0.0661	-0.0330	0.0330	0.0658	0.0987	4	471.51	7.37	-0.0309	-0.0155	0.0155	0.0312	0.0468	0.0626
	5	502.93	9.18	-0.1092	-0.0546	0.0546	0.1092	0.1639	5	710.98	11.11	-0.0528	-0.0265	0.0266	0.0535	0.0804	0.1076
	6	652.34	11.91	-0.1020	-0.0509	0.0508	0.1014	0.1519	6	985.48	15.4	-0.0478	-0.0239	0.0240	0.0480	0.0721	0.0963
	7	1102.81	20.14	-0.1702	-0.0857	0.0867	0.1745	0.2631	7	650.37	10.16	-0.1052	-0.0528	0.0532	0.1067	0.1604	0.2145
high-income rural households	1	808.71	47.21	-0.0013	-0.0007	0.0008	0.0016	0.0026	1	2941.56	31.45	-0.0135	-0.0068	0.0068	0.0135	0.0202	0.0270
	2	138.51	8.09	-0.0027	-0.0014	0.0016	0.0032	0.0051	2	791.31	8.46	-0.0435	-0.0217	0.0217	0.0435	0.0652	0.0869
	3	62.18	3.63	-0.0043	-0.0022	0.0024	0.0049	0.0076	3	727.81	7.78	-0.0448	-0.0224	0.0224	0.0448	0.0673	0.0898
	4	118.09	6.89	-0.0032	-0.0017	0.0018	0.0038	0.0059	4	669.33	7.16	-0.0440	-0.0220	0.0220	0.0440	0.0660	0.0880
	5	113.08	6.6	-0.0079	-0.0041	0.0043	0.0089	0.0137	5	1241.74	13.27	-0.0747	-0.0374	0.0374	0.0750	0.1126	0.1503
	6	227.8	13.3	-0.0043	-0.0022	0.0024	0.0051	0.0079	6	1541.19	16.48	-0.0693	-0.0346	0.0346	0.0692	0.1037	0.1382
	7	202.81	11.84	-0.0596	-0.0297	0.0295	0.0588	0.0878	7	1065.73	11.39	-0.1286	-0.0646	0.0652	0.1310	0.1973	0.2640

**Note:** 1. food, 2. clothing, 3. household appliances and services, 4. medicine and medical services, 5. transportation and communication, 6. education and recreation, 7. housing. I-VII as shown in Table 4.

**Sources:** Authors' calculation based on CGE model.

**Table 7 Short-Term Shock Influence of GSR Change on Household's Demand Unit: %**

Commodity	Baseline (ten thousand RMB)	Proportion	I	II	III	IV	V	VI
Food	18566.39	39.68	-0.0013	-0.0007	0.0007	0.0013	0.0020	0.0027
Clothing	3881.77	8.30	-0.0024	-0.0012	0.0012	0.0024	0.0035	0.0047
Household Appliances and Services	2747.23	5.87	-0.0027	-0.0013	0.0013	0.0027	0.0040	0.0054
Medicine and Medical Services	3114.05	6.66	-0.0024	-0.0012	0.0012	0.0024	0.0037	0.0049
Transportation and Communication	4464.68	9.54	-0.0043	-0.0021	0.0021	0.0043	0.0064	0.0086
Education and Recreation	6516.99	13.93	-0.0037	-0.0019	0.0019	0.0037	0.0056	0.0075
Housing	5825.60	12.50	-0.0112	-0.0056	0.0056	0.0113	0.0169	0.0225

Note: Six scenarios are shown in Table 4.

Source: Author's calculation based on CGE model.

**Table 8 Short-Term Shock Influence of GSR Change on Household's Demand by Income Groups Unit: %**

Commodity	Baseline (ten thousand RMB)	Proportion	I	II	III	IV	V	VI	Commodity	Baseline (ten thousand RMB)	Proportion	I	II	III	IV	V	VI
low-income rural households	1	880.01	55.88	-0.0030	-0.0015	0.0015	0.0030	0.0060	1	1045.75	44.73	0.0002	0.0001	-0.0001	-0.0002	-0.0004	-0.0005
	2	88.80	5.64	-0.0041	-0.0020	0.0020	0.0041	0.0081	2	222.00	9.49	0.0004	0.0002	-0.0002	-0.0004	-0.0006	-0.0008
	3	60.95	3.87	-0.0045	-0.0023	0.0023	0.0045	0.0091	3	103.77	4.44	0.0002	0.0001	-0.0001	-0.0002	-0.0003	-0.0005
	4	90.04	5.72	-0.0042	-0.0021	0.0021	0.0042	0.0063	4	161.88	6.92	0.0004	0.0002	-0.0002	-0.0003	-0.0005	-0.0007
	5	65.35	4.15	-0.0070	-0.0035	0.0035	0.0070	0.0106	5	184.80	7.90	0.0002	0.0001	-0.0001	-0.0002	-0.0003	-0.0004
	6	152.35	9.67	-0.0064	-0.0032	0.0032	0.0064	0.0096	6	305.10	13.05	0.0007	0.0003	-0.0003	-0.0003	-0.0006	-0.0010
	7	199.61	12.68	-0.0146	-0.0073	0.0073	0.0147	0.0220	7	254.73	10.89	-0.0061	-0.0031	0.0031	0.0061	0.0092	0.0122
lower-middle-income rural households	1	1074.66	52.41	-0.0023	-0.0012	0.0012	0.0023	0.0047	1	1271.71	42.15	-0.0001	0.0000	0.0000	0.0001	0.0001	0.0002
	2	116.16	5.66	-0.0034	-0.0017	0.0017	0.0034	0.0067	2	314.46	10.42	-0.0002	-0.0001	0.0001	0.0002	0.0003	0.0004
	3	82.67	4.03	-0.0038	-0.0019	0.0019	0.0038	0.0057	3	162.41	5.38	-0.0004	-0.0002	0.0002	0.0004	0.0006	0.0008
	4	117.17	5.71	-0.0035	-0.0017	0.0017	0.0035	0.0052	4	205.55	6.81	-0.0003	-0.0001	0.0001	0.0003	0.0004	0.0005
	5	105.86	5.16	-0.0059	-0.0029	0.0029	0.0059	0.0089	5	263.77	8.74	-0.0007	-0.0004	0.0004	0.0008	0.0012	0.0015
	6	227.68	11.10	-0.0053	-0.0026	0.0026	0.0053	0.0080	6	413.68	13.71	-0.0003	-0.0001	0.0002	0.0003	0.0005	0.0006
	7	273.45	13.34	-0.0133	-0.0067	0.0067	0.0133	0.0200	7	302.63	10.03	-0.0071	-0.0036	0.0036	0.0071	0.0107	0.0142
middle-income rural households	1	1265.92	49.18	-0.0018	-0.0009	0.0009	0.0018	0.0036	1	1535.30	39.25	-0.0005	-0.0002	0.0002	0.0005	0.0007	0.0010
	2	147.06	5.71	-0.0027	-0.0014	0.0014	0.0027	0.0054	2	409.72	10.47	-0.0010	-0.0005	0.0005	0.0010	0.0016	0.0021
	3	106.05	4.12	-0.0031	-0.0015	0.0015	0.0031	0.0046	3	237.82	6.08	-0.0013	-0.0006	0.0006	0.0013	0.0019	0.0026
	4	141.98	5.52	-0.0028	-0.0014	0.0014	0.0028	0.0042	4	274.61	7.02	-0.0011	-0.0006	0.0006	0.0011	0.0017	0.0022
	5	157.26	6.11	-0.0049	-0.0024	0.0024	0.0049	0.0073	5	362.80	9.28	-0.0021	-0.0011	0.0011	0.0021	0.0032	0.0043
	6	302.45	11.75	-0.0043	-0.0021	0.0021	0.0043	0.0064	6	572.07	14.63	-0.0016	-0.0008	0.0008	0.0016	0.0024	0.0033
	7	382.04	14.84	-0.0121	-0.0061	0.0061	0.0122	0.0183	7	404.07	10.33	-0.0086	-0.0043	0.0043	0.0086	0.0129	0.0171

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Commodity	Baseline (ten thousand RMB)	Proportion	I	II	III	IV	V	VI	Commodity	Baseline (ten thousand RMB)	Proportion	I	II	III	IV	V	VI
upper-middle-income rural households	1	1485.83	45.51	-0.0012	-0.0006	0.0006	0.0012	0.0018	1	1862.83	37.42	-0.0011	-0.0006	0.0006	0.0011	0.0017	0.0023
	2	192.25	5.89	-0.0021	-0.0010	0.0010	0.0021	0.0031	2	528.80	10.62	-0.0026	-0.0013	0.0013	0.0026	0.0039	0.0053
	3	146.03	4.47	-0.0024	-0.0012	0.0012	0.0024	0.0036	3	330.67	6.64	-0.0029	-0.0015	0.0015	0.0029	0.0044	0.0059
	4	182.29	5.58	-0.0021	-0.0011	0.0011	0.0021	0.0032	4	365.94	7.35	-0.0027	-0.0013	0.0013	0.0027	0.0040	0.0054
	5	240.42	7.36	-0.0038	-0.0019	0.0019	0.0038	0.0057	5	515.69	10.36	-0.0047	-0.0023	0.0023	0.0047	0.0070	0.0094
	6	386.21	11.83	-0.0032	-0.0016	0.0016	0.0032	0.0049	6	750.64	15.08	-0.0041	-0.0020	0.0020	0.0041	0.0061	0.0082
	7	526.01	16.11	-0.0109	-0.0054	0.0054	0.0109	0.0164	7	461.34	9.27	-0.0113	-0.0056	0.0056	0.0113	0.0169	0.0226
high-income urban households	1	2119.25	38.69	0.0000	0.0000	0.0000	0.0000	0.0001	1	2274.86	35.55	-0.0016	-0.0008	0.0008	0.0016	0.0025	0.0033
	2	311.23	5.68	-0.0001	-0.0001	0.0001	0.0001	0.0002	2	621.47	9.71	-0.0041	-0.0021	0.0021	0.0041	0.0062	0.0083
	3	263.69	4.81	-0.0003	-0.0002	0.0002	0.0003	0.0005	3	463.18	7.24	-0.0045	-0.0022	0.0022	0.0045	0.0067	0.0090
	4	315.66	5.76	-0.0002	-0.0001	0.0001	0.0002	0.0003	4	471.51	7.37	-0.0042	-0.0021	0.0021	0.0042	0.0063	0.0084
	5	502.93	9.18	-0.0006	-0.0003	0.0003	0.0006	0.0010	5	710.98	11.11	-0.0071	-0.0036	0.0036	0.0072	0.0107	0.0143
	6	652.34	11.91	-0.0002	-0.0001	0.0001	0.0002	0.0003	6	985.48	15.40	-0.0065	-0.0032	0.0032	0.0065	0.0097	0.0130
	7	1102.81	20.14	-0.0072	-0.0036	0.0036	0.0072	0.0108	7	650.37	10.16	-0.0139	-0.0070	0.0070	0.0139	0.0209	0.0279
lowest-income urban households	1	808.71	47.21	0.0003	0.0001	-0.0001	-0.0003	-0.0004	1	2941.56	31.45	-0.0026	-0.0013	0.0013	0.0026	0.0039	0.0052
	2	138.51	8.09	0.0005	0.0002	-0.0002	-0.0005	-0.0007	2	791.31	8.46	-0.0083	-0.0041	0.0041	0.0083	0.0124	0.0166
	3	62.18	3.63	0.0003	0.0001	-0.0001	-0.0003	-0.0005	3	727.81	7.78	-0.0084	-0.0042	0.0042	0.0084	0.0127	0.0169
	4	118.09	6.89	0.0004	0.0002	-0.0002	-0.0004	-0.0006	4	669.33	7.16	-0.0084	-0.0042	0.0042	0.0084	0.0125	0.0167
	5	113.08	6.60	0.0003	0.0001	-0.0001	-0.0003	-0.0005	5	1241.74	13.27	-0.0140	-0.0070	0.0070	0.0140	0.0210	0.0281
	6	227.80	13.30	0.0007	0.0004	-0.0004	-0.0007	-0.0011	6	1541.19	16.48	-0.0132	-0.0066	0.0066	0.0132	0.0198	0.0264
	7	202.81	11.84	-0.0061	-0.0030	0.0030	0.0061	0.0091	7	1065.73	11.39	-0.0214	-0.0107	0.0107	0.0214	0.0322	0.0430

Note: As Table 6.  
Sources: Authors' calculation based on CGE model.

**Table 9 Short-Term Shock Influence of ESR Change on Household's Demand Unit: %**

Commodity	Baseline (ten thousand RMB)	Proportion	I	II	III	IV	V	VI
Food	18566.39	39.68	0.0084	0.0039	-0.0034	-0.0064	-0.0091	-0.0115
Clothing	3881.77	8.30	0.0272	0.0128	-0.0116	-0.0222	-0.0319	-0.0410
Household Appliances and Services	2747.23	5.87	0.0219	0.0102	-0.0091	-0.0171	-0.0244	-0.0309
Medicine and Medical Services	3114.05	6.66	0.0259	0.0122	-0.0109	-0.0208	-0.0299	-0.0382
Transportation and Communication	4464.68	9.54	0.0409	0.0192	-0.0170	-0.0323	-0.0461	-0.0587
Education and Recreation	6516.99	13.93	0.0330	0.0155	-0.0139	-0.0265	-0.0379	-0.0484
Housing	5825.60	12.50	-0.0797	-0.0381	0.0351	0.0675	0.0974	0.1251

Note: Six scenarios are shown in Table 4.

Source: Author's calculation based on CGE model.

**Table 10** Short-Term Shock Influence of ESR Change on Household's Demand by Income Groups Unit: %

Commodity	Baseline (ten thousand RMB)	Proportion	I	II	III	IV	V	VI	Commodity	Baseline (ten thousand RMB)	Proportion	I	II	III	IV	V	VI	
low-income rural households	1	880.01	55.88	0.0107	0.0050	-0.0045	-0.0084	-0.0120	-0.0152	1	1045.75	44.73	0.0072	0.0033	-0.0029	-0.0054	-0.0095	
	2	88.80	5.64	0.0269	0.0127	-0.0116	-0.0223	-0.0322	-0.0414	2	222.00	9.49	0.0254	0.0120	-0.0108	-0.0207	-0.0297	-0.0380
	3	60.95	3.87	0.0219	0.0103	-0.0092	-0.0174	-0.0249	-0.0318	3	103.77	4.44	0.0197	0.0092	-0.0081	-0.0152	-0.0215	-0.0272
	4	90.04	5.72	0.0257	0.0122	-0.0110	-0.0210	-0.0303	-0.0388	4	161.88	6.92	0.0240	0.0113	-0.0101	-0.0192	-0.0274	-0.0350
	5	65.35	4.15	0.0404	0.0190	-0.0170	-0.0325	-0.0465	-0.0594	5	184.80	7.90	0.0374	0.0175	-0.0155	-0.0292	-0.0416	-0.0528
	6	152.35	9.67	0.0327	0.0154	-0.0140	-0.0267	-0.0384	-0.0493	6	305.10	13.05	0.0297	0.0139	-0.0124	-0.0235	-0.0336	-0.0427
	7	199.61	12.68	-0.0853	-0.0408	0.0373	0.0716	0.1031	0.1320	7	254.73	10.89	-0.0838	-0.0402	0.0371	0.0714	0.1032	0.1327
lower-middle-income rural households	1	1074.66	52.41	0.0101	0.0047	-0.0042	-0.0079	-0.0113	-0.0143	1	1271.71	42.15	0.0066	0.0031	-0.0026	-0.0049	-0.0069	-0.0086
	2	116.16	5.66	0.0267	0.0127	-0.0115	-0.0222	-0.0320	-0.0412	2	314.46	10.42	0.0253	0.0119	-0.0107	-0.0205	-0.0295	-0.0378
	3	82.67	4.03	0.0218	0.0102	-0.0091	-0.0174	-0.0248	-0.0316	3	162.41	5.38	0.0197	0.0092	-0.0080	-0.0151	-0.0215	-0.0271
	4	117.17	5.71	0.0256	0.0121	-0.0109	-0.0209	-0.0301	-0.0386	4	205.55	6.81	0.0238	0.0112	-0.0100	-0.0189	-0.0271	-0.0346
	5	105.86	5.16	0.0403	0.0190	-0.0170	-0.0324	-0.0463	-0.0592	5	263.77	8.74	0.0372	0.0174	-0.0154	-0.0291	-0.0414	-0.0525
	6	227.68	11.10	0.0325	0.0154	-0.0139	-0.0266	-0.0382	-0.0490	6	413.68	13.71	0.0295	0.0138	-0.0123	-0.0233	-0.0333	-0.0423
	7	273.45	13.34	-0.0853	-0.0407	0.0373	0.0716	0.1030	0.1320	7	302.63	10.03	-0.0836	-0.0401	0.0370	0.0713	0.1030	0.1325
middle-income rural households	1	1265.92	49.18	0.0096	0.0045	-0.0040	-0.0076	-0.0108	-0.0137	1	1535.30	39.25	0.0064	0.0029	-0.0025	-0.0047	-0.0066	-0.0082
	2	147.06	5.71	0.0270	0.0128	-0.0116	-0.0223	-0.0322	-0.0415	2	409.72	10.47	0.0259	0.0122	-0.0109	-0.0209	-0.0300	-0.0384
	3	106.05	4.12	0.0221	0.0103	-0.0092	-0.0175	-0.0250	-0.0319	3	237.82	6.08	0.0204	0.0095	-0.0083	-0.0156	-0.0221	-0.0278
	4	141.98	5.52	0.0258	0.0122	-0.0110	-0.0211	-0.0303	-0.0388	4	274.61	7.02	0.0244	0.0114	-0.0102	-0.0193	-0.0277	-0.0352
	5	157.26	6.11	0.0408	0.0192	-0.0172	-0.0327	-0.0468	-0.0598	5	362.80	9.28	0.0384	0.0179	-0.0158	-0.0298	-0.0424	-0.0538
	6	302.45	11.75	0.0329	0.0155	-0.0140	-0.0268	-0.0386	-0.0494	6	572.07	14.63	0.0306	0.0143	-0.0127	-0.0240	-0.0343	-0.0436
	7	382.04	14.84	-0.0847	-0.0405	0.0371	0.0711	0.1024	0.1312	7	404.07	10.33	-0.0821	-0.0394	0.0364	0.0701	0.1014	0.1305

*Continued*

Commodity	Baseline (ten thousand RMB)	Proportion	I	II	III	IV	V	VI	Commodity	Baseline (ten thousand RMB)	Proportion	I	II	III	IV	V	VI	
upper-middle-income rural households	1	1485.83	45.51	0.0089	0.0041	-0.0037	-0.0069	-0.0099	-0.0125	1	1862.83	37.42	0.0066	0.0030	-0.0026	-0.0048	-0.0067	-0.0084
	2	192.25	5.89	0.0270	0.0128	-0.0116	-0.0223	-0.0322	-0.0415	2	528.80	10.62	0.0274	0.0129	-0.0115	-0.0219	-0.0313	-0.0400
	3	146.03	4.47	0.0221	0.0104	-0.0092	-0.0175	-0.0250	-0.0319	3	330.67	6.64	0.0220	0.0102	-0.0089	-0.0166	-0.0235	-0.0296
	4	182.29	5.58	0.0258	0.0122	-0.0110	-0.0210	-0.0303	-0.0388	4	365.94	7.35	0.0260	0.0121	-0.0108	-0.0204	-0.0291	-0.0370
	5	240.42	7.36	0.0409	0.0192	-0.0172	-0.0328	-0.0469	-0.0598	5	515.69	10.36	0.0411	0.0191	-0.0168	-0.0316	-0.0449	-0.0568
	6	386.21	11.83	0.0329	0.0155	-0.0140	-0.0268	-0.0385	-0.0493	6	750.64	15.08	0.0332	0.0155	-0.0136	-0.0258	-0.0367	-0.0465
	7	526.01	16.11	-0.0841	-0.0402	0.0368	0.0706	0.1017	0.1303	7	461.34	9.27	-0.0790	-0.0379	0.0351	0.0677	0.0980	0.1262
high-income rural households	1	2119.25	38.69	0.0075	0.0035	-0.0031	-0.0058	-0.0083	-0.0105	1	2274.86	35.55	0.0065	0.0030	-0.0026	-0.0048	-0.0067	-0.0083
	2	311.23	5.68	0.0277	0.0131	-0.0119	-0.0227	-0.0327	-0.0421	2	621.47	9.71	0.0286	0.0134	-0.0119	-0.0227	-0.0324	-0.0413
	3	263.69	4.81	0.0225	0.0105	-0.0094	-0.0177	-0.0253	-0.0321	3	463.18	7.24	0.0232	0.0107	-0.0093	-0.0174	-0.0246	-0.0309
	4	315.66	5.76	0.0264	0.0125	-0.0112	-0.0214	-0.0308	-0.0394	4	471.51	7.37	0.0272	0.0127	-0.0112	-0.0212	-0.0302	-0.0384
	5	502.93	9.18	0.0418	0.0196	-0.0175	-0.0333	-0.0476	-0.0607	5	710.98	11.11	0.0433	0.0201	-0.0176	-0.0332	-0.0470	-0.0594
	6	652.34	11.91	0.0338	0.0159	-0.0143	-0.0273	-0.0392	-0.0501	6	985.48	15.40	0.0354	0.0165	-0.0145	-0.0273	-0.0387	-0.0490
	7	1102.81	20.14	-0.0809	-0.0387	0.0355	0.0681	0.0981	0.1257	7	650.37	10.16	-0.0765	-0.0368	0.0341	0.0658	0.0953	0.1228
lowest-income urban households	1	808.71	47.21	0.0081	0.0037	-0.0032	-0.0061	-0.0085	-0.0107	1	2941.56	31.45	0.0066	0.0030	-0.0026	-0.0048	-0.0067	-0.0084
	2	138.51	8.09	0.0261	0.0123	-0.0111	-0.0212	-0.0304	-0.0390	2	791.31	8.46	0.0331	0.0154	-0.0136	-0.0258	-0.0367	-0.0466
	3	62.18	3.63	0.0203	0.0094	-0.0083	-0.0157	-0.0222	-0.0281	3	727.81	7.78	0.0269	0.0124	-0.0107	-0.0200	-0.0282	-0.0353
	4	118.09	6.89	0.0248	0.0117	-0.0104	-0.0198	-0.0284	-0.0362	4	669.33	7.16	0.0317	0.0147	-0.0129	-0.0243	-0.0345	-0.0437
	5	113.08	6.60	0.0384	0.0179	-0.0159	-0.0301	-0.0429	-0.0544	5	1241.74	13.27	0.0511	0.0237	-0.0206	-0.0387	-0.0546	-0.0688
	6	227.80	13.30	0.0309	0.0145	-0.0129	-0.0245	-0.0350	-0.0446	6	1541.19	16.48	0.0432	0.0200	-0.0175	-0.0328	-0.0464	-0.0586
	7	202.81	11.84	-0.0832	-0.0399	0.0368	0.0708	0.1022	0.1314	7	1065.73	11.39	-0.0680	-0.0327	0.0305	0.0590	0.0855	0.1104

Note: As Table 6., Sources: Authors' calculation based on CGE model.

