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An Analysis of the Effects of Government Spending on the Income Distribution of Chilean Households

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An analysis of the effects of government spending on the income distribution of Chilean households

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Abstract

This paper analyzes the effect that government spending has on income distribution in Chile. The analysis is carried out by computing the Chilean Social Accounting Matrix for the year 2016 with 41 institutions. The results obtained show that households with higher income have a lower elasticity of income to government expenditure than lower-income households. The high elasticity in higher incomes is consequence of the high stake of income and the high elasticity of the low-income households is consequence of a poor participation on the income distribution. Thus, when the effects on the households is measured by its nominal impact, the highest income household receives 10 times more income than lowest income household as consequence of the fiscal expenditure. Using counterfactual simulations it is shown that this regressive effect of government spending has its origin in the unequal distribution of personal income made by markets.

Key words: Income Distribution; Social Accounting Matrix; Chile; Multiplier Model

1. Introduction

The recent social outbreak in Chile has its origin in multiple political, social and economic transformations that took place during the last 30 years in the country, as indicated by Peña (2020) and Haind, van Nievelt, Merbilhá y León (2020). Although there is still not enough perspective to agree in the source of the crisis, one of the key ingredients is that the Chilean government in its actions does not substantially affect the way in which the markets distribute the income. Figure 1 shows that while in 2017 the market-income inequality, measured by the Gini coefficient, was around 50 points, the intervention of the government reduced the inequality to 47 points. This result is in a stark contrast with the redistributive effect of most of the government belonging to the Organization for Economic Cooperation and Development (OECD), where government intervention reduces inequality, on average, by more than 10 points[1].

FIGURE 1 HERE

Government affect the distribution of income through multiple instruments which could be summarized into taxation, government intervention into markets and public spending (Papadimitriou (2006)). This paper analyzes how the last one, primary related to transfers made by the government affects income distribution in Chile. The expenditure made by the government has direct and indirect effects on the economy with indirect effects sometimes

[1] In Figure 1 are not represented, the other two Latin-American countries in the OECD, Mexico and Brazil. This is because they do not have data for year 2017 in the OECD Income Distribution Database. However, Mexico has data for year 2016, where the Gini before is 0.47 and after is 0.45. Brazil has data for year 2013 with Gini before of 0.575 and after of 0.47.

being the most relevant. In order to capture both effects, the Social Accounting Matrix (SAM) for year 2016 is built and a multiplier model is used to provide an answer.

The approach of the paper is complementary in method and instruments to most of the literature in income distribution in Chile. The method is an additional perspective to the computable general equilibrium, partial equilibrium or reduced-form models and the focus on government expenditure is complimentary to taxation as instrument to affect income distribution (see Mardones (2010), Engel, Galetovic & Raddatz (1999) and Urzua, Rodriguez & Contreras (2014)).

Using income multipliers of a SAM has two key assumptions has compared to other methods (Rubio Sanz and Perdiz (2003)). First the future behavior of agents cannot be predicted and second there are no supply restrictions. These assumptions simplify the functioning of the economy to emphasize the role of the flows of income within the agents of the economic system. Thus, using this method it is possible to analyze the redistributive effect that different exogenous income injections have on the multisectoral structure of the economy as explained in Pyatt and Round (1977) and Pyat and Round (1979).

Government expenditure affect income distribution through multiple mechanism as presented in Osberg, Smeeding and Schwabish (2004)). In contrast to taxation, government expenditure provides income or goods and services directly or indirectly to households. In this paper the focus is primarily on transfers to households instead of public expenditure on defense, police, infrastructure or research and development.

De Miguel and Perez (2006) uses a SAM for the economy of Extremadura, Spain to study how inequality is modified by exogenous injections of income, with two results to emphasize. First, increases in final demand negatively affect the poorest quintiles increasing the inequality gap, and second, direct transfers from higher-income households to lower-income households reduce the inequality gap. Utz-Peter Reich (2017) uses the SAMs as the statistical basis to extend the techniques of Input-Ouput analysis from the realm of product transactions into the field of income transactions, to explain the composition of primary income (wage, profit and tax) contained in the disposable income of any institutional sector of the economy. He applies the technique to Canada, Germany and Portugal showing the differences in the distribution of income between the economies. Civardi, Pansini and Targetti Lenti (2010), using the SAM of the economy of Vietnam, point out that, given the structure of the economy, there may be characteristics of the system that favor the accumulation of income by some group of people. Therefore, there may be policies aimed at favoring the poorest but that end up improving the condition of the groups of households with middle and high income, in this way, they find that policies focused on the agricultural sector will have a greater effect on the reduction in the level of income inequality.

