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.Environment-Development Relationship: Why “New Political Economy” Matters

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In the last years, the studying of economic policy has recorded a new important trend. Reforming political structure of nation has revealed of more great value than traditional economic policy based on utilization of well known instruments such as rate of interest, fiscal policy, etc..Also about environment-development relationship, sinthetized by famous Kuznetz law, we can have more informations and explanations if we consider the particular political system of nations and the possibility to progress toward more democratic institutions.

The last fifteen years have seen an explosion of contributions in the field of Political economy. They have presented characters much different from traditional studies and have founded a “New Political Economy”. For having an idea of copiousness of this literature is sufficient to read the books of Drazen [1] and Persson and Tabellini [2]. It has two particular features. First, it chiefly aims at explaining actual economic policies, rather than taking them as exogenous, as do “conventional economics”. Second, it departs from the assumption often made in conventional economy that policy is determinate by maxmizing a social welfare function. It explicitly takes into account that policy is determined by a political mechanism, and therefore will reflect the interests of the most powerful groups in society. It has tackled a wide variety of topics, such as the determination of redistributive taxation, inflation, budget deficits, labor market policies, and so on. It typically generates predictions about how policies that are actually pursued will depend on the distribution of agent’s income and particularly on political institutions. At the end, the “New Political Economy” demonstrated that reforming political structure has a more great value than traditional economic policy based on utilization of well known instruments such as rate of interest, income policy, fiscal policy and so on.¹ Also about environment-development relationship, sinthetized by famous Kuznetz law, “New Political Economy” can do us more informations and explanations.

A growing body of empirical research indicates that several types of pollution seem first to increase as per capita income increases and then to decline. The resulting inverted-U relationship between income and pollution has been christened the “Environmental Kutnetz curve”. This law is explained with

¹ Allan Drazen, *Political Economy in Macroeconomics*, Princeton: Princeton University Press, 2000; Torsten Persson and Guido Tabellini, *Political Economy: Explaining Economics Policy*, Cambridge, MA: MIT Press, 2000.

economics arguments without any consideration of political factors. We will see that the last factors are very important to study the Kuznetz relationship.

Agencies responsible for promoting international aid, lending and trade have shown keen interest in the environmental Kuznetz curve, particularly its downward sloping portion. Commenting on the environmental implication of growth, GATT [3] notes that: "Concentration of SO₂ have risen with income at low levels of per capita GDP, fallen with income at higher levels of per capita GDP, and eventually leveled off in the most advanced economies.. The estimated turning point comes at about \$ 5,000. The conclusions for smoke pollution are much the same". The eventual decline is attributed to an income effect: "Countries near the top of development ladder, and ... as a result they are likely to have and enforce stricter environmental standards. This appears to be borne out quite well in practical experience". The conclusion seems straightforward: income growth, possibly due to expanded trade, will eventually bring environmental benefits if carried past turning point.

The World Bank [4] also drew a positive message from this research in its 1992 World Development Report. Commenting on how income growth affects environmental protection it reported that: "There are strong 'win-win' opportunities that remain unexploited. The most important of these relates to poverty reduction: not only is attacking poverty a moral imperative, but it is also essential for environmental stewardship".

Whatever the factual merits of such reasoning may be, one possible consequences is a more relaxed attitude toward environmental protection in developing countries, particularly those that are growing rapidly. Policy maker might reason that the environmental protection problem eventually will take care of itself via an automatic solution if growth proceeds far enough. More over, while most economist have drawn guarded conclusion from these results, some have been less cautious. For example, Salinas-Leon, Beckerman and Bartlett [5-7] uses these empirical results to put a perverse twist on the possible effects of environmental policy, claiming that "existing environmental regulation, by reducing economic growth, may actually be reducing environmental quality". This opinion could blunt progress toward adoption of sensible environmental policies.

These erroneous interpretations of Kutznetz curve may be avoided if we take in consideration the political aspect as is thought by "New Political Economy". Research on this topic has largely ignored the fact that pollution control is a public good, provided by government so as national defense. All economists share this, exceptions are Lopez and Mitra and Barrett and Graddy [8-9]. Empirical models typically regress a measure of pollution on income, income squared, and other variables, but omit the form of government as a determinant. As a consequence, the profession can offer no credible insights on the kinds of political reform that would foster environmental protection in the developing world or on the likely environmental effects of recent trends toward democratization.

Omitting the form of government as an explanatory variable in cross country empirical models can lead to those biased results and incorrect inferences

on the effect of economic growth on the environment that we have already seen. Significantly, the environmental Kutznetz curve literature has provided very little evidence of actual policy responses. Further, while the idea of an 'inverted U' relationship between pollution and income is entirely plausible, the crucial question for policy is the income level at which the turning point occurs. To date this term has not been estimated as accurately as the data will allow.

Finally, and perhaps most importantly, the received literature might cause policy makers to focus on the wrong policy instrument. If the observed correlation between income and pollution mainly reflect political differences, fostering political reform may emerge as the key instrument for environmental improvement. The empirical evidence now available to policy makers provides no information on this possibility and it arguably confounds the effect of economic growth on the environment with the effect of differing political institutions.

