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THE ROLE OF FISCAL POLICY IN FIGHTING POVERTY AND REDUCING INEQUALITY IN IRAN: AN APPLICATION OF THE COMMITMENT TO EQUITY (CEQ) FRAMEWORK

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Abstract

This paper evaluates the role of fiscal system in Iran in reducing poverty and inequality. We employ the marginal contribution approach in which the effect of each component of the system is evaluated by comparing the current system to the counter factual of removing that component from the system. Using the CEQ framework, we show that the fiscal system as a whole reduces inequality and poverty significantly by about 16% and 63% respectively. We find that the main driver of this effect is the Targeted Subsidy Program (implemented in 2010) that eliminated the energy subsidies and substituted them with a nominal cash transfer to every Iranian. We show that the effect of this program on reducing inequality and poverty is about 10% and 64% respectively. The main reduction in poverty comes from the rural areas where this program reduces the poverty headcount index from 37% to 17% comparing to the 5% reduction in the urban areas. Given the success of this program in reaching the bottom deciles of the income distribution and reducing inequality and poverty, we recommend that the current plans of Iranian government in eliminating the subsidy of the top deciles is combined with the allocation of some of the freed funds to the bottom deciles.

JEL Classification: D31, H22, I38

Keywords: Inequality, poverty, marginal contribution, CEQ framework, policy simulation.

ملخص

تقيم هذه الورقة دور النظام المالي في إيران في الحد من الفقر وعدم المساواة. نقوم بتوظيف نهج مساهمة هامشية والتي يتم من خلالها تقييم تأثير كل مكون من مكونات النظام بمقارنة النظام الحالي إلى واقعية مكافحة إزالة هذا العنصر من النظام. باستخدام إطار CEQ، تبين لنا أن النظام المالي ككل يقلل من عدم المساواة والفقر بشكل ملحوظ بنسبة 16 في المائة و63 في المائة على التوالي. نجد أن المشتق الرئيسي من هذا التأثير هو برنامج الدعم المستهدف (نفذ في عام 2010) والذى قضى على دعم الطاقة واستبداله لهم بالتحويلات النقدية الاسمية لكل الإيرانيين. وتبين لنا أن تأثير هذا البرنامج على الحد من عدم المساواة والفقر حوالي 10 في المائة و64 في المائة على التوالي. التخفيض الرئيسي في الفقر يأتي من المناطق الريفية حيث يقلل هذا البرنامج مؤشر حجم الفقر من 37 في المائة إلى 17 في المائة مقارنة مع انخفاض بنسبة 5 في المائة في المناطق الحضرية. ونظرا لنجاح هذا البرنامج في الوصول إلى الأعشار السفلية من توزيع الدخل والحد من عدم المساواة والفقر، نحن نوصي بأن الخطط الحالية للحكومة الإيرانية في القضاء على الدعم من أعلى الأعشار وجنبا إلى جنب مع تخصيص بعض الأموال لأسفل الأعشار.

1. Introduction

Political rhetoric of reducing inequality and poverty is often used to create social support for the tax and transfer programs. The real outcome of these policies, however, is not always as good as promised and the incidence analysis is one of the widely used approaches that help to identify the true equalizing and/or pro-poor effect of fiscal policies. One major problem that arises from the utilization of different methodologies of incidence analysis is a lack of comparability; as a consequence, detecting important patterns or deducing general rules becomes difficult. The Commitment to Equity (CEQ) framework deals with this difficulty by unifying the analysis tool in order to provide comparable results across countries. At the heart of this framework is a flowchart (Figure 1 in the methodology section) that shows how different taxes and transfers are categorized and combined in order to form different income concepts (such as Disposable Income or Consumable Income) and therefore allows for a systematic analysis of the contribution of each component of the fiscal system to reducing (or increasing) poverty and inequality. In order to determine whether a fiscal policy is equalizing (or poverty alleviating) the CEQ framework uses the marginal contribution approach which differentiates it from the common methods of analysis that uses progressivity measures such as the Kakwani index. This is specially an important feature of this framework since the well-known progressivity indices are not infallible rigorous predictors of identifying equalizing interventions (Lustig et al., forthcoming). In other words, taxes or transfers that would be classified as progressive (regressive) using the conventional measures of progressivity can actually increase (reduce) inequality when their impact is analyzed taking into account the rest of the taxes and transfers. As we show in the result section, Iran also has an example of a regressive tax that reduces inequality (i.e. "Employee Contributions to the Social Security Insurance"). Marginal contribution approach, on the other hand, has the advantage of identifying equalizing interventions by asking how the inequality (or poverty) would change if a specific tax or transfer is removed from (or changed in) the fiscal system.

This study gives a special attention to Iran's Targeted Subsidies Program of December 2010, which replaced energy subsidies that cost the government around 20 percent of GDP (about $70 billion in 2010) by a lump-sum cash transfer of 455,000 Rials (equivalent to $37 to $44[1]) per person per month (Guillaume et. al. 2011) to all Iranians (including children of any age)[2]. Different motives have been listed for this reform among which are the fiscal burden of the pre-reform energy subsidies, the inequality in distribution of these subsidies, the excessive size of the energy consumption per GDP comparing to the neighboring as well as developed countries, the excessive waste in using the subsidized goods, the environmentally negative side effects of the use of cheap fossils fuels, the problem of smuggling the subsidized fuel out of the country, the fear of international embargo on importing gasoline and finally the political interests of the populist president or Iran at the time (Guillaume et. al. 2011; Salehi-Isfahani et al. 2015).

The reform, however, did not reduce the fiscal burden of the government as much as it was expected initially since the cash transfer exceeded the additional revenue generated from the increase in energy prices (Salehi-Isfahani et al. 2015). But the presence of this cash transfer was necessary for the peaceful transition since energy subsidies are one of the most controversial fiscal policies in developing countries. They have high fiscal burden, costs to the environment and usually enjoyed more by those who do not need it. However, eliminating

[1] Throughout 1390 Iranian year, which is equivalent to March 2011 to March 2012, the official exchange rate changed from 10,364 to 12,260 Rials per dollar. Using these official exchange rates, the value of the monthly cash transfer was between $43.90 and $37.11 respectively. (Source: Central Bank of Iran's Exchange Rates available at http://www.cbi.ir/exrates/rates_en.aspx and author's calculations).

[2] The reform had some other components but the main aspect implemented in 2011-12 (1390 Iranian year) is the cash transfer aspect of it.

energy subsidies has frequently resulted in extensive negative, and often violent, social reactions leading to unsuccessful implementation (Salehi-Isfahani et al. 2015). Such overt negative reactions were not witnessed in the case of Iran's successfully implemented subsidy reform. One major contributing factor to this peaceful transition was the fact that the government used the banking system to distribute the money and even provided the ATM services in remote rural areas (Guillaume et. al. 2011; Salehi-Isfahani et al. 2015). The most creative and trust-building aspect of the use of banking system in this reform was to transfer the money to the accounts of Iranians but not to allow them to withdraw it until the official beginning day of the reform.

