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IN THE WELFARE STATE
WITH COSTLY POLICIES

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Multiple equilibria in the welfare state with costly policies

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Abstract

Benevolent governments lacking commitment ability might provide too much insurance. Private agents might free ride on the government concern and exert too little effort. The cost of implementing the redistributive policy may work as a commitment device, alleviating the credibility problem. Thus tying the government's hands may Pareto improve the outcome. Besides, government insurance policy introduces strategic complementarities between private agents, so that the possibility of multiple Pareto rankable equilibria arises.

Keywords: Commitment; Coordination failure; Moral hazard; Multiple equilibria; Welfare state

JEL classification: D60; D82; H10; H30; I30; P16

1. Introduction

Welfare states have recently been under severe criticism, even in the countries in which the system enjoyed more political support, like some North European countries [Barr (1992); Atkinson and Mogensen (1993); Lindbeck et al. (1994); and the Scandinavian Journal of Economics special issue (1995)]. The main concern is about the distortions that

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welfare policies might be introducing in the economic system. There is a widespread feeling that the welfare state has gone "too far", with the costs of the system outweighing the benefits.

Forteza (1996) presents a simple model aimed at showing how a government that maximizes the expected utility of private agents providing insurance might generate too many distortions. The basic story is that a government that does not have the ability to commit not to help "unlucky" agents induces individuals to free ride on the government's concern, exerting too little effort. If the government could commit the policy in advance, instead, it could credibly announce a policy mix that provided the right incentives. That policy would typically include incomplete insurance, in order to induce agents to exert above minimum effort. Without commitment, the announcement of such a policy would not be credible, for agents would know that afterwards the "benevolent" government would anyway help the "unlucky".

Forteza (1996) made the simplifying but unrealistic assumptions that welfare policies are costless, and that the government might be in either of two extreme regimes, one of full commitment and one of full discretion. In the present paper, instead, the costs of implementing policies are explicitly modelled. It is shown that these costs might have important consequences for the performance of the welfare state. Not surprisingly, as in other policy games, the existence of costs of government policies might be welfare improving, since they enhance the commitment ability of the government [Lohmann (1992)]. Besides, this modelling strategy provides a simple way of dealing with a continuum of commitment abilities.

Also, costly policies might provide a simple explanation for the fact that, in the real world, unlike in the costless policy model, governments do not fully eliminate disparities between the lucky and the unlucky. Even in highly distorted economies, private agents face some degree of risk, i.e. there is incomplete insurance. Yet, there might be overinsurance in the sense that agents are facing less risk than what it is ex-ante socially optimal.

Finally, costly welfare policies might cause coordination failures in the welfare state. There might be "good" equilibria in which agents work hard, average performance is good, and a small amount of resources is spent in welfare policies, and other "bad" equilibria in which agents work little, there is a higher number of unlucky agents, and thus a relatively large amount of resources is spent in the welfare state.

The paper proceeds as follows. In section 2, the model is introduced. Equilibria are explored in section 3. Section 4 contains welfare comparisons and section 5 ends the paper with some remarks.

2. The model

Consider an economy populated by a large number of identical individuals. All of them produce the same consumption good,incurring in effort (a), which, for the sake of simplicity, can take just two values: high (H) and low (L) effort (H>L). Still, individuals might decide on a continuum of strategies, since they can randomize. Thus, in general, each agent can pick certain probability of putting in high effort. If he chooses 0 or 1, he is said to play a pure strategy, otherwise he plays a non-degenerate-mixed strategy.

There is individual uncertainty concerning the output: each agent gets an amount X with probability P(a) and x with probability (1-P(a)). Just to fix ideas, assume X > x so that P(a) is the probability of "being lucky". This probability is a function of the individual's action. The probability of getting a good outcome is higher when the agent chooses to put in high effort (P(H)>P(L)). Probabilities of different individuals are independent, so that, by the law of large numbers, there is no aggregate risk.

