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中国城市环境污染的影响因素研究

---基于环境财政联邦主义的视角

The Determinants of Environmental Pollution in Urban  
China---Based on the Environmental Fiscal Federalism

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## 摘 要

本文以中国财政分权和官员晋升机制为研究背景,通过理论分析和实证研究,首先从地方政府的角度研究地方政府征税行为对环境污染的影响。随后讨论作为地方政府行为主体的地方官员个人特征对环境污染的作用。最后分析和政府有关系的企业,即政企联系对企业环境行为的影响。

首先,本文在 Keen 和 Kotsogiannis (2002) 的研究基础上,通过构建包含生产者、消费者、地方政府和中央政府四个部门的一般均衡模型,刻画在中国式的分权体制背景下,地方政府征税行为对当地投资水平与环境污染产生的影响,及其带来的溢出效应。研究发现:一,在包含中央、地方两级政府的模型中,一个地区地方政府降低征税努力度会吸引更多的资本流入本地,但同时也会增加该地区的污染排放量。若一个地区提高其征税努力度,则会使资本外流。二,当污染存在溢出效应时,在短期资本供给无弹性的情况下,一个地区征税努力度的上升会使其他地区的污染排放量上升;而在长期资本供给有弹性的情况下,一个地区征税努力度的改变对其他地区污染排放的影响取决于两个因素:资本流动的多少与本地区对其他地区污染负外部性的大小。三,在其他地区征税努力度不变的情况下,若某地方政府提高其征税努力度,会降低全社会的总投资水平,减少总的污染排放量。基于 2003 年至 2010 年中国地级市层面的面板数据,运用系统 GMM 估计方法实证分析地方政府征税努力度与环境污染之间的关系,研究发现:一个地区实际税率的上升会降低当地污染排放量;若所有地区均提高其实际税率,会降低总污染排放水平;相比东部地区,实际税率对中西部地区污染排放量的影响更大、更显著。

其次,本文研究地方政府官员个人特征对其所在地区环境污染的影响,通过充分详实的理论分析,提出以下理论假说:一,地方官员不同的个人特征对其任职地区环境污染水平的影响不同,由本地晋升上来的官员和有中央任职经历的官员会带来更多的环境污染;二,有中央任职经历的官员对环境污染的影响会随其空降背景而减弱;三,相对于人均 GDP 较低的不发达地区,有中央任职经历的官员对环境污染的影响在人均 GDP 高的发达地区更大。基于 2003 年至 2010 年间中

国 35 个大中城市的市长样本数据和 30 个省的省长样本数据,按其晋升来源与中央工作经历划分,运用面板 OLS 估计方法实证研究了作为地方政府行为主体的地方官员个人特征对其任职地区环境污染水平的影响,对文中的理论假说进行了检验,发现实证结果与本文的理论假说相一致。

再次,本文讨论政治联系对企业环境行为的影响,通过理论分析提出以下理论假说:一,政治联系会对企业环境行为产生负面影响;二,政治联系对第二产业企业环境行为的负面影响会大于对第一、第三产业的影响。实证分析中,本文选取 2013 年在 CSMAR 数据库的《中国上市公司社会责任研究数据库》板块中披露了社会责任的 630 家非金融类上市企业的数据,运用 Logit 模型与 Ordered Logit 模型分析高管政治联系对企业环境行为的影响,研究表明:政治联系会增加企业不披露任何环境信息的概率,降低企业参照 GRI《可持续发展报告指南》披露环境信息的概率;政治联系对企业环境信息披露行为的负面影响在第二产业中更加显著。

基于以上研究结论,本文认为地方分权给予地方官员通过快速发展本地经济而让自身在地区间政治与财政竞争中脱颖而出的极大激励,在地方政府没有税率制定权的税收比例分成体制下,征税努力度作为博弈工具在地方招商引资中的作用被不断放大,造成高名义税率、低征管效率的局面,由此引发的盲目攀比和恶性竞争导致了资源的极大浪费与环境的极度恶化。地方政府官员作为理性行为人的利益(晋升)最大化行为与增长导向的晋升激励相结合,一方面推动了其所在地区的经济增长,另一方面也带来了环境污染的加剧。同时,企业向手握权力和资源的地方政府或官员寻租而建立起来的政治联系,很可能成为企业俘获地方政府官员进而放纵企业污染行为的手段。由此得出,在中国式财政分权与官员晋升体制下,减少污染排放,从根本上改变环境污染现状的关键可能并不仅仅限于先进技术设备的引进与污染治理投资额的增加。本文的政策含义在于:一,应适当平衡地方政府的财权与事权,优化地方政府行为,减弱地方政府间的恶性投资竞争,同时将污染控制纳入官员的晋升考核机制中,逐步减轻 GDP 在考核地方官员绩效时的权重,实施科学环保的政绩考核机制;二,通过建立市场化的减排激励、推进排污权交易制度、推进环境税改革等措施,杜绝地方政府官员与企业之间在排污上的互惠合谋;三,及时公开政府的执法信息与企业的排污信息,确保环境

