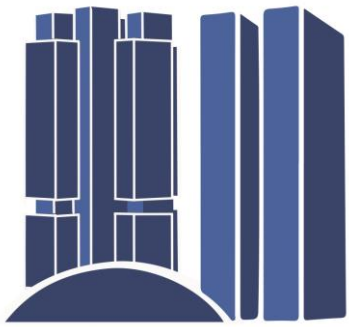

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Redistribution in Contemporary Japan: A Political Economy Analysis of Ide, Furuichi and Miyazaki (2016)'s "All for All" Fiscal Reform Proposal

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Redistribution in contemporary Japan:

A political economy analysis of Ide, Furuichi and Miyazaki (2016)'s "All for All" fiscal reform proposal[1]

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Abstract

This paper builds a political economy model to analyze Ide, Furuichi and Miyazaki (2016)'s "All for All" fiscal reform proposal. The main finding of the electoral competition equilibrium is that the stylized implementation of the proposal will likely increase Japan's already huge fiscal deficit and that it will only appease social cleavage, if the psychological feeling of equal treatment is large enough to compensate the poor citizen's utility loss. In that case, the equal-treatment feeling will compensate the loss due to a smaller provision of the previously targeted public services provision, to the poor, as well as the increased cost of universalizing, to the well-off. This gives a political economy foundation to Ide, Furuichi and Miyazaki (2016)'s fiscal reform proposal. On the other hand, if such psychological feeling is not high enough, then, under reasonable conditions, both the poor and the well-off will be dissatisfied with such a policy. This paper's findings relate to the contemporary discussion on universal basic income and on the targeting-versus-universal-policy debate.

1. Introduction

In spite of being the third largest economy in the world, Japan detains the highest gross public debt, corresponding to over 225% of its GDP[2]. That huge debt has prompted concern among leading sectors of Japanese society and the need for reform appears consensual[3], yet difficult to implement.

[1] The author gratefully acknowledges the financial support of Brazilian CNPq, as well as the overall academic support of Yokohama National University, where part of this research was undertaken. Furthermore, the author is deeply grateful to professor Keiichi Yamazaki's for insightful discussions. The interpretation of Ide, Furuichi and Miyazaki (2016) is the author's sole responsibility, as are the mistakes, misinterpretations and errors that might subsist in this paper.

[2] More precisely, 226.33% according to OECD: http://stats.oecd.org/Index.aspx?DataSetCode=SOCX_AGG

[3] See Ministry of Foreign Affairs: http://www.mofa.go.jp/policy/economy/japan/reform-m.html or RIETI: http://www.rieti.go.jp/en/events/04031101/nakabayashi.html

In 2016, professors Eisaku Ide, Masato Furuichi and Masato Miyazaki published the book *Bundan Shakai wo Owaraseru – Daremoga Juekisha toiu Zaisei Senryaku* (Ending a divided society – Fiscal strategy in which "All for All"[4]), which presents a new approach to the fiscal issue. According to the authors, social expenditure in Japan has always being allocated to the very poor and to the rural areas, so that the urban middle class, which strongly finance these expenditures by means of their taxes, do not profit from it. This creates a cleavage in Japanese society producing a strong resistance to taxation on the part of the middle class. This cleavage, in turn, induces a general discomfort in Japanese society, coming from the feeling of different treatment depending on who the citizen is. In order to end such division in society, a public policy reform that will provide equal access for all citizen to all public benefits is in order.

Ide, Furuichi and Miyazaki (2016)'s discussion reflects a concern that is present in several societies in present days, in the form of the universal basic income debate or in the form of the targeting versus universalism debate. The universal basic income (UBI) supporters argue that all citizens should receive periodic, individual, unconditional cash payments, regardless of their income or any personal characteristic. According to the Basic Income Earth Network (BIEN[5]), the idea of a UBI is not new and can be traced back to Thomas More's (1478-1535) Utopia, published in Louvain in 1516 and had notorious supporters throughout the centuries, including the mathematician and political scientist Marquis de Condorcet (1743-1794). The only real implementation of that idea to date appears to be Alaska's program distribution of dividends from the Alaska Permanent Fund, a fund created with income obtained with oil exploration. According to Matthews (2018), the fund distributed over US$2000 per Alaskan resident and, according to BIEN, it "helps make Alaska the most egalitarian among US states". One of the main rationales for a universal basic income is the equal treatment of all citizens, that is common to Ide, Furuichi and Miyazaki (2016)'s proposal.

The debate regarding targeting versus universalism suggests that public policy should be more effective if it is accessible to all citizens, rather than targeted to a specific group of people. Among the several rationales for universal public policy, which include the lower administration cost and the difficulties of targeting especially the poorer, most needed citizens, is the idea that targeting "reinforce unequal societal status" (Savchuk, 2012), which

[4] Free translation.
[5] https://basicincome.org/basic-income/history/

is also why Ide, Furuichi and Miyazaki (2016) argue that targeted public policy in Japan tends to create social cleavages.

This paper aims at building a stylized political economy model in order to analyze the fiscal and the social welfare effect of such universalization of social policies that are, presently, targeted to the poor. The main questions we which to answer are: What are the fiscal impacts of such a universalistic policy reform? and: Under which conditions will a society be more likely to support such a reform?