The literature to understand the effects of Chilean government on income inequality has been mainly bias to the use of taxation. Mardones (2010) uses a model of general equilibrium to show that reduction of the VAT rate by 20% and increases of the income tax by 40% for households belonging to the highest income quintile would generate only limited improvements in poverty and income distribution. Engel, Galetovic and Raddatz (1999) indicate that, between increasing the progressivity of a progressive tax in collection, such

as the income tax, and increasing a regressive tax rate, such as VAT, the second alternative may end up benefiting more to lower income sectors simply because the latter collects a larger fraction of income from higher income households.

This paper provides an additional perspective to the analysis of government effects on the distribution of income in Chile, focusing on the circuits of income flows triggered by the government expenditure, assuming the taxation system to be constant. The results indicate that government spendings when flowing through the entire payment system of the economy ends up in nominal terms benefiting the highest income quintiles. This result is tempered by the fact that the elasticity of fiscal expenditure to income of the quintiles is higher for the lowest incomes. This effect is due to the fact that the income base of the lowest quintiles is very low. The counterfactual exercises carried out to understand the origin of inequality suggest that, regardless of the size and progressivity of fiscal spending, its effect on improving income distribution is limited. Policies aimed at affecting the way in which the distribution of factor payments is made seem to have a much more important effect on the final distribution of income.

After this introduction, section 2 presents the multipliers model, section 3 explains how the SAM 2016 constructed for the Chilean economy was calculated, describing the main sources of information used for its preparation. Section 4 uses the SAM to extract relevant information represented in graphical terms. Section 5 analyzes the main results. Section 6 discuss the limitations of the results and finally section 7 presents the main conclusions.

2. Model of Multiplier

The starting point of the analysis is the SAM and the computation of multipliers affecting the income distribution. The information of the SAM is used to analyze the household distribution of income within the framework elaborated by Pyatt and Round (1979).

Following Polo, Roland-Holst and Sancho (1990), Roland-Holst and Sancho (1992) and De Miguel and Pérez (2006) assume that the number of institutions in the SAM is n, and they can be divided into s and k endogenous and exogenous institutions respectively. Let Y_{ij} be the income flow between institution i and j, and given that each institution has its own budget constraint it can be aggregated into:

$$Y_i = \sum_{j=1}^{n} Y_{ij} = \sum_{j=1}^{n} Y_{ji} \qquad (1)$$

with $i = 1..n$.

Let, $a_{ij} = \frac{Y_{ij}}{Y_j}$ be the proportion of average expenditures and substitute into equation (1) so that,

$$Y_i = \sum_{j=1}^{n} a_{ij} Y_j$$

This can be decomposed into the first s endogenous institutions and the second k exogenous institutions so that

$$Y_i = \sum_{j=1}^{s} a_{ij} Y_j + \sum_{j=s+1}^{s+k} a_{ij} Y_j$$

with $i = 1..n$.

Thus, equation (1) can be expressed with matrix notation as $Y = AY$, and the decomposition as

$$Y = \begin{bmatrix} Y_s \\ Y_k \end{bmatrix} = \begin{bmatrix} A_{ss} & A_{sk} \\ A_{ks} & A_{kk} \end{bmatrix} \begin{bmatrix} Y_s \\ Y_k \end{bmatrix} \quad (2)$$

Y_s y Y_k represent the income of the s endogenous and k exogenous institution respectively and A_{ij} denotes the submatrices with the proportion of average expenditure in each case.

Focusing the analysis into the effect of the exogenous institutions into the endogenous one, part of the equation (2) is used so that,

$$Y_s = A_{ss} Y_s + A_{sk} Y_k$$

Or

$$Y_s = M \cdot x \quad (3)$$

With $M = (I - A_{ss})^{-1}$ and $x = A_{sk} Y_k$.

M is a matrix of multipliers with s endogenous accounts where $m_{ij} \in M$ represents how much income in the account i generates a change in the account j and x is a vector representing the changes produced into the exogenous institutions expressed in terms of the endogenous institutions.