In this study we use the 1390 (2011-12) round of the Household Expenditure and Income Survey (HEIS) of Iran to examine the inequality and poverty reduction of fiscal system, and specifically the Targeted Subsidy Program, in Iran. A previous study by Salehi-Isfahani et al. (2015) analyzes the change in poverty during the first three months of this reform in January-March 2011 (1389 Iranian year), and reports a 5% decrease in the poverty rate among rural households. However, logistical issues with the reform's implementation including numerous families' inability to receive their cash transfers during the reform's initial months, likely muted the reform's impact. Thus, a more representative depiction of the reform's effect on inequality and poverty among Iranian households is necessary. To this goal, the current study circumvents the implementation issues of the reform's initial months by analyzing the fiscal system in March 2011- March 2012 (1390 Iranian year) — that is, the first full calendar year following the initial three months of implementing the reform— and, given the time elapsed, may provide a more accurate estimate of how the Targeted Subsidy Program contributes to reducing inequality and poverty in Iran. The big advantage of using the 1390 round of HEIS over the 1389 round (as it is used in Salehi-Isfahani et al. (2015)) is that the survey allows for the clear identification of the beneficiaries[3]. While Salehi-Isfahani et al. (2015) only identify less than 70% of the households as the beneficiaries using their indirect identification technique in 1389, we directly observe 96% of individuals as the beneficiaries in 1390 which is perfectly in line with the official statistics for the total beneficiaries of this program.

Using the CEQ framework, we find that the fiscal system including direct and indirect taxes, direct transfers, subsidies and in-kind transfers in education and health in Iran reduces the inequality by about 0.0737 Gini point equivalent to 16% reduction comparing to the base point Gini (i.e. Gini of the Market Income). This fiscal system is much more powerful in reducing poverty as it reduces it from about 19% to 7% in terms of the headcount ratio[4,5] from Market Income to Consumable Income. Targeted Subsidy Program is the most important component in the fiscal system of Iran in reducing inequality and poverty (in marginal contribution sense). We find that in 2011-12 (1390 Iranian year), this program reduced the inequality of the Final Income by about 0.0401 Gini point which is equivalent to about 11% extra inequality in the absence of it. Without the Targeted Subsidy Program the poverty headcount ratio of the Consumable Income would have been 16% instead of its current level which is 7%. The reduction in poverty is mainly because of the effect of this program in the rural areas. In the absence of it, the rural areas would have experienced 37% (instead of currently 17%) poverty while the urban areas would have only suffered from 8% poverty (instead of currently 3%). As a final step we evaluate different alternative scenarios in how to manage the Targeted Subsidy Program. We show that removing the subsidy from the top deciles of the income distribution

[3] In 1389, the cash transfer earning is recorded in addition to the "other income" sources and inseparable from them while in 1390 it is recorded as a completely separated variable.

[4] Unless otherwise specified, we use $4 per day in 2005 purchasing power parity (PPP) as the poverty line throughout this paper.

[5] We calculate the poverty indices using the international poverty lines that are calculated without accounting for the "consumption" of education and health so we avoid calculating the poverty indices for the Final Income and use the Consumable Income instead. See figure 1 for the construction of different income concepts.

and allocating part of it to the bottom deciles would significantly reduce inequality and poverty. This is mainly due to the fact that this program is very successful in reaching to the low income group especially in the rural areas.

The rest of this paper is organized as follows: section II briefly reviews the fiscal system of Iran and lists the programs that are included in the analysis. It also explains the method and assumptions that are used in constructing items that are not directly observed in the household survey. Section III presents the CEQ framework and the marginal contribution approach in calculating the effect of different taxes and transfers in reducing (increasing) inequality and poverty. Section IV introduces the Iranian household survey and provides summary statistics about the size and distribution of Market Income, Contributory Pensions and different components of the fiscal system among socio-economic groups in Iran. Section V provides the results of the inequality and poverty analysis of this paper. A special attention is given to the target Subsidy Program due to its significant role in reducing inequality and poverty. Finally section VI concludes and provides policy recommendations for how to move forward in managing the Targeted Subsidy Program in Iran.

2. Overview of the Iran's Fiscal System and What is Included in this Analysis

We divide the Fiscal System in Iran into taxes, transfers (subsidies), and pensions and review each of them in a separate section below. In each section, we indicate which components are included in the analysis and what assumptions are used in constructing the values for them if they are not directly observed in the household survey. One should note that the information in this section is in close relationship with Figure 1 and the methodology section.

To provide some context to the information provided in this section, note that Iran's GDP and Government expenditure in 2011-12 (1390 Iranian year) was 6,245,766 billion Rials[6] and 631,222 billion Rials[7] respectively. Moreover, the average household Market Income in the survey is 111,217 Thousand Rials[8].

2.1 Tax system

The current taxing system in Iran has two main categories of direct and indirect taxes. The direct taxes include two main sub-categories, property tax (inheritance tax and stamp duty) and Income tax (real state income tax, tax on income from agriculture, tax on salary income, tax on individual business income, tax on the profits of legal persons (i.e. Corporate income tax), incidental income tax and tax on aggregate income derived from different sources). On the other hand, the Value added tax (VAT) is the main indirect tax in Iran (INTA, 2015).[9] The movement from sales tax to VAT is a recent policy reform in Iran and it was not implemented for the year of the survey (i.e. 2011-2012) that is used in this study. It is worth noting that the main entity in charge of taxation in Iran is the "Ministry of Finance and Economic Affairs".

In this paper, we mainly focus on the tax incidences that we directly observe in the household survey or what we can infer from the available data. An example of categories that are excluded from this analysis are corporate income taxes and stamp duty. Income tax of self-employed individuals, on the other hand, is an item that we observe directly in the survey. Payroll taxes, however, are imputed using the gross and net income variables (that are observed directly in the survey) as well as the information about the deductions for pension and health insurance. Finally, sales tax is a category that we have the most assumptions in imputing for it. Since this

[6] Based on the exchange rate of March 2012 (12,260 Rials per $1), this is equivalent to $509.44 billion. World Bank reports $528.43 and $502.73 billion for the GDP of Iran in 2011 and 2012 respectively (WDI, 2015).

[7] Based on the exchange rate of March 2012 (12,260 Rials per $1), this is equivalent to $51.48 billion.

[8] Based on the exchange rate of March 2012 (12,260 Rials per $1), this is equivalent to $9.07 thousands.

[9] A complete description of each item is available (in English) from "Iranian National Tax Administration (INTA)" website: http://en.intamedia.ir/ under the heading "Taxes in Iran".

category is not directly observed in the survey, we use the general rule of 3% sales tax and combine it with the data on the household monthly consumption expenditure[10] to impute for the value of the sales taxes for the whole year.

2.2 Subsidy and transfer programs

Iran has various subsidy and transfer programs that in this paper we categorize them into three major groups. The first group is the "cash transfer" programs. This group includes the "Targeted Subsidy Program[11], cash transfer programs by BSOI[12] (which is an organization in charge of providing assistance to the families of those that are considered "martyr , prisoners of war or injured in defending the Islamic revolution in Iran"), Imam Khomeini Relief Foundation[13] (which mainly assists low income families), Islamic Revolution Mostazafan Foundation[14] (which mainly assists low income families) and State Welfare Organization of Iran[15] (which assists several groups including individuals who are disabled, addicted, orphans or elderly).

Cash transferred received through the Targeted Subsidy Program is observed directly in the survey. The survey shows that almost all of the households (about 96%) receive this subsidy. In the year of the survey used in this study, the Program provides 455,000 Rials (equivalent to $37 to $44 depending on the exchange rate being from March 2012 or March 2011 respectively) per person per month to all Iranians by depositing the money in the bank account of the head of the household. ATM machines were provided in the remote rural areas to facilitate access to this subsidy. To implement this subsidy reform, a new organization, the "Targeting Subsidies Organization", was established. The average transfer received by an Iranian household[16] through the Targeted Subsidy Program is about 14.7 million Rials (about 13% of the average Market Income) in the survey. The second cash transfer program that is included in this analysis combines all monetary transfer through the abovementioned organizations which we observe them directly in the survey as a total value (i.e. indistinguishable with regard to the amount provided by each individual organization). We refer to this transfer group as the "Social Assistance" program. The average transfer received by an Iranian household through the Social Assistance program is 0.9 million Rials (about 1% of the average Market Income). The third and last type of cash transfer programs included in this analysis is what we call "Semi-cash Transfers (Food)" transfers that is the edible goods that a household received for free but not from other households. The expenditure data has a code to identify goods that are consumed "free but not from other households" and given the existence of the "self-consumption" code, we decide to consider these free edible goods as all provided by the government. The average transfer received by an Iranian household through the Semi-cash Transfers (Food) program is about 0.06 million Rials (about 0.1% of the average Market Income).