By focusing on the "All for All" policy reform, we hope to bring light to wider discussions worldwide on the effects of UBI and on the debate regarding targeting versus universalism, which are issues especially important to developing countries that are characterized as highly unequal societies. The rest of the paper is organized as follows.

Session 2 presents the primitives of the stylized political economy model under the present targeting social policy. Session 3 finds the electoral competition equilibrium and analyzes its properties; in particular, we calculate the utilities of the poor and the well-off (hereafter called simply "the rich") and make clear the source of social cleavage. An additional social tension cost is, then, added to all citizens' utilities, to model the argument of a dissatisfaction with unequal treatment. Session 4 introduces the proposal of "All for All" policy into the original model and calculates the corresponding political equilibrium; in particular, we calculate the utilities of the poor and the rich under the new policy, where we postulate that the social tension cost is dropped due to the equal treatment rule. Session 5, then, compares the two equilibria, both in terms of the budget and volume of taxes and in terms of the utilities of the poor and of the rich and a calibration pf the model to the Japanese economy data is discussed. Section 6 measures the fiscal cost associated to such a policy reform. Finally, session 7 present the conclusions of this study.

2. The political economy model

There is a continuum of unit mass of voters, $\Omega=[0,1]$. Each voter belongs to one of two social classes according to his income. The upper class R ("rich") is composed of voters with high-income y^R, whereas the lower class P ("poor") includes voters with low income y^P. Thus, $y^R >$

y^P. A social class *J*, *J*=*R, P*, has mass α^J, so that $\alpha^P + \alpha^R = 1$[6].

There are two parties $P = A, B$, which compete by announcing a public policy q to be implemented if the party obtains the majority of votes. Public policy is bidimensional $q = (g, b)$ and consists of a per capita level of a public good g to be privided to all citizens, as well as a level of per capita targeted public service b, to be provided exclusively to the poor citizens. Public goods and services' provision is financed by an income tax given by the rate τ, which is the same for all voters. All tax-collected resources are converted into public goods and services provision. Therefore, the government budget constraint is $\alpha^P \tau y^P + \alpha^R \tau y^R = \tau y = g + \alpha^P b$ where $y = \alpha^P y^P + \alpha^R y^R$ represents the average income of voters in society.

The main distinction between g and b in that g is consumed by all citizens whereas b is consumed exclusively by the poor citizens. We use the terms "public goods" and "public services" for g and b respectively in order to make that distinction clearer.

A voter's utility has two components: a pragmatic (or sociotropic) and an ideological (or idiosyncratic) one[7]. The pragmatic part of the utility represents the voter's decisions as an economic agent, and depends on the consumption of a private good, as well as the consumption of the public good provided by the government. Suppose platform $q = (g, b)$ wins the election. Then, an agent of class *J*'s income, net of taxes, is $(1 - \tau)y^J = (y - g - \alpha^P b)\frac{y^J}{y}$, which is normalized to be the agent's private consumption utility. Moreover, the agent's utility for public good consumption is $H(g)$ where H is a strictly increasing and strictly concave function, and $(H')^{-1}$ is the inverse function of the derivative of H. Furthermore, the poor benefit from public services targeted to then, b, which yield an additional utility $B(b)$, where B is a strictly increasing and strictly concave function. Therefore, if ξ^J is the poor income class indicator function, i.e., $\xi^J = 1$ for $J = P$ and $\xi^J = 0$ for $J = R$, then, an typical agent's utility is:

$$W^J(q) = (y - g - \alpha^P b)\frac{y^J}{y} + H(g) + \xi^J B(b), \qquad J = P, R \tag{1}$$

[6] The two-class model is a simple way to characterize differences in wealth among citizens and flows Bugarin (2015)'s approach. However, it is straightforward to extend it to any finite number of classes. Portugal and Bugarin (2007), for instance, uses a three-class approach (the rich, the medium income and the poor classes).

[7] This is the most general way of characterizing an economic agent who also has political concerns. For more on this topic, see Ferejohn (1986), Bugarin (1999) or Bugarin (2003).

Thus, each class has its own preferred policy for the public good provision. These optimal policies are obtained by maximizing each class' utility function and are given by $q_J^* = (g_J^*, b_J^*), J = P, R$, where,

$$g_R^* = (H')^{-1}\left(\frac{y^R}{y}\right), \qquad b_R^* = 0, \qquad g_P^* = (H')^{-1}\left(\frac{y^P}{y}\right), \quad b_P^* = (B')^{-1}\left(\frac{\alpha^P y^P}{y}\right).$$

Note that the poor class' preferred production of public good, g_P^*, is higher than the rich class' one: $g_R^* < g_P^*$. This is a consequence of the fact that the rich contribute more money for the provision of the public good than the poor. Furthermore, since the targeted public service is directed exclusively to the poor, it represents only cost to the rich; therefore, they prefer no production of such services. In particular, $0 = b_R^* < b_P^*$.