Following Roland-Holst and Sancho (1992) the relative income vector can be defined as

$$y_s = Y_s(e'Y_s)^{-1}$$

or

$$y_s = (M \cdot x)(e'(M \cdot x))^{-1}$$

Where e' is a unitary row vector. Using matrix differentiation and equation (3) it can be expressed a redistribution model such that

$$dy_s = [e'Mx]^{-1}\{I - Mx[e'Mx]^{-1}e'M\}M\ dx$$

$$= (e'Y_s)^{-1}[I - Y_s(e'Y_s)^{-1}e']\ Mdx$$

$$dy_s = R(x)Mdx$$

Where dy_s represents the distributional effects on the endogenous accounts, generated by the change in the exogenous account dx, M is the matrix of multipliers, that capture the direct and indirect effects when the flow of income goes through all the economy and finally the income generated is distributed into the endogenous account through the distribution matrix $R(x) = (e'Y_s)^{-1}[I - Y_s(e'Y_s)^{-1}e']$.

In this paper dx is a column vector representing how the government expenditure is distributed throughout the endogenous accounts, therefore the terms in the vector Mdx can be expressed as,

$$(Mdx)_i = \sum_{j=1}^{s} m_{i,j}dx_j$$

and the redistribution that the expenditure of government generates into the account i becomes

$$dy_i = \frac{(Mdx)_i - y_i \sum_{j=1}^{s} (Mdx)_j}{e' Y_s} \quad (4)$$

The sign and intensity of $dy_i > 0$ determines whether government expenditure is beneficial to the endogenous account i or not. The effect depends on the interaction between the income generated into the institution i by the fiscal expenditure $(Mdx)_i$ and the participation y_i on the total income generated by the fiscal expenditure in the economy $\sum_{j=1}^{s} (Mdx)_j$. Thus, fiscal spending is progressive (regressive) over the institution *i*, if what *i* obtains directly as a consequence of fiscal spending is greater (lower) than what it would obtain from the entire economy.

3. Building the SAM for Chile

Over time, various Social Accounting Matrices have been built for the entire economy and regional economies of Chile. Venegas (1995), builds one of the first SAM for year 1986, and Venegas (2013), creates a very detailed SAM prepared with the official data from Chile's national accounts published in 2011 and 2012. Fuentes (2017) builds a SAM for year 2014.

Rojas (2009) builds a regional SAM for the Metropolitan region in order to analyze accounting multipliers. Mardones and Saavedra (2011) use an environmentally extended SAM for the economic analysis of the Bio-Bio region. Ormazabal, Avello, Trigueros and Escudero (2015) estimate a SAM for the Antofagasta region. Mardones y Brevis (2020) built a SAMEA to analyze environmental policies in Chile,

These matrices were built for different purposes, and the method used in this paper to construct the SAM was enriched by the experiences of each of these works.

The five main data sources used are: (i) the Integrated Economics Accounts, (ii) the Supply and Use Tables (SUT) and (iii) the Input-Output matrixes for year 2016 from the Central Bank of Chile, (iv) the VII Family Budget Survey 2016-2017 (FBS) and (v) the National Socioeconomic Characterization Survey (CASEN) from the National Institute of Statistics (INE).

The SUT table was used with 12 economic sectors, and the 1.190 products of the FBS were adapted to the 12 goods and sectors[2]. The Input-Output tables were used to obtain information about income of the households for each one of the activities. The households were classified into quintiles based on disposable income with imputed rent, the range of disposable income used are in Table 10 in the Appendix.

The characterization of household income was carried out using the FBS, due to the great level of detail it provides regarding household consumption. In order to achieve a concordance of the data from the different sources, the National Socioeconomic

[2] For more details of the classification, see the appendix

Characterization Survey (CASEN) was used with the adjustments made by the Economic Commission for Latin America and the Caribbean (ECLAC), to connect the CASEN data with those of the national accounts. The latter have a record of different sources of income, each with a certain value where there is a record granted by CASEN for these same items. If both items differ, the data from the sources provided by CASEN are multiplied by a factor (Fuentes, 2017). Following the adjustment described, this work uses the proportions of the data of each source of income and accounts of the FBS, multiplying them by the total income of the data of the Central Bank of Chile.

The total income that households receive is distributed, in different disbursements to the rest of the institutions of the economy such as the government, for taxes, activities, for concepts of final consumption of goods and services, and towards the capital account, for savings. The information for this distribution was distributed using the FBS.