Individuals choose effort levels in order to maximize expected utility functions, which are increasing and concave in consumption and decreasing in effort. Concavity in consumption implies that individuals are risk averse. Call W the consumption level in the good state of nature, i.e. when output is X, and w the consumption in the bad state. Assume that utility functions are additively separable in consumption and effort:

$$V(w,W,a) = P(a).u(W) + [1-P(a)].u(w) - a \quad \textbf{(1)}$$

Additive separability will prove useful in isolating the costs of implementing policies as an independent source of multiple equilibria. If utility functions were non separable, the model might exhibit multiple equilibria for reasons other than the costs of policies (see Forteza, 1996).

In the absence of insurance and redistribution, each agent would consume his own output, so that a lucky individual would consume W = X, while an unlucky individual would consume the smaller amount w = x. But, if there were insurance companies or a government redistributing output, individual consumption might be different from individual realized output.

There is a government ruled by a benevolent politician that redistributes output aiming at maximizing agents welfare. The government objective function is the summation of individual expected utilities. Economic policy reduces the variability of individual consumption. Thus, from an ex-ante perspective, the government provides insurance. [1]

Individual effort is private information. Other agents and the government can only observe

[1] Private insurance companies might do the job, but if insurance markets were incomplete, citizens might give politicians a mandate to provide insurance. As Dixit (1987, 1989) has emphasized, however, imperfect insurance markets do not necessarily imply that the government *should* intervene. It might not have any advantage over the private companies to overcome the distortions that caused the market failures. Yet, the point in the present paper is that afterwards, when the uncertainty is revealed, the politician might be tempted to help the unfortunate. Moreover, government temptation to provide free insurance ex-post might deter private companies from doing it at the beginning. Thus, government intervention could operate as a separate cause for market failures.

individual output. Thus, the government can associate consumption to output, but not to effort. Having observed individual output, the government computes aggregate output and the proportion of lucky agents in the population N.

Governments consume resources. They produce government services out of inputs. This is also the case of redistributive-insurance policy, which is the unique activity of the government in this model. Thus, the taxes levied on the "lucky" [N(X-W)] cannot be lower than the subsidies distributed to the "unlucky" [(1-N)(w-x)] *plus* the resources spent to support the government:

$$N(X-W) \geq (1-N)(w-x) + \textit{cost of redistribution} \qquad \textbf{(2)}$$

The "redistribution technology" can be summarized by the cost of redistribution function. It is assumed in this paper that total costs of government activities are increasing in the amount redistributed, i.e. in the taxes levied on the lucky and on the subsidies distributed to the unlucky. For the sake of simplicity, total government costs are assumed proportional to the redistributed income: [2]

$$\textit{cost of redistribution} = c.[N(X-W) + (1-N)(w-x)] \qquad \textbf{(3)}$$

where: $0<c<1$

The timing is as follows. First, private agents simultaneously pick effort levels. Second, output is realized. Third, the government redistributes output, and so chooses consumption levels for the lucky and the unlucky. Notice that, unlike private insurance companies that must write the insurance contract before agents choose actions, the government is assumed to choose afterwards. The main implication is that the government will not take private incentives into account when designing redistribution. Not because it is not aware

[2] The assumption that costs are proportional to the amount redistributed is not crucial for the results that follow. What is crucial is that the costs of the policy are non decreasing in "taxes" levied on the lucky (X-W) and on "subsidies" distributed to the unlucky (w-x), being increasing in at least one of them. Some of the results that follows would not hold if the costs of the welfare state were just fixed costs, independent of the amount redistributed. It is not difficult to analyze that case, but the one described in this paper seems both more realistic and more interesting.

of incentives, but because when its turn to play arrives private agents have already taken their decisions.

This timing formalizes the idea of lack of commitment capacity. Much of the government provision of insurance is informal, implicit in its policies, and involves a wide range of instruments. Thus, it is much more difficult to impose legal constraints on these activities, than on standard insurance contracts. Therefore, under discretion, the only credible announcement that the government can make is that it will choose consumption allocations that maximize its objective function ex-post. The government lacking a commitment capacity can only implement some "contracts", those that are incentive compatible.

3. The equilibria

A discretionary equilibrium is a set of consumption allocations and individual probabilities of working hard such that: i) both the government and private agents are optimizing, taking other's strategies as given; and ii) private agents' forecasts about other agents choices are on average correct.