The ideological component of a voter's utility function is represented by two variables corresponding to the voter's bias towards party *B*, or equivalently, party *B*'s popularity at the time the elections are held. The first is random variable common to all voters and is associated to the realization of a state of nature that affects the entire population. A war, an abrupt change in international prices of a commodity that is important to the country, a natural catastrophe, and a country-wide energy crisis are examples of such phenomena[8]. That process is described by a random variable δ, which the model assumes uniformly distributed on $\left[-\frac{1}{2\psi}, \frac{1}{2\psi}\right]$. The parameter $\psi > 0$ measures the level of sensibility of society to aggregate shocks: the lower the value of ψ, the more those shocks may affect society.

The second variable, σ^{iJ}, is particular to each voter *i* in class *J* and reflects his personal bias towards party *B*. Each voter knows his own bias, but parties only know that the bias σ^{iJ} is uniformly distributed on the interval $\left[-\frac{1}{2\phi^J}, \frac{1}{2\phi^J}\right]$. Hence, the greater the parameter ϕ^J, the more homogeneous is class *J*. For simplicity, and in order to avoid electoral effects of class heterogeneity, we set all the classes' heterogeneity to the same value[9]: $\phi^J = \phi, \ J = P, R$.

Therefore, if party *B* wins a majority of votes with the announced platform q_B, a voter *i* in the social class *J* derives utility:

$$W^J(q_B) + \sigma^{iJ} + \delta \qquad (2)$$

Note that positive values for σ^{iJ} and for δ indicate a favorable bias towards party *B*, whereas negative values indicate a favorable bias towards party *A*. Also note that the realization of the

[8] A clear example of such a countrywide shock is the terrorist attack on September 11th, 2001, which increased the popularity of the U.S. president from 57% in February to 90% in September. See "Poll Analyses", Section "Gallup Poll News Service", The Gallup Organization, http:/www.gallup.com, 09/24/2001.

[9] A more general analysis with different levels of heterogeneity is available upon request to the author.

global random variable can be favorable to party *B* and at the same time, the realization of the individual-specific random variable can favor party *A*, and vice-versa[10].

3. The present electoral competition equilibrium

Suppose now that party *P* announces policy g_P, *P = A, B.* Then a voter *i* in group *J* will prefer party *A* to *B* if $W^J(q_A) > W^J(q_B) + \sigma^{iJ} + \delta$. From voters' electoral decisions, one can identify, for each class *J,* a voter that is indifferent between the two parties, who is called the s*wing voter* of class *J*. That voter corresponds to the ideological bias σ^{iJ}, defined as σ^J by:

$$\sigma^J = W^J(q_A) - W^J(q_B) - \delta \tag{3}$$

Therefore, the number of votes cast for party *A* is:

$$\pi^A = \sum_J \alpha^J \left[\sigma^J + \frac{1}{2\phi}\right]\phi = \frac{1}{2} + \phi \sum_J \alpha^J \sigma^J \tag{4}$$

Then, writing $W(q_A) = \sum_J \alpha^J W^J(q_A)$ and $W(q_B) = \sum_J \alpha^J W^J(q_B)$, the probability of party *A* getting the majority of votes is:

$$p_A = \text{Prob}\left[\pi^A > \frac{1}{2}\right] = \text{Prob}\left[\delta < W(q_A) - W(q_B)\right]$$

Equivalently:

$$p_A = \frac{1}{2} + \psi\left[W(q_A) - W(q_B)\right] \tag{5}$$

And, by symmetry:

$$p_B = \frac{1}{2} + \psi\left[W(q_B) - W(q_A)\right] = 1 - p_A \tag{6}$$

Now, party *A* wishes to choose q_A in order to maximize $p_A(q_A, q_B)$. The first order conditions yield party *A*'s best response (see Appendix):

$$g_A = H_g^{-1}(1);\ b_A = B_g^{-1}(1) \tag{7}$$

And, by symmetry, this is also party *B*'s best response.

Therefore, electoral competition equilibrium in the present situation, $q^{now} = (g^{now}, b^{now})$, is:

[10] Suppose, for example, that the country faces an economic expansion, so that society approves the incumbent for overall conduct of the economy, but the president is involved in a sexual scandal, which can affect voters differently.

$$g^{now} = g_A = g_B = H_g^{-1}(1);\ \ b^{now} = \ b_A = b_B = B_g^{-1}(1) \tag{8}$$

Comparing the electoral competition equilibrium with the preferences of voters we easily see that:

$$0 = b^R < b^{now} < b^P;\ g^R < g^{now} < g^P \tag{9}$$

Therefore, the equilibrium production of public goods and services is above the level the rich citizens prefer and below the level preferred by the poor citizens. Therefore, all citizens are unsatisfied with the democratic equilibrium. However, the two different income groups of voters are dissatisfied for opposing reasons: The rich believe there is too much government in the provision of both public goods and targeted public services, and poor find that there is too little of both.

This preferences' divergence agrees with a theoretic finding well-established in political economy that was made carefully explicit in Richard and Meltzer (1981): The poorer a citizen is, the more government he favors[11]. The divergence also explains the natural social cleavage where the rich blame the poor for too much government intervention and the poor blame the rich for too little, as suggested by Ide, Furuichi and Miyazaki (2016).

Note that this cleavage is not necessarily related to the fact that there is one targeted public policy. It appears in the same way even if there is just one general public good production. However, the fact that there is a policy that is targeted to one part of the population tends to exacerbate the cleavage. This can be seen, in or model, by comparing the divergence between the two income classes for each policy. Indeed, if the income of both classes converge, so does their preferred policy in what concerns the general public good g. However, regardless of income proximity, the rich always prefer $b^R = 0$, which is much smaller than what the poor prefer.