The Social Accounting Matrix was built with 41 accounts or institutions. The list of accounts is reported in Table 9 in the Appendix. The account 41 capture errors and omissions made within the table, and it will be considered as an exogenous account.

Table 1 presents the SAM with the 41 accounts estimated for the year 2016.

TABLE 1 HERE

It is useful to look at some important characteristics that emerge in the SAM structure associated with income distribution. In Table 2 the different sources of income received by households are represented by quintiles.

TABLE 2 HERE

The largest source of income comes from labor income. Capital income is composed of net income from self-employment plus gross income from retirement and / or old-age pensions, plus disposable income from other self-employment, plus income from properties and income from financial instruments. The transfers made by the government to households is the sum of the liquid amount received for pensions plus the average amount received from the state as family allowance, study scholarships, among others, and the value of the species received from the government. The aggregate government transfers to households are quite uniform across the quintile. However, the composition of the transfers to each quintile is different. While the poorest quintiles mainly receive transfers associated with welfare, the richest quintiles receive transfers associated with pensions for the armed forces and law enforcement, and pensions for former state officials. Gálvez and Kremerman (2019) shows the differences in composition of the pensions payed by the government.

Finally, foreign transfers are the sum of transfers from abroad plus the amount of cash transfers or donations from abroad.

The table shows how bad is the distribution of income in the country. While 20% of the richest households in Chile receive 54.4% of the income generated by wages, the poorest

20% obtain only 2.5% of the income generated. The ratio between the fifth and first quintiles is almost 22. This inequality is less pronounced when looking at income from the capital account where the ratio between the richest quintile and the poorest is approximately 9.5 times.

Households savings to household by quintile is shown in Table 3. The big asymmetry between the first three and the fifth quintile in savings has been shown in other reports, as the XV Informe de Deuda Personal Universidad San Sebastián-Equifax.

TABLE 3 HERE

Moreover, according to the Household Financial Survey of 2014 made by the Central Bank, 73% of Chilean households have some kind of debts. The VIII Survey of Family Budgets of the INE, indicates that more than 60% of households were in debt between the period 2016-2017. This asymmetry on saving capacity across income quintiles is also reported for many countries in Latin America in Gandelman (2017).

5. Results[3]

The results of applying equation (3) to the estimated SAM is presented in Table 4. The second column shows how a dollar of fiscal expenditure affects the income of households

[3] The reader con make the computations presented in this paper with the files available at the repository https://github.com/nicogarrido/IncomeInequality

in each quintile of the income distribution. The third column shows the elasticity of the fiscal expenditure[4] to the income of each quintile.

Notice that fiscal spending benefits unevenly the quintiles. The richest the quintile, the highest the impact on the income of the fiscal expenditure. Although the elasticity to fiscal spending behaves differently, having a greater effect on the poorest quintile than the richest quintile.

TABLE 4 HERE

In Table 5 the redistribution effect is analyzed through a decomposition. The focus is on determining whether fiscal expenditure is progressive or regressive. Looking at column 2 it can be seen that for quintile 5 it is regressive, while for the rest of the quintiles it is progressive. Notice that the regressivity of the fiscal expenditure for the quintile 5 is because that quintile in average take a big share (6,6%) of the rest of the economy.

TABLE 5 HERE

Looking at the A_{sk} matrix, the expenditure of the government is distributed into the endogenous accounts of the economy through final demand (77%), transfers to the households (16%) and capital account (7%).

[4] The elasticity for the household in the quintile i is computed as $\epsilon_i = \frac{1}{Y_T}\frac{Y_h}{M_h}$, where Y_T is the transfer that household in the quintile i received, Y_h is the total income of the households in quintile i and M_h is the multiplier of the transfer to the household of the quintile i.

Final demand fiscal expenditure is concentrated mainly in two sectors, Personal Services[5] (51%) and Public Administration[6] (45%). Therefore, in Table 6 are the multipliers effect of all the channels through which fiscal expenditure affects the quintile distribution. In most of the cases, the impact of the channels favors an unequal distribution of income. Notice that in all the cases, the fifth quintile get a higher effect than all the other quintiles.

TABLE 6 HERE

In conclusion, the households that most benefit when there is an exogenous impulse from the government, are the households of the highest income quintiles, which are capable of generating higher incomes.