3.1. The government reaction function

In the discretionary regime, when the government plays, private agents have already picked effort levels, and production has taken place. Each individual belongs now to one of the following four groups: 1) those that worked hard and got high output; 2) those that worked hard, but got low output; 3) those that did not work hard, and still got high output; and 4) those that did not work hard and got low output. Calling q the proportion in the population of individuals that worked hard, the ex-post government objective function can be written as:

Individual effort is not observable, but the proportion of individuals that worked hard can be inferred from the aggregate outcome:

$$q.P(H)[u(W)-H] + q.[1-P(H)][u(w)-H] + (1-q).P(L)[u(W)-L] + (1-q).[1-P(L)][u(w)-L] \quad \textbf{(4)}$$

$$N = P(H).q + P(L).(1-q) \quad \textbf{(5)}$$

The discretionary policy or the government reaction function can be computed maximizing (4) subject to (2), (3) and (5). Alternatively, the government program can be more compactly written as:

$$\underset{w,W}{Maximize} \quad N.u(W) + (1-N).u(w) - [q.H + (1-q).L]$$
$$s.t.: \quad W < \frac{1-N}{N}\cdot\frac{1}{1-c}\cdot w + constant \quad \textbf{(6)}$$

It follows from the first order conditions that:

$$\frac{u'(W)}{u'(w)} = 1-c < 1 \Rightarrow w < W \quad \textbf{(7)}$$

The government thus provides incomplete insurance when marginal costs are positive (c > 0). Equation (7) states that the marginal rate of substitution between consumption of the lucky and the unlucky must be equal to the marginal rate of transformation implicit in the distribution technology. If the welfare policy were costless, the marginal rate of transformation would be one. Costly welfare policies imply that the pool of unlucky agents receive less than one additional unit of output per unit withdrawn from the lucky, i.e. the marginal rate of transformation is less than one. The larger the costs of the policy, the smaller the marginal rate of transformation, and thus the smaller the marginal rate of substitution in an optimum. A smaller marginal rate of substitution means a larger gap between consumption of the lucky and the unlucky, i.e. less insurance. In summary, the government might provide incomplete insurance ex-post simply because providing insurance is a costly activity in the margin. [3]

It seems convenient to represent the government program and its reaction function graphically in the w-W space (figure 1). The government budget constraint is a straight line, passing through the point (x,X), which is the point of no intervention. [4] Its slope

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[3] Simple as it is, the point should not be oversimplified: the government might still provide full insurance with costly policies if all the costs were fixed. In this case, once the government has decided to incur in the costs of mounting the system, costs would not be a reason to provide less than full insurance.

[4] If the cost of redistribution function included fixed costs, the government budget constraint would shift to the southwest. Then, the x-X point would not be feasible, unless the welfare system were dismounted.

depends on the proportion of lucky agents and on the costs of the redistribution policy. The larger the marginal costs of redistribution, the steeper the budget constraint; i.e. the less efficient the government is in redistributing income, the more it must take out of the lucky per unit received by the unlucky. The smaller the proportion of individuals that got high output, the steeper the government budget constraint. The intuition is also clear: the larger the number of the unlucky, the less each one receives per unit withdrawn from the lucky. The proportion of the lucky, in turn, depends on the proportion of individuals that decided to put in high effort q. According to (5), the proportion of lucky agents reaches its maximum, equal to P(H), when everybody decided to work hard (q=1), and its minimum, equal to P(L), when nobody decided to work hard (q=0).

There are well-behaved government indifference curves with slope given by:

$$\left.\frac{dW}{dw}\right|_{indiff} = -\frac{1-N}{N}\cdot\frac{u'(w)}{u'(W)}$$

The government will choose the point on its budget set (the region enclosed by the axis and the budget line) that corresponds to the indifference curve that is farthest from the origin. There is one such point for each N, and the set of these points conform (the image of) the government reaction function (GRF).

It is convenient for the analysis that follows to single out the points that represent full insurance, i.e. consumption allocations such that private agents get the same disposable income in both states of nature (w = W). These points are represented by the 45º line passing through the origin in the w-W space.