**Table 11** Sensitivity Comparison of Short-Term Shock Influence among RSR, GSR and ESR on Household's Demand Unit: %

Commodity	Decrease RSR by 1%	Decrease GSR by 1%	Decrease ESR by 1%
Food	0.0009	0.0001	-0.0005
Clothing	0.0020	0.0002	-0.0015
Household Appliances and Services	0.0022	0.0003	-0.0012
Medicine and Medical Services	0.0020	0.0002	-0.0014
Transportation and Communication	0.0036	0.0004	-0.0022
Education and Recreation	0.0031	0.0004	-0.0019
Housing	0.0090	0.0011	0.0034

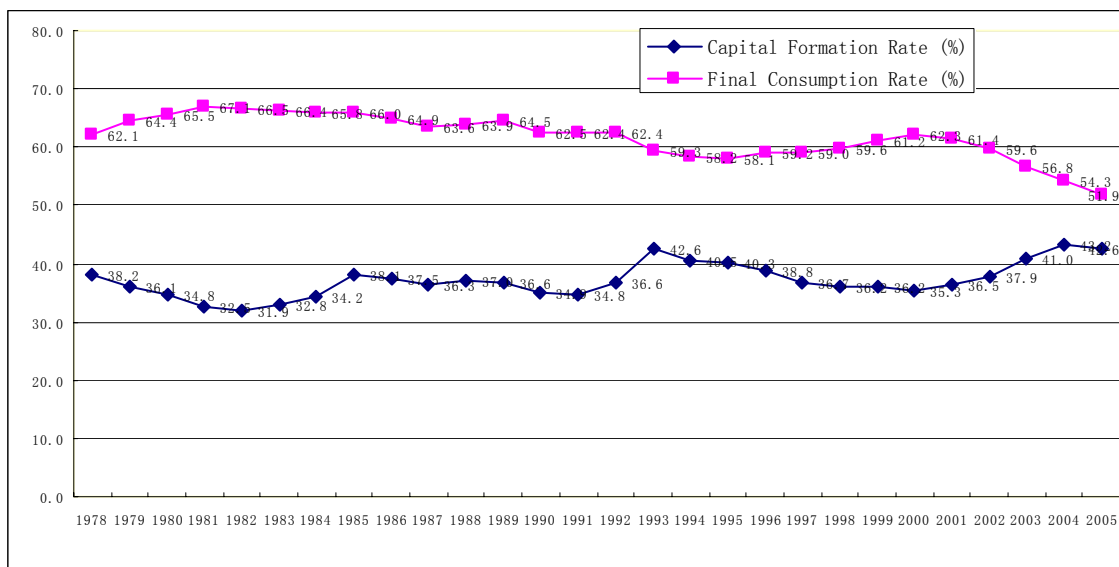
Source: Author's calculation based on CGE model.

**Table 12** Sensitivity Comparison of Long-Term Shock Influence among RSR, GSR and ESR on Household's Demand Unit: %

Year	Decrease RSR by 1%	Decrease GSR by 1%	Decrease ESR by 1%
2005	0.0024	0.0003	-0.0030
2010	0.0018	0.0001	-0.0040
2015	0.0017	0.0001	-0.0043
2020	0.0018	0.0001	-0.0042
2025	0.0020	0.0000	-0.0039
2030	0.0021	0.0000	-0.0032

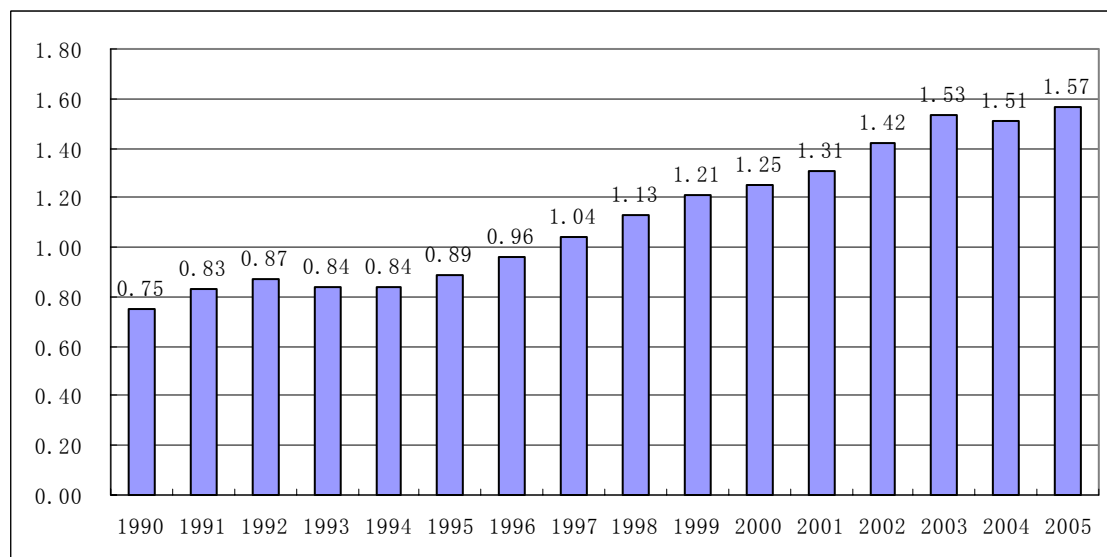
Source: Author's calculation based on DRC-CGE model.





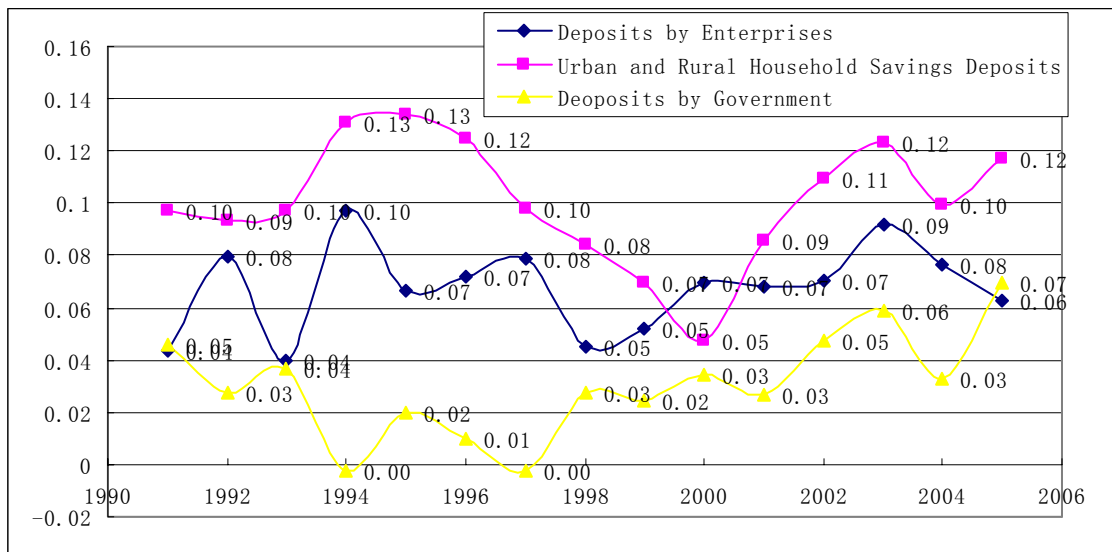
Source: Table 3-11 in *China Statistic Yearbook (2006)* by National Bureau of Statistics of China.

Figure 1 China's Final Consumption and Capital Formation: 1978-2005



Source: Calculated by the authors based on "Credit Funds Balance Sheet of Financial Institutions(Sources of Funds)" in *Chinese Statistical Yearbook (1990-2006)* and *Comprehensive Statistical Data and Materials on 50 Years of New China* by National Bureau of Statistics of China.

Figure 2 Total Deposits to GDP of China: 1990-2005



Source: As Figure 2.

Note: Deposits of Government include Fiscal Deposits, Deposits by Government Departments & Organizations, Agricultural Deposits, Trusted Deposits and Other Deposits.

Figure 3 Net Added of the Three Types of Deposits to GDP: 1991-2005

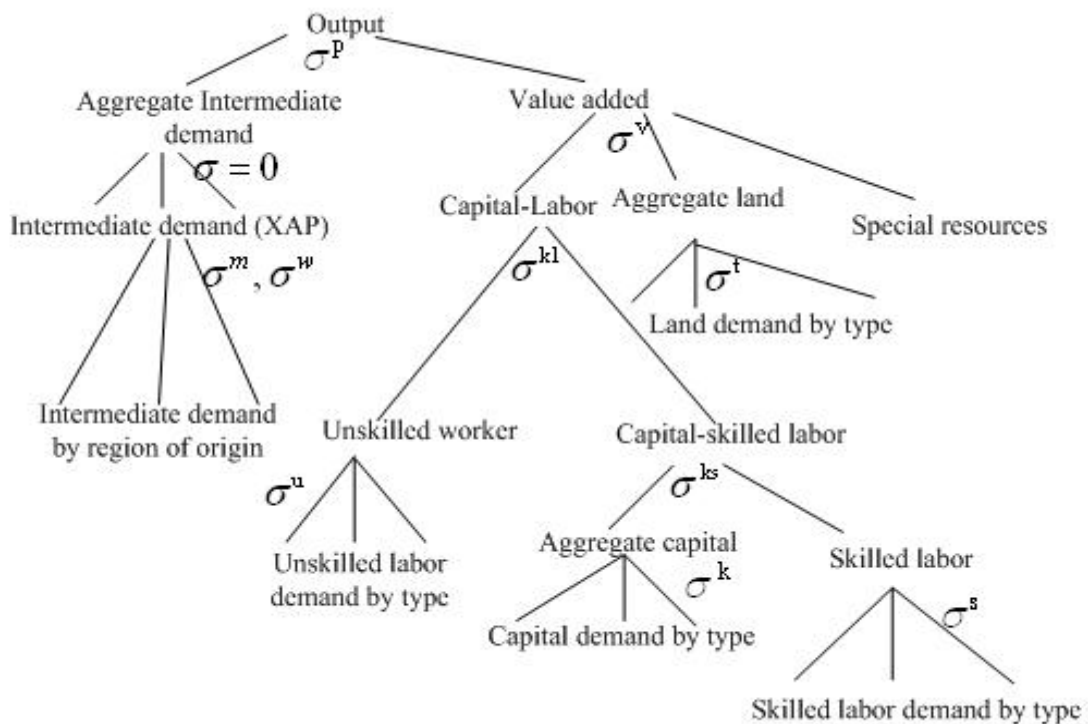
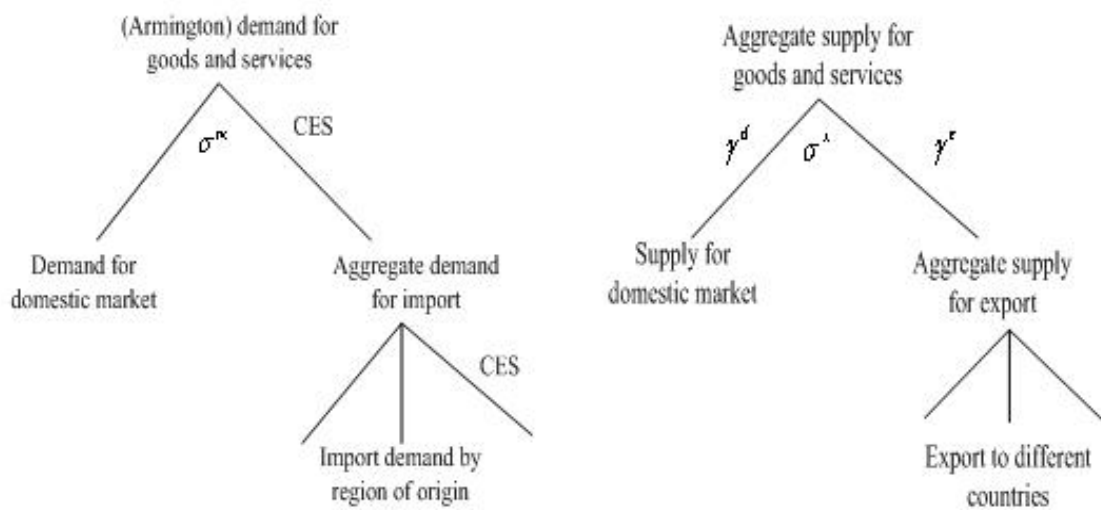
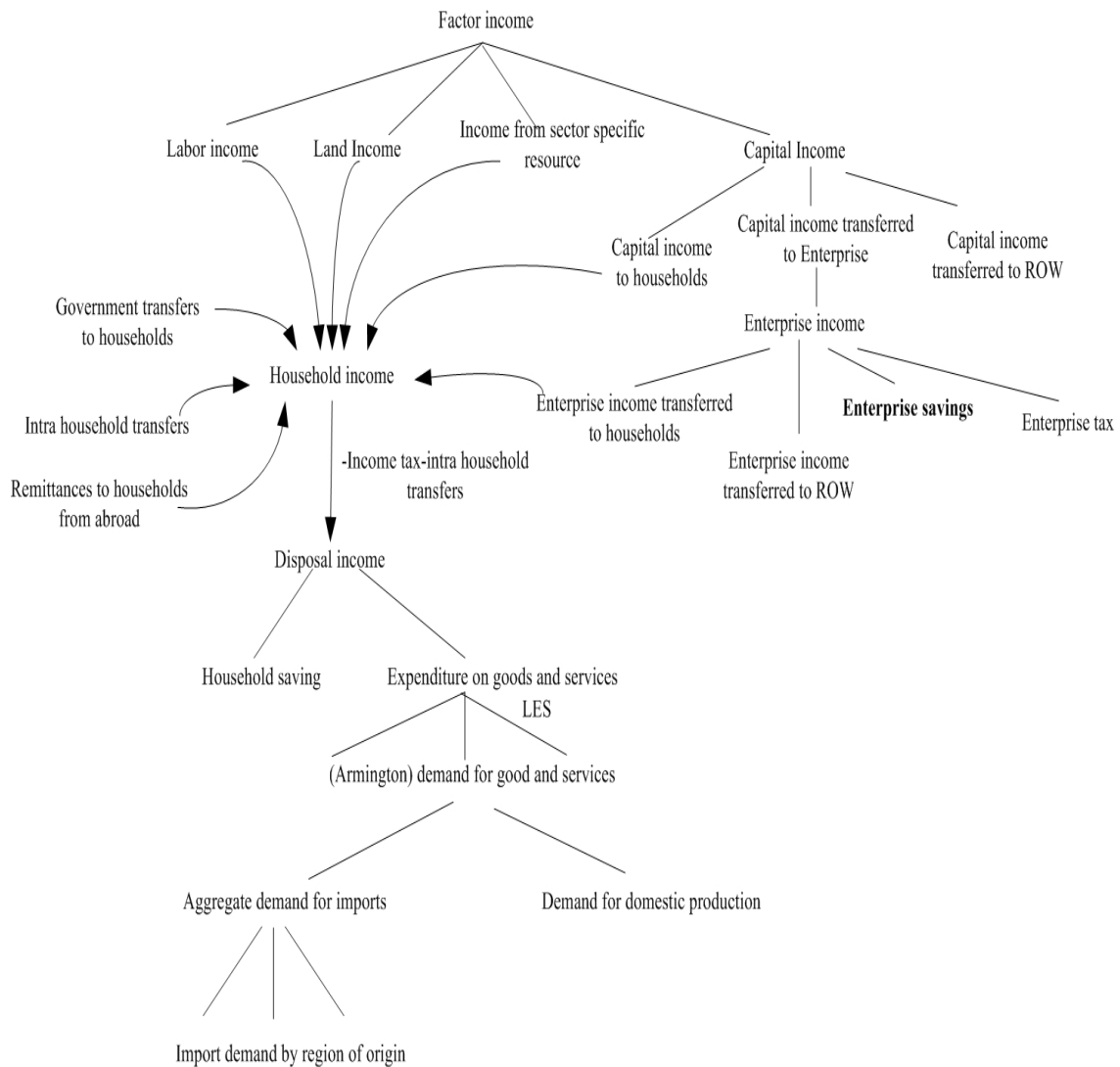


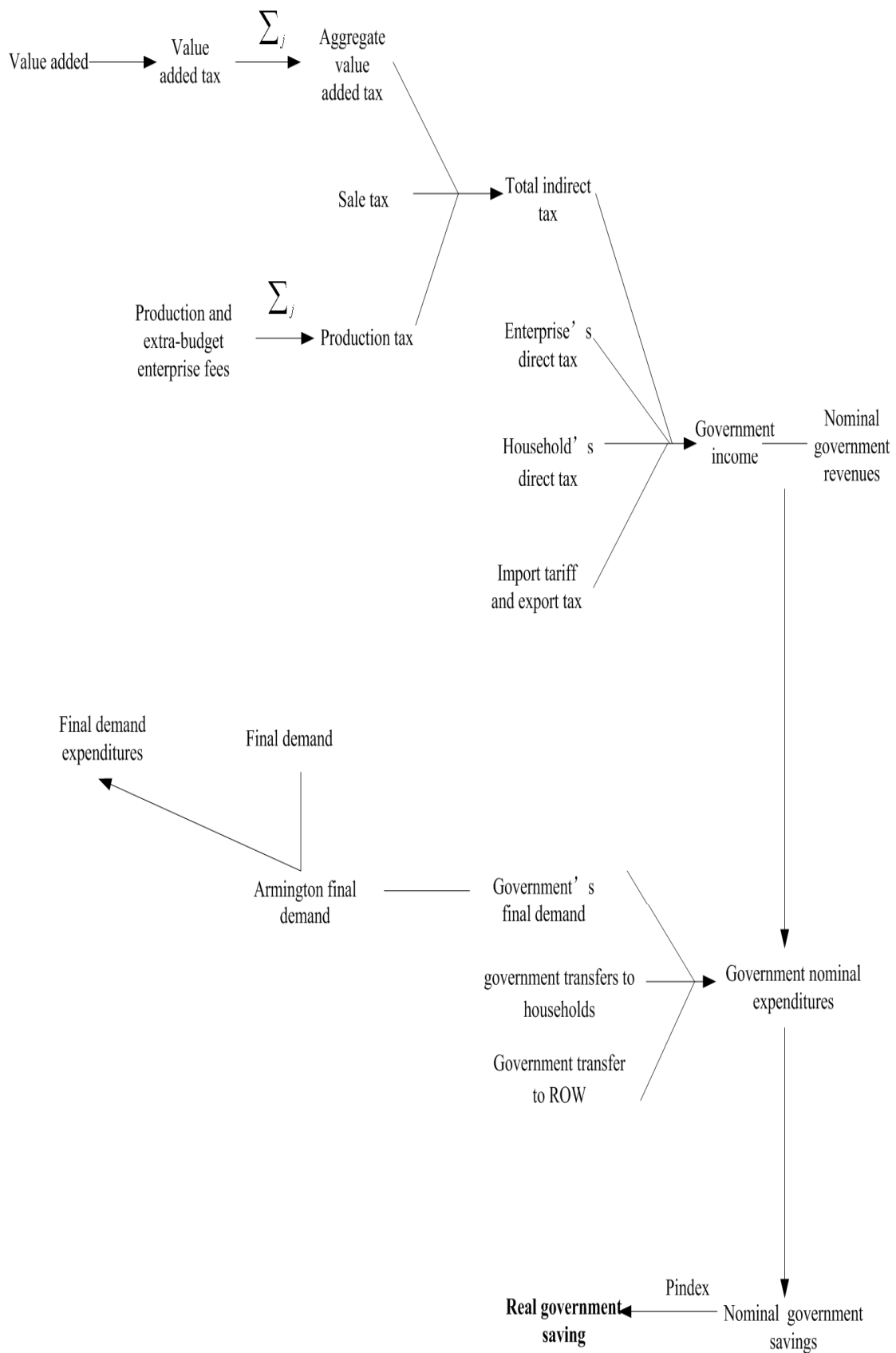
Figure 4 Nested CES Structure of Production in DRC-CGE Model



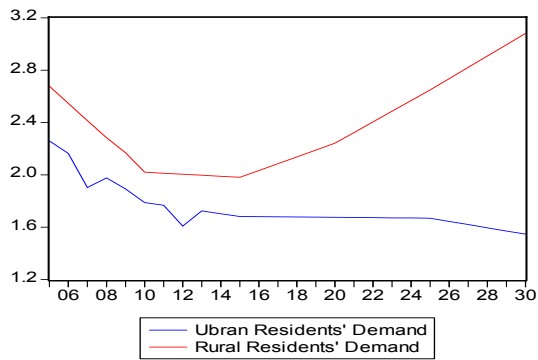
**Figure5 Armington Demand and Supply in DRC-CGE Model**



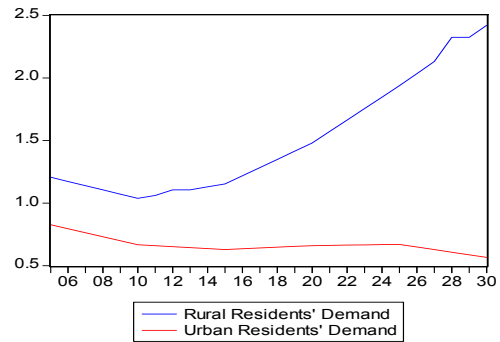
**Figure 6 Income Distribution in DRC-CGE Model**