The second group of subsidies is "price subsidy" programs. This group includes both consumer and producer subsidies and the main items and their budgetary values in the year of survey are presented in Table 1. One should note that the household survey does not have enough information to allow us to allocate these subsidies to households and therefore we do not

[10] Iranian household survey has the income information of each household member for the year prior to the day of survey but only the expenditure information of the whole household for the month prior to that day.

[11] In Farsi: "Tarh-e Hadafmansazi-e Yarane-ha".

[12] In Farsi: "Bonyad-e Shahid va Omoor-e Issargaran"

[13] In Farsi: "Komite-ye Emdad-e Imam Khomeini"

[14] In Farsi: "Bonyad-e Mostazafan-e Enghelab-e Eslami"

[15] In Farsi: "Sazmane-e Behzisti-e Keshvar"

[16] The total number of households in the extended survey is 21,159,033.

include them in this paper. The only exception is part of the bread subsidy that is distributed to families as part of the Targeted Subsidy Program.

The third group is "In-kind transfers" and it is divided into "housing subsidies", "education subsidies" and "health subsidies". Similar to the case of price subsidies we are not able to identify the beneficiary households of housing subsidies in the survey so this group of subsidies is not included in this analysis as well. However, the information related to the budgetary values of this subsidy group is reported in Table 2.

The primary and secondary education in Iran is under the supervision of the Ministry of Education and it is composed of 12 grades: 5 for primary, 3 for middle school and 4 for high school and the compulsory education is until the end of middle school (i.e. 8th grade). The primary and secondary education is free for all 12 grades in public schools but people have the option to switch to the private schools. The tertiary education is supervised by the Ministry of Science, Research and Technology and the Ministry of Health and Medical Education depending on the field of study. The tertiary education is not free but public universities offer it freely in exchange for an obligation that a student will work in the country for a period after the end of their education which could be as long as 3 times of their length of education. So for example a person who gets a 4 years B.S. degree, depending on which public university he has attended, can be required to work for 12 years in the country before his degree is released to him[17]. The Ministry of Science, Research and Technology normally doesn't require people to work in any specific place in the country but just to contribute to the pension system for a specific number of years. Ministry of Health and Medical Education on the other hand usually assigns people to cities that normally lack medical staff. Students, however, have the option to buy their degrees from the Ministry of Science, Research and Technology before their obligation ends and leave the country; this is a harder task for those who fall under the jurisdiction of the Ministry of Health and Medical Education. Beside the above mentioned education-for-work type of the universities, which is limited to the public universities and it is the most favorite one among Iranian students, both public and private universities admit students who are willing to pay for their education.

This analysis includes the education transfer using the imputation method and the per pupil budgetary expenditures on education. Table 3 presents the per pupil education transfer for students of different grades in the year of survey that is used in this study (based on Adlband, 2011; MNA, 2011). Since we are not able to identify the type of high school or university one is attending from the survey, we allocate the average value of per pupil expenditures for these two levels[18].

Finally, with regard to the health system, Iran combines medical provision and education through public and private medical schools. Each province of Iran has at least one public medical university which is both a place to train physicians and also in charge of the public health in that province. These universities, which are directly supervised by the Ministry of Health and Medical Education, control a health network that expands into the rural and urban areas of each province. Every village or a group of them has a "health house" (with the ratio of 1 health house per 1,200 inhabitants) with a trained health worker known as "Behvarz". The health houses are all connected to "rural health centers" (with the ratio of 1 rural health center to 7,000 inhabitants) that each has at least one physician. Similar structure exists in the urban areas, where "health posts" and "urban health centers" replaces the corresponding entities in the rural areas respectively. All of the rural and urban health centers are supervised by the

[17] The requirement only affects those who wish to leave the country and for the rest of population it is, as it was not existed. The only exception is for those who receive their degree from the Ministry of Health and Medical Education, as they are required to work in the public run hospitals/medical centers of the government's choice for a period of time upon graduation.

[18] The average does not include values for the PhD or Doctorate programs.

"district health centers" which are controlled by the public medical university which is in charge of a province. Public hospitals are also directly report to this university. Beside this public health system, private sector is active in the field with private physician offices and hospitals. Moreover, NGOs are also present and active in the health market of Iran (Asaei, 2015; Mehrdad, 2009).

Medical services are not free in Iran but receives subsidy from the government. Government's budget has a specific line for "medicine and skim milk" subsidy which amounted to 3,900 billion Rials in 1390 (2011-12) which is the year of survey used in this analysis. Health insurance is available to a large fraction of population but mostly include large copayments. According to the Statistical Center of Iran, total public expenditure on health in year 1390 (2011-12) was about 170,000 billion Rials (SCI, 2015). In that year the private expenditure was about 283,000 billion Rials of which the share of households was about 245,000 billion Rials. The rest is covered by the private insurances, employers, NGOs and also the additional (optional) coverage provided by the public insurance companies. Finally the fund received from international sources amounted to 26,000 billion Rials in that year (SCI, 2015). For the purpose of this analysis we allocate the per capita health subsidy of 2,250,720 Rials to every member of a household that has a medical expenditure in the survey[19].

2.3 Pension system

The first civil servant (contributory) pension system legislation in Iran dates back to 1922 (1301 Iranian calendar) (CSPO, 2015). Since then, it has experienced several major changes but it is still mainly a pay-as-you-go (PAYG) system and it is known as the Civil Servants Pension Organization (CSPO). Currently, there are several ways through which a civil servant can be retired among which are "Compulsory retirement (employees of 65 years of age regardless of the years of rendering service)", "Retirement based on Mutual agreement (50 years of age and at least 25 years of rendering service for male and 20 years for female employees)", "Forcible retirement (based on the issued verdicts of the board of investigation administrative violations but requires 25 years of rendering service for male and 20 years for female employees)", "Voluntary retirement by authority of employee (if he is 60 years old) or authority of organization (if the employee has rendered 30 years of service)", "Invalidity pension (occupation a non-occupation related invalidity or decease)" (CSPO, 2015). The main factors in calculating one's pension are his/her years of service and his salary and benefits in the last two years of service (CSPO, 2015).

Military servants have their own pension and health insurance system. Prior to 2002 (1381 Iranian calendar) different branches of armed forces of Iran had their own pension system but they are all combined in one organization in 2002 (although still funds of each branch is kept separated from each other) known as the "Retirement Organization of Armed Forces" which is part of the "Social Security Organization of Armed Forces" which is the centralized entity in charge of Armed forces welfare. This system is also a PAYG one and it is mainly funded through fees paid by the servants and the government, a governmental budget and the financial investments of the Organization (IPRS, 2015).