Insert figure 1

The larger the marginal costs of the redistributive policy, the farther the GRF from the full insurance line. Other things equal, the government is less willing to provide insurance the more costly it is to do it.

The figures were drawn assuming that the utility functions are of the constant relative risk aversion type in consumption (CRRA):

In this case, condition (7) takes the form:

$$u(w) = \frac{w^{1-\gamma}}{1-\gamma}, \quad for \quad \gamma>0, \quad \gamma\neq 1 \qquad u(w) = \ln w, \quad for \quad (\gamma=1) \qquad \textbf{(9)}$$

$$\frac{W}{w} = \left(1+c\right)^{\frac{1}{\gamma}} > 1 \qquad \textbf{(10)}$$

The government budget constraint in (6) must be binding in an optimum:

$$W = -\frac{1-N}{N}\cdot\frac{1-c}{1+c}\cdot w + \frac{(1-N).x.(1+c)}{N.(1-c)} \qquad \textbf{(11)}$$

The system (10)-(11) yields the pairs of consumption allocations (w,W) that maximize the government objective function for each N. Thus, in the case of CRRA utility functions, the government reaction function is the segment of a straight line passing through the origin, with slope larger than one [equation (10)], and extremes on the budget constraints corresponding to the minimum and the maximum values of N.

3.2. Private agents strategies

As it was already pointed out, private agents simultaneously pick effort levels before uncertainty is revealed and before the government chooses the redistribution scheme. They know the government objective function, so that they can solve its program and get the government reaction function. The problem might be much more difficult, however, in regards to other private agents choices. Each one must correctly anticipate other agents decisions - not at the individual level, but on average -, for his own best choice might depend on what others do. Indeed, each agent optimal effort depends on the consumption allocation (w,W), and consumption allocations depend in turn, through the government reaction function, on the proportion of the lucky, which depends on the proportion of individuals working hard.

There are cases in which guessing other agents choices is not actually difficult. Suppose, for instance, that the government is very inefficient in redistributing income (c is large), so that it will not be willing to help much unlucky agents, no matter the proportion of the unlucky in the population. Then, it is likely that, no matter what other agents do, the best choice for each one is to work hard. In this example, though not specially interesting, it is easy to guess other agents' decisions: everybody will work hard.

There are other more complex cases in which finding out what other individuals will do is not such an easy task. This is typically the case when the economy admits several equilibria. Then, there is a coordination problem, which is particularly acute in the present setting for the number of agents is large. This difficulty is formally avoided in the present paper by assuming shared beliefs: all agents are assumed to expect the same aggregate outcome. Admittedly, this is not a fully satisfactory treatment of the issue. Yet, the results in the present paper serve as a building block for a dynamic model that addresses the selection between the multiple equilibria (Forteza, 1996). The static equilibria obtained in the present paper are shown to be stationary states of the dynamic version. Thus, the assumption of shared beliefs does not seem to be particularly misleading in the present context.

An agent chooses high effort when the expected utility associated with it is larger than the expected utility associated with low effort. Agents dislike effort, but they can still work hard in order to raise the probability of enjoying high consumption. Of course, if consumption in good and bad states of nature were not very different, agents would not work hard. Hence, agents expecting consumption allocations "close" to the full insurance line in the w-W space choose low effort. There is a set of consumption pairs such that agents are indifferent between high and low effort. This locus will be called the incentive line (IL). It separates the w-W space in two regions: to the west agents pick high effort, and to the east they pick low effort. On the incentive line agents are strictly indifferent, so that they might randomize. Under the simplifying assumption of CRRA utility functions, explicit functional forms for the incentive line are obtained:

$$W = \left[w^{1-\gamma} + (1-\gamma)\frac{H-L}{P(H)-P(L)} \right]^{\frac{1}{1-\gamma}} \quad , \quad \textit{for} \quad \gamma \neq 1 \qquad \textbf{(12)}$$

$$W = w.e^{\frac{H-L}{P(H)-P(L)}} \quad , \quad for \quad \gamma = 1 \qquad \textbf{(13)}$$

Figure 2 presents an incentive line and the two effort regions for an economy with γ < 1. (IL is a straight line when γ = 1, and it is convex when γ > 1).