For that reason, we include an additional cost in voters' utilities, $\chi > 0$, that reflect the fact that all citizens feel uncomfortable with the unequal treatment that the targeted policy brings about. We believe this models Ide, Furuichi and Miyazaki (2016)'s idea of dissatisfaction with the current equilibrium.

[11] One most stress that recent works have been challenging this finding. See Alesina & Guiliano (2009) for a more empiric analysis and Moene & Wallerstein (2001, 2003) and Bugarin & Hazama (2014, 2016) for a more theoretical discussion.

Therefore, in the present equilibrium, the utilities of voters are described below, where T denotes the fact that the services b are targeted to the poor:

$$W^J(q^{now};T) - \chi = (y - g^{now} - \alpha^P b^{now})\frac{y^J}{y} + H(g^{now}) + \xi^J B(b^{now}) - \chi, \quad J = P, R \tag{10}$$

4. The electoral equilibrium under the "All for All" fiscal reform proposal

The "All for All" policy proposes that all citizens have access to the benefits of all public policies and services. In this paper's model, that corresponds to making the targeted public service b available to the rich as well as to the poor. But then, the new government budget constraint is $\tau y = g + b$, which reflects the fact that, now, all citizens receive public service b. Then, voters' utilities can be written as below, where U denotes the fact that the services are now universal:

$$W^J(q;U) = (y - g - b)\frac{y^J}{y} + H(g) + \zeta^J B(b), \qquad J = P, R \tag{11}$$

Expression (11) is similar to expression (1), but there is one distinction, the term $\zeta^J, J = P, R$. Although $\zeta^P = \xi^P = 1$, now $\zeta^R > 0 = \xi^P$. We do not require here that $\zeta^R = 1$ because we believe that richer citizens do not value as much the type of social policies that usually target the poor. However, the conclusions of the model do not depend on the exact size of ζ^R, as long as it is not higher than 1.

It is noteworthy that in (11) the social cleavage cost χ that appears in utility (10) has been removed. This is the expectation of Ide, Furuichi and Miyazaki (2016) that the new policy will remove the disutility due to the dissatisfaction with unequal treatment.

A similar calculation for the probability of victory yields the following electoral competition equilibrium.

$$g^{new} = g_A = g_B = H_g^{-1}(1); \;\; b^{new} = \; b_A = b_B = B_b^{-1}\left(\frac{1}{\sum_J \alpha^J \zeta^J}\right) \tag{12}$$

It is noteworthy that there is no change in the equilibrium public good provision: $g^{new} = g^{now} = H_g^{-1}(1)$. However, there is a change in the equilibrium provision of public service b. Indeed, since $\zeta^R \leq 1$ it follows that $\sum_J \alpha^J \zeta^J \leq 1$, thus $\frac{1}{\sum_J \alpha^J \zeta^J} \geq 1$ and $b^{new} \leq b^{now}$. In

particular, if $\zeta^R < 1$, then $b^{new} < b^{now}$, so that the per capita production of public services reduces further.

5. A comparative analysis

5.1. The traditional analysis without the unequal treatment utility cost

This section compares the utilities of the rich and the poor before and after the introduction of the "All for All" policy without taking into account the unequal treatment utility reducing parameter χ, i.e., we suppose that $\chi = 0$.

Suppose, first, that it is the case that $\zeta^R = 1$. Then $b^{new} = b^{now}$ and there will be no reduction in the per capita amount of public services, now available to the entire population, with the new policy. Therefore, the per capita cost increased from $\alpha^P b^{now}$ to $b^{new} = b^{now}$. Hence, there is a clear reduction in the utility of the poor, because now they have to pay more for the same amounts of public goods and public service provided.

As for the rich, there are two conflicting effects of the new policy. First, there is a benefit, due to the fact that they do benefit from the public services now. This is the term $\zeta^R B(b^{new}) = B(b^{new})$ in their utility. Second, there is an increased cost of producing these public services. The rich will be better off if:

$$(-\alpha^P b^{now})\frac{y^R}{y} < (-b^{new})\frac{y^R}{y} + B(b^{new}) \qquad (13)$$

The LHS of the above equation corresponds to the cost to the rich of producing the public service for the poor. The RHS corresponds to the net gain of the public service to the rich in the new situation.

Note first that $b^{new} = b^{now} = B_g^{-1}(1)$ which is the amount of public services that maximizes $-b + B(b)$. Therefore, if there were only rich citizens in society, then $\frac{y^R}{y} = 1$ and the RHS would surely be positive. Since the LHS is negative, condition (13) would surely be satisfied and the rich would prefer the new situation, where they have access to an additional, valuable public service.

Now, as the proportion of poor in the economy, α^P, increases, so does $\frac{y^R}{y} > 1$. Therefore, the RHS decreases. However, the LHS also decreases.

Condition (13) can be rewritten as:

$$B(b^{new}) > \left((1-\alpha^P)b^{new}\right)\frac{y^R}{y} \qquad (14)$$

Therefore, whether condition (14) holds depends on a tradeoff between the decrease in the term $(1-\alpha^P)$ and the increase in the term $\frac{y^R}{y}$. We postulate here that condition (14) holds, so that, if the rich do value the public service in the same intensity as the poor, then the rich are better off with the new policy.

