

本书由河南农业大学农业政策与农村发展研究中心资助出版

生活垃圾回收市场机制研究

The Market Mechanism of the Living Trash Recycling

张继承◎著



 中国农业出版社

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摘要

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一、问题的提出和主要研究目标

生活垃圾是环境主要污染源之一。随着人民生活水平的提高,垃圾产生量也迅速增加,特别是化学工业的发展,生活垃圾中难以自然降解的成分不断增多。对生活垃圾进行减量化、资源化和无害化管理已经成为大家的共识,而垃圾回收可以一方面通过资源再生活动不断向人们提供有利于社会的公共物品;另一方面不断改变生产的运行方向,把经济系统中的垃圾,通过合适的方式重新回到经济系统,在物质、能量和价值流动过程中,力图把被人类生产、消费活动破坏了的生态平衡重新恢复过来,实现经济系统与生态系统之间协调发展。从这个意义上来说,以生活垃圾回收为代表的资源再生利用产业是社会经济健康发展的一项基础性产业。

而资源再生利用产业与一般产业相比却有其自身的特殊性。首先,再生资源中有价组分较低、分散度高,增加了相应提取成本,当超过一定程度,垃圾的可利用价值降为负值,使回收在经济上缺少必要的激励。同时再生资源产生源广为分布且品种不一,使得可收集到供资源化利用的数量满足不了形成规模效应的最低原料数量的经济要求。其次,垃圾回收虽然可以带来一定经济效益,减少对原生资源的开采和使用,避免一部分垃圾管理与处置的费用以及降低相应的垃圾污染环境风险。但是回收利用过程也会产生一定程度的污染,对于全社会而言,并不是所有的回

收活动都是有利的。这些特征使得再生资源产业市场机制作用的发挥与一般性产业相比有很大不同，必须从全社会角度，以系统的观点对其进行认识和评价。

再生资源产业链的运行是由其中的资金流、价值流和物流在各主体间的流动形成的，同时其运行也受到制度和技术等因素的制约。目前，我国的再生资源产业在低层次水平上无序竞争，市场机制的发挥是建立在牺牲劳动者福利和污染环境的基础上。在管理上对产业的属性和定位不明确，管理理念不清晰，造成管理体制不完善和无序管理，因此探寻产业发展的机理，发现其中的问题，从理论和实践中寻找产业健康发展的路径和措施，真正发挥再生资源产业基础性地位作用，实现行业善治和国家发展该行业的初始目标，这些都具有重要的研究意义。因此本书以“生活垃圾回收市场机制研究”为题，希望解决其中的一些理论与政策问题。

二、研究的主要方法和研究内容

本书对生活垃圾回收的研究，在逻辑安排上，从对该行业是否可以发挥市场机制作用、市场机制运行机理、市场机制运行中存在的问题和原因、如何保证市场机制有效发挥出发，作为贯穿全书的一条主线；在研究方法上，主要采用了比较分析方法和案例研究方法；在理论支撑上，利用物质代谢、平衡和循环理论说明生活垃圾回收的必要性和行业定位；利用公共物品理论说明产业的本质属性、为什么在回收中要发挥市场机制的作用，市场机制的局限性和政府介入的理由；利用社会最佳回收水平决定理论说明考虑环境因素后的回收水平决定，为产业政策的制定必须进行环境经济分析提供依据；利用有效竞争理论为改变目前过度竞争和垄断市场结构、创造有效竞争局面提供依据；公共治理理论为如何通过改变治理结构，提高治理水平，保证市场机制更好发挥作用提供依据。

在内容组成上，主要包括五个部分。第一部分，即第三章，

通过国内外回收管理体系在参与主体、成本收益、市场结构、管理机构和管理政策上的比较,找到了我国再生资源产业问题产生的原因和差距,明确了我国再生资源管理的近期和远期努力方向;第二部分,即第四章,通过对我国社会回收体系和回收产业链分析,揭示了产业链运行机理、影响因素及存在的问题,分析了生活垃圾回收市场机制运作原理,为通过建立有效竞争的市场结构、引入多种利益主体、完善管理体制和治理结构来保证市场机制作用发挥奠定基础;第三部分,即第五章,通过典型案例的分析,在实践上通过物质流和价值流的分析,剖析市场机制作用原理,通过北京市和石家庄市案例的对比分析,指出目前过度竞争和垄断市场结构的缺陷,提出通过制定标准、制定法规和政策等以完善相应管理体制、创造有效竞争的市场结构才能更好地发挥市场机制作用;第四部分,即第六章,通过对以废塑料为例的环境经济效益分析,论证了环境经济分析对提出针对性管理方法和相应政策制定的重要性;第五部分,即第七章和第八章,通过市场参与主体的行为分析及该行业市场失灵和政府失效的原因分析,说明引入第三方治理主体,构建多级公共治理结构,是在行业有效竞争结构和完善的管理体制基础上,保证市场机制更好发挥作用和实现行业善治的根本措施。最后提出了规范和完善我国再生资源产业的具体政策建议。