We can offer a brief intuitive explanations of effect that omitting the form of government might have on the turning point in estimated environmental Kutznetz curves. Suppose the pollution that would result from production if no effort were spent on abatement is a monotone function of a country's total output. Spending resources on abatement results in a lower level of 'net pollution'. Abatement is generally accomplished by adopting regulations on waste treatment and production process. Government choose such regulations by balancing those environmental costs and benefit that are politically relevant, i.e., those that accrue to the group who controls the political process. In an ideal democracy the controlling group is the entire voting population, and stylized models imply that the public good level equates marginal cost and marginal benefit to the median citizen.

Public choice theory has less to say about public goods provision by non-democratic governments. McGuire and Olson [10] consider a model economy in which policies are controlled by an elite minority who can transfer funds from the public budget to themselves. Because public funds are fungible to the elite, the politically relevant opportunity cost of publicly produced goods is the full marginal cost of provision. That is, spending an extra government dollar on, say, public sanitation reduces the elite's income by one dollar. If pollution abatement takes place through regulations on production, its cost is felt in the prices of commodities. Here, the cost share borne by the elite should roughly equal their command of the national spendable income. On the benefit side, while pollution control is often a non-exclusive good as all public goods, only the benefit accruing to the political elite is policy relevant. In a non-democratic country this is only a fraction of the benefit the entire population can enjoy. Since policy is set by balancing politically relevant marginal benefits with politically relevant marginal costs, the model implies that non-democratic governments will under provide public goods relative to democracies.

Before to arrive to conclusions, it is useful to examine prior research on the growth-environment relationship. Most of the received research on the effect of economic growth on the environment is empirical. Shafik and Bandyopadhyay[11] and Grossman and Krueger[12] (SB e GK) both examined ambient concentration of several air and water pollutants in a cross country panel

of monitoring sites. Both specified pollution to be second or third order polynomials in per capita income, linear in other variables, and allowed for fixed or random effects. SB and GK both discuss structural factors, but neither postulate structural framework. Both generally found inverted U relations for SO₂ smoke in urban areas, with peaks in the range of \$4-6,000 in GK and \$3-4,000 in SB. Selden and Song [13] used the same basic approach to examine country level emissions of several air pollutants. They also found inverted U patterns. Selden and Holtz-Eakin [14] examined carbon dioxide emissions in the same way and found that per capita emissions rise with per capita income up to extremely high income levels. Panayotou [15] and Cropper and Griffiths [16] have estimated such relationships for deforestation and other environmental outcomes. Reviewing this work, Thompson and Strohm [17] and Stern [18], find that the lack of a theoretical structure robs these studies of clear policy implications.

Hilton and Levinson [19] took a step toward identifying structural factors for lead emissions from gasoline. They broke down total emissions into pollution intensity, measured as lead per gallon of gasoline, and total gasoline consumption. Pollution intensity (lead per gallon), which reflects a policy response, was found to decline with income as several have conjectured. Total gasoline consumption rises with income. The product, lead emissions, follows an inverted U pattern. These results indicate, at least for lead emissions, that it is a policy response that causes the pollution curve to bend down at higher incomes. Further, because lead emissions result from consumption rather than production, the eventual decline is not due to a "pollution haven" effect, whereby rich countries import pollution intensive goods from poor countries.

Barrett and Graddy [9] revisited the GK data, extending the model to include measures of political and civil freedom. They found support for the proposition that more freedom is associated with lower levels of several pollutants. Since democracy and civil/political freedom tend to go together, this agrees with our basic premise. They also found, however, that this relationship does not apply to all pollutants. This seems to indicate that the downward sloping portion of environmental Kuznets curves for some pollutants is caused by something other than an induced policy response. (Shifts in the composition of output seems an obvious possibility.).

In an important recent contribution Antweiler, Copeland, and Taylor developed a rigorous structural framework. In their model countries set environmental policy endogenously by satisfying a Samuelson condition. Environmental policy, in turn, alters the relative prices of goods according to their pollution intensity. Countries trade, with comparative advantage determined both by environmental policy and factor abundance. A reduced form equation for pollution is then estimated with the same SO₂ data others have used, primarily to determine the environmental effects of trade liberalization.

Theoretical models of the growth-environment relationship are scarcer. Lopez [20] models pollution as use of the environment as a productive input. He shows that an inverted U relationship is generally possible, though not if preferences are homothetic. He also shows that its form depends on the ease of substituting environmental and conventional factors. Lopez and Mitra [8] extend this

framework to examine the effect of government corruption. Corruption takes the form of payments from industry, the source of pollution, to government officials. Government officials are motivated by these payments and by the desire to retain office, which depends on the average citizen's welfare. They find that corrupt regimes may also follow an inverted U pattern, but with more pollution at each income level and a higher turning point than non corrupt regimes.

Overall, this review indicates the importance of basing empirical work on a structural framework to motivate policy inferences. It also describes suggestive evidence that the form of government is empirically related to pollution (Barrett and Graddy [9]) and offers a set of relevant testable hypotheses (Lopez and Mitra [8]).

As we have seen, the address suggested regarding environmental research, precisely the extension of New Political Economy principles to environment-development research, has revealed good possibility to enhance the study of environment problem. It is demonstrated the importance of beginning the environment research from the form of government.. It might be modeled by combining data on the method of selecting government executives and representative, the degree of power exercised by the legislative vs. the executive, the degree to which nominating process are competitive, the practice of excluding political groups and parties, and other possible criteria. Otherwise we risk to neglect the fundamental variable as the form of government influence both the level of income, because it is demonstrated that democratic countries are more developed and ,because the level of income tends to influence the level at which a country provides public goods, the level of pollution.

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