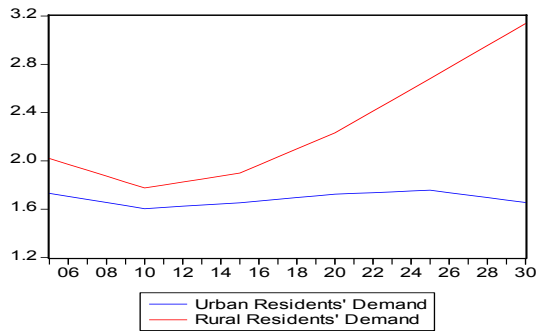
**Figure 7 Government Revenues and Expenditures in DRC-CGE Model**



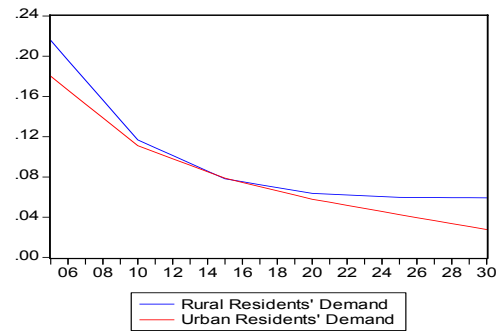
a. Average Level



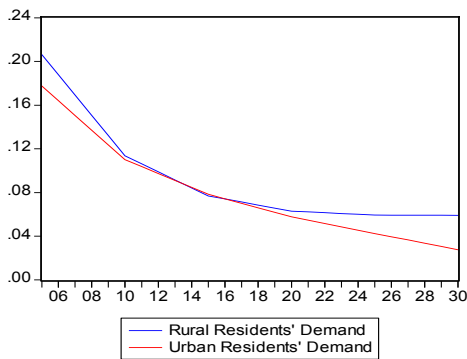
b. Food



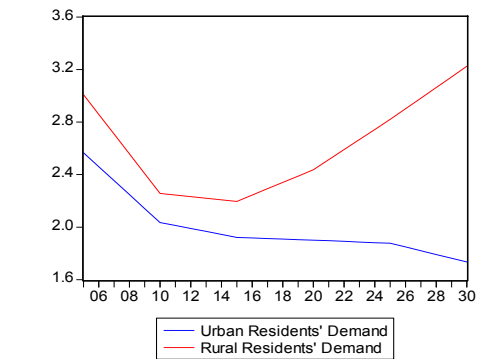
c. Clothing



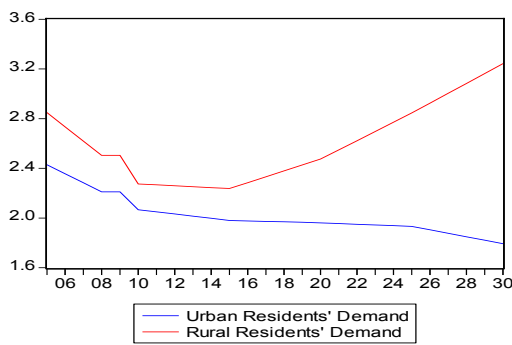
d. Household Appliances and Services



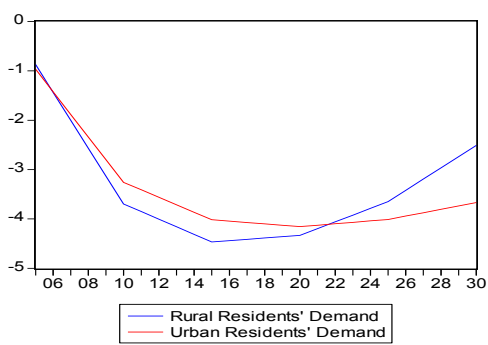
e. Medicine and Medical Services



f. Transportation and Communication



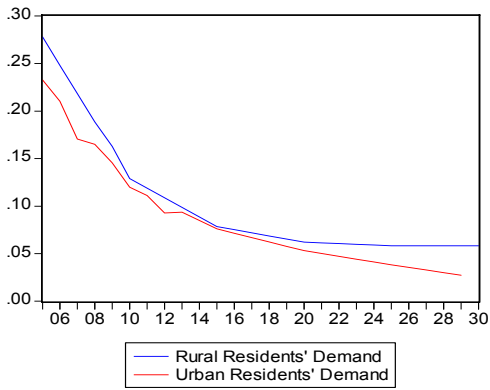
g. Education and Recreation



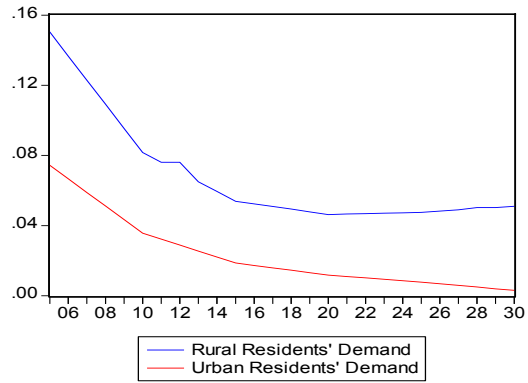
h. Housing

Note: The unit of the Y-axis is 0.01 percent, and the X-axis is year from 2005 to 2030.

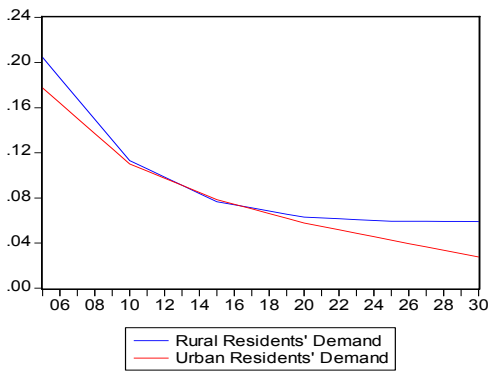
Figure 8 Long-Term Shock Scenario of Ten Percent Fall of RSR on Household's Demand



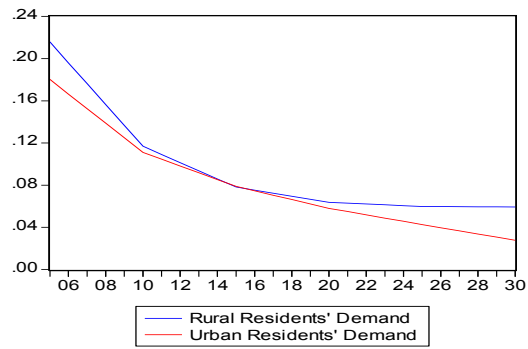
a. Average Level



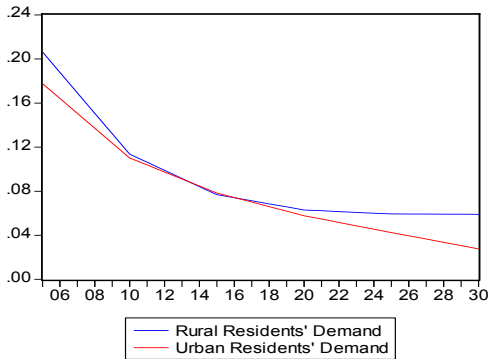
b. Food



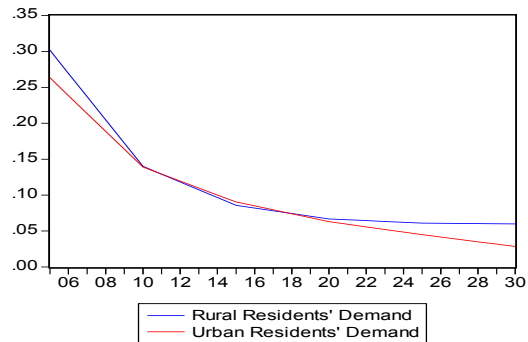
c. Clothing



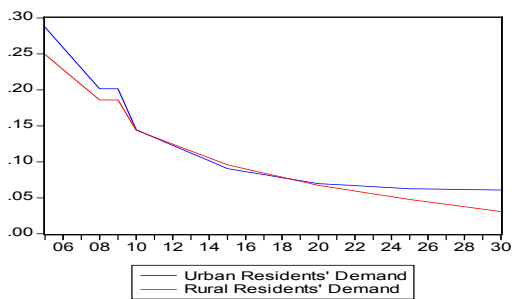
d. Household Appliances and Services



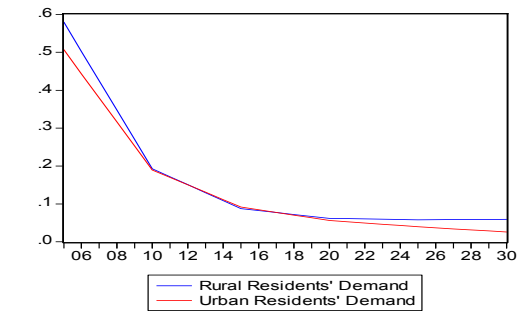
e. Medicine and Medical Services



f. Transportation and Communication



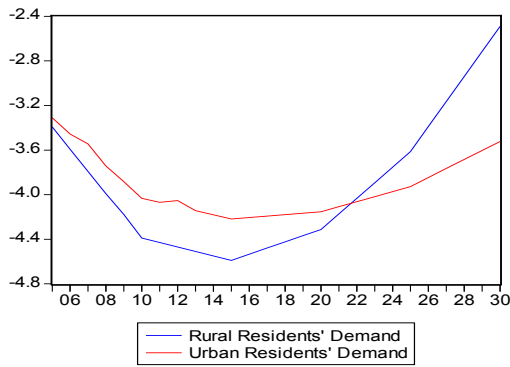
g. Education and Recreation



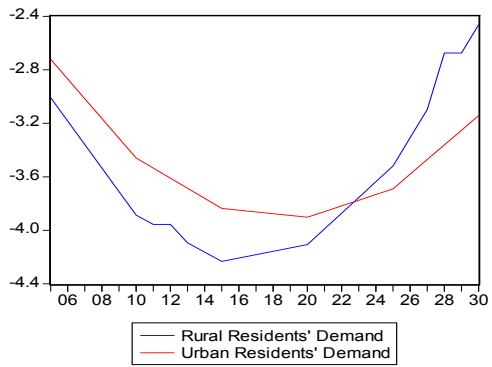
h. Housing

Note: As figure 8.

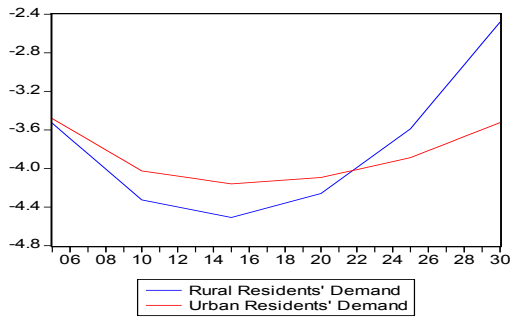
Figure 9 Long-Term Shock Scenario of Ten Percent Fall of GSR on Household's Demand



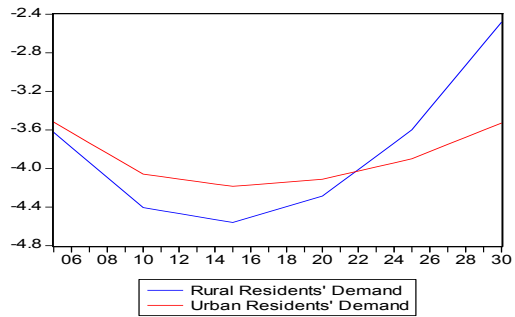
a. Average Level



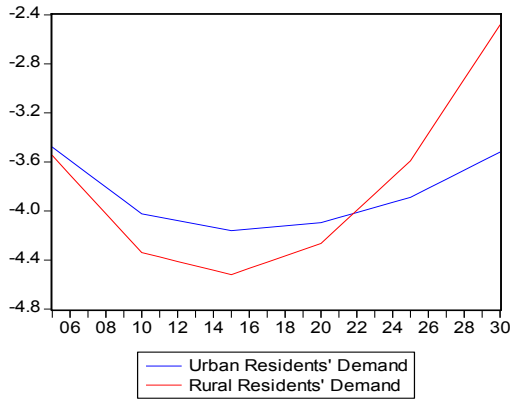
b. Food



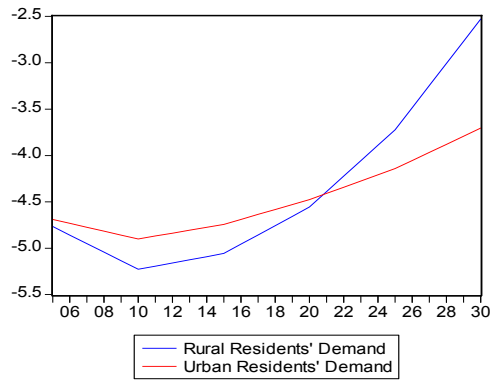
c. Clothing



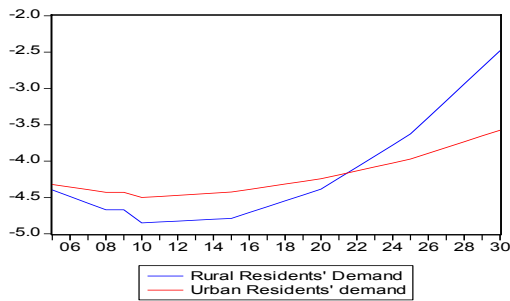
d. Household Appliances and Services



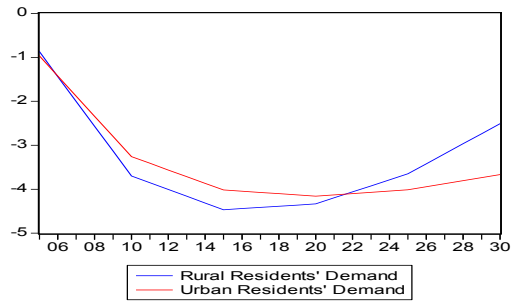
e. Medicine and Medical Services



f. Transportation and Communication



g. Education and Recreation

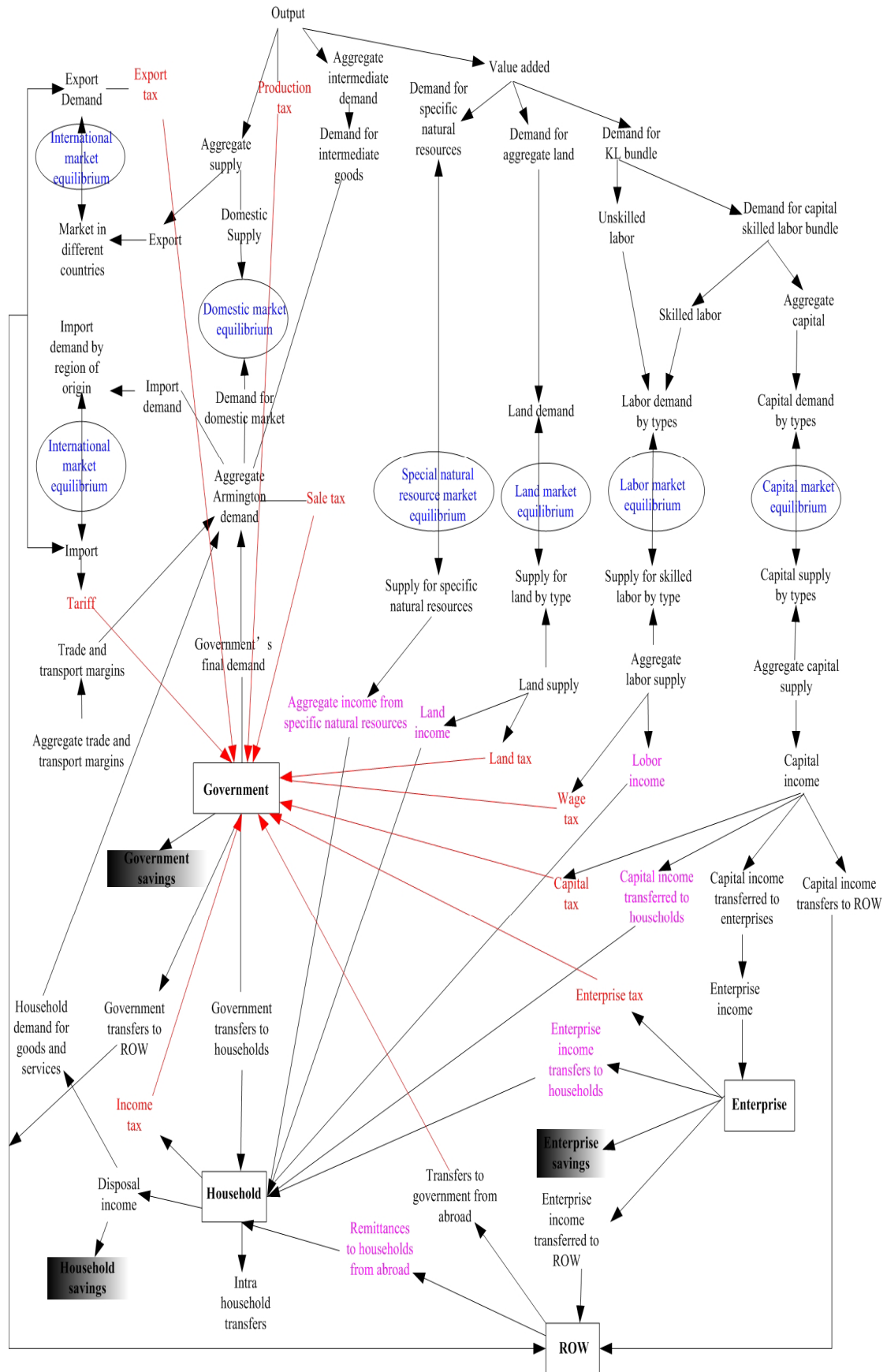


h. Housing

Note: As figure 8.

Figure 10 Long-Term Shock Scenario of Ten Percent Fall of ESR on Household's Demand

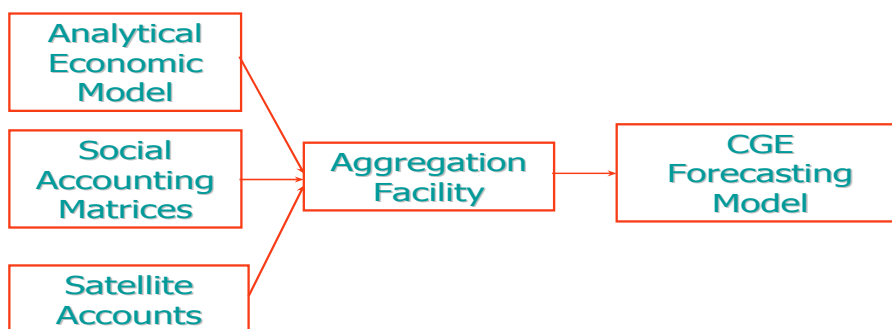
## Appendix A. The Structure of Static DRC-CGE Model



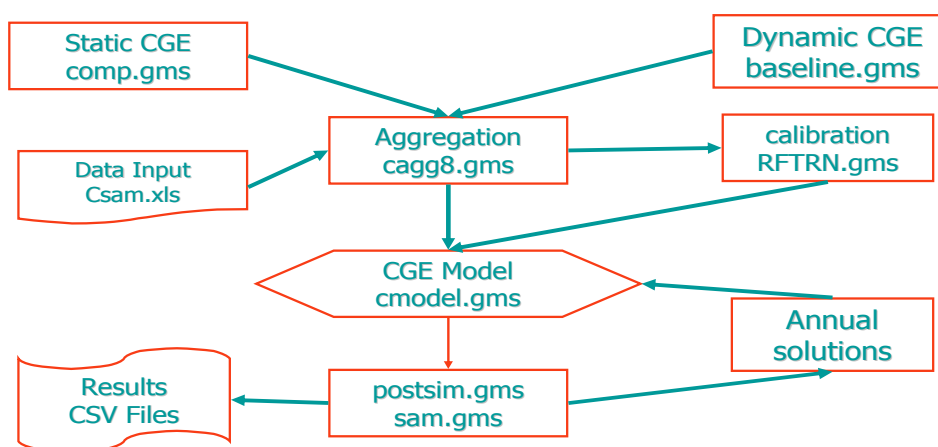
Resource: Author's Design Based on the Prototype Recursive Dynamic Model from the World Bank.



## Appendix B. The Structure of Dynamic DRC-CGE Model



a. The theoretical structure of DRC-CGE model



**Note:** Csam.xls is basic SAM of China; comp.gms is the main program; cagg8.gms is base SAM definition and some parameters declaration and value-assignment; model.gms is parameters and variables declaration, definition or calibration, equation and model definition; calibration RFTRN.gms shows calibration process; postsim.gms defines the output file, showing the variables values under different scenarios; Dynamic CGE baseline.gms is output file, showing SAM after model running; Results CSV is output file, showing variable values in different years.

b. The structure of DRC-CGE model in GAMS programme

Source: Based on the prototype recursive dynamic model from the World Bank (van der Mensbrugge & Roland-Holst, 2004).