Those who are employed by the private sector are mandated to be covered in the pension and health insurance system provided by the Social Security Organization (SSO). The first initiation for providing social security to the workers dates back to 1932 (1310 Iranian calendar) (SSO, 2015). This system is also a PAYG one and is considered an independent organization but under the supervision of the "Ministry of Cooperatives, Labor and Social Welfare". SSO is financed through payments made by employees (7% of their base salary), employers (about 23% of the base salary of each employee) and government (3% of the base salary of each

[19] We observe the medical expenditure in the household level but allocate the health subsidy to all members of the family.

insured employee) as well as financial activities by the entities that are controlled by SSO (SSO, 2015). One should note that any employee who is covered by the SSO is considered an "insured" employee and the fees that are paid by him/her and his/her employer are also called "insurance fee" and this is mainly due to the fact that SSO provides both health insurance, retirement insurance (i.e. pension) as well as other types of insurance (e.g. invalidity and unemployment) (SSO, 2015).[20] Those who are self-employed have the option to self-insure themselves through SSO. The general rule for the calculation of pension in SSO is similar (although not identical) to CSPO. Male and female employees have to be at least 50 and 45 respectively and have at least 30 years of paid insurance fees to be eligible for retirement. Age requirement does not apply to those who have at least 35 years of paid insurance fees. Male and female individuals who are above 60 and 55 respectively who have at least 20 years of paid insurance fee are eligible to become retired. Under some special circumstances women can be eligible for retirement if they are at least 42 years old (SSO, 2015).

It is important to note that all pensions are exempt from the tax (CSPO, 2015). Moreover, pension deduction of all Civil and Military servants is 9% of their salary and the government pays 1.5 times of their fee as its contribution to the pension funds (HVM, 2015). For the purpose of this study, it should be noted that the household survey has information about the pension that is received by any member of a household as well as the deductions for the social security system and the related health insurance.

3. Methodology

This study uses the methodology that is developed by the Commitment to Equity (CEQ) institute[21] at Tulane University which is explained in great detail in Lustig (forthcoming) and an earlier version of it is presented in Lustig and Higgins (2013). The backbone of this methodology is a flowchart displayed in Figure 1. It shows how different taxes and transfers (income components) are combined to produce different main income concepts as well as extended income concepts.

In a nutshell, this taxonomy allows us to evaluate how different taxes and transfer programs contribute to the reduction of (or increase in) poverty or inequality in a country. Lustig et al. (forthcoming) show that commonly used indicators such as progressivity are not able to provide information about how equalizing (or in the context of poverty, poverty alleviating) a tax or transfer is and may lead to misleading conclusions. For example, a regressive tax can be in fact equalizing when it is added to a progressive transfer. Lustig et al. (forthcoming) argue that marginal contribution analysis is a safe way to evaluate the role of a tax or transfer in fighting inequality and poverty. Theoretically, marginal contribution analysis asks how the distribution of income would have been in the absence of a tax (or transfer) and defines the difference between this counter factual and the actual distribution of income as the marginal contribution of that tax (or transfer). In practice and in this paper we focus on the first order effects of removing a tax or transfer and therefore ignore the behavioral responses.

4. Data

The main data base for this study is the Iranian Household Expenditure and Income Survey (HEIS) for the calendar year 1390 (20011-12)[22]. The Statistical Center of Iran conducts this survey every year and its sample represents all rural and urban areas of Iran. In the year of survey that is used in this analysis there are 18,727 urban and 19,786 rural households in the sample. These households represent about 56.4 million urban and 23.1 million rural

[20] There are exceptions to which employers are mandated to pay their share or which employees are qualified for mandatory participation in SSO which interested readers are encouraged to review the complete law (available on SSO website)

[21] Hereafter we refer to this methodology as the CEQ methodology

[22] Most of the survey data is available at http://goo.gl/pcG70N. Please note that the online data base does not include the survey weight variables. These variables are, however, available for researchers who visit the Statistical Center of Iran in person.

individuals. For each one of the households in the sample, we follow Figure 1 and construct different main income concepts as well as income components (i.e. taxes and transfers) as it is described in Table 4.

Table 5 shows the distribution of individuals and household based on their income group as well as the average size of household in each income group. About 16% of the population live in poverty and about 35% are economically vulnerable. Together, more than 50% of the Iranians are considered low income. The middle class is also large and includes about 48% of the population. The remained 2% belong to the high income group.

Table 6 shows the average annual Market Income, Contributory Pensions and different taxes and subsidies at household level in each income group. The average market income of an ultra-poor household is about 5% of a middle class household and 2% of a rich household. However, the retirement pensions received on average by an ultra-poor household is less than 0.03% of a middle class family and less than 0.01% of a wealthy household. Therefore, while the divide in the market income of the low and high income groups is large as expected, the divide in average pension received by these groups is considerably larger. Given that the pensions are generally of a moderate size in Iran, this can be only derived by the fact that not that many low income households in Iran are benefiting from pension system. Direct taxes mainly targets high income households but direct transfers benefits all income groups very similarly.

Giving transfers to the high income groups, who do not need such programs, is a negative property for a fiscal system from the equality and anti-poverty stand points. This issue also applies to the indirect taxes as well as In-kind transfers that are hardly pro-poor. In the next section we take a more in depth look at the general groups of fiscal incidences as well as their sub-items to determine how they contribute, positively or negatively, to the reduction of inequality and poverty in Iran.

5. Results

In this section we first review the change in inequality and poverty between different income concepts from “Market Income” to “Final Income”. Then we analyze each component of the fiscal system and evaluate its marginal contribution to reducing inequality and poverty. Finally, we focus on the “Targeted Subsidy Program” and evaluate how much it would contribute to the change in poverty and inequality (in the marginal contribution sense) under different policy scenarios.

5.1 Inequality and poverty from market income to final income

Table 7 shows the change in different inequality indices from “Market Income” to “Final Income”. The total change in Gini from Market to Final income is about 0.0736 Gini point which is equivalent to about 16% reduction in Gini index of the Market income. The most reduction in Gini is when the direct transfers are added to the system. In other words, the biggest reduction in Gini happens when one compares the Gini of Market Income plus Contributory Pensions to Gross Income and also Net market Income to Disposable Income. The second and much less noticeable drop is when In-kind Transfers net of user fees are added to the system (i.e. comparing Consumable Income to Final Income). However, given the amount of imputation and the type of assumptions in calculating In-kind Transfers (as it is explained in the previous sections), one should use results related to the In-kind Transfers with caution. Other inequality indices in Table 7 are also pointing to the same story which is the considerable role of direct transfers in reducing inequality.

Similarly, Table 8 shows how different poverty indices are compared across income concepts. The whole fiscal system reduces the headcount of the poor population (i.e. those with a daily

income less than $4 PPP) from about 19% in Market Income to 7% in Consumable Income[23]. The major reduction again happens with the addition of direct transfers that cuts the poverty by about two third. The reduction in poverty headcount is even higher for the other two poverty lines. In-kind Transfers are again the second best fiscal intervention in reducing poverty. The increase in poverty due to the indirect taxes (i.e. Sales Taxes) is relatively low and of the second order importance.

5.2 Contribution of fiscal incidences to inequality and poverty

The results in the previous section shows that direct transfers is the main component in Iran's fiscal system that contributes to reducing inequality and poverty. To further analyze this result, we turn our attention to sub-components of the fiscal system. Table 9 shows the progressivity of each income component as well as their marginal contribution to reducing (or increasing) inequality in three of the main income concepts (i.e. Disposable, Consumable, and Final incomes). The marginal contributions should interpret as how much the Gini of an income concept would have been higher (or lower), if a specific income component (i.e. a tax or transfer) is removed from the fiscal system. The positive values mean that the Gini would have been higher and therefore removing that component increases the inequality. In other words, positive values for the marginal contribution mean that an income component has a positive effect in increasing equality (reducing inequality). Among all income components, only indirect taxes (i.e. Sales Taxes) have a negative effect on equality. As expected, direct transfers has the highest marginal contribution to reducing inequality in all three income concepts. The whole contribution, however, is derived by the Targeted Subsidy Program. In fact, in the absence of this program, the Social Assistance would play a role similar to the other components of the fiscal system in reducing inequality.