5.1. Counterfactual Scenarios

Most of the consequence of the unequal distribution of the effect of fiscal expenditure is due to the structure of the economy captured by the Social Accounting Matrix. In this section it is analyzed what could change in the distribution if the structure of the flows across the SAM are modified. The modifications are represented into two counterfactuals scenarios. In the first scenario the transfers made by the government are modified so that

[5] Personal services includes the activities of organizations (trade unions, religious and political organizations, research institutes and associations of a cultural, recreational and artisan type), artistic, entertainment and recreation activities (gaming and betting, theatrical, musical and other services, libraries , museums and others), and other personal service activities (sports such as gymnasium, sports clubs, stadiums and others).
[6] It is made up of the services provided by the central government, municipal activities and pension institutions. Regarding the destination of production, the services of the public administration are for the most part intended for the consumption of the government itself.

poorest quintiles are recipients of higher transfers. In the second scenario, the payments made by labor are modified in favor of the poorest quintiles.

The analysis of the first scenario is presented in Table 7. Column 2 and 3 presents how the total transfer was distributed in 2016 and the value of the multipliers of fiscal expenditure.

TABLE 7 HERE

Columns 4 and 5 shows the counterfactual scenario. First the distribution of transfer is changed, the matrixes of the SAM are reevaluated with this new distribution and the multipliers obtained are shown in the column 5.

It is worth to mention that the direct effect of the transfer is very poor at changing the final effects on the households. Even though the transfers made by the government is very progressive, the final result is almost negligible with the base situation.

The second counterfactual is the consequence of changing the payments to the labor factor. These payments are the one obtained from the labor market, and as it shown in the second column of Table 8, there is an enormous difference between the first and fifth quintile.

Taking this as the base situation, in the counterfactual analysis the distribution of wage payments is arranged as indicated in column (4) of the table. In order of obtaining almost double the effect of the multipliers, the share of wage payments to the first quintile should increase four times, from 2.5% to 10%.

TABLE 8 HERE

These counterfactual exercises help to elucidate the sources of the uneven distribution of income. The main source of the distribution represented in Table 4 seems to deal in the payment structure made by the markets. The final distribution of these payments is quite rigid, so that even when the government intervenes in a regressive way, changing the distribution of its transfers, the results do not improve the distribution of income. Thus, advances in a fairer income distribution would be the result of public policies aimed at reducing the wage and capital gap between households.

6. Discussion

There are two important caveats to the interpretation of the results. First, there are limitations intrinsic to the method used to make the analysis and second the specific type of public expenditure employed in the paper.

The income multipliers of the SAM have the assumptions that the behavior of the economic agents does not change and that there are no supply restrictions to the counterfactual scenarios. This means that when it is simulated that the transfer to the poorest quintile is increased, the household in that quintile does not change their behavior in the labor market or that their change in behavior does not affect substantially the flow of incomes represented by the SAM. Moreover, the net change of final demand made by households as consequence of the new scheme of transfers simulated in the counterfactual scenarios does not face any supply restrictions.

The results presented in the paper are complementary to the results obtained with other techniques, like CGE, which are not free of critical assumptions that also conditionate the interpretation of the results (see Heertje (2002)).

Government expenditure affects the welfare and income distribution of individuals through multiple channels as presented in Osberg et al (2004). This paper is about the transfers made by the government to households. The transfers are computed as the difference between the payment of pensions, subsidies, severance payments and all other social benefits delivered to households by the government less social contributions paid by households. In addition, the net current transfers delivered from the government to households is also included.

7. Conclusion

This paper explores the effect of government expenditure on the income distribution of households in Chile. The analysis is made through the multipliers of the Social Accounting Matrix for the year 2016. The effect of government is looked through counterfactual exercises of different transfers schemes.

The results suggest that direct transfers, have a negligible effect on the long run distribution of income. In the long run the best way to obtain a more equalitarian income distribution is through affecting the market mechanism of distribution of income: education and equal opportunities.

The main results show that households belonging to the highest income quintiles benefit over households with lower income each time the government disburses into the economy as a consequence of the income distribution carried out by the market. These results are consistent with the results presented by Contreras (1999) and Repetto (2016). From the counterfactual exercises, it is concluded that, to solve the problem of income inequality, the state would be insufficient by redistributing the transfers it makes, considering the structure of wages and capital received by households. Therefore, a more equal distribution of income would be given by public policies that aim to reduce the wage and capital gaps produced by the market

These conclusions are in line with the information reported in the UNDP (2017), where it is presented a five-point decrease in wage inequality between 2003 and 2015 in Chile. Half of this reduction is explained by the increase in the number of workers with higher education. Sapelli (2016) maintains that this trend is linked to the expansion of coverage in education since 1990, which has reduced the differences in years of schooling and income from work in the younger cohorts. Thus, inequality measured by the Gini coefficient has decreased since the late 1990s in a trend that is more attributable to the narrowing of the market income gap than to a greater redistributive capacity of the tax and transfer system, such as mentioned in Martner (2018).