三、主要研究结论

1. 从再生资源产业链的组成、产业链运行机理、存在问题和原因分析出发,通过分析认为:再生资源产业链运行动力不足,如过低的原生资源价格对再生资源需求的制约;过度竞争和垄断的市场结构并存引起产业链运行成本上升;缺乏经济上有效的再生资源利用技术;现行再生资源政策对再生资源产业发展不利;国外废料的进口对国内再生资源行业造成了冲击;受再生资源特性决定,无论从质量或是数量上都不利于产业链条上主体经营规模的扩大和成本的降低;缺乏产业链内部和外部各经营主体

的真正有效参与等，这些是当前再生资源产业链运行中面临的主要问题。最后，通过分析，发现维持我国产业链运行的主要动力是靠牺牲环境和劳动者福利获得，这是当前我国再生资源回收市场机制运行中存在的主要问题。针对这些问题，提出了在创造有效竞争市场结构和完善相应管理体制基础上，通过多级治理结构创建以保证市场机制更好发挥作用的结论。

2. 通过与发达国家在参与主体、成本收益、市场结构、管理机构和管理政策几个方面的比较，提出了规范和完善我国再生资源产业的三个关键点：一是建立一个能够适应和保证再生资源产业链健康运转的相应管理体制；二是规范和提升目前资源再生产业的市场结构，产生有效竞争，形成多方有利于再生资源产业健康发展的格局；三是改善目前单一的政府主导型的行业治理结构，构建多级的公共治理模式，进行“善治”（good governance）。

3. 通过对北京市和石家庄市等回收市场的分析，研究发现了实践中再生资源物流和价值流的方向和强度，从实践上找到了我国目前回收市场混乱、二次污染严重的原因。研究认为通过建立市场准入标准以构建有效竞争的市场结构，制定相关法律和政策以完善相应管理体制是未来再生资源回收市场管理的方向。

4. 以湖南省益阳市沧水铺镇的废塑料回收为例，对于企业治理污染后的环境效益进行了评价，从实践上论证了环境经济效益分析对相关政策制定的重要性。针对我国以“小规模、大群体”为特征的再生资源产业，提出了污染治理方式的建议：对于治理污染后仍然有利润可图，可以通过创造公平竞争环境发挥市场机制作用；对于治理污染后造成企业亏损，可以通过引入其他利益相关者以发挥市场机制作用的两种解决方案。

5. 通过对再生资源回收中市场失灵和政府失效的主要原因分析，得出各利益主体的分散决策、相互分隔、难以形成共同利益目标和产生合力效应是造成两种失灵的主要原因。通过对两种失灵的原因分析，提出通过引入独立的第三方管理主体——行业

协会,形成在宏观、中观、微观领域多级治理的结构,把各利益相关方有效地组织起来,对其行为加以整合,以形成行业健康发展的合力,是解决市场失灵、政府失效和实现行业“善治”的根本出路。

四、研究的创新点

1. 从个体拾荒者到再生资源的不同使用者全过程进行了跟踪调研,对再生资源回收市场的基本情况有了较为深入的了解,较详细地了解七类主要生活性废旧物资在产生量、价格、流向、用途等方面的信息,对主要品种在各环节的物流、价值流情况进行了定量计算,为剖析产业链运行机理和发现其中的问题提供了较为可靠的依据。

2. 对典型企业再生资源回收过程中的二次污染情况进行了检测,并对考虑环境因素后的企业成本收益进行了计算分析,探索性提出保证资源再生利用过程中污染得到治理的不同建议,提出了税费政策制定的依据。

3. 尝试利用产业经济中的有效竞争理论,解释目前再生资源回收市场存在问题的原因,并通过案例分析,对有效竞争理论在该行业的作用提供了实践上的证据。

4. 借鉴发达国家经验,提出如何把其他相关利益主体纳入该产业的思路和办法。指出在完善管理体制和创造有效竞争市场结构基础上,构建多级治理模式是实现行业“善治”的根本出路。

五、不足与进一步研究方向

1. 在对回收中的环境经济效益分析中,仅对价值较高的废塑料进行分析,对于价值较低的其他再生资源情况缺乏必要的实践依据;同时,由于调查中资料获取较难,对于环境经济效益的分析比较单薄,有待进一步加以深化。

2. 对于再生资源回收中,对某些废旧物资或回收市场是否应该实行特种行业管理,如果实行特种行业管理后可能带来的有

利及不利影响，缺乏深入的分析。希望对此做进一步的调研论证。

3. 再生资源回收市场形成有效竞争市场结构的方法之一是对符合标准的企业进行园区式管理，但如何保证园区内企业的竞争力，避免盲目投资和无效管理，如何从物流和信息化角度提高园区管理水平，对此仍需进一步调研分析。



Abstract

1. Background of the issue and main goals of the research

With the improvement of people's living condition, the amount of household garbage which is the main source of the urban pollution has increased dramatically, as well as the percentage of the undercomposed component because of the development of chemical industry. Therefore, the rising amount of waste disposal increase the attractiveness of the garbage recycling management with character of minimizing, resources allocating and innocuity, for garbage recycling not only provides us with public goods beneficial to our society by recycling living trash but also changes the pattern of production and recovers the ecosystem balance which has been ruined by production and consumption through putting the trash back to the economy system, which contributes to the harmonious development between economy and ecosystem. In that case, resource regenerated industry represented by living trash recycling is the fundamental industry for guaranteeing sustainable development of society and economy.