Table 9 also reveals an example of a phenomenon known as the Lambert Conundrum (Lustig et al., forthcoming). The commonly used rule of thumb regarding the effect of a tax or transfer in reducing inequality expresses that a progressive tax or transfer (as measured by the Kakwani index) reduces inequality and a regressive one increases it. Lambert Conundrum shows that the rule is not always correct as adding a regressive tax to a progressive transfer can result in higher equality. In the case of Iran, Employee Contributions to the Social Security Insurance is regressive (has a negative Kakwani index) yet its marginal contribution to the inequality of all three income concepts is positive. In other words, removing this regressive deduction would result in higher (instead of lower) inequality in the whole income distribution.

Table 10 performs the same marginal contribution analysis for the poverty headcount ratio. Positive values in this table have a positive connotation similar to the previous table. In other words, a transfer with a positive value for marginal contribution would reduce poverty and if it is removed from the fiscal system would result in an increase in the poverty headcount ratio equal to the size of the marginal contribution. As expected, taxes always can do harm, i.e. to increase poverty but they are not a concern in the case of Iran unless in the case of the Sales Taxes. With respect to the Consumable Income, Direct Taxes increase poverty headcount ratio by about 2% and Sales Taxes increase it by about 10%. Direct transfers, on the other hand, reduce this poverty index by about 58% and most of this reduction is due to the Targeted Subsidy Program which reduces the poverty by about 56%.

5.3 Alternative scenarios for the implementation of "targeted subsidy program"

Since Targeted Subsidy Program is the main component of the fiscal system in reducing inequality and poverty, it is important to further analyze it. This subsidy program (in the year of survey used in this paper) offers a similar cash transfer to every Iranian regardless of their

[23] The poverty indices are not calculated for the Final Income since these international poverty lines are calculated without accounting for the "consumption" of education and health.

income (Baseline scenario). In this section we analyze three alternative scenarios to see how much the marginal contribution of this program to reducing inequality and poverty would change in each scenario. The first scenario is the one that is very recently considered by the Iranian government which is to remove the subsidy from the top deciles. Here we simulate the results by removing the transfer from the top 20%. In the second scenario we continue to remove the subsidy of the top 20% but we also increase the transfers of the bottom 80% by 10%. Finally, in the third scenario we eliminate transfers to the top 20% but increase those of the bottom 30% by 20%. Before we compare these scenarios with respect to their power to reduce inequality and poverty, it is worth comparing them with respect to the size of budget necessary for them. Based on the survey data, the Baseline scenario distributes 311,108 billion Rials (4.98% of GDP) while Scenario one through three distribute 262,502 billion Rials (4.20% of GDP), 288,752 billion Rials (4.62% of GDP), and 283,470 billion Rials (4.54% of GDP) respectively.

Table 11 shows how the marginal contribution of Targeted Subsidy Program to reducing inequality changes in different scenarios. As expected, the inequality decreases in all scenarios as the subsidy of top income group is removed and the subsidy of low income group is increased. Focusing on the Final Income and comparing to the Baseline, the extra marginal contribution of this subsidy program to reducing inequality is about 18%, 29%, and 35% under scenarios one though three respectively. Comparing scenarios two and three to the first one indicates an extra 9% and 14% reduction in inequality under these two scenarios respectively. The difference between scenario two and three is only an extra 4% for the third scenario. Ignoring the administrative costs associated with targeting and given that the third scenario has a much less financial burden comparing to the second one, this scenario clearly dominates the second one.

Table 12 performs a similar analysis for the change in poverty under each scenario using the headcount ratio. The Baseline and the first scenario are not different given that the top 20% would not become poor if they lose this subsidy. With respect to the Consumable Income, scenarios two and three improve the marginal contribution of this subsidy program in reducing poverty by about 7% and 15% comparing to the baseline. The improvement under the third scenario comparing to the second one is only 7%. The third scenario is again the dominant one comparing to the second one and it is definitely preferable over the baseline or the first scenario if the objective is to reduce poverty.

As a final step, we analyze the effect of different policy scenarios on the poverty headcount index of the urban versus rural areas. Panel A and B of Table 13 present these results. It is clear from these two panels that the Targeted Subsidy Program specially benefits the rural areas as it reduces the poverty headcount by about 20% (for the Consumable Income) as opposed to only 5% in the urban areas. By removing the subsidy from the top deciles and allocating it to the bottom deciles, the marginal contribution of this program to reducing poverty in rural areas increases more, almost two times, in percentage term. For example, comparing to the MC of the Targeted Subsidy Program in the baseline, scenario 3 increases this MC by about 17% in the rural areas comparing to the 10% in the urban areas.

6. Conclusion

This paper analyzes the effect of different components of the fiscal system in Iran on reducing inequality and poverty. Using the CEQ framework and the marginal contribution approach, we show that the direct transfers in general and the Targeted Subsidy Program in particular play the most significant role in creating a more equal distribution of income as well as less poverty in Iran. The system as a whole reduces the inequality of Final Income by 16% and poverty head count ratio of Consumable Income by about 63%. The Targeted Subsidy Program by itself reduces the inequality and poverty by 11% and 56% respectively. The main reduction in

poverty comes from the rural areas where this program reduces the poverty headcount ratio from about 37% to only 17%. The urban areas only experience a moderate 5% reduction in the poverty due to this program.

We evaluate different policy scenarios about how to proceed with the current Targeted Subsidy Program and find that if the current plan of Iran's government in eliminating the subsidy of top deciles is combined with a moderate increase in the subsidy of the bottom deciles, the outcome would be significant in reducing poverty and inequality. Comparing to the baseline case of providing the same subsidy for everyone, if the subsidy of the top 20% is eliminated and the subsidy of the bottom 30% is increased by only 20%, the inequality and poverty would experience an extra 35% and 15% reduction respectively (comparing to the current MC of the Targeted Subsidy Program to the inequality of the Final Income and poverty of the Consumable Income). The power of the Targeted Subsidy Program in reducing inequality and poverty stems from the success of this program in reaching to the bottom deciles of the income distribution in Iran. Therefore, the main policy recommendation of this paper regarding the Targeted Subsidy Program is to not just remove the subsidy of the top deciles (as it is implemented recently in Iran) but to allocate part of the resulted extra funds to the bottom deciles especially in the rural areas. Even if the government of Iran finds it challenging (especially politically) to effectively target the bottom deciles, we show that a 10% increase in the subsidy of the bottom 80% has also a significant effect on the reduction of poverty and inequality.