Appendix Table A

Long-Term Shock Scenario of Changes of RSR on Household's Demand: 2005-2030

Unit: %

Commodity	Increase RSR by 10%							Increase RSR by 5%																	
	Rural 1	Rural 2	Rural 3	Rural 4	Rural 5	Urban1	Urban2	Urban3	Urban4	Urban5	Urban6	Urban7	Rural 1	Rural 2	Rural 3	Rural 4	Rural 5	Urban1	Urban2	Urban3	Urban4	Urban5	Urban6	Urban7	
2005	1	-0.0014	-0.0050	-0.0080	-0.0108	-0.0341	-0.0018	-0.0026	-0.0062	-0.0080	-0.0081	-0.0136	-0.0158	-0.0007	-0.0026	-0.0040	-0.0054	-0.0170	-0.0010	-0.0014	-0.0031	-0.0040	-0.0041	-0.0068	-0.0079
	2	-0.0013	-0.0063	-0.0110	-0.0162	-0.0650	-0.0020	-0.0034	-0.0100	-0.0145	-0.0157	-0.0296	-0.0428	-0.0007	-0.0032	-0.0055	-0.0081	-0.0324	-0.0011	-0.0018	-0.0051	-0.0073	-0.0079	-0.0149	-0.0214
	3	-0.0014	-0.0067	-0.0115	-0.0171	-0.0677	-0.0021	-0.0036	-0.0104	-0.0151	-0.0163	-0.0305	-0.0427	-0.0008	-0.0034	-0.0058	-0.0086	-0.0338	-0.0011	-0.0019	-0.0053	-0.0076	-0.0082	-0.0153	-0.0213
	4	-0.0013	-0.0064	-0.0110	-0.0163	-0.0653	-0.0020	-0.0034	-0.0100	-0.0145	-0.0157	-0.0297	-0.0428	-0.0007	-0.0033	-0.0056	-0.0082	-0.0326	-0.0011	-0.0018	-0.0051	-0.0073	-0.0079	-0.0149	-0.0214
	5	-0.0020	-0.0094	-0.0162	-0.0241	-0.0968	-0.0030	-0.0051	-0.0148	-0.0215	-0.0233	-0.0439	-0.0633	-0.0011	-0.0048	-0.0082	-0.0121	-0.0483	-0.0016	-0.0027	-0.0075	-0.0109	-0.0118	-0.0220	-0.0317
	6	-0.0012	-0.0085	-0.0151	-0.0227	-0.0930	-0.0022	-0.0043	-0.0137	-0.0202	-0.0220	-0.0420	-0.0611	-0.0007	-0.0043	-0.0076	-0.0114	-0.0464	-0.0012	-0.0023	-0.0069	-0.0102	-0.0111	-0.0211	-0.0306
	7	-0.0254	-0.0340	-0.0421	-0.0509	-0.1326	-0.0260	-0.0280	-0.0383	-0.0454	-0.0468	-0.0691	-0.0897	-0.0125	-0.0168	-0.0208	-0.0252	-0.0659	-0.0128	-0.0138	-0.0190	-0.0225	-0.0232	-0.0343	-0.0446
2010	1	0.0005	-0.0031	-0.0062	-0.0092	-0.0359	0.0006	-0.0003	-0.0041	-0.0064	-0.0071	-0.0136	-0.0172	0.0003	-0.0015	-0.0031	-0.0046	-0.0178	0.0003	-0.0001	-0.0020	-0.0032	-0.0035	-0.0068	-0.0086
	2	0.0001	-0.0045	-0.0090	-0.0142	-0.0643	-0.0002	-0.0016	-0.0083	-0.0133	-0.0155	-0.0303	-0.0458	0.0001	-0.0022	-0.0045	-0.0070	-0.0319	-0.0001	-0.0008	-0.0041	-0.0066	-0.0077	-0.0151	-0.0228
	3	0.0002	-0.0046	-0.0093	-0.0147	-0.0660	-0.0002	-0.0016	-0.0085	-0.0136	-0.0158	-0.0309	-0.0457	0.0001	-0.0023	-0.0046	-0.0073	-0.0328	-0.0001	-0.0008	-0.0042	-0.0068	-0.0079	-0.0154	-0.0227
	4	0.0002	-0.0045	-0.0090	-0.0143	-0.0645	-0.0002	-0.0016	-0.0082	-0.0132	-0.0154	-0.0303	-0.0458	0.0001	-0.0022	-0.0045	-0.0071	-0.0320	-0.0001	-0.0008	-0.0041	-0.0066	-0.0077	-0.0151	-0.0228
	5	0.0004	-0.0054	-0.0112	-0.0179	-0.0825	0.0000	-0.0018	-0.0104	-0.0168	-0.0196	-0.0387	-0.0584	0.0002	-0.0027	-0.0055	-0.0089	-0.0410	0.0000	-0.0009	-0.0052	-0.0084	-0.0098	-0.0192	-0.0291
	6	-0.0002	-0.0059	-0.0116	-0.0181	-0.0815	-0.0006	-0.0024	-0.0108	-0.0171	-0.0199	-0.0386	-0.0581	-0.0001	-0.0029	-0.0057	-0.0090	-0.0405	-0.0003	-0.0012	-0.0054	-0.0085	-0.0099	-0.0192	-0.0289
	7	-0.0069	-0.0135	-0.0200	-0.0275	-0.0984	-0.0083	-0.0102	-0.0193	-0.0260	-0.0288	-0.0490	-0.0697	-0.0034	-0.0066	-0.0099	-0.0136	-0.0488	-0.0041	-0.0050	-0.0095	-0.0129	-0.0143	-0.0244	-0.0347
2015	1	-0.0012	-0.0042	-0.0071	-0.0099	-0.0386	0.0015	0.0007	-0.0034	-0.0060	-0.0070	-0.0143	-0.0188	-0.0006	-0.0021	-0.0035	-0.0049	-0.0191	0.0008	0.0004	-0.0017	-0.0029	-0.0034	-0.0071	-0.0093
	2	-0.0021	-0.0061	-0.0103	-0.0151	-0.0656	0.0000	-0.0014	-0.0082	-0.0135	-0.0164	-0.0319	-0.0490	-0.0010	-0.0030	-0.0051	-0.0075	-0.0325	0.0001	-0.0007	-0.0040	-0.0067	-0.0081	-0.0158	-0.0244
	3	-0.0022	-0.0062	-0.0105	-0.0155	-0.0668	0.0000	-0.0014	-0.0083	-0.0137	-0.0166	-0.0323	-0.0490	-0.0011	-0.0031	-0.0052	-0.0076	-0.0331	0.0001	-0.0007	-0.0041	-0.0068	-0.0082	-0.0160	-0.0243
	4	-0.0021	-0.0061	-0.0103	-0.0152	-0.0658	0.0000	-0.0014	-0.0082	-0.0135	-0.0164	-0.0319	-0.0490	-0.0010	-0.0030	-0.0051	-0.0075	-0.0326	0.0001	-0.0006	-0.0040	-0.0067	-0.0081	-0.0158	-0.0244
	5	-0.0022	-0.0068	-0.0116	-0.0173	-0.0770	0.0003	-0.0014	-0.0094	-0.0157	-0.0191	-0.0374	-0.0575	-0.0011	-0.0033	-0.0057	-0.0086	-0.0382	0.0002	-0.0006	-0.0046	-0.0077	-0.0095	-0.0186	-0.0286
	6	-0.0028	-0.0073	-0.0121	-0.0178	-0.0767	-0.0005	-0.0021	-0.0101	-0.0163	-0.0196	-0.0377	-0.0576	-0.0014	-0.0036	-0.0060	-0.0088	-0.0380	-0.0002	-0.0010	-0.0050	-0.0081	-0.0097	-0.0187	-0.0286
	7	-0.0044	-0.0093	-0.0146	-0.0208	-0.0842	-0.0025	-0.0042	-0.0126	-0.0192	-0.0227	-0.0418	-0.0627	-0.0021	-0.0046	-0.0072	-0.0102	-0.0417	-0.0012	-0.0020	-0.0062	-0.0095	-0.0112	-0.0208	-0.0312
2020	1	-0.0053	-0.0077	-0.0101	-0.0124	-0.0417	0.0016	0.0008	-0.0034	-0.0062	-0.0074	-0.0153	-0.0204	-0.0026	-0.0038	-0.0050	-0.0061	-0.0206	0.0009	0.0005	-0.0017	-0.0030	-0.0037	-0.0076	-0.0101
	2	-0.0066	-0.0099	-0.0135	-0.0178	-0.0678	-0.0001	-0.0016	-0.0085	-0.0140	-0.0173	-0.0333	-0.0516	-0.0033	-0.0049	-0.0067	-0.0088	-0.0336	0.0000	-0.0007	-0.0042	-0.0069	-0.0086	-0.0165	-0.0256
	3	-0.0067	-0.0100	-0.0137	-0.0181	-0.0686	-0.0001	-0.0016	-0.0085	-0.0142	-0.0175	-0.0336	-0.0515	-0.0033	-0.0050	-0.0068	-0.0089	-0.0340	0.0000	-0.0007	-0.0042	-0.0070	-0.0087	-0.0167	-0.0256
	4	-0.0066	-0.0099	-0.0135	-0.0178	-0.0678	-0.0001	-0.0015	-0.0084	-0.0140	-0.0173	-0.0333	-0.0516	-0.0033	-0.0049	-0.0067	-0.0088	-0.0336	0.0000	-0.0007	-0.0041	-0.0069	-0.0086	-0.0165	-0.0256
	5	-0.0069	-0.0105	-0.0145	-0.0193	-0.0751	0.0002	-0.0014	-0.0092	-0.0154	-0.0191	-0.0371	-0.0574	-0.0034	-0.0052	-0.0072	-0.0096	-0.0372	0.0002	-0.0006	-0.0045	-0.0076	-0.0095	-0.0184	-0.0286
	6	-0.0073	-0.0110	-0.0149	-0.0197	-0.0751	-0.0006	-0.0022	-0.0099	-0.0160	-0.0197	-0.0375	-0.0577	-0.0036	-0.0054	-0.0074	-0.0098	-0.0373	-0.0002	-0.0010	-0.0048	-0.0079	-0.0097	-0.0186	-0.0287
	7	-0.0076	-0.0114	-0.0155	-0.0206	-0.0786	-0.0006	-0.0023	-0.0103	-0.0167	-0.0205	-0.0390	-0.0600	-0.0038	-0.0056	-0.0077	-0.0102	-0.0390	-0.0002	-0.0011	-0.0050	-0.0082	-0.0101	-0.0194	-0.0298
2025	1	-0.0103	-0.0126	-0.0146	-0.0164	-0.0452	0.0017	0.0009	-0.0035	-0.0063	-0.0077	-0.0157	-0.0209	-0.0052	-0.0063	-0.0073	-0.0082	-0.0224	0.0009	0.0005	-0.0017	-0.0031	-0.0038	-0.0077	-0.0104
	2	-0.0117	-0.0147	-0.0180	-0.0218	-0.0706	0.0001	-0.0014	-0.0084	-0.0142	-0.0178	-0.0343	-0.0534	-0.0058	-0.0074	-0.0089	-0.0108	-0.0351	0.0001	-0.0006	-0.0041	-0.0070	-0.0088	-0.0170	-0.0265
	3	-0.0117	-0.0148	-0.0181	-0.0219	-0.0711	0.0001	-0.0014	-0.0085	-0.0143	-0.0179	-0.0345	-0.0533	-0.0059	-0.0074	-0.0090	-0.0109	-0.0353	0.0001	-0.0006	-0.0041	-0.0070	-0.0089	-0.0171	-0.0265
	4	-0.0117	-0.0147	-0.0179	-0.0218	-0.0706	0.0001	-0.0014	-0.0084	-0.0141	-0.0178	-0.0342	-0.0534	-0.0058	-0.0074	-0.0089	-0.0108	-0.0351	0.0001	-0.0006	-0.0041	-0.0069	-0.0088	-0.0170	-0.0265
	5	-0.0120	-0.0152	-0.0186	-0.0227	-0.0753	0.0004	-0.0012	-0.0088	-0.0151	-0.0190	-0.0369	-0.0577	-0.0060	-0.0076	-0.0093	-0.0113	-0.0374	0.0003	-0.0005	-0.0043	-0.0074	-0.0094	-0.0183	-0.0287
	6	-0.0122	-0.0155	-0.0189	-0.0231	-0.0754	-0.0003	-0.0019	-0.0094	-0.0156	-0.0196	-0.0373	-0.0579	-0.0061	-0.0077	-0.0094	-0.0115	-0.0374	-0.0001	-0.0008	-0.0046	-0.0077	-0.0097	-0.0185	-0.0288
	7	-0.0122	-0.0155	-0.0190	-0.0232	-0.0771	0.0002	-0.0014	-0.0092	-0.0156	-0.0196	-0.0379	-0.0591	-0.0061	-0.0077	-0.0095	-0.0116	-0.0383	0.0002	-0.0006	-0.0045	-0.0077	-0.0097	-0.0188	-0.0294
2030	1	-0.0144	-0.0172	-0.0195	-0.0213	-0.0490	0.0024	0.0016	-0.0027	-0.0055	-0.0069	-0.0144	-0.0192	-0.0072	-0.0086	-0.0097	-0.0106	-0.0244	0.0013	0.0009	-0.0012	-0.0026	-0.0034	-0.0071	-0.0095
	2	-0.0154	-0.0190	-0.0224	-0.0262	-0.0743	0.0015	0.0000	-0.0072	-0.0131	-0.0170	-0.0340	-0.0540	-0.0078	-0.0095	-0.0112	-0.0131	-0.0370	0.0008	0.0001	-0.0035	-0.0064	-0.0084	-0.0168	-0.0268
	3	-0.0155	-0.0191	-0.0225	-0.0263	-0.0746	0.0015	0.0001	-0.0072	-0.0131	-0.0171	-0.0341	-0.0539	-0.0078	-0.0096	-0.0113	-0.0132	-0.0371	0.0008	0.0001	-0.0035	-0.0064	-0.0084	-0.0169	-0.0268
	4	-0.0154	-0.0190	-0.0224	-0.0262	-0.0743	0.0015	0.0001	-0.0071	-0.0130	-0.0169	-0.0339	-0.0540	-0.0078	-0.0095	-0.0112	-0.0131	-0.0370	0.0008	0.0001	-0.0034	-0.0064	-0.0083	-0.0168	-0.0268
	5	-0.0156	-0.0193	-0.0229	-0.0268	-0.0772	0.0018	0.0																	

Commodity	Dncrease RSR by 5%												Dncrease RSR by 10%												
	Rural 1	Rural 2	Rural 3	Rural 4	Rural 5	Urban1	Urban2	Urban3	Urban4	Urban5	Urban6	Urban7	Rural 1	Rural 2	Rural 3	Rural 4	Rural 5	Urban1	Urban2	Urban3	Urban4	Urban5	Urban6	Urban7	
2005	1	0.0008	0.0027	0.0041	0.0055	0.0170	0.0011	0.0015	0.0032	0.0041	0.0042	0.0068	0.0079	0.0018	0.0054	0.0083	0.0110	0.0339	0.0022	0.0030	0.0064	0.0083	0.0084	0.0137	0.0158
	2	0.0009	0.0033	0.0056	0.0082	0.0323	0.0012	0.0019	0.0052	0.0074	0.0081	0.0149	0.0214	0.0018	0.0068	0.0113	0.0165	0.0646	0.0026	0.0040	0.0105	0.0150	0.0163	0.0299	0.0428
	3	0.0009	0.0035	0.0059	0.0087	0.0337	0.0013	0.0020	0.0054	0.0077	0.0084	0.0154	0.0213	0.0019	0.0072	0.0120	0.0174	0.0672	0.0027	0.0042	0.0109	0.0156	0.0168	0.0308	0.0427
	4	0.0009	0.0034	0.0057	0.0083	0.0325	0.0012	0.0019	0.0052	0.0074	0.0081	0.0149	0.0214	0.0018	0.0068	0.0114	0.0166	0.0649	0.0026	0.0040	0.0105	0.0150	0.0163	0.0300	0.0428
	5	0.0013	0.0049	0.0084	0.0122	0.0482	0.0019	0.0029	0.0077	0.0110	0.0120	0.0222	0.0317	0.0028	0.0101	0.0168	0.0246	0.0962	0.0039	0.0060	0.0156	0.0222	0.0241	0.0444	0.0634
	6	0.0009	0.0045	0.0078	0.0115	0.0463	0.0015	0.0025	0.0071	0.0104	0.0113	0.0212	0.0306	0.0020	0.0091	0.0157	0.0231	0.0924	0.0032	0.0051	0.0144	0.0209	0.0227	0.0425	0.0612
	7	0.0121	0.0164	0.0204	0.0248	0.0652	0.0125	0.0135	0.0186	0.0222	0.0229	0.0339	0.0441	0.0240	0.0325	0.0404	0.0491	0.1296	0.0247	0.0267	0.0369	0.0440	0.0455	0.0675	0.0878
2010	1	-0.0003	0.0015	0.0030	0.0045	0.0176	-0.0003	0.0001	0.0020	0.0031	0.0035	0.0067	0.0085	-0.0006	0.0029	0.0059	0.0088	0.0349	-0.0006	0.0002	0.0040	0.0062	0.0069	0.0133	0.0168
	2	-0.0001	0.0021	0.0044	0.0069	0.0315	0.0001	0.0008	0.0040	0.0065	0.0076	0.0149	0.0226	-0.0002	0.0042	0.0086	0.0137	0.0625	0.0001	0.0015	0.0080	0.0129	0.0152	0.0297	0.0450
	3	-0.0001	0.0022	0.0045	0.0072	0.0323	0.0001	0.0008	0.0041	0.0067	0.0078	0.0152	0.0225	-0.0003	0.0044	0.0089	0.0142	0.0642	0.0001	0.0015	0.0082	0.0132	0.0155	0.0303	0.0449
	4	-0.0001	0.0022	0.0044	0.0069	0.0316	0.0001	0.0008	0.0040	0.0065	0.0076	0.0149	0.0226	-0.0003	0.0042	0.0087	0.0137	0.0627	0.0001	0.0015	0.0080	0.0129	0.0151	0.0297	0.0450
	5	-0.0002	0.0026	0.0054	0.0087	0.0404	0.0000	0.0009	0.0051	0.0082	0.0097	0.0191	0.0288	-0.0005	0.0051	0.0107	0.0172	0.0803	-0.0001	0.0017	0.0101	0.0164	0.0192	0.0379	0.0573
	6	0.0001	0.0029	0.0056	0.0088	0.0399	0.0003	0.0012	0.0053	0.0084	0.0098	0.0190	0.0287	0.0001	0.0056	0.0112	0.0175	0.0793	0.0006	0.0023	0.0105	0.0167	0.0195	0.0379	0.0571
	7	0.0032	0.0064	0.0096	0.0133	0.0481	0.0039	0.0048	0.0093	0.0127	0.0141	0.0240	0.0343	0.0063	0.0127	0.0190	0.0263	0.0954	0.0076	0.0095	0.0184	0.0251	0.0279	0.0478	0.0681
2015	1	0.0005	0.0020	0.0033	0.0047	0.0187	-0.0009	-0.0005	0.0015	0.0028	0.0033	0.0069	0.0092	0.0009	0.0038	0.0066	0.0093	0.0371	-0.0018	-0.0010	0.0030	0.0055	0.0065	0.0137	0.0182
	2	0.0010	0.0029	0.0049	0.0073	0.0320	-0.0002	0.0006	0.0039	0.0065	0.0080	0.0156	0.0241	0.0019	0.0057	0.0097	0.0144	0.0634	-0.0004	0.0010	0.0076	0.0129	0.0158	0.0310	0.0479
	3	0.0010	0.0029	0.0050	0.0074	0.0325	-0.0002	0.0006	0.0039	0.0066	0.0081	0.0158	0.0241	0.0019	0.0058	0.0099	0.0147	0.0645	-0.0004	0.0010	0.0077	0.0131	0.0160	0.0314	0.0479
	4	0.0010	0.0029	0.0049	0.0073	0.0320	-0.0002	0.0005	0.0039	0.0065	0.0079	0.0156	0.0241	0.0019	0.0057	0.0097	0.0144	0.0635	-0.0004	0.0010	0.0076	0.0128	0.0157	0.0310	0.0479
	5	0.0010	0.0032	0.0055	0.0083	0.0375	-0.0003	0.0005	0.0044	0.0075	0.0093	0.0183	0.0283	0.0019	0.0063	0.0109	0.0164	0.0743	-0.0008	0.0009	0.0087	0.0149	0.0183	0.0363	0.0562
	6	0.0013	0.0035	0.0058	0.0086	0.0374	0.0001	0.0009	0.0048	0.0079	0.0095	0.0185	0.0283	0.0025	0.0069	0.0115	0.0170	0.0741	0.0001	0.0017	0.0094	0.0155	0.0189	0.0367	0.0563
	7	0.0020	0.0044	0.0070	0.0100	0.0410	0.0010	0.0019	0.0060	0.0092	0.0110	0.0204	0.0308	0.0040	0.0087	0.0138	0.0197	0.0813	0.0019	0.0036	0.0118	0.0182	0.0218	0.0406	0.0612
2020	1	0.0026	0.0037	0.0049	0.0060	0.0203	-0.0010	-0.0006	0.0015	0.0029	0.0035	0.0074	0.0099	0.0051	0.0074	0.0096	0.0118	0.0401	-0.0021	-0.0013	0.0029	0.0056	0.0069	0.0146	0.0197
	2	0.0032	0.0048	0.0066	0.0086	0.0330	-0.0001	0.0006	0.0040	0.0067	0.0084	0.0163	0.0253	0.0064	0.0096	0.0130	0.0171	0.0655	-0.0004	0.0010	0.0077	0.0132	0.0165	0.0323	0.0504
	3	0.0033	0.0049	0.0066	0.0088	0.0334	-0.0002	0.0006	0.0040	0.0068	0.0084	0.0164	0.0253	0.0065	0.0097	0.0131	0.0173	0.0663	-0.0004	0.0010	0.0078	0.0133	0.0167	0.0325	0.0503
	4	0.0032	0.0048	0.0066	0.0087	0.0331	-0.0002	0.0006	0.0039	0.0067	0.0084	0.0163	0.0253	0.0064	0.0096	0.0130	0.0171	0.0656	-0.0004	0.0010	0.0077	0.0131	0.0165	0.0322	0.0504
	5	0.0034	0.0051	0.0070	0.0094	0.0366	-0.0003	0.0005	0.0043	0.0074	0.0092	0.0181	0.0282	0.0067	0.0101	0.0139	0.0185	0.0726	-0.0008	0.0008	0.0084	0.0145	0.0182	0.0359	0.0561
	6	0.0036	0.0053	0.0073	0.0096	0.0366	0.0001	0.0009	0.0046	0.0077	0.0095	0.0183	0.0284	0.0071	0.0106	0.0144	0.0190	0.0726	0.0000	0.0016	0.0091	0.0151	0.0188	0.0363	0.0564
	7	0.0037	0.0055	0.0075	0.0100	0.0383	0.0001	0.0009	0.0048	0.0080	0.0099	0.0190	0.0295	0.0073	0.0109	0.0149	0.0197	0.0759	0.0000	0.0016	0.0094	0.0157	0.0196	0.0377	0.0586
2025	1	0.0052	0.0062	0.0072	0.0081	0.0221	-0.0010	-0.0006	0.0015	0.0029	0.0036	0.0075	0.0102	0.0104	0.0125	0.0143	0.0160	0.0437	-0.0022	-0.0014	0.0028	0.0056	0.0071	0.0149	0.0202
	2	0.0059	0.0073	0.0089	0.0107	0.0346	-0.0003	0.0004	0.0039	0.0067	0.0086	0.0167	0.0262	0.0117	0.0147	0.0177	0.0213	0.0686	-0.0007	0.0007	0.0076	0.0132	0.0169	0.0331	0.0521
	3	0.0059	0.0074	0.0089	0.0108	0.0348	-0.0003	0.0004	0.0039	0.0068	0.0086	0.0168	0.0262	0.0118	0.0147	0.0178	0.0215	0.0691	-0.0007	0.0007	0.0076	0.0133	0.0170	0.0333	0.0521
	4	0.0059	0.0073	0.0089	0.0107	0.0346	-0.0003	0.0004	0.0039	0.0067	0.0085	0.0167	0.0262	0.0117	0.0147	0.0177	0.0213	0.0687	-0.0007	0.0007	0.0075	0.0132	0.0169	0.0331	0.0521
	5	0.0060	0.0076	0.0092	0.0112	0.0369	-0.0004	0.0003	0.0041	0.0071	0.0092	0.0180	0.0283	0.0120	0.0151	0.0184	0.0223	0.0732	-0.0011	0.0005	0.0079	0.0140	0.0181	0.0357	0.0563
	6	0.0061	0.0077	0.0094	0.0114	0.0369	-0.0001	0.0007	0.0044	0.0074	0.0094	0.0182	0.0285	0.0123	0.0154	0.0187	0.0226	0.0733	-0.0004	0.0012	0.0085	0.0146	0.0186	0.0361	0.0566
	7	0.0061	0.0077	0.0094	0.0114	0.0377	-0.0004	0.0004	0.0042	0.0074	0.0094	0.0185	0.0290	0.0122	0.0154	0.0188	0.0227	0.0749	-0.0009	0.0006	0.0082	0.0145	0.0186	0.0366	0.0577
2030	1	0.0073	0.0087	0.0098	0.0106	0.0241	-0.0014	-0.0010	0.0011	0.0024	0.0032	0.0069	0.0093	0.0148	0.0175	0.0196	0.0212	0.0480	-0.0030	-0.0022	0.0019	0.0047	0.0062	0.0136	0.0185
	2	0.0079	0.0096	0.0113	0.0131	0.0366	-0.0010	-0.0003	0.0032	0.0061	0.0081	0.0165	0.0264	0.0158	0.0193	0.0226	0.0262	0.0729	-0.0022	-0.0009	0.0061	0.0119	0.0159	0.0326	0.0525
	3	0.0079	0.0096	0.0113	0.0132	0.0368	-0.0010	-0.0003	0.0032	0.0061	0.0081	0.0165	0.0264	0.0159	0.0194	0.0227	0.0263	0.0732	-0.0023	-0.0009	0.0061	0.0120	0.0160	0.0327	0.0525
	4	0.0079	0.0096	0.0113	0.0131	0.0366	-0.0010	-0.0003	0.0032	0.0061	0.0081	0.0164	0.0264	0.0158	0.0193	0.0226	0.0262	0.0729	-0.0022	-0.0009	0.0061	0.0119	0.0158	0.0325	0.0525
	5	0.0079	0.0098	0.0115	0.0134	0.0381	-0.0012	-0.0005	0.0032	0.0064	0.0085	0.0174	0.0281	0.0160	0.0196	0.0230	0.0268	0.0758	-0.0027	-0.0012	0.0062	0.0124	0.0166	0.0344	0.0558
	6	0.0080	0.0098	0.0116	0.0135	0.0382	-0.0009	-0.0002	0.0036	0.0067	0.0087	0.0177	0.0283	0.0161	0.0198	0.0232	0.0270	0.0760	-0.0020	-0.0006	0.0068	0.0130	0.0172	0.0349	0.0562
	7	0.0080	0.0098	0.0116	0.0135	0.0386	-0.0012	-0.0005	0.0033	0.0065	0.0086	0.0177	0.0286	0.0161	0.0197	0.0232	0.0271	0.0768	-0.0027	-0.0012	0.0063	0.0126	0.0169	0.0350	0.0567