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9. Appendix

These is the list of the accounts/institutions that are in the Social Accounting Matrix used in the paper.

TABLE 9 HERE

9.2 Range of Quintiles

Next, the quintile range are presented based on household disposable income:

TABLE 10 HERE

Table 1: Social Accounting Matrix Chile 2016

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
1	-	-	-	-	-	-	-	-	-	-	-	-	1.415	0	10.922	57	10	628	-	1	-	33	89	43	-	-	-	1.281	1.752	1.881	2.128	2.492	1	-	-	-	460	107	-	5.935 -	3.163
2	-	-	-	-	-	-	-	-	-	-	-	-	138	2.270	4.509	1.579	158	0	0	0	0	0	0	1	-	-	-	33	51	86	114	258	-	-	-	-	- -	103	-	30.655 -	506
3	-	-	-	-	-	-	-	-	-	-	-	-	4.965	3.724	20.681	759	11.046	6.772	5.360	631	68	1.495	3.880	1.240	-	-	-	3.363	5.284	6.116	7.979	12.648	177	-	-	-	18.682 -	1.716	-	23.981	31.117
4	-	-	-	-	-	-	-	-	-	-	-	-	167	2.902	2.498	6.238	135	798	412	84	134	200	711	829	-	-	-	1.080	1.275	1.327	1.598	2.073	102	-	-	-	-	0	-	100 -	2.597
5	-	-	-	-	-	-	-	-	-	-	-	-	41	19	57	147	4.718	385	228	15	3.241	100	534	536	-	-	-	235	340	322	516	943	-	-	-	-	28.288	-	-	- -	2.552
6	-	-	-	-	-	-	-	-	-	-	-	-	315	111	607	9	55	2.288	1.127	55	33	443	627	128	-	-	-	489	815	1.175	1.774	4.286	809	-	-	-	0	-	-	1.049	1.067
7	-	-	-	-	-	-	-	-	-	-	-	-	635	1.376	4.178	398	418	5.107	7.565	966	51	1.486	745	731	-	-	-	1.609	2.704	3.371	5.012	10.311	17	-	-	-	3.303	0	-	3.594 -	6.596
8	-	-	-	-	-	-	-	-	-	-	-	-	581	361	1.242	486	1.015	1.703	891	2.793	1.206	663	329	75	-	-	-	116	235	403	616	1.777	122	-	-	-	-	-	-	506	5.567
9	-	-	-	-	-	-	-	-	-	-	-	-	89	117	460	59	141	3.194	1.166	257	443	1.028	1.270	218	-	-	-	4.641	5.060	5.335	6.761	12.960	-	-	-	-	199	-	-	84 -	16.946
10	-	-	-	-	-	-	-	-	-	-	-	-	2.303	5.601	6.649	1.329	2.512	6.946	6.768	2.950	611	6.165	2.598	1.199	-	-	-	186	309	438	866	3.789	245	-	-	-	6.415	-	-	4.571 -	4.596
11	-	-	-	-	-	-	-	-	-	-	-	-	11	13	51	0	16	71	162	30	0	7	1.492	62	-	-	-	1.820	2.600	3.389	5.353	12.261	17.354	-	-	-	-	-	-	8 -	3.167
12	-	-	-	-	-	-	-	-	-	-	-	-	6	-	25	-	20	50	33	-	-	-	3	-	-	-	-	179	226	295	503	1.164	15.483	-	-	-	-	-	-	- -	2.090
13	18.945	-	-	-	-	-	30	-	-	1.689	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	- -	2
14	-	34.591	1.012	-	-	-	99	-	3	960	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28
15	167	117	69.374	856	-	2.709	230	-	-	2.645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.266
16	-	-	1	17.966	37	170	29	-	7	516	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13
17	-	-	-	-	36.936	-	118	-	211	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	- -	41
18	-	-	1.171	-	-	49.189	247	93	321	6.049	57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	- -	63
19	-	-	1	-	3	236	40.973	-	128	2.559	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	- -	16
20	-	-	-	-	-	-	107	18.784	184	303	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	- -	19
21	-	-	-	-	-	-	16	-	24.781	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52
22	-	-	7	-	-	44	334	-	180	36.627	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	- -	36
23	-	-	0	-	-	51	176	-	80	969	40.025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	- -	150
24	-	-	14	180	-	0	543	1	66	174	309	15.897	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	- -	63
25	-	-	-	-	-	-	-	-	-	-	-	-	3.179	3.577	8.198	1.100	8.867	14.589	7.794	5.242	725	11.128	22.647	9.497	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-
26	-	-	-	-	-	-	-	-	-	-	-	-	6.555	16.539	15.738	6.498	7.806	14.002	13.079	6.118	17.290	14.274	5.886	2.536	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.777	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42.452	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.400	4.486	-	-	-	-	-	-	1.463	-	-	-	-	-	-	38	6.991
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.095	6.893	-	-	-	-	-	-	1.468	-	-	-	-	-	-	38	5.620
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12.921	8.338	-	-	-	-	-	-	1.458	-	-	-	-	-	-	675	1.302
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.415	13.010	-	-	-	-	-	-	1.481	-	-	-	-	-	-	191 -	1.928
32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52.346	42.485	-	-	-	-	-	-	1.484	-	-	-	-	-	-	566 -	11.985
33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.982	11.109	174	292	384	597	2.840	-	20.274	5.920	1.028	-	-	-	- -	0
34	326	7	10.997	1.005	1.137	1.421	1.616	743	442	1.485	1.095	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-	263	82	3.551	82	312	530 -	696	230	1.068	133	339	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	4	40	984	0	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31.303	180	180	180	360	17.100	2.936	-	-	-	-	-	-	3.394	0
38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	- -	1.712	-	-	-	-
39	5.643	70	31.032	58	- -	36.831	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	- -	0
40	985	4.418	53.657	0	1	275	2.435	1.064	133	3.855	31	-	-	-	-	-	-	-	-	-	-	-	-	-	411	14.449	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.492
41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 2: Income Composition by Quintile