Insert figure 2

3.3. The equilibria

The configuration of the equilibria depends on the parameter values. Some examples for CRRA utility functions are presented in figure 3, all of them for γ < 1 and the point x-X located to the west of the incentive line.

The first example is built for a small marginal cost of the redistribution policy c. There is just one equilibrium in this case, with the government providing incomplete insurance, and private agents choosing low effort. Private agents safely anticipate that the government will pick a consumption allocation in the low effort region. Thus, everybody choose to work little (q=0), aggregate output reaches its minimum, and the proportion of individuals that will need help reaches its maximum (1-P(L)). Agents know it, and they also know the government reaction function, so that there are no mistakes.

Insert figure 3

Consider now the case of large marginal costs c'. There is again only one equilibrium and the government provides incomplete insurance, but now private agents choose high effort. Like in the previous example, private agents have no problems to anticipate the aggregate outcome. The government reaction function is to the west of the incentive line, so that everybody will choose high effort, and the proportion of the lucky will be N=P(H).

In this example, unlike in the previous one, agents work hard. Still, incomplete insurance is not designed to provide the "right" incentives. In equilibrium, agents are facing more risk than what is needed to induce them to choose high effort. Incentives are just a sideproduct, not a deliberate policy.

If the marginal costs of the redistributive policy is neither as low as in the first example nor as high as in the second one, the possibility of multiple equilibria arises (marginal costs c'' in figure 3). There will be two equilibria in pure strategies, one in which all agents choose high effort and another one in which all agents choose low effort. There will also be a mixed strategies equilibrium at the crossing of the government reaction function and the incentives line. At this point, agents are indifferent between effort levels, so that they might randomize. If they choose probabilities of working hard such that, in the aggregate, the proportion of lucky agents corresponds to the budget line passing through this point, then the government will actually choose the consumption pair corresponding to it. If all this turns out to happen, both the government and private agents will be optimizing, and agents will be making correct guesses.

Which of the three equilibria in the intermediate cost case is observed depends on expectations, i.e. these are expectations-driven equilibria. Furthermore, the existence of these equilibria depends on the coordination of expectations among private agents. Thus, the assumption of shared beliefs is crucial in this case. Notice that the multiplicity of equilibria would remain, even if the mixed-strategies equilibrium were dismissed as unlikely. [5]

[5] Mixed strategies have been under severe criticism (Rubinstein, 1991). In the present setting, they admit a simple interpretation as proportions of the population that are playing pure strategies. Still, if all individuals are identical, why should some of them choose high effort and others low effort? Moreover, nothing compels agents to choose the "right" randomization. Nevertheless, the mixed-strategies equilibrium will not be dismissed in what follows, for it can be shown that some extensions of the basic model turn it into either a pure-strategies equilibrium (with heterogenous population) or a stable mixed-strategies equilibrium (in a dynamic setting) (Forteza, 1996).

Where does the multiplicity of equilibria come from? Redistribution causes private production decisions to have positive external effects: if I work harder, you get more transfers. The well known consequence is that redistribution lessens my incentives to work hard. But how does my effort choice affect the incentives *you* face? Is it possible that the decision of one agent to work harder provides incentives for others to do so? The model shows it is, and the intuition is simple. Someone working harder will have on average higher income, and will apply to social insurance less often, reducing the burden on others, who will then have stronger incentives to work hard.

4. Welfare

The model allows for explicit welfare comparisons. Two different but related welfare analysis are performed in this section. First, the expected utilities in different equilibria associated with the same marginal cost of the policy (given c) are compared. Second, the effects of small changes in the marginal cost of the redistribution policy on expected utilities in equilibrium are analyzed.

Multiple equilibria associated with a given c are Pareto rankable, since the population is homogeneous and the government maximizes agents expected utilities. Indeed, all agents are getting the same expected utility in equilibrium, so that if one agent prefers an equilibrium allocation, then all agents do.