Consider now the situation where $\zeta^R < 1$. This appears to be a more natural assumption, since the services that are typically targeted to the poor may be of little interest to the rich. Support for living in simple housing complexes, for example, maybe of little interest to the rich, who would not leave their comfortable neighborhoods to move to poorer neighborhoods even if they were to receive public support for it.

In that case, $b^{new} = B_b^{-1}\left(\frac{1}{\sum_J \alpha^J \zeta^J}\right) < B_b^{-1}(1)$, and the condition for the rich to support the new policy is:

$$(-\alpha^P b^{now})\frac{y^R}{y} < (-b^{new})\frac{y^R}{y} + \zeta^R B(b^{new}) \qquad (13')$$

Or, equivalently,

$$\zeta^R B(b^{new}) > (b^{new} - \alpha^P b^{now})\frac{y^R}{y} \qquad (14')$$

Comparing expression (14') with expression (14) we can see that although there is a reduction in the RHS due to the reduction in b, there is a double reduction in the LHS due, fist, to the reduction in b and second to the reducing multiplier $\zeta^R < 1$. Therefore, we might expect that the likelihood that the rich will prefer not to implement the proposed new policy will be high if the rich preference for the public service parameter ζ^R is low enough.

As an illustration, consider the following calibrated parameters for the Japanese economy. We take the proportion of the poor in the population to be represented by the casual and part-time employees. According to The Economist (2016), the most important type of inequality in Japan "is not between the mega-rich and the rest, […] but between a privileged cadre of

workers on permanent contracts and those with more precarious jobs, who account for a rising share of the workforce." According to McNeil (2015), "Casual and part-time employees number nearly 20 million, almost 40% of the current Japanese workforce." Therefore, we calibrate the parameter α^P to 0.4. Furthermore, still according to The Economist (2016), "The average annual salary for permanent employees is around ¥5m ($41,500), compared with ¥2m for less secure workers." Therefore, we calibrate the rich and poor's respective incomes as $y^R = 5$ million yen and $y^P = 2$ million yen.

Suppose, furthermore, that the utility function B is given by $B(b) = \sqrt{1 + \beta b}$ where the parameter β reflects how important the public service is in the utility function B. Table 1 below present the calculations of the difference $\zeta^R B(b^{new}) - (b^{new} - \alpha^P b^{now})\frac{y^R}{y}$ for values of ζ^R ranging from 0.01 to 0.2 and values of β ranging from 1 to 100[12]. We also included a last line for $\zeta^R = 1$ to support our hypothesis that the rich prefer the new policy if they value the public service as much as the poor.

The simulation shows that there is a wide range of values for the parameters in which ζ^R is small and β is high, where the rich are worse off with the new policy. This is the region in yellow in the table. In particular, for all values of ζ^R up to 0.1 and of β between 10 and 50, the rich prefer the present targeting policy.

Note that for values of ζ^R higher than 0.11, the rich do prefer the new policy. In other words, if the rich value enough the policy targeted to the poor, then they will prefer it to be made universal.

It is important to stress that, regardless of the rich preferences regarding the proposed policy, which could favor or dislike it, for the poor there is a clear loss of utility with the proposed "All for All" policy. Therefore, under the assumption of no unequal treatment utility cost, the new policy will not have support of all citizens and may, actually, be disliked by the entire society.

[12] Higher values for ζ^R from 0.2 to 1 yield positive net utilities for rich.

Table 1. Net utility of the rich if the new "All for All" policy is implemented

(The rich's utility under the new policy minus their utility in the present situation)