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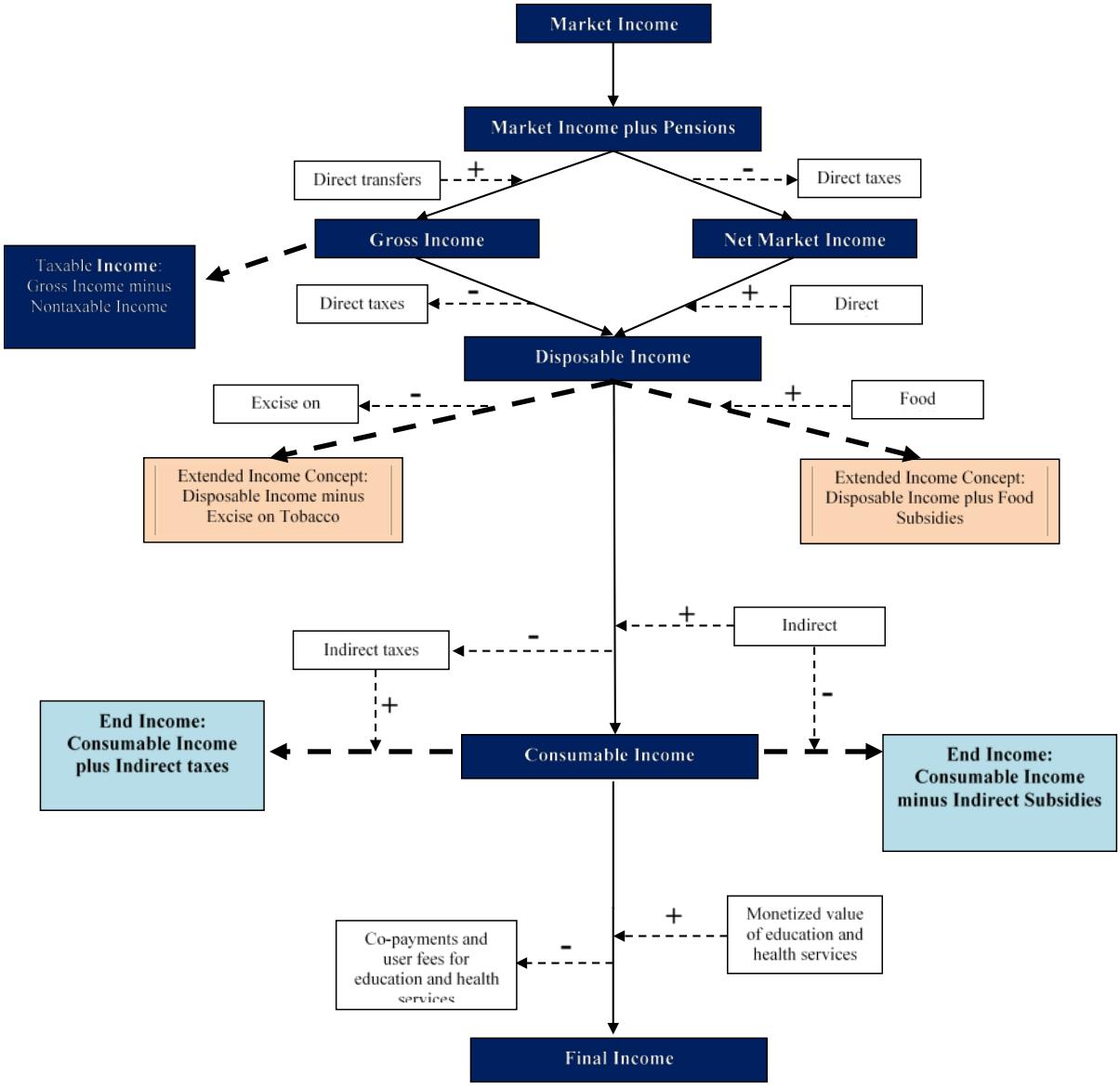
Figure 1: Income Concepts Diagram According to the CEQ Methodology



Note: Core Income Concepts in dark blue background, Fiscal Interventions in white background, Examples of Extended Income Concepts in light orange background, Examples of End Income Concepts in light blue background.
Source: Lustig (forthcoming).

Table 1: Price subsidies (Consumer and Producer) and their Value in the Budget for the Year of Survey (1390 Iranian Calendar, Equivalent to 2011-12)

Item	Value in the budget in billion Rials (Value in current 2011 US billion Dollars)	% GDP
Bread subsidy	35,000 (3.38)	0.56%
The subsidy for production factors used in the agriculture sector	12,000 (1.16)	0.19%
The subsidy for essential consumption product	25,000 (2.41)	0.40%
To cover the loss due to the "guaranteed purchase" programs	1,000 (0.10)	0.02%
To cover the difference between the real price and the price set by the government for specific items and also to pay for the remained accounts from the previous years	4,000 (0.39)	0.06%
To pay for the obligations of specific governmental agencies with regard to the essential consumption items	4,800 (0.46)	0.08%
Subsidy for Medicine and Skim milk (aka Skimmed milk or Dried milk)	3,900 (0.38)	0.06%
To cover the difference between the guaranteed price of water and purified water purchased from the private sector and the market price	300 (0.03)	0.00%
To help patients with diseases such as cancer, MS, etc.	1,100 (0.11)	0.02%
The subsidy to pay for profit related to the guaranteed purchase of agriculture and essential consumption products	1,000 (0.10)	0.02%
Subsidy for milk and enriched bread in schools and food in specific schools	3,000 (0.29)	0.05%
Energy subsidy (the difference between the price of electricity and the fuel used in power plants to produce it)	40,660 (3.92)	0.65%
Subsidy for the city bus and subway tickets	4,000 (0.39)	0.06%
To help with the financial loss in public companies	1,308 (0.13)	0.02%
To help with the financial loss in water and sewage companies in rural areas	1,038 (0.1)	0.02%
Total	**138,106 (13.33)**	**2.21%**

Note: The exchange rate used here is 10,364 Rials per $1 which is the exchange rate of March 2011 (beginning of the 1390 Iranian year and the month that the budget became effective) according to the Central Bank of Iran: http://www.cbi.ir/exrates/rates_en.aspx
Source: Government budget of Iran for 1390 calendar year (equivalent to 2011-12) available at: https://goo.gl/LpoGFb

Table 2: Housing Subsidies and Their Value in the Budget for the Year of Survey (1390 Iranian Calendar, Equivalent to 2011-12)

Item	Value in the budget in billion Rials (Value in current 2011 US billion Dollars)	% GDP
Discount on the fees related to the house constructions, financial assistance to house construction and construction of "Mehr" public houses	2,430 (0.23)	0.04%
housing subsidy to teachers	365 (0.04)	0.01%
Providing the infrastructure for the "Mehr" public houses (Government share)	1,621 (0.16)	0.03%
Subsidy to assist with the interest on loans related to rural houses	324 (0.03)	0.01%
Assisting clergies with their housing	100 (0.01)	0.002%
Subsidy to assist with the interest on loans related to "Mehr" public houses	1,621 (0.16)	0.03%
Total	**6,461 (0.62)**	**0.10%**

Note: The exchange rate used here is 10,364 Rials per $1 which is the exchange rate of March 2011 (beginning of the 1390 Iranian year and the month that the budget became effective) according to the Central Bank of Iran: http://www.cbi.ir/exrates/rates_en.aspx
Source: Government budget of Iran for 1390 calendar year (equivalent to 2011-12) available at: https://goo.gl/LpoGFb

Table 3: Per Pupil Education Transfer (in-kind) in the Budget for the Year of Survey (1390 Iranian Calendar, Equivalent to 2011-12)

Item	Per pupil expenditure in the budget (Thousand Rials) (Value in current 2011 US Thousand Dollars)	% Average household Market Income
	4,462	
Primary	(0.43)	4.01%
Secondary	-	-
	6,431	
Middle School	(0.62)	5.78%
	9,854	
High School	(0.95)	8.860%
	94,800	
Tertiary	(9.15)	85.24%

Note: The exchange rate used here is 10,364 Rials per $1 which is the exchange rate of March 2011 (beginning of the 1390 Iranian year and the month that the budget became effective) according to the Central Bank of Iran: http://www.cbi.ir/exrates/rates_en.aspx
Source: Adlband (2011) and MNA (2011).