Appendix Table B

## Long-Term Shock Scenario of Changes of GSR on Household's Demand: 2005-2030

Unit: %

Commodity	Increase GSR by 10%											Increase GSR by 5%													
	Rural 1	Rural 2	Rural 3	Rural 4	Rural 5	Urban1	Urban2	Urban3	Urban4	Urban5	Urban6	Urban7	Rural 1	Rural 2	Rural 3	Rural 4	Rural 5	Urban1	Urban2	Urban3	Urban4	Urban5	Urban6	Urban7	
2005	1	-0.0026	-0.0021	-0.0016	-0.0011	-0.0001	0.0002	0.0002	-0.0001	-0.0005	-0.0011	-0.0015	-0.0024	-0.0013	-0.0010	-0.0008	-0.0006	0.0000	0.0001	0.0001	-0.0001	-0.0002	-0.0005	-0.0008	-0.0012
	2	-0.0034	-0.0028	-0.0023	-0.0017	-0.0001	0.0005	0.0004	-0.0001	-0.0008	-0.0022	-0.0034	-0.0068	-0.0017	-0.0014	-0.0011	-0.0009	0.0000	0.0002	0.0002	-0.0001	-0.0004	-0.0011	-0.0017	-0.0034
	3	-0.0036	-0.0029	-0.0024	-0.0018	-0.0001	0.0005	0.0004	-0.0001	-0.0009	-0.0022	-0.0035	-0.0068	-0.0018	-0.0015	-0.0012	-0.0009	0.0000	0.0002	0.0002	-0.0001	-0.0004	-0.0011	-0.0018	-0.0034
	4	-0.0034	-0.0028	-0.0023	-0.0017	-0.0001	0.0005	0.0004	-0.0001	-0.0008	-0.0022	-0.0034	-0.0068	-0.0017	-0.0014	-0.0011	-0.0009	0.0000	0.0002	0.0002	-0.0001	-0.0004	-0.0011	-0.0017	-0.0034
	5	-0.0050	-0.0041	-0.0033	-0.0025	-0.0001	0.0007	0.0006	-0.0002	-0.0012	-0.0032	-0.0051	-0.0100	-0.0025	-0.0021	-0.0017	-0.0013	0.0000	0.0003	0.0003	-0.0001	-0.0006	-0.0016	-0.0025	-0.0050
	6	-0.0048	-0.0039	-0.0032	-0.0024	0.0000	0.0007	0.0007	-0.0001	-0.0011	-0.0030	-0.0048	-0.0097	-0.0024	-0.0020	-0.0016	-0.0012	0.0000	0.0004	0.0003	0.0000	-0.0006	-0.0015	-0.0024	-0.0049
	7	-0.0080	-0.0071	-0.0062	-0.0053	-0.0024	-0.0016	-0.0016	-0.0024	-0.0036	-0.0057	-0.0077	-0.0131	-0.0040	-0.0035	-0.0031	-0.0026	-0.0012	-0.0008	-0.0008	-0.0012	-0.0018	-0.0028	-0.0038	-0.0065
2010	1	-0.0016	-0.0012	-0.0009	-0.0005	0.0002	0.0004	0.0004	0.0002	-0.0001	-0.0006	-0.0010	-0.0017	-0.0008	-0.0006	-0.0004	-0.0003	0.0001	0.0002	0.0002	0.0001	-0.0001	-0.0003	-0.0005	-0.0009
	2	-0.0021	-0.0016	-0.0013	-0.0009	0.0002	0.0005	0.0005	0.0001	-0.0004	-0.0014	-0.0023	-0.0047	-0.0010	-0.0008	-0.0006	-0.0004	0.0001	0.0002	0.0002	0.0001	-0.0002	-0.0007	-0.0011	-0.0023
	3	-0.0021	-0.0017	-0.0013	-0.0009	0.0002	0.0005	0.0005	0.0001	-0.0004	-0.0014	-0.0023	-0.0047	-0.0011	-0.0008	-0.0007	-0.0005	0.0001	0.0002	0.0002	0.0001	-0.0002	-0.0007	-0.0012	-0.0023
	4	-0.0021	-0.0016	-0.0013	-0.0009	0.0002	0.0005	0.0005	0.0001	-0.0004	-0.0014	-0.0023	-0.0047	-0.0010	-0.0008	-0.0006	-0.0005	0.0001	0.0002	0.0002	0.0001	-0.0002	-0.0007	-0.0011	-0.0023
	5	-0.0025	-0.0020	-0.0016	-0.0011	0.0003	0.0007	0.0006	0.0002	-0.0005	-0.0018	-0.0029	-0.0060	-0.0013	-0.0010	-0.0008	-0.0006	0.0001	0.0003	0.0003	0.0001	-0.0003	-0.0009	-0.0015	-0.0030
	6	-0.0026	-0.0021	-0.0016	-0.0012	0.0002	0.0006	0.0005	0.0001	-0.0006	-0.0018	-0.0029	-0.0059	-0.0013	-0.0010	-0.0008	-0.0006	0.0001	0.0003	0.0003	0.0000	-0.0003	-0.0009	-0.0015	-0.0030
	7	-0.0032	-0.0026	-0.0021	-0.0016	-0.0001	0.0003	0.0002	-0.0002	-0.0010	-0.0023	-0.0035	-0.0068	-0.0016	-0.0013	-0.0011	-0.0008	-0.0001	0.0001	0.0001	-0.0001	-0.0005	-0.0012	-0.0018	-0.0034
2015	1	-0.0012	-0.0009	-0.0006	-0.0003	0.0003	0.0004	0.0004	0.0002	0.0000	-0.0004	-0.0007	-0.0013	-0.0006	-0.0004	-0.0003	-0.0002	0.0001	0.0002	0.0002	0.0001	0.0000	-0.0002	-0.0003	-0.0006
	2	-0.0015	-0.0011	-0.0009	-0.0006	0.0002	0.0004	0.0004	0.0001	-0.0003	-0.0010	-0.0017	-0.0034	-0.0007	-0.0006	-0.0004	-0.0003	0.0001	0.0002	0.0002	0.0001	-0.0001	-0.0005	-0.0008	-0.0017
	3	-0.0015	-0.0012	-0.0009	-0.0006	0.0002	0.0004	0.0004	0.0001	-0.0003	-0.0010	-0.0017	-0.0034	-0.0007	-0.0006	-0.0004	-0.0003	0.0001	0.0002	0.0002	0.0001	-0.0001	-0.0005	-0.0008	-0.0017
	4	-0.0015	-0.0011	-0.0009	-0.0006	0.0002	0.0004	0.0004	0.0001	-0.0003	-0.0010	-0.0017	-0.0034	-0.0007	-0.0006	-0.0004	-0.0003	0.0001	0.0002	0.0002	0.0001	-0.0001	-0.0005	-0.0008	-0.0017
	5	-0.0016	-0.0013	-0.0010	-0.0007	0.0003	0.0005	0.0005	0.0002	-0.0003	-0.0012	-0.0020	-0.0040	-0.0008	-0.0006	-0.0005	-0.0003	0.0001	0.0002	0.0002	0.0001	-0.0002	-0.0006	-0.0010	-0.0020
	6	-0.0017	-0.0013	-0.0010	-0.0007	0.0002	0.0004	0.0004	0.0001	-0.0004	-0.0012	-0.0020	-0.0040	-0.0008	-0.0007	-0.0005	-0.0004	0.0001	0.0002	0.0002	0.0000	-0.0002	-0.0006	-0.0010	-0.0020
	7	-0.0017	-0.0013	-0.0010	-0.0007	0.0003	0.0005	0.0005	0.0002	-0.0003	-0.0012	-0.0020	-0.0042	-0.0009	-0.0007	-0.0005	-0.0003	0.0002	0.0003	0.0003	0.0001	-0.0001	-0.0006	-0.0010	-0.0021
2020	1	-0.0010	-0.0007	-0.0005	-0.0003	0.0002	0.0003	0.0003	0.0002	0.0000	-0.0003	-0.0005	-0.0009	-0.0005	-0.0004	-0.0003	-0.0001	0.0001	0.0002	0.0002	0.0001	0.0000	-0.0001	-0.0002	-0.0005
	2	-0.0012	-0.0009	-0.0007	-0.0005	0.0001	0.0003	0.0003	0.0001	-0.0002	-0.0008	-0.0012	-0.0025	-0.0006	-0.0005	-0.0004	-0.0002	0.0001	0.0001	0.0001	0.0000	-0.0001	-0.0004	-0.0006	-0.0013
	3	-0.0012	-0.0009	-0.0007	-0.0005	0.0001	0.0003	0.0003	0.0001	-0.0002	-0.0008	-0.0012	-0.0025	-0.0006	-0.0005	-0.0004	-0.0002	0.0001	0.0001	0.0001	0.0000	-0.0001	-0.0004	-0.0006	-0.0013
	4	-0.0012	-0.0009	-0.0007	-0.0005	0.0001	0.0003	0.0003	0.0001	-0.0002	-0.0008	-0.0012	-0.0025	-0.0006	-0.0005	-0.0004	-0.0002	0.0001	0.0001	0.0001	0.0000	-0.0001	-0.0004	-0.0006	-0.0013
	5	-0.0013	-0.0010	-0.0008	-0.0005	0.0002	0.0003	0.0003	0.0001	-0.0002	-0.0008	-0.0014	-0.0028	-0.0006	-0.0005	-0.0004	-0.0003	0.0001	0.0002	0.0002	0.0001	-0.0001	-0.0004	-0.0007	-0.0014
	6	-0.0013	-0.0010	-0.0008	-0.0005	0.0001	0.0003	0.0003	0.0001	-0.0002	-0.0009	-0.0014	-0.0028	-0.0006	-0.0005	-0.0004	-0.0003	0.0001	0.0001	0.0001	0.0000	-0.0001	-0.0004	-0.0007	-0.0014
	7	-0.0012	-0.0010	-0.0007	-0.0005	0.0003	0.0004	0.0004	0.0002	-0.0001	-0.0008	-0.0013	-0.0028	-0.0006	-0.0005	-0.0004	-0.0002	0.0001	0.0002	0.0002	0.0001	-0.0001	-0.0004	-0.0007	-0.0014
2025	1	-0.0009	-0.0007	-0.0005	-0.0003	0.0001	0.0003	0.0002	0.0002	0.0000	-0.0002	-0.0004	-0.0007	-0.0005	-0.0004	-0.0003	-0.0002	0.0001	0.0001	0.0001	0.0001	0.0000	-0.0001	-0.0002	-0.0004
	2	-0.0011	-0.0008	-0.0007	-0.0005	0.0001	0.0002	0.0002	0.0001	-0.0001	-0.0006	-0.0009	-0.0019	-0.0005	-0.0004	-0.0003	-0.0002	0.0000	0.0001	0.0001	0.0000	-0.0001	-0.0003	-0.0005	-0.0010
	3	-0.0011	-0.0008	-0.0007	-0.0005	0.0001	0.0002	0.0002	0.0001	-0.0001	-0.0006	-0.0009	-0.0019	-0.0005	-0.0004	-0.0003	-0.0002	0.0000	0.0001	0.0001	0.0000	-0.0001	-0.0003	-0.0005	-0.0010
	4	-0.0011	-0.0008	-0.0007	-0.0005	0.0001	0.0002	0.0002	0.0001	-0.0001	-0.0006	-0.0009	-0.0019	-0.0005	-0.0004	-0.0003	-0.0002	0.0000	0.0001	0.0001	0.0000	-0.0001	-0.0003	-0.0005	-0.0010
	5	-0.0011	-0.0009	-0.0007	-0.0005	0.0001	0.0003	0.0003	0.0001	-0.0001	-0.0006	-0.0010	-0.0021	-0.0005	-0.0004	-0.0003	-0.0002	0.0000	0.0001	0.0001	0.0001	-0.0001	-0.0003	-0.0005	-0.0010
	6	-0.0011	-0.0009	-0.0007	-0.0005	0.0000	0.0002	0.0002	0.0001	-0.0002	-0.0006	-0.0010	-0.0021	-0.0005	-0.0004	-0.0004	-0.0003	0.0000	0.0001	0.0001	0.0000	-0.0001	-0.0003	-0.0005	-0.0010
	7	-0.0011	-0.0009	-0.0007	-0.0005	0.0001	0.0003	0.0003	0.0002	-0.0001	-0.0005	-0.0010	-0.0021	-0.0005	-0.0004	-0.0003	-0.0002	0.0001	0.0002	0.0002	0.0001	0.0000	-0.0003	-0.0005	-0.0010
2030	1	-0.0009	-0.0007	-0.0006	-0.0004	0.0000	0.0002	0.0002	0.0001	0.0001	-0.0001	-0.0002	-0.0005	-0.0004	-0.0004	-0.0003	-0.0002	0.0000	0.0001	0.0001	0.0001	0.0000	-0.0001	-0.0001	-0.0002
	2	-0.0010	-0.0008	-0.0007	-0.0005	0.0000	0.0002	0.0002	0.0001	0.0000	-0.0004	-0.0007	-0.0015	-0.0005	-0.0004	-0.0003	-0.0003	0.0000	0.0001	0.0001	0.0001	0.0000	-0.0002	-0.0003	-0.0007
	3	-0.0010	-0.0008	-0.0007	-0.0005	0.0000	0.0002	0.0002	0.0001	0.0000	-0.0004	-0.0007	-0.0015	-0.0005	-0.0004	-0.0003	-0.0003	0.0000	0.0001	0.0001	0.0001	0.0000	-0.0002	-0.0003	-0.0007
	4	-0.0010	-0.0008	-0.0007	-0.0005	0.0000	0.0002	0.0002	0.0001	0.0000	-0.0004	-0.0007	-0.0015	-0.0005	-0.0004	-0.0003	-0.0003	0.0000	0.0001	0.0001	0.0001	0.0000	-0.0002	-0.0003	-0.0007
	5	-0.0010	-0.0008	-0.0007	-0.0005	0.0000	0.0003	0.0003	0.0002																