$$(\zeta^R \in [0.01,0.20] \cup \{1\}, \beta \in [5,100])$$

ζ^R \ β	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
0,01	0,004	-0,072	-0,096	-0,108	-0,115	-0,120	-0,123	-0,125	-0,127	-0,128	-0,129	-0,130	-0,130	-0,131	-0,131	-0,132	-0,132	-0,132	-0,133	-0,133
0,02	0,008	-0,065	-0,087	-0,098	-0,104	-0,108	-0,110	-0,112	-0,113	-0,114	-0,114	-0,115	-0,115	-0,115	-0,116	-0,116	-0,116	-0,116	-0,116	-0,116
0,03	0,012	-0,057	-0,079	-0,088	-0,093	-0,096	-0,098	-0,099	-0,099	-0,100	-0,100	-0,100	-0,100	-0,100	-0,100	-0,099	-0,099	-0,099	-0,099	-0,099
0,04	0,017	-0,050	-0,070	-0,078	-0,082	-0,084	-0,085	-0,085	-0,086	-0,086	-0,085	-0,085	-0,085	-0,084	-0,084	-0,083	-0,083	-0,082	-0,082	-0,081
0,05	0,021	-0,043	-0,061	-0,068	-0,071	-0,072	-0,072	-0,072	-0,072	-0,071	-0,071	-0,070	-0,069	-0,069	-0,068	-0,067	-0,066	-0,066	-0,065	-0,064
0,06	0,025	-0,036	-0,052	-0,057	-0,059	-0,060	-0,060	-0,059	-0,058	-0,057	-0,056	-0,055	-0,054	-0,053	-0,052	-0,051	-0,050	-0,049	-0,048	-0,047
0,07	0,029	-0,029	-0,043	-0,047	-0,048	-0,048	-0,047	-0,046	-0,045	-0,043	-0,042	-0,040	-0,039	-0,037	-0,036	-0,035	-0,033	-0,032	-0,031	-0,030
0,08	0,033	-0,022	-0,034	-0,037	-0,037	-0,036	-0,035	-0,033	-0,031	-0,029	-0,027	-0,025	-0,023	-0,022	-0,020	-0,018	-0,017	-0,016	-0,014	-0,013
0,09	0,037	-0,015	-0,025	-0,027	-0,026	-0,024	-0,022	-0,020	-0,017	-0,015	-0,012	-0,010	-0,008	-0,006	-0,004	-0,002	-0,001	0,001	0,003	0,004
0,10	0,041	-0,007	-0,016	-0,017	-0,015	-0,012	-0,009	-0,006	-0,003	-0,001	0,002	0,005	0,007	0,009	0,012	0,014	0,016	0,018	0,020	0,022
0,11	0,046	0,000	-0,007	-0,007	-0,004	0,000	0,003	0,007	0,010	0,014	0,017	0,020	0,022	0,025	0,028	0,030	0,032	0,035	0,037	0,039
0,12	0,050	0,007	0,002	0,004	0,007	0,012	0,016	0,020	0,024	0,028	0,031	0,035	0,038	0,041	0,044	0,046	0,049	0,051	0,054	0,056
0,13	0,054	0,014	0,011	0,014	0,018	0,024	0,028	0,033	0,038	0,042	0,046	0,050	0,053	0,056	0,059	0,062	0,065	0,068	0,071	0,073
0,14	0,058	0,021	0,020	0,024	0,030	0,035	0,041	0,046	0,051	0,056	0,060	0,064	0,068	0,072	0,075	0,079	0,082	0,085	0,088	0,090
0,15	0,062	0,028	0,029	0,034	0,041	0,047	0,054	0,060	0,065	0,070	0,075	0,079	0,084	0,088	0,091	0,095	0,098	0,101	0,104	0,107
0,16	0,066	0,036	0,037	0,044	0,052	0,059	0,066	0,073	0,079	0,084	0,089	0,094	0,099	0,103	0,107	0,111	0,115	0,118	0,121	0,125
0,17	0,071	0,043	0,046	0,054	0,063	0,071	0,079	0,086	0,092	0,098	0,104	0,109	0,114	0,119	0,123	0,127	0,131	0,135	0,138	0,142
0,18	0,075	0,050	0,055	0,065	0,074	0,083	0,091	0,099	0,106	0,113	0,119	0,124	0,129	0,134	0,139	0,143	0,148	0,152	0,155	0,159
0,19	0,079	0,057	0,064	0,075	0,085	0,095	0,104	0,112	0,120	0,127	0,133	0,139	0,145	0,150	0,155	0,160	0,164	0,168	0,172	0,176
0,20	0,083	0,064	0,073	0,085	0,096	0,107	0,117	0,125	0,133	0,141	0,148	0,154	0,160	0,166	0,171	0,176	0,180	0,185	0,189	0,193
1,00	0,415	0,637	0,787	0,899	0,988	1,062	1,125	1,180	1,229	1,273	1,313	1,349	1,383	1,414	1,444	1,471	1,497	1,521	1,544	1,566

Source: Author's calculations

5.2. Introducing the unequal treatment utility cost

According to Ide, Furuichi and Miyazaki (2016), Japanese citizens suffer from the social tensions associated to a divided society where public services are targeted to specific classes in detriment of others. According to Savchuk (2012), "A universalistic approach promotes inclusive citizenship, equal rights and social solidarity, and has historically been associated with more equitable societies. Targeting, on the other hand can reinforce social disparities, reduce autonomy, exclude vulnerable individuals from accessing benefits and buttress uneven power relations." Therefore, those tensions will vanish if the new "All for All" policy is implemented. In practice, this means a net gain of the utility cost χ that exists presently. This section analyses the effect of this net gain with the new policy in citizens' support for the change.

Let us first analyze the rich voters. The condition for them to support the new policy becomes now:

$$\zeta^R B(b^{new}) - (b^{new} - \alpha^P b^{now})\frac{y^R}{y} + \chi \geq 0 \qquad (15)$$

The effect of that cost gain is that the new policy becomes more attractive to the rich. In our simulation, this corresponds to increasing the range of values of the parameters for which there will be support to the policy. Suppose, for example, that $\zeta^R = 0.05$ and $\beta = 60$. Then, without the utility cost approach, rich voters will not approve the new policy. However, if the utility cost χ is higher than 0.07, then the rich will now prefer that policy. The higher the net gain due to the equal treatment, the more likely the rich will support that policy. In Table 1, all the negative figures correspond to the net gains needed to gain the support of the rich for the new policy, for the corresponding values of the parameters ζ^R and β.