Table 4: Description of Market Income and Other Income Components

Main Category	Sub Categories (if any)	Description
Market Income	-	All monetary and non-monetary income received as an employee or self-employed individual excluding any subsidy or social assistance and including imputed rent for homeowners. All components are directly observed in the survey.
Contributory Pensions	-	All pensions received through the retirement programs. The relevant information is observed directly in the survey.
Direct Taxes and Contributions	Income Tax	Income tax for self-employed individuals (observed directly in the survey) and payroll tax for employees (imputed using the data about gross and net income as well as contributions to pensions).
	Employee contributions to the health insurance	The deductions from employees' paychecks that is paid toward the health insurance. The relevant information is observed directly in the survey.
	Employer contributions to the health insurance	The employers' payment toward the health insurance of employees. Since this is a mandatory payment and we assume it results in lower payments to employees, we include it as a type of deduction. The relevant information is observed directly in the survey.
	Employee contributions to the Social Security Insurance	The deductions from employees' paychecks that is paid for the social security insurance (i.e. pension) of an employee. The relevant information is observed directly in the survey.
	Employer contributions to the Social Security Insurance	The employers' payment toward the social security insurance (i.e. pension) of employees. Since this is a mandatory payment and we assume it results in lower payments to employees, we include it as a type of deduction. The relevant information is observed directly in the survey.
Direct Transfers	Targeted Subsidy Program	The direct cash transfer program that is established by the government following the energy subsidy reform in Iran. The relevant information is observed directly in the survey.
	Social Assistance	Includes all cash transfers to low income individuals through public organizations. The relevant information is observed directly in the survey.
	Semi-cash Transfers (Food)	Include the monetary value of all edible items that a household receives for free. The values are imputed assuming all edible goods that are obtained "free but not from other households" are provided by the different public agencies.
Indirect Taxes	-	Sales taxes. Imputed using the 3% rule of thumb and the information available in the survey about the consumption expenditure of each household)
In-kind Transfers	Education	Includes a nominal subsidy for each student in a household depending on the grade minus any user fees (the latter is observed directly in the survey)
	Health	Includes a nominal subsidy for each individual in a household with health costs minus these costs (the latter is observed directly in the survey)

Table 5: Distribution of Individuals and Households According to the Socio-Economic Group

In Daily US 2005 PPP	Socio-Economic Group	Number of individuals (% share)	Number of households (% share)	Average size of household
0 to 1.25	Ultra-Poor	1,610,648 (2.03%)	376,976 (1.78%)	4.3
1.25 to 2.5	Extreme Poor	4,091,925 (5.15%)	957,828 (4.53%)	4.3
2.5 to 4	Moderate Poor	6,781,078 (8.53%)	1,536,704 (7.26%)	4.4
4 to10	Vulnerable	27,474,659 (34.55%)	6,555,070 (30.98%)	4.2
10 to 50	Middle Class	37,772,673 (47.51%)	10,925,191 (51.63%)	3.5
50 or more	Wealthy	1,780,710 (2.24%)	807,264 (3.82%)	2.2
Total		**79,511,694**	**21,159,033**	**3.8**

Note1: The total population exceeds the actual population for this year due to the application of survey weights.
Note2: Socio-Economic group is determined according to the "Market Income plus contributory Pensions"
Note3: PPP stands for Purchasing Power Parity. In calculating PPP values, we use the 2005 round of ICP (International Comparison Program) as reported in the World Development Indicators (WDI) published by the World Bank. To change monetary values from the year of survey to 2005, we use the CPI index from the WDI.
Source: Own calculations using the Iranian household survey of year 1390 (2011-12).

Table 6: Average per Household Market Income and Incidence of Taxes and Transfers by Income Category

Panel A: Poor households

Values are per annum per household and in Rials	Socio-Economic Group (In Daily US 2005 PPP) [% of the average market income in each group]		
	Ultra-Poor (0 to 1.25)	Extreme Poor (1.25 to 2.5)	Moderate Poor (2.5 to 4)
Market income	8,679,980	20,238,678	35,642,663
Contributory Pensions	6,627 [0.08%]	38,239 [0.19%]	326,682 [0.92%]
Direct Taxes and Contributions	105,501 [1.22%]	130,466 [0.64%]	474,885 [1.33%]
Direct Transfers	19,275,862 [222.07%]	18,928,611 [93.53%]	18,612,882 [52.22%]
Indirect Taxes	1,510,715 [17.40%]	1,608,128 [7.95%]	1,981,837 [5.56%]
In-kind Transfers (Not including user fees)	18,098,562 [208.51%]	14,541,249 [71.85%]	16,210,316 [45.48%]

Panel B: Non-poor households

Values are per annum per household and in Rials	Socio-Economic Group (In Daily US 2005 PPP)		
	Vulnerable (4 to 10)	Middle Class (10 to 50)	Wealthy (50 and more)
Market income	71,287,723	162,881,212	423,124,626
Contributory Pensions	4,102,409 [5.75%]	22,256,470 [13.66%]	51,980,101 [12.285]
Direct Taxes and Contributions	3,037,319 [4.26%]	10,782,173 [6.62%]	17,026,904 [4.02%]
Direct Transfers	17,322,922 [24.30%]	14,304,083 [8.78%]	8,763,637 [2.07%]
Indirect Taxes	2,625,160 [3.68%]	4,217,365 [2.59%]	7,784,459 [1.84%]
In-kind Transfers (Not including user fees)	17,019,283 [23.87%]	16,750,333 [10.28%]	8,529,107 [2.02%]

Note1: Socio-Economic group is determined according to the "Market Income plus contributory Pensions"
Note2: PPP stands for Purchasing Power Parity. In calculating PPP values, we use the 2005 round of ICP (International Comparison Program) as reported in the World Development Indicators (WDI) published by the World Bank. To change monetary values from the year of survey to 2005, we use the CPI index from the WDI.
Source: Own calculations using the Iranian household survey of year 1390 (2011-12).

Table 7: Inequality Indices for the Main Income Concepts

Index	Market Income (MI)	MI plus Contributory Pensions	Net MI	Gross MI	Taxable Income	Disposable Income	Consumable Income	Final Income
Gini	0.4468	0.4458	0.4445	0.3981	0.4305	0.3960	0.3985	0.3731
Absolute Gini	13224108	14945809	14545022	15002586	11119090	14604657	14325473	14285890
S-Gini v=1.25	0.1937	0.1949	0.1938	0.1696	0.1921	0.1682	0.1696	0.1589
S-Gini v=1.5	0.3097	0.3133	0.3113	0.2725	0.3100	0.2700	0.2722	0.2558
S-Gini v=2.5	0.5287	0.5377	0.5340	0.4673	0.5367	0.4628	0.4664	0.4424
S-Gini v=3	0.5837	0.5937	0.5897	0.5160	0.5943	0.5111	0.5150	0.4902
Theil	0.3708	0.3641	0.3636	0.2923	0.3346	0.2908	0.2948	0.2567
90/10	8.7081	8.9422	8.7155	6.1763	8.5613	6.0399	6.1202	5.2608

Source: Own calculations using the Iranian household survey of year 1390 (2011-12).

Table 8: Poverty Indices for the Main Income Concepts

Index (Poverty line in daily US 2005 PPP)		Market Income (MI)	MI plus Contributory Pensions	Net MI	Gross MI	Taxable Income	Disposable Income	Consumable Income
1.25	Headcount	0.0248	0.0203	0.0205	0.0017	0.0368	0.0017	0.0021
	Poverty Gap	0.0087	0.0069	0.0070	0.0005	0.0139	0.0005	0.0008
	Squared Poverty Gap	0.0048	0.0036	0.0037	0.0003	0.0075	0.0003	0.0005
2.5	Headcount	0.0857	0.0717	0.0724	0.0129	0.1056	0.0130	0.0153
	Poverty Gap	0.0307	0.0254	0.0256	0.0031	0.0411	0.0032	0.0040
	Squared Poverty Gap	0.0163	0.0132	0.0133	0.0013	0.0231	0.0013	0.0018
4	Headcount	0.1864	0.1570	0.1593	0.0639	0.2149	0.0644	0.0723
	Poverty Gap	0.0695	0.0581	0.0587	0.0148	0.0852	0.0150	0.0175
	Squared Poverty Gap	0.0372	0.0309	0.0312	0.0056	0.0480	0.0057	0.0069

Note: PPP stands for Purchasing Power Parity. In calculating PPP values, we use the 2005 round of ICP (International Comparison Program) as reported in the World Development Indicators (WDI) published by the World Bank. To change monetary values from the year of survey to 2005, we use the CPI index from the WDI.
Source: Own calculations using the Iranian household survey of year 1390 (2011-12).