The ranking of the equilibria is monotone in effort, if the utility functions are CRRA. The larger the proportion of individuals working hard - or, equivalently, in mixed strategies equilibria, the higher the probability of working hard -, the higher the expected utility. This statement might seem counterintuitive, for agents dislike effort. Yet, the point can be made quite straightforwardly. Notice that consumption pairs on the government reaction function are rankable: if one point includes more consumption in the bad state of nature than another point on the GRF, then the former also yields higher consumption in the good state of nature than the latter (see figure 1). An agent facing a larger consumption basket must be better off, no matter what effort level he chooses (agents are free to choose their best). Hence, points located to the northeast in the w-W space yield higher expected utility. Finally, points located to the northeast on the GRF are associated with higher aggregate output and higher proportion of the population working hard. [6]

These results establish that the model exhibits a coordination failure when the marginal cost of the redistribution policy is neither too small nor too large. Coordination failures necessitate positive externalities or strategic complementarities [Cooper and John (1988)]. An agent choosing high effort must somehow provide incentives for others to do the same. The externality in the present application goes through the redistribution scheme: when an agent switches from low to high effort, he not only raises his probability of enjoying high consumption, but also induces the government to modify the consumption allocation. The change in the consumption pair alters other agents' expected utilities - this is the externality -, and if this change increases the incentives other agents have to choose high effort, as it happens in the case depicted in figure 3, then this is a positive externality.

Changes in the marginal cost of the redistribution policy might have fairly complex consequences on welfare. As it was already shown in the previous section, the configuration of equilibria depends on this parameter. Hence, even small changes in the cost of the policy might have sizeable consequences on welfare. It can be shown that expected utility in equilibrium is a (set valued) function of the parameter c, as represented in figure 4.

Insert figure 4

[6] If the population were heterogenous, equilibria might not be Pareto rankable. If the population were homogeneous, but utility functions were not CRRA, the equilibria would still be Pareto rankable, but the ranking might not have so simple a pattern as in the present case. Then, equilibria associated with higher effort would not necessarily be preferred to lower effort equilibria. For a detailed analysis of these alternative cases, see Forteza (1996).

Figure 3 helps in deriving figure 4. Start with a high cost c', and reduce it by a small amount, such that agents still continue choosing high effort. The budget lines shift counterclockwise around point x-X and the GRF shifts clockwise around the origin. The new equilibrium allocation lies above the previous budget set. The improvement of the distribution technology made this point feasible, and expected utility rose. [7]

If the cost parameter is reduced farther down to c**, two other equilibria appear. It is by now clear that these equilibria are Pareto rankable, and that the expected utility associated with the "new" equilibria are strictly smaller than the expected utility of the previous equilibrium. There is a range of values for the cost parameter such that the model exhibits three Pareto-rankable equilibria. Reductions of the cost parameter increase expected utility along any of these equilibria, but expected utility might decrease if an equilibrium switch took place.

When the parameter cost is reduced farther to c*, the high-effort and the mixed-strategies equilibria collapse into one equilibrium. At such point, even a negligible reduction in the marginal cost of the policy might cause a sizeable decrease in expected utility, if the economy previously was in any of these equilibria. For parameter values below c*, the model exhibits only the low-effort equilibrium.

It is worth noting that nothing can be said in general, even for this simple example, about the welfare ranking of *different* equilibria for *different* marginal costs of the policy. It cannot be established, for instance, without knowing the parameter values of the economy, whether the expected utility associated with zero marginal costs is larger, equal or smaller than the expected utility associated with costs an epsilon above c**. It was *assumed* to draw figure 4 that the former is below the latter, but it does not need to be so.

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[7] It is proved in the appendix that the expected utility *in each equilibrium* is a decreasing function of the cost parameter c.

5. Concluding remarks

The government provides incomplete insurance in the present model, even though it is not aiming at providing incentives for agents to work hard. Unlike in the standard principal-agent relationship, the government (principal) does not care about agents' effort. When the government's turn to play arrives, agents have already chosen their actions, and bygones are bygones. Still, it provides incomplete insurance, because doing it is costly.