The corresponding condition for the poor to change and support the new policy is presented below:

$$B(b^{new}) - B(b^{now}) - (b^{new} - \alpha^P b^{now})\frac{y^R}{y} + \chi \geq 0 \qquad (16)$$

Note that, since $B(b^{new}) - B(b^{now}) < 0$, the poor would surely oppose the new policy, as explained earlier, and will require a higher value for χ in order to change their mind. Table 2 below presents the net utilities for the poor in the new policy disregarding the utility gain χ and corresponds to Table 1 for the poor. Note that for the poor, only the parameter β matters, since $\zeta^P = 1$.

Table 2. Net utility of the poor if the new "All for All" policy is implemented

(The rich's utility under the new policy minus their utility in the present situation)

($\beta \in [5,100]$)

β	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Net utility	-0,284	-0,363	-0,389	-0,402	-0,410	-0,416	-0,419	-0,422	-0,424	-0,426	-0,428	-0,429	-0,430	-0,431	-0,431	-0,432	-0,433	-0,433	-0,434	-0,434

Source: Author's calculations

Comparing tables 1 and 2 it becomes clear that the unequal treatment cost will need to be much higher in order for the poor to be satisfied with the new policy. Indeed, if $\chi \geq 0.133$, then the rich will support the new policy for all possible values of the parameters in Table 1. On the other hand, χ needs to be at least 0.284, more than twice as high, for the poor to support the new policy in the most optimistic situation in which $\beta = 5$. As β increases, so

does the threshold for χ. When $\beta = 50$, for example, that threshold jumps to 0.426, more than 3 times the threshold for the rich.

6. The fiscal effect of the "All for All" reform

Recall that $b^{new} = B_b^{-1}\left(\frac{1}{\sum_J \alpha^J \zeta^J}\right) \leq B_b^{-1}(1) = b^{now}$. This happens because, with the new policy, all citizens must pay for the provision of public service to the entire society. Therefore, it becomes less attractive to the poor providing that service. On the other hand, if the rich do not profit as much from that service, they too will regret such a costly provision.

However, the total cost b^{new} is to be compared to the previous total cost $\alpha^P b^{now} < b^{now}$. Therefore, if ζ^J is close enough to 1, in which case b^{new} is close to b^{now}, there will be an increase in the government social expenditure.

Note that this is the situation where the rich are more likely to support the reform, because they benefit from using the public service b. In other words, it is the very situation where the rich may be more willing to support the social policy reform that this reform will most probably increase the already huge budget deficit of Japanese government. Professor Eisaku Ide also believes that the reform will increase government expenditure. Indeed, he estimates in an interview to Japanese weekly journal 週利エコノミスト (Weekly Economist) that the reform can be financed by an increase of 3.5% in consumer's tax[13].

7. Conclusion

In addition to being one of the most advanced world economies, Japan holds also the unfortunate record of having the highest per GDP public debt. That persistent situation is a source of concern for citizens and academicians alike in Japan.

In 2016 professors Eisaku Ide, Masato Furuichi and Masato Miyazaki published the book *Bundan Shakai wo Owaraseru – Daremoga Juekisha toiu Zaisei Senryaku*, which presents a diagnosis of the public debt issue in a historic perspective and discusses possible solutions to it. According to the authors, social public investment in Japan has traditionally allocated resources to the very poor and to the rural areas, disregarding the significant urban middle class that is the main source of government taxes. This situation creates a divided society in

[13] https://www.weekly-economist.com/20171024pickup2/

Japan where the middle class is dissatisfied with paying taxes without profiting from its use. A feeling of different treatment for different citizens could be the main factor of antagonism in a society that used to be very homogeneous. In order to end such cleavage in society, the authors propose a reform in the focus of social policies, from targeted to universal, so that all citizens may have access and benefit from to all public policies and services. By making this move, society will regain the feeling of "same treatment" which will become the basis for the return to a united, homogeneous society.

The present article aimed at developing a formal model of electoral competition in order to assess the likelihood of social support for such a reform as well as the public expenditure consequences of its implementation. The model is based on a society with two economic classes: the poor and the well-off. In the present-days situation all citizens receive a public good but only the poor receive an additional public service. The main policy reform consists of making the public service accessible to all citizens, regardless of the corresponding economic situation.

The solutions to the electoral competition games before and after the reform suggest that the poor will surely be economically worse-off after the reform, because they will have to share with the well-off the financing of an (overall) more expensive new universal service, rather than the previous service targeted to them. That economic disadvantage, however, may be reversed by the benefit of the same-treatment feeling. The same-treatment feeling may also stimulate the well-off to support such a reform, but this is only likely if the well-off care strongly for the use of the newly universalized service. In that case, such a reform may be supported by society, but at the cost of increasing further the government budget deficit.

However, if, as one expect, the well-off do not care that much about the benefits of the targeted public policy (rich citizens care little about popular housing far away from their work, for example), and if the benefit of the same-treatment feeling is not high enough, then such a policy reform is not likely to receive social support from the well-off and much less from the poor citizens.

The main conclusion of the present study is that, although a reform that treats all citizens as targets of all public policies is appealing in an equal-treatment perspective, we need to assess very carefully the psychological benefits of such a reform, before a likely expensive move is undertaken in that direction.