Quintile	Labor	Capital	Government Transfers	Foreign Tranfers	Total
First	2,399	4,484	1,463	38	8,384
Second	7,093	6,892	1,468	39	15,491
Third	12,917	8,337	1,458	675	23,387
Fourth	21,411	13,007	1,481	191	36,090
Fifth	52,332	42,474	1,483	566	96,855
Total	96,152	75,195	7,353	1,508	180,208

Note: The figures are in U$ MM

Table 3: Household Savings

Quintile	Household Savings
First	-8,264
Second	-6,496
Third	-4,041
Fourth	1,106
Fifth	35,695
Note: The figures are in U$ MM	

Table 4: Multipliers of Fiscal Expenditure in Households Income

Quintile	Difussion	Elasticity
1 (Poorest)	0.22	1.4
2	0.4	1.25
3	0.6	1.32
4	0.94	1.2
5 (Richest)	2.56	1.1

Table 5: Decomposition of the Redistribution of Fiscal Expenditure on Household Income Quintile

Quintiles	Direction of the effect	Fiscal Multiplier for quintile	Share of total production	Total Multiplier of Fiscal Expenditure
	$(Mdx)_i - y_i \sum_{j=1}^{s} (Mdx)_j$	$(Mdx)_i$	y_i	$\sum_{j=1}^{s} (Mdx)_j$
1 (Poorest)	0.041	0.218	0.004	40.04
2	0.037	0.405	0.009	40.04
3	0.086	0.609	0.013	40.04
4	0.055	0.945	0.022	40.04
5 (Richest)	-0.083	2.557	0.066	40.04

Table 6: Multipliers of the main channels of Fiscal Expenditure

Quintiles	Personal Services	Public Admin.	Government Transfers to quintiles					Capital Account
			First	Second	Third	Fourth	Fifth	
1 (Poorest)	0,18	0,18	1,19	0,18	0,18	0,17	0,17	0,12
2	0,37	0,37	0,37	1,34	0,34	0,34	0,33	0,23
3	0,57	0,58	0,55	0,52	1,52	0,52	0,50	0,35
4	0,90	0,92	0,87	0,82	0,83	1,82	0,80	0,55
5 (Richest)	2,48	2,53	2,45	2,31	2,31	2,29	3,22	1,53