This reason for incomplete state insurance is also different from the one emphasized by Wright (1986) and Persson and Tabellini (1992). They assume heterogeneous population, with agents facing different individual probabilities of getting high output. Thus, agents with higher probabilities of a good outcome also get higher average output. Redistribution and insurance in their context alter individuals' relative average disposable income. Agents vote on redistribution, and assumptions are made so that the median voter result holds. Like the discretionary government in the present paper, voters face a risk-sharing problem, with no incentive considerations. Still, full-insurance is not the best choice for most voters. Full-insurance involves not only the highest level of insurance, which is desirable for all in their setting, but also the highest degree of redistribution, which is only desirable for those with expected output below average. If the median voter coincides with the average of the population - something that happens when the distribution of the voters over types is not skewed -, there will be full insurance. The median voter receives no net transfer while he is interested in an as complete as possible insurance. But if the median voter is above average, there will be incomplete insurance. He will be facing a negative net transfer, but at the same time he is interested in insurance. So the median voter trades off these opposite forces, choosing an intermediate level of insurance and redistribution. Thus the voting model predicts full insurance when the distribution of the population over risk types is not skewed. The model in this paper, instead, yields incomplete insurance even when the population is assumed homogeneous or, being heterogenous, the distribution is not skewed.

The model in this paper might be used to tell a simple story for development traps in middle and high income countries. Assume that in an initial state of development, economic policies are highly costly ($c>c^{**}$). As the country develops, the government manages to provide less costly welfare systems and welfare increases. But, as the marginal costs of the policy approach the critical value c^{**}, the possibility arises that further reductions in these costs induce a decrease in welfare. A distinctive feature of this story is that, unlike other development traps reported in the literature, the overinsurance trap requires some degree of development to take place. The state must be relatively sophisticated for people to feel safe under its protection, something that looks unlikely in the poorest countries. Thus, overinsurance seems to be a middle and high income countries disease.

The model might also have some normative implications. As in other policy games, making government actions costly might be welfare improving (Persson and Tabellini, 1990). Costs of the redistributive policy serve as a commitment device, alleviating the credibility constraint. And yet, having too high costs might inhibit government interventions when they are needed. Thus, there might be a trade off between commitment and flexibility. A similar issue has been extensively analyzed in the monetary policy literature (Rogoff, 1985; Flood and Isard, 1989; Lohmann, 1992; and Persson and Tabellini, 1993; among others).

Lohmann (1992) explicitly considers the cost for the government of overriding the central banker, and proposes a model to choose it optimally together with the degree of "conservatism" of the central banker. Even though the idea is appealing, it seems more difficult to implement something similar and give it a precise meaning in the present context. Governments make use of a large set of tools to redistribute income and help the unfortunate. It is not easy to set costs to uniformly raise the commitment capacity in all these heterogenous fronts. Specific welfare programs can be limited, but imperfect substitutes might do worse. In the absence of formal and specialized welfare institutions, politicians might be tempted, and even pressed by their political constituencies, to perform "social" policies by means of other less efficient and more distorting instruments. The experience of some Latin American countries might be illustrative in this respect (especially so in the case of Argentina and Uruguay). Therefore, more research, including some applied one, seems advisable before moving towards policy recommendations.

Appendix

Proposition: The expected utility *in each equilibrium* is a decreasing function of the cost parameter c.

Proof: The expected utility in equilibrium can be written as:

$$L[w(c),W(c),c] = P(a)u[W(c)] + [1-P(a)]u[w(c)] - a + \lambda.\{(1-c)N[X-W(c)] + (1+c)(1-N)[x-w(c)]\}$$

where a = H, L. Notice that this expression is the lagrangian of the government's optimization program in equilibrium (it is not out of equilibrium, though). This is evident in pure strategies equilibria, for setting q equal to 0 or 1 in the government's program yields the above expression. In the case of mixed strategies equilibria, this expression is obtained by substituting the individuals incentive compatibility constraints in the government's lagrangian. This observation allows to use the envelope theorem, so that indirect effects of changes in c going through w and W can be disregarded:

$$\frac{dL}{dc}[w(c),W(c),c] = -\lambda.[N(X-W) + (1-N)(w-x)] < 0$$

QED.

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