Commodity	Increase GSR by 5%													Decrease GSR by 10%												
	Rural 1	Rural 2	Rural 3	Rural 4	Rural 5	Urban1	Urban2	Urban3	Urban4	Urban5	Urban6	Urban7	Rural 1	Rural 2	Rural 3	Rural 4	Rural 5	Urban1	Urban2	Urban3	Urban4	Urban5	Urban6	Urban7		
2005	1	0.0013	0.0010	0.0008	0.0006	0.0000	-0.0001	-0.0001	0.0001	0.0002	0.0005	0.0008	0.0012	0.0026	0.0021	0.0016	0.0011	0.0001	-0.0002	-0.0002	0.0001	0.0005	0.0011	0.0015	0.0024	
	2	0.0017	0.0014	0.0011	0.0009	0.0000	-0.0002	-0.0002	0.0001	0.0004	0.0011	0.0017	0.0034	0.0034	0.0028	0.0023	0.0017	0.0001	-0.0005	-0.0004	0.0001	0.0008	0.0022	0.0034	0.0068	
	3	0.0018	0.0015	0.0012	0.0009	0.0000	-0.0002	-0.0002	0.0001	0.0004	0.0011	0.0018	0.0034	0.0036	0.0030	0.0024	0.0018	0.0001	-0.0005	-0.0004	0.0001	0.0009	0.0022	0.0035	0.0068	
	4	0.0017	0.0014	0.0011	0.0009	0.0000	-0.0002	-0.0002	0.0001	0.0004	0.0011	0.0017	0.0034	0.0034	0.0028	0.0023	0.0017	0.0001	-0.0005	-0.0004	0.0001	0.0008	0.0022	0.0034	0.0068	
	5	0.0025	0.0021	0.0017	0.0013	0.0000	-0.0003	-0.0003	0.0001	0.0006	0.0016	0.0025	0.0050	0.0050	0.0041	0.0034	0.0025	0.0001	-0.0007	-0.0006	0.0002	0.0012	0.0032	0.0051	0.0100	
	6	0.0024	0.0020	0.0016	0.0012	0.0000	-0.0004	-0.0003	0.0000	0.0006	0.0015	0.0024	0.0049	0.0048	0.0040	0.0032	0.0024	0.0000	-0.0007	-0.0007	0.0001	0.0011	0.0030	0.0049	0.0097	
	7	0.0040	0.0035	0.0031	0.0026	0.0012	0.0008	0.0008	0.0012	0.0018	0.0028	0.0038	0.0065	0.0080	0.0071	0.0062	0.0053	0.0024	0.0016	0.0016	0.0024	0.0036	0.0056	0.0077	0.0131	
2010	1	0.0008	0.0006	0.0004	0.0003	-0.0001	-0.0002	-0.0002	-0.0001	0.0001	0.0003	0.0005	0.0009	0.0016	0.0012	0.0009	0.0005	-0.0002	-0.0004	-0.0004	-0.0002	0.0001	0.0006	0.0010	0.0017	
	2	0.0010	0.0008	0.0006	0.0004	-0.0001	-0.0002	-0.0002	-0.0001	0.0002	0.0007	0.0011	0.0023	0.0021	0.0016	0.0013	0.0009	-0.0002	-0.0005	-0.0005	-0.0001	0.0004	0.0014	0.0023	0.0047	
	3	0.0011	0.0008	0.0007	0.0005	-0.0001	-0.0002	-0.0002	-0.0001	0.0002	0.0007	0.0012	0.0023	0.0021	0.0017	0.0013	0.0009	-0.0002	-0.0005	-0.0005	-0.0001	0.0004	0.0014	0.0023	0.0047	
	4	0.0010	0.0008	0.0006	0.0004	-0.0001	-0.0002	-0.0002	-0.0001	0.0002	0.0007	0.0011	0.0023	0.0021	0.0016	0.0013	0.0009	-0.0002	-0.0005	-0.0005	-0.0001	0.0004	0.0014	0.0023	0.0047	
	5	0.0013	0.0010	0.0008	0.0006	-0.0001	-0.0003	-0.0003	-0.0001	0.0003	0.0009	0.0015	0.0030	0.0025	0.0020	0.0016	0.0011	-0.0003	-0.0007	-0.0006	-0.0002	0.0005	0.0018	0.0029	0.0060	
	6	0.0013	0.0010	0.0008	0.0006	-0.0001	-0.0003	-0.0003	0.0000	0.0003	0.0009	0.0015	0.0030	0.0026	0.0021	0.0016	0.0012	-0.0002	-0.0006	-0.0005	-0.0001	0.0006	0.0018	0.0029	0.0059	
	7	0.0016	0.0013	0.0011	0.0008	0.0001	-0.0001	-0.0001	0.0001	0.0005	0.0012	0.0018	0.0034	0.0031	0.0026	0.0021	0.0016	0.0001	-0.0003	-0.0002	0.0002	0.0010	0.0023	0.0035	0.0068	
2015	1	0.0006	0.0004	0.0003	0.0002	-0.0001	-0.0002	-0.0002	-0.0001	0.0000	0.0002	0.0003	0.0006	0.0012	0.0009	0.0006	0.0003	-0.0003	-0.0004	-0.0004	-0.0002	0.0000	0.0004	0.0007	0.0013	
	2	0.0007	0.0006	0.0004	0.0003	-0.0001	-0.0002	-0.0002	-0.0001	0.0001	0.0005	0.0008	0.0017	0.0015	0.0011	0.0009	0.0006	-0.0002	-0.0004	-0.0004	-0.0001	0.0003	0.0010	0.0017	0.0034	
	3	0.0007	0.0006	0.0004	0.0003	-0.0001	-0.0002	-0.0002	-0.0001	0.0001	0.0005	0.0008	0.0017	0.0015	0.0012	0.0009	0.0006	-0.0002	-0.0004	-0.0004	-0.0001	0.0003	0.0010	0.0017	0.0034	
	4	0.0007	0.0006	0.0004	0.0003	-0.0001	-0.0002	-0.0002	-0.0001	0.0001	0.0005	0.0008	0.0017	0.0015	0.0011	0.0009	0.0006	-0.0002	-0.0004	-0.0004	-0.0001	0.0003	0.0010	0.0017	0.0034	
	5	0.0008	0.0006	0.0005	0.0003	-0.0001	-0.0002	-0.0002	-0.0001	0.0002	0.0006	0.0010	0.0020	0.0016	0.0013	0.0010	0.0007	-0.0003	-0.0005	-0.0005	-0.0002	0.0003	0.0012	0.0020	0.0040	
	6	0.0008	0.0007	0.0005	0.0004	-0.0001	-0.0002	-0.0002	0.0000	0.0002	0.0006	0.0010	0.0020	0.0017	0.0013	0.0010	0.0007	-0.0002	-0.0004	-0.0004	-0.0001	0.0004	0.0012	0.0020	0.0040	
	7	0.0009	0.0007	0.0005	0.0003	-0.0002	-0.0003	-0.0003	-0.0001	0.0001	0.0006	0.0010	0.0021	0.0017	0.0013	0.0010	0.0007	-0.0003	-0.0005	-0.0005	-0.0002	0.0003	0.0012	0.0020	0.0042	
2020	1	0.0005	0.0004	0.0003	0.0001	-0.0001	-0.0002	-0.0002	-0.0001	0.0000	0.0001	0.0002	0.0005	0.0010	0.0007	0.0005	0.0003	-0.0002	-0.0003	-0.0003	-0.0002	0.0000	0.0003	0.0005	0.0009	
	2	0.0006	0.0005	0.0004	0.0002	-0.0001	-0.0001	-0.0001	0.0000	0.0001	0.0004	0.0006	0.0013	0.0012	0.0009	0.0007	0.0005	-0.0001	-0.0003	-0.0003	-0.0001	0.0002	0.0008	0.0012	0.0025	
	3	0.0006	0.0005	0.0004	0.0002	-0.0001	-0.0001	-0.0001	0.0000	0.0001	0.0004	0.0006	0.0013	0.0012	0.0009	0.0007	0.0005	-0.0001	-0.0003	-0.0003	-0.0001	0.0002	0.0008	0.0012	0.0025	
	4	0.0006	0.0005	0.0004	0.0002	-0.0001	-0.0001	-0.0001	0.0000	0.0001	0.0004	0.0006	0.0013	0.0012	0.0009	0.0007	0.0005	-0.0001	-0.0003	-0.0003	-0.0001	0.0002	0.0008	0.0012	0.0025	
	5	0.0006	0.0005	0.0004	0.0003	-0.0001	-0.0002	-0.0002	-0.0001	0.0001	0.0004	0.0007	0.0014	0.0013	0.0010	0.0008	0.0005	-0.0002	-0.0003	-0.0003	-0.0001	0.0002	0.0008	0.0014	0.0028	
	6	0.0006	0.0005	0.0004	0.0003	-0.0001	-0.0001	-0.0001	0.0000	0.0001	0.0004	0.0007	0.0014	0.0013	0.0010	0.0008	0.0005	-0.0001	-0.0003	-0.0003	-0.0001	0.0002	0.0009	0.0014	0.0028	
	7	0.0006	0.0005	0.0004	0.0002	-0.0001	-0.0002	-0.0002	-0.0001	0.0001	0.0004	0.0007	0.0014	0.0012	0.0010	0.0007	0.0005	-0.0003	-0.0004	-0.0004	-0.0002	0.0001	0.0008	0.0013	0.0028	
2025	1	0.0005	0.0004	0.0003	0.0002	-0.0001	-0.0001	-0.0001	0.0000	0.0001	0.0002	0.0004	0.0009	0.0009	0.0007	0.0005	0.0003	-0.0001	-0.0003	-0.0002	-0.0002	0.0000	0.0002	0.0004	0.0007	
	2	0.0005	0.0004	0.0003	0.0002	0.0000	-0.0001	-0.0001	0.0000	0.0001	0.0003	0.0005	0.0010	0.0011	0.0008	0.0007	0.0005	-0.0001	-0.0002	-0.0002	-0.0001	0.0001	0.0006	0.0009	0.0019	
	3	0.0005	0.0004	0.0003	0.0002	0.0000	-0.0001	-0.0001	0.0000	0.0001	0.0003	0.0005	0.0010	0.0011	0.0008	0.0007	0.0005	-0.0001	-0.0002	-0.0002	-0.0001	0.0001	0.0006	0.0009	0.0019	
	4	0.0005	0.0004	0.0003	0.0002	0.0000	-0.0001	-0.0001	0.0000	0.0001	0.0003	0.0005	0.0010	0.0011	0.0008	0.0007	0.0005	-0.0001	-0.0002	-0.0002	-0.0001	0.0001	0.0006	0.0009	0.0019	
	5	0.0005	0.0004	0.0003	0.0002	0.0000	-0.0001	-0.0001	-0.0001	0.0001	0.0003	0.0005	0.0010	0.0011	0.0009	0.0007	0.0005	-0.0001	-0.0003	-0.0003	-0.0001	0.0001	0.0006	0.0010	0.0021	
	6	0.0005	0.0004	0.0004	0.0003	0.0000	-0.0001	-0.0001	0.0000	0.0001	0.0003	0.0005	0.0010	0.0011	0.0009	0.0007	0.0005	0.0000	-0.0002	-0.0002	-0.0001	0.0002	0.0006	0.0010	0.0021	
	7	0.0005	0.0004	0.0003	0.0002	-0.0001	-0.0002	-0.0002	-0.0001	0.0000	0.0003	0.0005	0.0010	0.0011	0.0009	0.0007	0.0005	-0.0001	-0.0003	-0.0003	-0.0002	0.0001	0.0005	0.0010	0.0021	
2030	1	0.0004	0.0004	0.0003	0.0002	0.0000	-0.0001	-0.0001	-0.0001	0.0000	0.0001	0.0001	0.0002	0.0009	0.0007	0.0006	0.0004	0.0000	-0.0002	-0.0002	-0.0002	-0.0001	0.0001	0.0002	0.0005	
	2	0.0005	0.0004	0.0003	0.0003	0.0000	-0.0001	-0.0001	-0.0001	0.0000	0.0002	0.0003	0.0007	0.0010	0.0008	0.0007	0.0005	0.0000	-0.0002	-0.0002	-0.0001	0.0000	0.0004	0.0007	0.0015	
	3	0.0005	0.0004	0.0003	0.0003	0.0000	-0.0001	-0.0001	-0.0001	0.0000	0.0002	0.0003	0.0007	0.0010	0.0008	0.0007	0.0005	0.0000	-0.0002	-0.0002	-0.0001	0.0000	0.0004	0.0007	0.0015	
	4	0.0005	0.0004	0.0003	0.0003	0.0000	-0.0001	-0.0001	-0.0001	0.0000	0.0002	0.0003	0.0007	0.0010	0.0008	0.0007	0.0005	0.0000	-0.0002	-0.0002	-0.0001	0.0000	0.0004	0.0007	0.0015	
	5	0.0005	0.0004	0.0003	0.0003	0.0000	-0.0001	-0.0001	-0.0001	0.0000	0.0002	0.0004	0.0008	0.0010	0.0008	0.0007	0.0005	0.0000	-0.0003	-0.0003	-0.0002	0.0000	0.0004	0.0007	0.0016	
	6	0.0005	0.0004	0.0003	0.0003	0.0000	-0.0001	-0.0001	-0.0001	0.0000	0.0002	0.0004	0.0008	0.0010	0.0008	0.0007	0.0005	0.0001	-0.0002	-0.0002	-0.0001	0.0001	0.0004	0.0007	0.0016	
	7	0.0005	0.0004	0.0003	0.0003	0.0000	-0.0002	-0.0002	-0.0001	0.0000	0.0002	0.0003	0.0008	0.0010	0.0008	0.0007	0.0005	0.0000	-0.0003	-0.0003	-0.0002	0.0000	0.0004	0.0007	0.0016	

Continued

Commodity	Decrease GSR by 15%													Decrease GSR by 20%												
	Rural 1	Rural 2	Rural 3	Rural 4	Rural 5	Urban1	Urban2	Urban3	Urban4	Urban5	Urban6	Urban7	Rural 1	Rural 2	Rural 3	Rural 4	Rural 5	Urban1	Urban2	Urban3	Urban4	Urban5	Urban6	Urban7		
2005	1	0.0040	0.0031	0.0024	0.0017	0.0001	-0.0003	-0.0003	0.0002	0.0007	0.0016	0.0023	0.0036	0.0053	0.0042	0.0032	0.0023	0.0002	-0.0005	-0.0004	0.0002	0.0010	0.0021	0.0031	0.0049	
	2	0.0051	0.0042	0.0034	0.0026	0.0001	-0.0007	-0.0006	0.0002	0.0013	0.0032	0.0051	0.0102	0.0068	0.0056	0.0045	0.0034	0.0001	-0.0009	-0.0008	0.0002	0.0017	0.0043	0.0068	0.0136	
	3	0.0054	0.0044	0.0036	0.0027	0.0001	-0.0007	-0.0006	0.0002	0.0013	0.0034	0.0053	0.0101	0.0072	0.0059	0.0048	0.0036	0.0001	-0.0009	-0.0008	0.0002	0.0017	0.0045	0.0070	0.0135	
	4	0.0051	0.0042	0.0034	0.0026	0.0001	-0.0007	-0.0006	0.0002	0.0013	0.0032	0.0051	0.0102	0.0069	0.0057	0.0046	0.0034	0.0001	-0.0009	-0.0008	0.0002	0.0017	0.0043	0.0068	0.0136	
	5	0.0075	0.0062	0.0050	0.0038	0.0001	-0.0010	-0.0009	0.0003	0.0019	0.0048	0.0076	0.0150	0.0100	0.0083	0.0067	0.0051	0.0002	-0.0013	-0.0012	0.0003	0.0025	0.0064	0.0101	0.0201	
	6	0.0072	0.0059	0.0048	0.0036	0.0000	-0.0011	-0.0010	0.0001	0.0017	0.0046	0.0073	0.0146	0.0096	0.0079	0.0064	0.0048	0.0001	-0.0014	-0.0013	0.0002	0.0023	0.0061	0.0097	0.0194	
	7	0.0120	0.0106	0.0093	0.0079	0.0036	0.0023	0.0024	0.0036	0.0053	0.0085	0.0115	0.0196	0.0160	0.0141	0.0124	0.0105	0.0049	0.0031	0.0032	0.0048	0.0071	0.0113	0.0153	0.0261	
2010	1	0.0025	0.0018	0.0013	0.0008	-0.0003	-0.0006	-0.0006	-0.0002	0.0002	0.0009	0.0015	0.0026	0.0033	0.0025	0.0018	0.0011	-0.0004	-0.0008	-0.0008	-0.0003	0.0002	0.0012	0.0020	0.0035	
	2	0.0031	0.0024	0.0019	0.0013	-0.0003	-0.0007	-0.0007	-0.0002	0.0006	0.0021	0.0034	0.0070	0.0041	0.0033	0.0025	0.0018	-0.0004	-0.0010	-0.0009	-0.0002	0.0008	0.0028	0.0046	0.0093	
	3	0.0032	0.0025	0.0020	0.0014	-0.0003	-0.0007	-0.0007	-0.0002	0.0006	0.0021	0.0035	0.0070	0.0042	0.0034	0.0026	0.0018	-0.0004	-0.0010	-0.0010	-0.0002	0.0008	0.0029	0.0047	0.0093	
	4	0.0031	0.0025	0.0019	0.0013	-0.0003	-0.0007	-0.0007	-0.0002	0.0006	0.0021	0.0034	0.0070	0.0041	0.0033	0.0025	0.0018	-0.0004	-0.0010	-0.0009	-0.0002	0.0008	0.0028	0.0046	0.0093	
	5	0.0038	0.0030	0.0024	0.0017	-0.0004	-0.0010	-0.0009	-0.0002	0.0008	0.0027	0.0044	0.0089	0.0051	0.0041	0.0032	0.0022	-0.0006	-0.0013	-0.0012	-0.0003	0.0010	0.0035	0.0059	0.0119	
	6	0.0039	0.0031	0.0024	0.0017	-0.0003	-0.0009	-0.0008	-0.0001	0.0009	0.0027	0.0044	0.0089	0.0051	0.0041	0.0032	0.0023	-0.0004	-0.0011	-0.0011	-0.0002	0.0011	0.0036	0.0059	0.0119	
	7	0.0047	0.0039	0.0032	0.0024	0.0002	-0.0004	-0.0004	0.0004	0.0014	0.0035	0.0053	0.0101	0.0063	0.0052	0.0043	0.0033	0.0002	-0.0006	-0.0005	0.0005	0.0019	0.0046	0.0071	0.0135	
2015	1	0.0018	0.0013	0.0009	0.0005	-0.0004	-0.0006	-0.0006	-0.0003	0.0000	0.0006	0.0010	0.0019	0.0024	0.0017	0.0012	0.0006	-0.0006	-0.0008	-0.0008	-0.0004	0.0000	0.0008	0.0013	0.0025	
	2	0.0022	0.0017	0.0013	0.0009	-0.0003	-0.0006	-0.0005	-0.0002	0.0004	0.0015	0.0025	0.0051	0.0029	0.0023	0.0017	0.0012	-0.0004	-0.0008	-0.0007	-0.0002	0.0005	0.0020	0.0033	0.0068	
	3	0.0022	0.0017	0.0013	0.0009	-0.0003	-0.0006	-0.0006	-0.0002	0.0004	0.0015	0.0025	0.0051	0.0030	0.0023	0.0018	0.0012	-0.0004	-0.0008	-0.0007	-0.0002	0.0006	0.0021	0.0034	0.0068	
	4	0.0022	0.0017	0.0013	0.0009	-0.0003	-0.0006	-0.0005	-0.0002	0.0004	0.0015	0.0025	0.0051	0.0029	0.0023	0.0017	0.0012	-0.0004	-0.0008	-0.0007	-0.0002	0.0005	0.0020	0.0033	0.0068	
	5	0.0025	0.0019	0.0015	0.0010	-0.0004	-0.0007	-0.0007	-0.0002	0.0004	0.0018	0.0029	0.0060	0.0033	0.0026	0.0019	0.0013	-0.0005	-0.0009	-0.0009	-0.0003	0.0006	0.0023	0.0039	0.0080	
	6	0.0025	0.0020	0.0015	0.0011	-0.0003	-0.0006	-0.0006	-0.0001	0.0005	0.0018	0.0030	0.0060	0.0034	0.0026	0.0020	0.0014	-0.0004	-0.0008	-0.0008	-0.0002	0.0007	0.0024	0.0040	0.0080	
	7	0.0025	0.0020	0.0015	0.0010	-0.0005	-0.0008	-0.0008	-0.0003	0.0004	0.0018	0.0030	0.0062	0.0034	0.0026	0.0020	0.0013	-0.0006	-0.0011	-0.0010	-0.0004	0.0006	0.0024	0.0040	0.0083	
2020	1	0.0015	0.0011	0.0008	0.0004	-0.0004	-0.0005	-0.0005	-0.0003	-0.0001	0.0004	0.0007	0.0014	0.0020	0.0015	0.0010	0.0006	-0.0005	-0.0006	-0.0006	-0.0004	-0.0001	0.0005	0.0010	0.0019	
	2	0.0018	0.0014	0.0011	0.0007	-0.0002	-0.0004	-0.0004	-0.0001	0.0003	0.0011	0.0019	0.0038	0.0024	0.0018	0.0014	0.0010	-0.0003	-0.0006	-0.0005	-0.0002	0.0004	0.0015	0.0025	0.0050	
	3	0.0018	0.0014	0.0011	0.0007	-0.0002	-0.0004	-0.0004	-0.0001	0.0003	0.0011	0.0019	0.0038	0.0024	0.0019	0.0014	0.0010	-0.0003	-0.0006	-0.0006	-0.0002	0.0004	0.0015	0.0025	0.0050	
	4	0.0018	0.0014	0.0011	0.0007	-0.0002	-0.0004	-0.0004	-0.0001	0.0003	0.0011	0.0019	0.0038	0.0024	0.0018	0.0014	0.0010	-0.0003	-0.0006	-0.0006	-0.0002	0.0004	0.0015	0.0025	0.0050	
	5	0.0019	0.0015	0.0011	0.0008	-0.0003	-0.0005	-0.0005	-0.0002	0.0003	0.0012	0.0021	0.0042	0.0025	0.0020	0.0015	0.0010	-0.0003	-0.0007	-0.0007	-0.0002	0.0004	0.0017	0.0027	0.0056	
	6	0.0019	0.0015	0.0012	0.0008	-0.0002	-0.0004	-0.0004	-0.0001	0.0004	0.0013	0.0021	0.0042	0.0026	0.0020	0.0016	0.0011	-0.0003	-0.0006	-0.0005	-0.0001	0.0005	0.0017	0.0028	0.0057	
	7	0.0019	0.0014	0.0011	0.0007	-0.0004	-0.0007	-0.0006	-0.0003	0.0002	0.0011	0.0020	0.0042	0.0025	0.0019	0.0014	0.0009	-0.0005	-0.0009	-0.0009	-0.0004	0.0002	0.0015	0.0027	0.0056	
2025	1	0.0014	0.0011	0.0008	0.0005	-0.0002	-0.0004	-0.0004	-0.0002	-0.0001	0.0003	0.0005	0.0011	0.0019	0.0014	0.0010	0.0006	-0.0003	-0.0005	-0.0005	-0.0003	-0.0001	0.0004	0.0007	0.0014	
	2	0.0016	0.0013	0.0010	0.0007	-0.0001	-0.0004	-0.0003	-0.0001	0.0002	0.0008	0.0014	0.0029	0.0021	0.0017	0.0013	0.0009	-0.0001	-0.0005	-0.0004	-0.0002	0.0003	0.0011	0.0019	0.0038	
	3	0.0016	0.0013	0.0010	0.0007	-0.0001	-0.0004	-0.0003	-0.0001	0.0002	0.0008	0.0014	0.0029	0.0021	0.0017	0.0013	0.0009	-0.0001	-0.0005	-0.0005	-0.0002	0.0003	0.0011	0.0019	0.0038	
	4	0.0016	0.0013	0.0010	0.0007	-0.0001	-0.0004	-0.0003	-0.0001	0.0002	0.0008	0.0014	0.0029	0.0021	0.0017	0.0013	0.0009	-0.0001	-0.0005	-0.0005	-0.0002	0.0003	0.0011	0.0019	0.0038	
	5	0.0016	0.0013	0.0010	0.0007	-0.0001	-0.0004	-0.0004	-0.0002	0.0002	0.0009	0.0015	0.0031	0.0022	0.0017	0.0014	0.0010	-0.0001	-0.0005	-0.0005	-0.0002	0.0002	0.0012	0.0020	0.0041	
	6	0.0016	0.0013	0.0011	0.0008	-0.0001	-0.0003	-0.0003	-0.0001	0.0002	0.0009	0.0015	0.0031	0.0022	0.0018	0.0014	0.0010	-0.0001	-0.0005	-0.0004	-0.0002	0.0003	0.0012	0.0020	0.0042	
	7	0.0016	0.0013	0.0010	0.0007	-0.0002	-0.0005	-0.0005	-0.0003	0.0001	0.0008	0.0014	0.0031	0.0021	0.0017	0.0013	0.0009	-0.0002	-0.0007	-0.0007	-0.0004	0.0001	0.0011	0.0019	0.0041	
2030	1	0.0013	0.0011	0.0009	0.0006	0.0000	-0.0003	-0.0003	-0.0002	-0.0001	0.0002	0.0004	0.0007	0.0018	0.0014	0.0011	0.0008	-0.0001	-0.0004	-0.0004	-0.0003	-0.0001	0.0002	0.0005	0.0010	
	2	0.0014	0.0012	0.0010	0.0008	0.0001	-0.0004	-0.0004	-0.0002	0.0001	0.0006	0.0010	0.0022	0.0019	0.0016	0.0013	0.0010	0.0001	-0.0005	-0.0005	-0.0003	0.0001	0.0008	0.0013	0.0029	
	3	0.0014	0.0012	0.0010	0.0008	0.0001	-0.0004	-0.0004	-0.0002	0.0001	0.0006	0.0010	0.0022	0.0019	0.0016	0.0013	0.0010	0.0001	-0.0005	-0.0005	-0.0003	0.0001	0.0008	0.0014	0.0029	
	4	0.0014	0.0012	0.0010	0.0008	0.0001	-0.0004	-0.0004	-0.0002	0.0001	0.0006	0.0010	0.0022	0.0019	0.0016	0.0013	0.0010	0.0001	-0.0005	-0.0005	-0.0003	0.0001	0.0008	0.0013	0.0029	
	5	0.0014	0.0012	0.0010	0.0008	0.0001	-0.0004	-0.0004	-0.0002	0.0000	0.0006	0.0011	0.0023	0.0019	0.0016	0.0013	0.0010	0.0001	-0.0005	-0.0005	-0.0003	0.0001	0.0008	0.0014	0.0031	
	6	0.0015	0.0012	0.0010	0.0008	0.0001	-0.0004	-0.0004	-0.0002	0.0001	0.0006	0.0011	0.0024	0.0019	0.0016	0.0014	0.0010	0.0001	-0.0005	-0.0005	-0.0003	0.0001	0.0008	0.0015	0.0032	
	7	0.0014	0.0012	0.0010	0.0008	0.0000	-0.0005	-0.0005	-0.0003	0.0000	0.0006	0.0010	0.0023	0.0019	0.0016	0.0013	0.0010	0.0000	-0.0006	-0.0006	-0.0004	0.0000	0.0007	0.0014	0.0031	