Table 7: Counterfactual analysis: Change in Government Transferences

Quintiles	Initial Distribution of Transfers	Initial Multipliers	Counterfactual Distribution of Transfer	Counterfactual Multipliers
1 (Poorest)	20.17%	0.22	40%	0.25
2	20.14%	0.41	28%	0.42
3	19.83%	0.61	25%	0.62
4	19.96%	0.95	4%	0.92
5 (Richest)	19.90%	2.56	3%	2.53

Table 8: Counterfactual Analysis: Changes in the Wage Payments

Quintiles	Initial Distribution of Payments	Initial Multipliers of Fiscal Expend.	Counterfactual Distribution of Payments	Counterfactual Multipliers of Fiscal Expend.
1 (Poorest)	2.5%	0.22	10%	0.41
2	7.4%	0.41	15%	0.61
3	13.4%	0.61	20%	0.79
4	22.3%	0.95	25%	1.04
5 (Richest)	54.4%	2.56	30%	2.02

Table 9: Accounts used to build the SAM

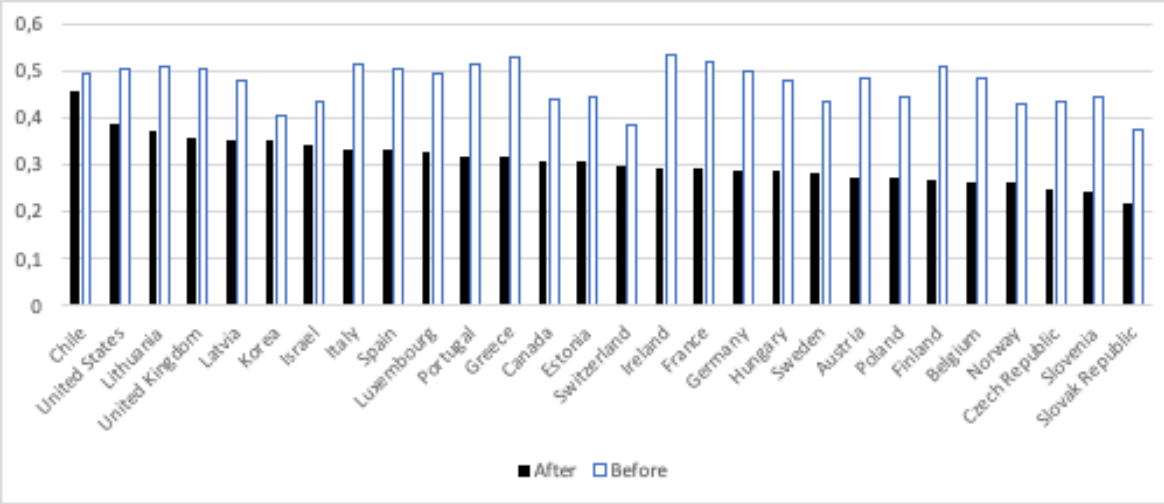
1. Agricultural-forestry and fishing	15. Activity – Manufacturing Industry	29. Household Quintile 2
2. Mining	16. Activity - Electricity, gas, water and waste management	30. Household Quintile 3
3. Manufacturing industry	17. Activity - Building	31. Household Quintile 4
4. Electricity, gas, water and waste management	18. Activity - Commerce, hotels and restaurants	32. Household Quintile 5

5. Building	19. Activity - Transport, communications and information services	33. Government
6. Commerce, hotels and restaurants	20. Activity - Financial intermediation	34. VAT
7. Transport, communications and information services	21. Activity - Real estate and housing services	35. Production tax
8. Financial intermediation	22. Activity - Business services	36. Duties
9. Real estate and housing services	23. Activity - Personal services	37. Capital Account
10. Business services	24. Activity - Public administration	38. Stock Flow
11. Personal services	25. Wage payments	39. Markup
12. Public administration	26. Capital payments	40. Rest of the World
13. Activity - Agricultural-forestry and fishing	27. Firms	41. Errors and omissions
14. Activity - Mining	28. Household Quintile 1	

Table 10: Monthly income range for definition of quintiles

Quintiles	Range of monthly income U$ dollars	
1	118	576
2	576	953
3	953	1.437
4	1.437	2.407
5	2.407	-

Figure 1: Disposable Income Gini After and Before Government Intervention 2017



Note: The data was obtained from the Income Distribution Database, OECD.