Table 9: Marginal Contribution of Taxes and Transfers to Inequality

Fiscal Incident		Progressivity (Kakwani Index)	Marginal contribution to the Gini index of: Disposable Income (0.3960)	Consumable Income (0.3985)	Final Income (0.3731)
Direct Taxes and Contributions	Income Tax	0.1956	0.0012	0.0012	0.0013
	Employee contributions to the health insurance	0.0013	0.0002	0.0002	0.0004
	Employer contributions to the health insurance	0.0483	0.0006	0.0006	0.0007
	Employee contributions to the Social Security	-0.0009	0.0005	0.0005	0.0007
	Employer contributions to the Social Security	0.0836	0.0023	0.0023	0.0024
	Total Direct Taxes and Contributions	**0.0615**	**0.0054**	**0.0053**	**0.0059**
Direct Transfers	Targeted Subsidy Program	0.4336	0.0443	0.0460	0.0401
	Social Assistance	0.7600	0.0034	0.0035	0.0032
	Semi-cash Transfers (Food)	0.3321	0.0000	0.0000	0.0000
	Total Direct Transfers	**0.4513**	**0.0485**	**0.0504**	**0.0440**
Indirect Taxes (Sales Taxes)		**-0.1470**	-	**-0.0026**	**-0.0024**
In-kind Transfers	Education	0.4257	-	-	0.0070
	Health	0.4365	-	-	0.0184
	Total In-kind Transfers	**0.6036**	-	-	**0.0259**

Note: The original income used to calculate the Kakwani index is the "Market Income plus contributory Pensions".
Source: Own calculations using the Iranian household survey of year 1390 (2011-12).

Table 10: Marginal Contribution of Taxes and Transfers to Poverty

Fiscal Incident		Marginal contribution to the $4 PPP Poverty headcount index of: Disposable Income (0.0644)	Consumable Income (0.0723)
Direct Taxes and Contributions	Income Tax	-0.0001	-0.0002
	Employee contributions to the health insurance	-0.0004	-0.0004
	Employer contributions to the health insurance	-0.0001	-0.0003
	Employee contributions to the Social Security	-0.0004	-0.0007
	Employer contributions to the Social Security	-0.0001	-0.0003
	Total Direct Taxes and Contributions	**-0.0010**	**-0.0013**
Direct Transfers	Targeted Subsidy Program	0.0866	0.0920
	Social Assistance	0.0075	0.0082
	Semi-cash Transfers (Food)	0.0001	0.0001
	Total Direct Transfers	**0.0949**	**0.1001**
Indirect Taxes (Sales Taxes)		-	**-0.0078**

Note: PPP stands for Purchasing Power Parity. In calculating PPP values, we use the 2005 round of ICP (International Comparison Program) as reported in the World Development Indicators (WDI) published by the World Bank. To change monetary values from the year of survey to 2005, we use the CPI index from the WDI.
Source: Own calculations using the Iranian household survey of year 1390 (2011-12).

Table 11: Alternative Policies for How to Manage Targeted Subsidy Program and their Effect on Inequality

Policy	Marginal contribution to the Gini index of: Disposable Income (DI)	Consumable Income (CI)
Baseline (All income deciles receive the subsidy)	0.0443 (Gini of DI: 0.3960)	0.0460 (Gini of CI: 0.3985)
S1: No subsidy for top 20%	0.0519 (Gini of DI: 0.3884)	0.0537 (Gini of CI: 0.3908)
S2: No subsidy for top 20% and an extra 10% for bottom 80%	0.0564 (Gini of DI: 0.3839)	0.0584 (Gini of CI: 0.3861)
S3: No subsidy for top 20% and an extra 20% for bottom 30%	0.0591 (Gini of DI: 0.3812)	0.0611 (Gini of CI: 0.3834)

Source: Own calculations using the Iranian household survey of year 1390 (2011-12).

Table 12: Alternative Policies for How to Manage Targeted Subsidy Program and their Effect on Poverty

Policy	Marginal contribution to the $4 PPP Poverty headcount index (PHI) of: Disposable Income (DI)	Consumable Income (CI)
Baseline (All income deciles receive the subsidy)	0.0866 (PHI of DI: 0.0644)	0.0920 (PHI of CI: 0.0723)
S1: No subsidy for top 20%	0.0866 (PHI of DI: 0.0644)	0.0920 (PHI of CI: 0.0723)
S2: No subsidy for top 20% and an extra 10% for bottom 80%	0.0928 (PHI of DI: 0.0582)	0.0986 (PHI of CI: 0.0657)
S3: No subsidy for top 20% and an extra 20% for bottom 30%	0.0991 (PHI of DI: 0.0519)	0.1054 (PHI of CI: 0.0590)

Note: PPP stands for Purchasing Power Parity. In calculating PPP values, we use the 2005 round of ICP (International Comparison Program) as reported in the World Development Indicators (WDI) published by the World Bank. To change monetary values from the year of survey to 2005, we use the CPI index from the WDI.
Source: Own calculations using the Iranian household survey of year 1390 (2011-12).

Table 13: Alternative Policies for How to Manage Targeted Subsidy Program and Their Effect on Poverty in Urban Vs. Rural Areas

Panel A. Urban areas		
Policy	**Marginal contribution to the $4 PPP Poverty headcount index (PHI) of: Disposable Income (DI)**	**Consumable Income (CI)**
Baseline (All income deciles receive the subsidy)	0.0428 (PHI of DI: 0.0290)	0.0480 (PHI of CI: 0.0327)
S1: No subsidy for top 20%	0.0428 (PHI of DI: 0.0290)	0.0480 (PHI of CI: 0.0327)
S2: No subsidy for top 20% and an extra 10% for bottom 80%	0.0477 (PHI of DI: 0.0270)	0.0502 (PHI of CI: 0.0305)
S3: No subsidy for top 20% and an extra 20% for bottom 30%	0.0470 (PHI of DI: 0.0247)	0.0527 (PHI of CI: 0.0280)
Panel B. Rural areas		
Policy	**Marginal contribution to the $4 PPP Poverty headcount index (PHI) of: Disposable Income (DI)**	**Consumable Income (CI)**
Baseline (All income deciles receive the subsidy)	0.1935 (PHI of DI: 0.1510)	0.1996 (PHI of CI: 0.1688)
S1: No subsidy for top 20%	0.1935 (PHI of DI: 0.1510)	0.1996 (PHI of CI: 0.1688)
S2: No subsidy for top 20% and an extra 10% for bottom 80%	0.2102 (PHI of DI: 0.1343)	0.2168 (PHI of CI: 0.1516)
S3: No subsidy for top 20% and an extra 20% for bottom 30%	0.2263 (PHI of DI: 0.1182)	0.2338 (PHI of CI: 0.1346)

Note: PPP stands for Purchasing Power Parity. In calculating PPP values, we use the 2005 round of ICP (International Comparison Program) as reported in the World Development Indicators (WDI) published by the World Bank. To change monetary values from the year of survey to 2005, we use the CPI index from the WDI.
Source: Own calculations using the Iranian household survey of year 1390 (2011-12).