Appendix Table C

## Long-Term Shock Scenario of Changes of ESR on Household's Demand: 2005-2030

Unit: %

Commodity	Increase ESR by 10%												Increase ESR by 5%												
	Rural 1	Rural 2	Rural 3	Rural 4	Rural 5	Urban1	Urban2	Urban3	Urban4	Urban5	Urban6	Urban7	Rural 1	Rural 2	Rural 3	Rural 4	Rural 5	Urban1	Urban2	Urban3	Urban4	Urban5	Urban6	Urban7	
2005	1	0.0380	0.0371	0.0364	0.0354	0.0334	0.0344	0.0334	0.0327	0.0323	0.0326	0.0326	0.0180	0.0176	0.0173	0.0168	0.0158	0.0163	0.0158	0.0155	0.0153	0.0154	0.0154		
	2	0.0429	0.0427	0.0428	0.0428	0.0432	0.0418	0.0412	0.0411	0.0419	0.0438	0.0453	0.0505	0.0203	0.0202	0.0202	0.0202	0.0204	0.0197	0.0194	0.0193	0.0197	0.0205	0.0211	0.0234
	3	0.0442	0.0440	0.0441	0.0441	0.0443	0.0422	0.0417	0.0418	0.0427	0.0446	0.0461	0.0504	0.0208	0.0208	0.0208	0.0208	0.0209	0.0199	0.0196	0.0196	0.0200	0.0209	0.0215	0.0234
	4	0.0432	0.0429	0.0431	0.0430	0.0434	0.0420	0.0412	0.0410	0.0418	0.0437	0.0453	0.0505	0.0204	0.0203	0.0203	0.0203	0.0205	0.0197	0.0194	0.0193	0.0196	0.0205	0.0211	0.0234
	5	0.0580	0.0580	0.0584	0.0586	0.0594	0.0567	0.0558	0.0557	0.0569	0.0598	0.0622	0.0699	0.0273	0.0273	0.0275	0.0276	0.0280	0.0266	0.0261	0.0261	0.0266	0.0279	0.0289	0.0323
	6	0.0539	0.0537	0.0541	0.0540	0.0548	0.0525	0.0513	0.0513	0.0525	0.0553	0.0577	0.0656	0.0254	0.0253	0.0255	0.0254	0.0258	0.0246	0.0240	0.0240	0.0245	0.0258	0.0268	0.0303
	7	0.0058	0.0051	0.0051	0.0052	0.0071	0.0043	0.0035	0.0040	0.0060	0.0101	0.0134	0.0242	0.0033	0.0031	0.0031	0.0031	0.0040	0.0025	0.0021	0.0023	0.0032	0.0050	0.0065	0.0113
2010	1	0.0438	0.0432	0.0425	0.0415	0.0393	0.0393	0.0385	0.0379	0.0374	0.0371	0.0368	0.0362	0.0214	0.0211	0.0208	0.0203	0.0192	0.0192	0.0188	0.0185	0.0183	0.0181	0.0179	0.0176
	2	0.0472	0.0472	0.0472	0.0471	0.0467	0.0444	0.0439	0.0439	0.0440	0.0443	0.0446	0.0461	0.0230	0.0230	0.0230	0.0230	0.0228	0.0216	0.0214	0.0214	0.0214	0.0215	0.0216	0.0223
	3	0.0481	0.0481	0.0481	0.0480	0.0474	0.0448	0.0444	0.0444	0.0446	0.0448	0.0451	0.0460	0.0234	0.0235	0.0235	0.0234	0.0232	0.0218	0.0216	0.0216	0.0217	0.0218	0.0219	0.0223
	4	0.0474	0.0473	0.0473	0.0472	0.0468	0.0445	0.0439	0.0438	0.0440	0.0442	0.0446	0.0461	0.0231	0.0231	0.0231	0.0230	0.0228	0.0217	0.0214	0.0213	0.0214	0.0215	0.0216	0.0223
	5	0.0564	0.0568	0.0571	0.0573	0.0573	0.0543	0.0537	0.0536	0.0538	0.0541	0.0545	0.0562	0.0275	0.0277	0.0279	0.0279	0.0280	0.0264	0.0261	0.0261	0.0262	0.0263	0.0264	0.0271
	6	0.0528	0.0530	0.0532	0.0532	0.0531	0.0501	0.0494	0.0493	0.0496	0.0499	0.0504	0.0524	0.0257	0.0258	0.0259	0.0259	0.0259	0.0244	0.0240	0.0240	0.0241	0.0242	0.0244	0.0253
	7	0.0399	0.0396	0.0395	0.0392	0.0387	0.0348	0.0341	0.0342	0.0347	0.0354	0.0363	0.0393	0.0195	0.0194	0.0194	0.0192	0.0190	0.0170	0.0167	0.0167	0.0170	0.0172	0.0176	0.0190
2015	1	0.0442	0.0443	0.0441	0.0435	0.0420	0.0411	0.0405	0.0401	0.0396	0.0389	0.0385	0.0376	0.0219	0.0219	0.0218	0.0216	0.0208	0.0204	0.0201	0.0199	0.0197	0.0193	0.0191	0.0186
	2	0.0460	0.0465	0.0468	0.0469	0.0468	0.0442	0.0438	0.0437	0.0435	0.0427	0.0423	0.0417	0.0228	0.0230	0.0232	0.0233	0.0232	0.0219	0.0217	0.0217	0.0215	0.0211	0.0209	0.0206
	3	0.0465	0.0471	0.0474	0.0476	0.0473	0.0445	0.0441	0.0441	0.0439	0.0431	0.0426	0.0417	0.0230	0.0233	0.0235	0.0236	0.0234	0.0220	0.0218	0.0218	0.0217	0.0213	0.0211	0.0206
	4	0.0461	0.0466	0.0469	0.0470	0.0469	0.0443	0.0438	0.0437	0.0435	0.0427	0.0424	0.0417	0.0228	0.0231	0.0232	0.0233	0.0232	0.0219	0.0217	0.0216	0.0215	0.0211	0.0210	0.0206
	5	0.0509	0.0518	0.0525	0.0530	0.0534	0.0505	0.0501	0.0500	0.0497	0.0488	0.0483	0.0473	0.0252	0.0257	0.0260	0.0262	0.0264	0.0250	0.0248	0.0247	0.0246	0.0241	0.0239	0.0234
	6	0.0486	0.0493	0.0498	0.0501	0.0503	0.0473	0.0468	0.0467	0.0465	0.0456	0.0452	0.0445	0.0240	0.0244	0.0247	0.0248	0.0249	0.0234	0.0232	0.0231	0.0230	0.0226	0.0223	0.0220
	7	0.0456	0.0462	0.0465	0.0468	0.0467	0.0430	0.0425	0.0424	0.0423	0.0414	0.0411	0.0406	0.0225	0.0228	0.0230	0.0231	0.0231	0.0213	0.0210	0.0210	0.0209	0.0205	0.0203	0.0200
2020	1	0.0399	0.0409	0.0414	0.0417	0.0414	0.0404	0.0400	0.0397	0.0392	0.0382	0.0376	0.0365	0.0199	0.0204	0.0207	0.0208	0.0207	0.0202	0.0200	0.0199	0.0196	0.0191	0.0189	0.0183
	2	0.0405	0.0418	0.0427	0.0435	0.0446	0.0425	0.0421	0.0420	0.0416	0.0402	0.0395	0.0376	0.0202	0.0209	0.0214	0.0218	0.0223	0.0213	0.0211	0.0210	0.0208	0.0201	0.0198	0.0188
	3	0.0407	0.0421	0.0430	0.0438	0.0449	0.0427	0.0423	0.0422	0.0418	0.0404	0.0397	0.0376	0.0203	0.0210	0.0215	0.0219	0.0224	0.0214	0.0212	0.0212	0.0209	0.0203	0.0199	0.0188
	4	0.0406	0.0419	0.0428	0.0436	0.0446	0.0425	0.0421	0.0420	0.0416	0.0402	0.0395	0.0376	0.0203	0.0209	0.0214	0.0218	0.0223	0.0213	0.0211	0.0210	0.0208	0.0201	0.0198	0.0188
	5	0.0427	0.0444	0.0457	0.0468	0.0485	0.0465	0.0461	0.0460	0.0455	0.0440	0.0431	0.0408	0.0213	0.0222	0.0228	0.0234	0.0243	0.0233	0.0231	0.0230	0.0228	0.0220	0.0216	0.0204
	6	0.0414	0.0429	0.0440	0.0450	0.0464	0.0442	0.0438	0.0437	0.0432	0.0417	0.0409	0.0388	0.0207	0.0215	0.0220	0.0225	0.0232	0.0221	0.0219	0.0218	0.0216	0.0209	0.0205	0.0194
	7	0.0411	0.0426	0.0437	0.0447	0.0461	0.0437	0.0432	0.0431	0.0426	0.0411	0.0402	0.0381	0.0205	0.0213	0.0218	0.0223	0.0230	0.0218	0.0216	0.0215	0.0213	0.0205	0.0201	0.0191
2025	1	0.0313	0.0331	0.0345	0.0356	0.0372	0.0376	0.0371	0.0368	0.0362	0.0350	0.0344	0.0329	0.0157	0.0167	0.0173	0.0179	0.0187	0.0189	0.0187	0.0186	0.0183	0.0177	0.0173	0.0166
	2	0.0312	0.0332	0.0348	0.0364	0.0396	0.0396	0.0393	0.0392	0.0387	0.0370	0.0360	0.0335	0.0157	0.0167	0.0175	0.0183	0.0199	0.0200	0.0198	0.0198	0.0195	0.0187	0.0182	0.0169
	3	0.0313	0.0333	0.0349	0.0365	0.0398	0.0398	0.0394	0.0393	0.0388	0.0371	0.0361	0.0335	0.0157	0.0168	0.0176	0.0184	0.0200	0.0200	0.0199	0.0198	0.0196	0.0187	0.0182	0.0169
	4	0.0312	0.0332	0.0348	0.0364	0.0396	0.0397	0.0393	0.0392	0.0387	0.0370	0.0360	0.0335	0.0157	0.0167	0.0175	0.0183	0.0200	0.0200	0.0198	0.0197	0.0195	0.0187	0.0182	0.0169
	5	0.0320	0.0342	0.0361	0.0379	0.0417	0.0423	0.0419	0.0418	0.0412	0.0394	0.0384	0.0355	0.0161	0.0172	0.0181	0.0191	0.0210	0.0213	0.0211	0.0211	0.0208	0.0199	0.0194	0.0179
	6	0.0314	0.0335	0.0352	0.0369	0.0404	0.0406	0.0402	0.0401	0.0396	0.0378	0.0368	0.0340	0.0158	0.0168	0.0177	0.0186	0.0204	0.0205	0.0203	0.0202	0.0200	0.0191	0.0186	0.0172
	7	0.0315	0.0337	0.0355	0.0372	0.0410	0.0413	0.0409	0.0407	0.0402	0.0383	0.0373	0.0344	0.0158	0.0169	0.0178	0.0187	0.0206	0.0208	0.0206	0.0205	0.0202	0.0193	0.0188	0.0174
2030	1	0.0195	0.0214	0.0231	0.0248	0.0284	0.0318	0.0313	0.0309	0.0302	0.0289	0.0281	0.0264	0.0099	0.0109	0.0117	0.0126	0.0144	0.0161	0.0159	0.0157	0.0153	0.0147	0.0143	0.0134
	2	0.0193	0.0212	0.0229	0.0249	0.0302	0.0352	0.0349	0.0349	0.0344	0.0326	0.0317	0.0289	0.0097	0.0107	0.0116	0.0126	0.0153	0.0178	0.0177	0.0177	0.0175	0.0166	0.0161	0.0147
	3	0.0193	0.0212	0.0230	0.0249	0.0302	0.0352	0.0350	0.0350	0.0345	0.0327	0.0318	0.0289	0.0097	0.0107	0.0116	0.0126	0.0153	0.0178	0.0177	0.0177	0.0175	0.0166	0.0161	0.0147
	4	0.0193	0.0212	0.0229	0.0249	0.0302	0.0351	0.0349	0.0348	0.0344	0.0326	0.0317	0.0289	0.0097	0.0107	0.0116	0.0126	0.0153	0.0178	0.0177	0.0177	0.0174	0.0165	0.0161	0.0147
	5	0.0195	0.0215	0.0233	0.0254	0.0311	0.0370	0.0367	0.0367	0.0362	0.0343	0.0334	0.0303	0.0098	0.0109	0.0118	0.0128	0.0158	0.0187	0.0186	0.0186	0.0184	0.0174	0.0169	0.0154
	6	0.0192	0.0211	0.0229	0.0249	0.0304	0.0357	0.0355	0.0355	0.0350	0.0331	0.0322	0.0292	0.0097	0.0107	0.0116	0.0126	0.0154	0.0181	0.0180	0.0180	0.0177	0.0168	0.0163	0.0149
	7	0.0193	0.0213	0.0232	0.0252	0.0310	0.0368	0.0365	0.0365	0.0360	0.0340	0.0331	0.0300	0.0098	0.0108	0.0117	0.0128	0.0157	0.0186	0.0185	0.0185	0.0182	0.0173	0.0168	0.0153



Commodity	Increase ESR by 5%							Decrease ESR by 10%																	
	Rural 1	Rural 2	Rural 3	Rural 4	Rural 5	Urban1	Urban2	Urban3	Urban4	Urban5	Urban6	Urban7	Rural 1	Rural 2	Rural 3	Rural 4	Rural 5	Urban1	Urban2	Urban3	Urban4	Urban5	Urban6	Urban7	
2005	1	-0.0164	-0.0161	-0.0158	-0.0153	-0.0145	-0.0148	-0.0144	-0.0141	-0.0139	-0.0140	-0.0139	-0.0315	-0.0309	-0.0304	-0.0296	-0.0280	-0.0285	-0.0277	-0.0271	-0.0268	-0.0269	-0.0268	-0.0267	
	2	-0.0184	-0.0183	-0.0184	-0.0184	-0.0185	-0.0177	-0.0175	-0.0174	-0.0177	-0.0183	-0.0188	-0.0206	-0.0353	-0.0352	-0.0353	-0.0353	-0.0355	-0.0339	-0.0334	-0.0333	-0.0337	-0.0348	-0.0357	-0.0389
	3	-0.0189	-0.0188	-0.0189	-0.0189	-0.0189	-0.0179	-0.0176	-0.0177	-0.0179	-0.0186	-0.0191	-0.0206	-0.0362	-0.0362	-0.0363	-0.0363	-0.0363	-0.0342	-0.0337	-0.0338	-0.0343	-0.0354	-0.0362	-0.0389
	4	-0.0185	-0.0184	-0.0185	-0.0184	-0.0186	-0.0178	-0.0174	-0.0173	-0.0176	-0.0183	-0.0188	-0.0206	-0.0355	-0.0354	-0.0355	-0.0354	-0.0356	-0.0340	-0.0333	-0.0332	-0.0336	-0.0347	-0.0357	-0.0389
	5	-0.0247	-0.0247	-0.0249	-0.0249	-0.0252	-0.0238	-0.0234	-0.0234	-0.0238	-0.0247	-0.0255	-0.0282	-0.0473	-0.0473	-0.0477	-0.0478	-0.0483	-0.0454	-0.0447	-0.0446	-0.0453	-0.0469	-0.0483	-0.0531
	6	-0.0229	-0.0228	-0.0230	-0.0230	-0.0232	-0.0220	-0.0215	-0.0214	-0.0218	-0.0228	-0.0236	-0.0263	-0.0437	-0.0437	-0.0440	-0.0439	-0.0444	-0.0418	-0.0409	-0.0408	-0.0415	-0.0432	-0.0446	-0.0496
	7	-0.0041	-0.0038	-0.0039	-0.0039	-0.0046	-0.0031	-0.0027	-0.0029	-0.0036	-0.0050	-0.0062	-0.0101	-0.0087	-0.0083	-0.0084	-0.0084	-0.0097	-0.0067	-0.0060	-0.0062	-0.0075	-0.0100	-0.0121	-0.0192
2010	1	-0.0205	-0.0203	-0.0200	-0.0195	-0.0185	-0.0184	-0.0180	-0.0178	-0.0175	-0.0174	-0.0172	-0.0169	-0.0403	-0.0398	-0.0393	-0.0384	-0.0365	-0.0362	-0.0355	-0.0350	-0.0345	-0.0341	-0.0337	-0.0331
	2	-0.0220	-0.0221	-0.0221	-0.0220	-0.0219	-0.0207	-0.0205	-0.0204	-0.0205	-0.0204	-0.0210	-0.0210	-0.0432	-0.0432	-0.0433	-0.0434	-0.0433	-0.0430	-0.0406	-0.0401	-0.0401	-0.0401	-0.0400	-0.0408
	3	-0.0224	-0.0225	-0.0225	-0.0225	-0.0222	-0.0208	-0.0206	-0.0207	-0.0207	-0.0207	-0.0209	-0.0209	-0.0440	-0.0442	-0.0442	-0.0442	-0.0437	-0.0409	-0.0405	-0.0405	-0.0406	-0.0404	-0.0405	-0.0407
	4	-0.0221	-0.0221	-0.0222	-0.0221	-0.0219	-0.0207	-0.0205	-0.0204	-0.0204	-0.0204	-0.0205	-0.0210	-0.0434	-0.0435	-0.0435	-0.0434	-0.0431	-0.0407	-0.0401	-0.0400	-0.0400	-0.0399	-0.0400	-0.0408
	5	-0.0263	-0.0265	-0.0267	-0.0268	-0.0268	-0.0252	-0.0250	-0.0249	-0.0249	-0.0249	-0.0250	-0.0255	-0.0516	-0.0521	-0.0524	-0.0526	-0.0526	-0.0495	-0.0489	-0.0488	-0.0488	-0.0487	-0.0488	-0.0495
	6	-0.0245	-0.0247	-0.0248	-0.0248	-0.0247	-0.0232	-0.0229	-0.0228	-0.0229	-0.0229	-0.0230	-0.0236	-0.0481	-0.0484	-0.0487	-0.0487	-0.0486	-0.0454	-0.0448	-0.0447	-0.0448	-0.0446	-0.0448	-0.0459
	7	-0.0189	-0.0188	-0.0188	-0.0187	-0.0185	-0.0164	-0.0161	-0.0161	-0.0163	-0.0165	-0.0168	-0.0178	-0.0372	-0.0371	-0.0371	-0.0369	-0.0365	-0.0324	-0.0318	-0.0318	-0.0321	-0.0323	-0.0328	-0.0347
2015	1	-0.0215	-0.0216	-0.0215	-0.0213	-0.0206	-0.0201	-0.0198	-0.0196	-0.0194	-0.0190	-0.0188	-0.0183	-0.0428	-0.0429	-0.0427	-0.0423	-0.0409	-0.0400	-0.0394	-0.0390	-0.0385	-0.0378	-0.0374	-0.0365
	2	-0.0224	-0.0226	-0.0228	-0.0229	-0.0228	-0.0215	-0.0213	-0.0213	-0.0212	-0.0207	-0.0205	-0.0201	-0.0444	-0.0449	-0.0453	-0.0455	-0.0454	-0.0428	-0.0424	-0.0423	-0.0420	-0.0411	-0.0407	-0.0398
	3	-0.0226	-0.0229	-0.0231	-0.0232	-0.0231	-0.0217	-0.0215	-0.0215	-0.0214	-0.0209	-0.0207	-0.0201	-0.0448	-0.0455	-0.0458	-0.0460	-0.0459	-0.0430	-0.0427	-0.0426	-0.0424	-0.0415	-0.0410	-0.0398
	4	-0.0224	-0.0227	-0.0228	-0.0229	-0.0229	-0.0216	-0.0214	-0.0213	-0.0212	-0.0207	-0.0205	-0.0201	-0.0445	-0.0450	-0.0454	-0.0456	-0.0455	-0.0429	-0.0424	-0.0423	-0.0420	-0.0411	-0.0407	-0.0398
	5	-0.0247	-0.0252	-0.0256	-0.0258	-0.0260	-0.0246	-0.0244	-0.0243	-0.0242	-0.0237	-0.0234	-0.0228	-0.0490	-0.0501	-0.0507	-0.0512	-0.0517	-0.0489	-0.0484	-0.0483	-0.0480	-0.0469	-0.0464	-0.0451
	6	-0.0235	-0.0240	-0.0242	-0.0244	-0.0245	-0.0230	-0.0227	-0.0227	-0.0226	-0.0221	-0.0219	-0.0214	-0.0467	-0.0475	-0.0481	-0.0484	-0.0486	-0.0456	-0.0451	-0.0450	-0.0447	-0.0437	-0.0433	-0.0423
	7	-0.0221	-0.0224	-0.0226	-0.0227	-0.0227	-0.0209	-0.0206	-0.0206	-0.0205	-0.0200	-0.0198	-0.0195	-0.0438	-0.0444	-0.0449	-0.0451	-0.0451	-0.0415	-0.0409	-0.0408	-0.0406	-0.0396	-0.0392	-0.0385
2020	1	-0.0199	-0.0204	-0.0207	-0.0208	-0.0207	-0.0203	-0.0201	-0.0199	-0.0197	-0.0192	-0.0189	-0.0183	-0.0398	-0.0409	-0.0414	-0.0417	-0.0415	-0.0406	-0.0402	-0.0399	-0.0394	-0.0384	-0.0379	-0.0367
	2	-0.0202	-0.0209	-0.0213	-0.0217	-0.0223	-0.0213	-0.0211	-0.0211	-0.0209	-0.0202	-0.0198	-0.0188	-0.0404	-0.0417	-0.0427	-0.0435	-0.0446	-0.0426	-0.0423	-0.0422	-0.0417	-0.0404	-0.0396	-0.0377
	3	-0.0203	-0.0210	-0.0215	-0.0219	-0.0225	-0.0214	-0.0212	-0.0212	-0.0210	-0.0203	-0.0199	-0.0188	-0.0406	-0.0420	-0.0430	-0.0438	-0.0449	-0.0428	-0.0425	-0.0424	-0.0420	-0.0406	-0.0398	-0.0377
	4	-0.0202	-0.0209	-0.0214	-0.0218	-0.0223	-0.0213	-0.0211	-0.0211	-0.0209	-0.0202	-0.0198	-0.0188	-0.0404	-0.0418	-0.0427	-0.0435	-0.0447	-0.0427	-0.0423	-0.0422	-0.0418	-0.0404	-0.0396	-0.0377
	5	-0.0213	-0.0222	-0.0228	-0.0234	-0.0243	-0.0233	-0.0231	-0.0231	-0.0228	-0.0221	-0.0216	-0.0205	-0.0426	-0.0443	-0.0456	-0.0467	-0.0485	-0.0467	-0.0463	-0.0462	-0.0457	-0.0441	-0.0433	-0.0409
	6	-0.0206	-0.0214	-0.0220	-0.0225	-0.0232	-0.0222	-0.0219	-0.0219	-0.0217	-0.0209	-0.0205	-0.0194	-0.0412	-0.0428	-0.0439	-0.0449	-0.0464	-0.0443	-0.0439	-0.0438	-0.0433	-0.0418	-0.0410	-0.0389
	7	-0.0204	-0.0212	-0.0217	-0.0222	-0.0230	-0.0218	-0.0215	-0.0215	-0.0213	-0.0205	-0.0201	-0.0190	-0.0407	-0.0423	-0.0434	-0.0444	-0.0459	-0.0435	-0.0431	-0.0429	-0.0425	-0.0409	-0.0401	-0.0379
2025	1	-0.0159	-0.0168	-0.0176	-0.0182	-0.0190	-0.0192	-0.0190	-0.0188	-0.0185	-0.0180	-0.0176	-0.0169	-0.0320	-0.0339	-0.0353	-0.0365	-0.0383	-0.0388	-0.0383	-0.0380	-0.0374	-0.0362	-0.0355	-0.0341
	2	-0.0159	-0.0169	-0.0177	-0.0185	-0.0202	-0.0203	-0.0201	-0.0201	-0.0198	-0.0190	-0.0185	-0.0172	-0.0319	-0.0340	-0.0356	-0.0373	-0.0407	-0.0409	-0.0406	-0.0404	-0.0399	-0.0383	-0.0373	-0.0347
	3	-0.0159	-0.0169	-0.0178	-0.0186	-0.0203	-0.0204	-0.0202	-0.0201	-0.0199	-0.0190	-0.0186	-0.0172	-0.0319	-0.0340	-0.0357	-0.0374	-0.0408	-0.0410	-0.0407	-0.0406	-0.0401	-0.0384	-0.0374	-0.0347
	4	-0.0159	-0.0169	-0.0177	-0.0185	-0.0202	-0.0203	-0.0201	-0.0201	-0.0198	-0.0190	-0.0185	-0.0172	-0.0319	-0.0340	-0.0357	-0.0373	-0.0407	-0.0409	-0.0406	-0.0404	-0.0399	-0.0383	-0.0373	-0.0347
	5	-0.0163	-0.0174	-0.0183	-0.0193	-0.0213	-0.0217	-0.0215	-0.0214	-0.0211	-0.0202	-0.0197	-0.0183	-0.0327	-0.0350	-0.0369	-0.0388	-0.0428	-0.0436	-0.0433	-0.0431	-0.0426	-0.0408	-0.0397	-0.0368
	6	-0.0159	-0.0170	-0.0179	-0.0188	-0.0206	-0.0208	-0.0206	-0.0205	-0.0203	-0.0194	-0.0189	-0.0175	-0.0320	-0.0342	-0.0360	-0.0377	-0.0415	-0.0419	-0.0415	-0.0414	-0.0408	-0.0390	-0.0380	-0.0353
	7	-0.0160	-0.0171	-0.0180	-0.0189	-0.0208	-0.0210	-0.0209	-0.0208	-0.0205	-0.0196	-0.0191	-0.0176	-0.0321	-0.0343	-0.0361	-0.0380	-0.0419	-0.0424	-0.0420	-0.0418	-0.0413	-0.0394	-0.0384	-0.0355
2030	1	-0.0101	-0.0111	-0.0120	-0.0129	-0.0148	-0.0166	-0.0163	-0.0161	-0.0157	-0.0151	-0.0147	-0.0138	-0.0204	-0.0225	-0.0242	-0.0261	-0.0299	-0.0337	-0.0331	-0.0327	-0.0319	-0.0306	-0.0298	-0.0280
	2	-0.0100	-0.0110	-0.0119	-0.0129	-0.0157	-0.0183	-0.0182	-0.0182	-0.0180	-0.0171	-0.0166	-0.0152	-0.0201	-0.0222	-0.0240	-0.0261	-0.0317	-0.0372	-0.0370	-0.0369	-0.0364	-0.0346	-0.0337	-0.0308
	3	-0.0100	-0.0110	-0.0119	-0.0129	-0.0157	-0.0183	-0.0182	-0.0182	-0.0180	-0.0171	-0.0166	-0.0152	-0.0201	-0.0222	-0.0240	-0.0261	-0.0318	-0.0372	-0.0370	-0.0370	-0.0365	-0.0347	-0.0338	-0.0308
	4	-0.0100	-0.0110	-0.0119	-0.0129	-0.0157	-0.0183	-0.0182	-0.0182	-0.0179	-0.0170	-0.0166	-0.0152	-0.0201	-0.0222	-0.0240	-0.0261	-0.0317	-0.0371	-0.0369	-0.0369	-0.0364	-0.0346	-0.0337	-0.0308
	5	-0.0101	-0.0111	-0.0121	-0.0132	-0.0162	-0.0193	-0.0192	-0.0191	-0.0189	-0.0179	-0.0174	-0.0159	-0.0203	-0.0224	-0.0244	-0.0266	-0.0327	-0.0391	-0.0389					