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Appendix

1. The calculation of the first order conditions for the present situation electoral equilibrium

For the sake of generalization, we present the calculations for the general case with possibly different levels of heterogeneity is the sensibility to shocks, i.e., ϕ^P may be diferente from ϕ^R.

$$p_A(q_A, q_B) = \frac{1}{2} + \frac{\psi}{\phi}\sum_J \alpha^J \phi^J [W^J(q_A) - W^J(q_B)]$$

$$\frac{\partial}{\partial g_A} p_A(q_A, q_B) = \frac{\psi}{\phi}\sum_J \alpha^J \phi^J \frac{\partial}{\partial g_A} W^J(q_A) = 0$$

$$W^J(q_A) = (y - g_A - \alpha^P b)\frac{y^J}{y} + H(g_A)) + \xi^J B(b_A)$$

$$\frac{\partial}{\partial g_A} W^J(q_A) = -\frac{y^J}{y} + H_g(g_A)$$

$$\sum_J \alpha^J \phi^J \left[-\frac{y^J}{y} + H_g(g_A)\right] = 0$$

$$\sum_J \alpha^J \phi^J \left[-\frac{y^J}{y} + H_g(g_A)\right] = 0$$

$$\phi H_g(g_A) = \sum_J \alpha^J \phi^J \frac{y^J}{y} = \sum_J \frac{\alpha^J \phi^J y^J}{y}$$

$$g_A = H_g^{-1}\left(\frac{1}{\phi}\sum_J \frac{\alpha^J \phi^J y^J}{y}\right)$$

$$\frac{\partial}{\partial b_A} p_A(q_A, q_B) = \frac{\psi}{\phi}\sum_J \alpha^J \phi^J \frac{\partial}{\partial b_A} W^J(q_A) = 0$$

$$W^J(q_A) = (y - g_A - \alpha^P b)\frac{y^J}{y} + H(g_A) + \xi^J B(b_A)$$

$$\frac{\partial}{\partial b_A} W^J(q_A) = -\frac{\alpha^P y^J}{y} + \xi^J B_b(b_A)$$

$$\sum_J \alpha^J \phi^J \left[-\frac{\alpha^P y^J}{y} + \xi^J B_b(b_A)\right] = 0$$

$$\sum_J \alpha^J \phi^J \left[-\frac{\alpha^P y^J}{y} + \xi^J B_b(b_A)\right] = 0$$

$$\alpha^P \phi^P B_b(b_A) = \alpha^P \sum_J \alpha^J \phi^J \frac{y^J}{y} = \alpha^P \sum_J \frac{\alpha^J \phi^J y^J}{y}$$

$$b_A = B_b^{-1}\left(\frac{1}{\phi^P}\sum_J \frac{\alpha^J \phi^J y^J}{y}\right)$$

2. The calculation of the first order conditions for the new situation electoral equilibrium

$$p_A(q_A, q_B) = \frac{1}{2} + \frac{\psi}{\phi}\sum_J \alpha^J \phi^J [W^J(q_A) - W^J(q_B)]$$

$$\frac{\partial}{\partial g_A} p_A(q_A, q_B) = \frac{\psi}{\phi}\sum_J \alpha^J \phi^J \frac{\partial}{\partial g_A} W^J(q_A) = 0$$

$$W^J(q_A) = (y - g_A - b)\frac{y^J}{y} + H(g_A)) + \xi^J B(b_A)$$

$$\frac{\partial}{\partial g_A} W^J(q_A) = -\frac{y^J}{y} + H_g(g_A)$$

$$\sum_J \alpha^J \phi^J \left[-\frac{y^J}{y} + H_g(g_A)\right] = 0$$

$$\sum_J \alpha^J \phi^J \left[-\frac{y^J}{y} + H_g(g_A) \right] = 0$$

$$\phi H_g(g_A) = \sum_J \alpha^J \phi^J \frac{y^J}{y} = \sum_J \frac{\alpha^J \phi^J y^J}{y}$$

$$g_A = H_g^{-1}\left(\frac{1}{\phi} \sum_J \frac{\alpha^J \phi^J y^J}{y} \right)$$

$$\frac{\partial}{\partial b_A} p_A(q_A, q_B) = \frac{\psi}{\phi} \sum_J \alpha^J \phi^J \frac{\partial}{\partial b_A} W^J(q_A) = 0$$

$$W^J(q_A) = (y - g_A - b)\frac{y^J}{y} + H(g_A)) + \zeta^J B(b_A)$$

$$\frac{\partial}{\partial b_A} W^J(q_A) = -\frac{y^J}{y} + \zeta^J B_b(b_A)$$

$$\sum_J \alpha^J \phi^J \left[-\frac{y^J}{y} + \zeta^J B_b(b_A) \right] = 0$$

$$\sum_J \alpha^J \phi^J \left[-\frac{y^J}{y} + \zeta^J B_b(b_A) \right] = 0$$

$$B_b(b_A) \sum_J \alpha^J \phi^J \zeta^J = \sum_J \alpha^J \phi^J \frac{y^J}{y} = \sum_J \frac{\alpha^J \phi^J y^J}{y}$$

$b_A = B_b^{-1}\left(\frac{1}{\zeta} \sum_J \frac{\alpha^J \phi^J y^J}{y} \right)$ where $\zeta = \sum_J \alpha^J \phi^J \zeta^J$

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