保护法的有效执行,减少地方官员与企业的寻租行为,加快产业结构调整的步伐;四,政府主导与市场化运作并举,让市场成为配置资源的主要力量,让企业成为节能减排的第一执行主体,让环保带动创新;五,保障公众的知情权、参与权、监督权、举报权,树立全民节能减排、保护环境意识,让环保成为全民行动。

**关键词:** 环境财政联邦; 环境污染; 税收竞争; 官员行为; 政治联系

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## Abstract

Given fiscal decentralization and governors' promotion mechanism in China, through theoretical analysis and empirical research, this dissertation tries to figure out the local government tax effort impact on environmental pollution, then research the relationship between background of governors and environmental pollution, at last, study the impact of political connections on enterprises environmental behavior.

First, based on model from Keen and Kotsogiannis (2002), the dissertation constructs a general equilibrium model including four parts of producer, consumer, local government and central government to analyze the local government tax effort impact on environmental pollution and its spillovers given Chinese fiscal decentralization. The following conclusion are obtained: (1) In the model including central government and local government, lower tax-collecting effort will induce more capital inflow, and more pollution emission. On the contrary, higher tax-collecting effort will induces capital outflow. (2) There is pollution spillover, the supply of capital is lack of elasticity in short term, higher tax-collecting effort will induce more pollution emission in other areas. In long run, two factors determine this tax-collecting effort spillover effect: capital flow and pollution negative externalities. (3) Given tax-collecting effort of other local governments, higher tax-collecting effort in one local government will reduce the total investment, then reduce the pollution emissions. Relying on the Chinese panel data of 271 cities during the period 2003-2010, the dissertation do empirical tests using sys-GMM estimation method, finding that higher real tax rate will induce lower pollution emission; real tax rate' impact on environmental pollution is much bigger and more significant in central and western part of China.

Secondly, the dissertation prose several following theoretical hypothesis. (1) Different personal characteristics of local governors will determine their behavior of environmental pollution. Governors promoted from local and governors who have

central government working experience will lead to more serious environmental pollution. (2) The negative effects on the environment will be weakened if the officials who have the central government working experiences are appointed as the local government governor. (3) Officers with central government working experience will bring more negative impact on environmental pollution in region with high GDP per capital. Relying on the data samples of 35 mayors and 30 governors from 35 large and medium-sized cities and 30 provinces in China from 2003 to 2010, the paper investigate the impact of local officials' personal characteristics on regional environmental pollution, finding that empirical results are consistent with the theoretical hypotheses.

In addition, political connections and enterprises environmental behavior are discussed, and makes the following theoretical hypothesis: (1) Enterprises with political connections of governments will have negative influence on enterprises environmental behavior. (2) This negative influence is bigger in secondary industry than primary sector and tertiary industry. Relying on the data of 630 non-financial listed companies from the CSMAR database in 2013, the paper use Logit model and Ordered Logit model to analyze the impact of political connections on enterprises environmental behavior. We find that the firms with political connection are less inclined to reveal environmental information. They are also less incentive to report environmental information according to GRI. This negative influence of political connection on environmental behavior is more significant in secondary industry.

Based on these theoretical and empirical finding, we draw the conclusion that fierce and disorder competition between local governments induce worsening environmental pollution. Under decentralization mechanism, local governors are motivated to choose the policy to spur local economy. Without title of tax policy, tax-collecting effort play a vital role in attracting investment. The paradox that high real tax rate and low tax-collecting effort exist is common. The combination of promotion incentive and economy develop-oriented mechanism promote growth, but growth has its social costs such as environmental pollution. At the meantime, via political connections, firms capture local government officers who have the rights to

manage firms' pollution, and therefore get as much pollution privilege as possible. At present, the key to reduce pollution can not only be limited to spending more on the eco-friendly technology or pollution control. The policy implication of this dissertation are stated as followed: (1) Reforming the method of economic development and the political incentive system, bring the pollution control factors into official promotion assessment mechanism, reduce the weight of the economic growth in assessing the local officials' performance, optimize the local government behavior. (2) Establish market-oriented mechanism of pollution control, prohibit the rent seeking between local officials and firms. (3) Release the information of environment enforcement law and enterprises emission. Accelerate the adjusting paces of the industrial structure. (4) Making the market play the vital role in asset allocation. Encourage enterprise to innovate to protect environment. (5) Protect the public's right to know, to participate, and to supervise. Initiate an all the people activity, raise the environmental protection consciousness.

**Key words:** Environmental Fiscal Federalism; Environmental Pollution; Tax Competition; Local Officials' Behavior; Political Connection.

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