Commodity	Decrease ESR by 15%											Decrease ESR by 20%													
	Rural 1	Rural 2	Rural 3	Rural 4	Rural 5	Urban1	Urban2	Urban3	Urban4	Urban5	Urban6	Urban7	Rural 1	Rural 2	Rural 3	Rural 4	Rural 5	Urban1	Urban2	Urban3	Urban4	Urban5	Urban6	Urban7	
2005	1	-0.0456	-0.0447	-0.0440	-0.0429	-0.0406	-0.0412	-0.0400	-0.0393	-0.0388	-0.0389	-0.0387	-0.0386	-0.0589	-0.0578	-0.0569	-0.0554	-0.0526	-0.0531	-0.0517	-0.0507	-0.0501	-0.0501	-0.0499	-0.0497
	2	-0.0510	-0.0508	-0.0510	-0.0510	-0.0513	-0.0489	-0.0481	-0.0479	-0.0485	-0.0499	-0.0510	-0.0554	-0.0656	-0.0655	-0.0658	-0.0657	-0.0661	-0.0628	-0.0618	-0.0616	-0.0622	-0.0638	-0.0652	-0.0704
	3	-0.0523	-0.0522	-0.0524	-0.0524	-0.0524	-0.0492	-0.0485	-0.0486	-0.0492	-0.0507	-0.0518	-0.0553	-0.0674	-0.0673	-0.0675	-0.0675	-0.0675	-0.0632	-0.0623	-0.0623	-0.0631	-0.0648	-0.0661	-0.0703
	4	-0.0513	-0.0511	-0.0513	-0.0512	-0.0515	-0.0490	-0.0480	-0.0477	-0.0484	-0.0498	-0.0510	-0.0554	-0.0660	-0.0658	-0.0660	-0.0659	-0.0663	-0.0629	-0.0617	-0.0613	-0.0620	-0.0637	-0.0651	-0.0704
	5	-0.0681	-0.0682	-0.0687	-0.0689	-0.0696	-0.0653	-0.0641	-0.0640	-0.0649	-0.0671	-0.0689	-0.0754	-0.0875	-0.0877	-0.0884	-0.0886	-0.0895	-0.0836	-0.0822	-0.0819	-0.0830	-0.0855	-0.0877	-0.0954
	6	-0.0630	-0.0629	-0.0633	-0.0633	-0.0640	-0.0600	-0.0587	-0.0585	-0.0595	-0.0616	-0.0635	-0.0702	-0.0809	-0.0809	-0.0814	-0.0813	-0.0821	-0.0768	-0.0751	-0.0748	-0.0760	-0.0785	-0.0807	-0.0888
	7	-0.0139	-0.0133	-0.0134	-0.0135	-0.0153	-0.0106	-0.0096	-0.0099	-0.0117	-0.0151	-0.0179	-0.0274	-0.0194	-0.0188	-0.0189	-0.0190	-0.0212	-0.0149	-0.0136	-0.0139	-0.0160	-0.0201	-0.0235	-0.0351
2010	1	-0.0595	-0.0588	-0.0581	-0.0568	-0.0540	-0.0535	-0.0524	-0.0517	-0.0510	-0.0503	-0.0498	-0.0488	-0.0782	-0.0774	-0.0764	-0.0748	-0.0711	-0.0703	-0.0689	-0.0680	-0.0671	-0.0661	-0.0654	-0.0641
	2	-0.0638	-0.0639	-0.0641	-0.0640	-0.0635	-0.0598	-0.0592	-0.0590	-0.0590	-0.0587	-0.0588	-0.0597	-0.0838	-0.0840	-0.0842	-0.0841	-0.0835	-0.0785	-0.0776	-0.0775	-0.0774	-0.0769	-0.0768	-0.0777
	3	-0.0649	-0.0652	-0.0653	-0.0652	-0.0645	-0.0603	-0.0597	-0.0597	-0.0597	-0.0594	-0.0594	-0.0596	-0.0853	-0.0856	-0.0858	-0.0857	-0.0848	-0.0791	-0.0783	-0.0783	-0.0783	-0.0777	-0.0776	-0.0776
	4	-0.0640	-0.0642	-0.0643	-0.0641	-0.0636	-0.0600	-0.0591	-0.0589	-0.0589	-0.0587	-0.0588	-0.0596	-0.0841	-0.0844	-0.0845	-0.0843	-0.0837	-0.0787	-0.0776	-0.0773	-0.0773	-0.0768	-0.0768	-0.0777
	5	-0.0761	-0.0768	-0.0774	-0.0776	-0.0777	-0.0729	-0.0720	-0.0719	-0.0719	-0.0715	-0.0715	-0.0723	-0.0999	-0.1009	-0.1017	-0.1021	-0.1021	-0.0956	-0.0945	-0.0942	-0.0942	-0.0935	-0.0934	-0.0940
	6	-0.0709	-0.0714	-0.0717	-0.0718	-0.0716	-0.0668	-0.0658	-0.0657	-0.0658	-0.0655	-0.0656	-0.0669	-0.0930	-0.0937	-0.0942	-0.0942	-0.0940	-0.0875	-0.0862	-0.0860	-0.0860	-0.0855	-0.0856	-0.0869
	7	-0.0552	-0.0551	-0.0551	-0.0548	-0.0542	-0.0481	-0.0471	-0.0472	-0.0476	-0.0477	-0.0483	-0.0507	-0.0729	-0.0728	-0.0728	-0.0725	-0.0718	-0.0635	-0.0622	-0.0622	-0.0627	-0.0626	-0.0633	-0.0660
2015	1	-0.0638	-0.0640	-0.0638	-0.0631	-0.0611	-0.0596	-0.0588	-0.0583	-0.0575	-0.0564	-0.0557	-0.0544	-0.0846	-0.0849	-0.0847	-0.0839	-0.0812	-0.0792	-0.0781	-0.0774	-0.0764	-0.0749	-0.0740	-0.0721
	2	-0.0661	-0.0670	-0.0675	-0.0678	-0.0677	-0.0638	-0.0632	-0.0630	-0.0626	-0.0612	-0.0605	-0.0591	-0.0876	-0.0888	-0.0896	-0.0900	-0.0899	-0.0846	-0.0838	-0.0836	-0.0830	-0.0811	-0.0801	-0.0780
	3	-0.0668	-0.0677	-0.0683	-0.0686	-0.0684	-0.0641	-0.0636	-0.0636	-0.0632	-0.0617	-0.0610	-0.0590	-0.0885	-0.0898	-0.0906	-0.0911	-0.0908	-0.0851	-0.0844	-0.0843	-0.0837	-0.0817	-0.0807	-0.0779
	4	-0.0663	-0.0671	-0.0676	-0.0679	-0.0679	-0.0639	-0.0632	-0.0630	-0.0626	-0.0612	-0.0606	-0.0591	-0.0878	-0.0890	-0.0897	-0.0901	-0.0901	-0.0848	-0.0838	-0.0835	-0.0830	-0.0811	-0.0801	-0.0780
	5	-0.0731	-0.0746	-0.0756	-0.0764	-0.0772	-0.0728	-0.0722	-0.0720	-0.0715	-0.0698	-0.0689	-0.0669	-0.0969	-0.0989	-0.1004	-0.1014	-0.1024	-0.0966	-0.0957	-0.0954	-0.0948	-0.0924	-0.0912	-0.0883
	6	-0.0695	-0.0708	-0.0716	-0.0721	-0.0725	-0.0680	-0.0672	-0.0670	-0.0666	-0.0650	-0.0643	-0.0626	-0.0921	-0.0938	-0.0949	-0.0956	-0.0962	-0.0900	-0.0890	-0.0888	-0.0882	-0.0860	-0.0849	-0.0826
	7	-0.0652	-0.0662	-0.0669	-0.0672	-0.0673	-0.0618	-0.0610	-0.0608	-0.0605	-0.0589	-0.0583	-0.0570	-0.0865	-0.0878	-0.0887	-0.0892	-0.0893	-0.0819	-0.0809	-0.0807	-0.0802	-0.0780	-0.0771	-0.0751
2020	1	-0.0598	-0.0613	-0.0622	-0.0626	-0.0624	-0.0611	-0.0604	-0.0599	-0.0592	-0.0577	-0.0569	-0.0552	-0.0797	-0.0818	-0.0830	-0.0837	-0.0834	-0.0816	-0.0807	-0.0801	-0.0791	-0.0771	-0.0761	-0.0737
	2	-0.0605	-0.0626	-0.0640	-0.0653	-0.0670	-0.0640	-0.0635	-0.0633	-0.0627	-0.0606	-0.0595	-0.0565	-0.0807	-0.0835	-0.0855	-0.0871	-0.0895	-0.0855	-0.0848	-0.0846	-0.0837	-0.0809	-0.0794	-0.0753
	3	-0.0609	-0.0630	-0.0645	-0.0657	-0.0675	-0.0643	-0.0638	-0.0637	-0.0631	-0.0609	-0.0597	-0.0565	-0.0812	-0.0840	-0.0860	-0.0878	-0.0901	-0.0859	-0.0852	-0.0851	-0.0842	-0.0813	-0.0797	-0.0753
	4	-0.0606	-0.0627	-0.0641	-0.0654	-0.0671	-0.0641	-0.0635	-0.0633	-0.0627	-0.0606	-0.0595	-0.0565	-0.0809	-0.0836	-0.0856	-0.0872	-0.0896	-0.0856	-0.0849	-0.0846	-0.0837	-0.0809	-0.0794	-0.0753
	5	-0.0639	-0.0665	-0.0684	-0.0701	-0.0729	-0.0701	-0.0696	-0.0694	-0.0686	-0.0663	-0.0649	-0.0614	-0.0852	-0.0887	-0.0913	-0.0936	-0.0973	-0.0937	-0.0929	-0.0926	-0.0917	-0.0884	-0.0866	-0.0818
	6	-0.0618	-0.0642	-0.0659	-0.0673	-0.0697	-0.0665	-0.0659	-0.0657	-0.0650	-0.0627	-0.0615	-0.0582	-0.0824	-0.0856	-0.0879	-0.0898	-0.0930	-0.0888	-0.0879	-0.0877	-0.0868	-0.0836	-0.0820	-0.0776
	7	-0.0610	-0.0633	-0.0650	-0.0665	-0.0688	-0.0652	-0.0646	-0.0644	-0.0637	-0.0613	-0.0601	-0.0568	-0.0813	-0.0844	-0.0867	-0.0887	-0.0918	-0.0870	-0.0861	-0.0859	-0.0850	-0.0817	-0.0801	-0.0756
2025	1	-0.0482	-0.0511	-0.0533	-0.0551	-0.0578	-0.0586	-0.0579	-0.0574	-0.0565	-0.0547	-0.0537	-0.0515	-0.0646	-0.0685	-0.0714	-0.0740	-0.0776	-0.0787	-0.0778	-0.0771	-0.0759	-0.0736	-0.0722	-0.0693
	2	-0.0480	-0.0512	-0.0537	-0.0562	-0.0614	-0.0618	-0.0613	-0.0611	-0.0604	-0.0578	-0.0564	-0.0525	-0.0643	-0.0686	-0.0720	-0.0754	-0.0824	-0.0830	-0.0823	-0.0821	-0.0811	-0.0777	-0.0758	-0.0706
	3	-0.0481	-0.0513	-0.0539	-0.0564	-0.0616	-0.0620	-0.0615	-0.0613	-0.0606	-0.0580	-0.0566	-0.0525	-0.0645	-0.0688	-0.0722	-0.0757	-0.0827	-0.0832	-0.0826	-0.0824	-0.0814	-0.0780	-0.0760	-0.0705
	4	-0.0481	-0.0512	-0.0538	-0.0563	-0.0614	-0.0618	-0.0613	-0.0611	-0.0603	-0.0578	-0.0564	-0.0525	-0.0644	-0.0686	-0.0721	-0.0755	-0.0824	-0.0831	-0.0824	-0.0821	-0.0811	-0.0777	-0.0758	-0.0706
	5	-0.0492	-0.0527	-0.0556	-0.0585	-0.0647	-0.0659	-0.0654	-0.0652	-0.0644	-0.0616	-0.0600	-0.0557	-0.0659	-0.0707	-0.0746	-0.0785	-0.0868	-0.0885	-0.0879	-0.0876	-0.0865	-0.0828	-0.0807	-0.0748
	6	-0.0482	-0.0515	-0.0542	-0.0569	-0.0626	-0.0633	-0.0627	-0.0625	-0.0617	-0.0590	-0.0575	-0.0533	-0.0645	-0.0690	-0.0727	-0.0763	-0.0839	-0.0849	-0.0842	-0.0839	-0.0829	-0.0792	-0.0772	-0.0716
	7	-0.0483	-0.0517	-0.0545	-0.0572	-0.0632	-0.0639	-0.0633	-0.0631	-0.0623	-0.0595	-0.0579	-0.0537	-0.0646	-0.0692	-0.0729	-0.0767	-0.0847	-0.0858	-0.0850	-0.0847	-0.0836	-0.0798	-0.0778	-0.0720
2030	1	-0.0309	-0.0340	-0.0368	-0.0396	-0.0455	-0.0512	-0.0504	-0.0498	-0.0486	-0.0466	-0.0454	-0.0427	-0.0417	-0.0459	-0.0496	-0.0534	-0.0614	-0.0693	-0.0682	-0.0673	-0.0657	-0.0630	-0.0615	-0.0578
	2	-0.0305	-0.0336	-0.0364	-0.0396	-0.0482	-0.0566	-0.0562	-0.0562	-0.0555	-0.0527	-0.0513	-0.0469	-0.0410	-0.0452	-0.0491	-0.0534	-0.0650	-0.0765	-0.0761	-0.0760	-0.0750	-0.0713	-0.0694	-0.0635
	3	-0.0305	-0.0336	-0.0364	-0.0396	-0.0482	-0.0566	-0.0563	-0.0563	-0.0556	-0.0528	-0.0514	-0.0469	-0.0410	-0.0453	-0.0491	-0.0534	-0.0651	-0.0765	-0.0762	-0.0761	-0.0752	-0.0714	-0.0695	-0.0635
	4	-0.0305	-0.0336	-0.0364	-0.0396	-0.0482	-0.0565	-0.0562	-0.0561	-0.0554	-0.0526	-0.0513	-0.0469	-0.0410	-0.0452	-0.0491	-0.0534	-0.0650	-0.0764	-0.0760	-0.0759	-0.0749	-0.0712	-0.0694	-0.0635
	5	-0.0308	-0.0340	-0.0370	-0.0404	-0.0497	-0.0595	-0.0592	-0.0591	-0.0583	-0.0554	-0.0539	-0.0492	-0.0414	-0.0458	-0.0499	-0.0545	-0.0671	-0.0804	-0.0800	-0.0800	-0.0789	-0.0750	-0.0730	-0.0666
	6	-0.0303	-0.0335	-0.0363	-0.0396	-0.0485	-0.0575	-0.0571	-0.0570	-0.0563	-0.0534	-0.0520	-0.0474	-0.0408	-0.0451	-0.0490	-0.0534	-0.0654	-0.0777	-0.0772	-0.0772	-0.0762	-0.0723	-0.0703	-0.0642
	7	-0.0305	-0.0337	-0.0367	-0.0400	-0.0493	-0.0589	-0.0586	-0.0585	-0.0577	-0.0547	-0.0533	-0.0485	-0.0411	-0.0454	-0.0494	-0.0540	-0.0665	-0.0797	-0.0792	-0.0791	-0.0781	-0.0740	-0.0720	-0.0657

**Note: In Appendix Table A, Table B and Table C, from Commodity 1 to 7 is the same as Table 6 respectively. Rural 1, 2, 3, 4, 5 and 6 are low-income rural households, lower-middle-income rural households, middle-income rural households, upper-middle-income rural households, high-income rural households respectively, and also Urban 1, 2, 3, 4, 5, 6, and 7 represent lowest-income urban households, low-income urban households, lower-middle-income urban households, middle-income urban households, upper-middle-income urban households, high-income urban households, highest-income urban households respectively.**

**Source: Authors' calculation based on DRC-CGE model.**