However, recycling industry distinguishes itself from other industries in several traits: to begin with, regeneration resources are stocked in scattered location and make it difficult to be

categorized and collected, which enhances the pickup cost when beyond certain extent the profit of recycled trash becomes minus resulting in lack of economic incentive for picking up and collection. At the same time, decentralization of regeneration resources makes it difficult for regeneration resources available to meet the minimum demand for scale economy. Furthermore, although recycling industry could bring some benefits such as decreasing exploitation and use of virgin material, cutting certain cost for garbage disposal and management and reducing the risks of pollution caused by rubbish, recycling is not hundred percent of being profitable, which indicates it is a priority choice to systematically analyze and estimate recycling industry considering all aspects of the recycled material as is stated above.

Operation of regeneration resource consists of flow of finance, value and logistics, and is restricted by administrative system and technology. On the basis of sacrificing laborers welfare and polluting environment, mechanism of recycled material market is on the low level and competition is disordered, which caused by disordered management, ambiguity of industry property and principle of administration, and faultiness of governance system. To exert optional allocation of recycled material, implement good governance and realize the initial goal of national strategy on this industry, it is significant to discover the mechanism of recycling industry, reveal problem and suggest solution for sustainable development of that industry in terms of theory and practice. Hence, the paper is titled as research on the market mechanism of the recycling of living trash, which expects more valuable advice to solve these problems as is mentioned above.

2. Introduction of the methods and contents of the dissertation

The logic clue of this paper is to analyze function, mechanism, and reveal problem, discover reasons and suggestion on solution for insuring bring into play. As far as the method is concerned, this paper makes use of comparison and case study. With regard to theories, substance metabolizing, balance and recycling theory available to interpret the necessity and market position of living trash recycling; public goods theory is used to illuminate nature of the industry and why the market mechanism is necessary and its corresponding limit and reasons for intervention and participation of government. In order to provide theoretical foundation for interpreting the indispensability of economic and environmental analysis when establishing policy, the theory that optimizing level of recycling determination is necessary. Effective competition theory is useful to change the exceedingly competition and monopoly market structure, offering reference on how to create effective competition. Public governance theory is available on suggestions in altering administrative structure, enhancing governance level and guaranteeing the efficient allocation of the market.

The paper consists of five parts: first, in Chapter Three, through comparison of participator, cost and benefit, market structure, organization and policy of management of the recycling industry domestically and abroad, differences and reasons are found out and as the result, long-term and short-term goals of recycled material management that should be established becomes definitude. Secondly, in Chapter Four, the analysis of system and industrial chain of recycling indicates mechanism of industrial chains, impacts and obstacles and

operating principle of living trash market, in order to insure market mechanism exert fundamental function by establishing market structure of effective competition, introducing multiple individual to participate and consummating administrative system; thirdly, the Fifth Chapter reveals mechanism and demerit of monopoly market structure by case study which contributes to analyze the substance flow and value flow so as to consummate management, create market structure which helps mechanism exert its function through establishing standard. Fourthly, the sixth part argues significance of environmental analysis on corresponding administration and policy making. In Part Five, the seventh and eighth part indicates that forming multilevel administrative structure is the essential countermeasure to guarantee efficient operation of market mechanism and good governance by discovering the causes for market failure and management disability. Finally, specific suggestions are put forward on consummating and regulating recycling industry in our country.

3. Main conclusions in this dissertation

(1) Based on the analysis of composition, mechanism and problem and reasons about industrial chain in recycling industry, the paper indicates the chain is lack of incentive and motive. A good case in point is exceeding low price of virgin material limit the demand of the recycled one; excessive competition and monopoly market structure enhance cost of the chain; the lack of technology of recycling; current policy is the disadvantage of development; the negative impact of foreign trash import on our domestic recycled material; due to the traits of resources, the recycled material is unfit to enlarge scale and minimize cost with regard to the quality and quantity; lack of effective participation of individual inside and outside the industrial chain etc. All of

above is the main obstacles of the recycling industry. Finally, the conclusion that multiple administration to exert the fundamental allocation of mechanism based on creating the market structure of effective competition and corresponding management system, after the analysis which implicate that the main motive of maintaining operation of industrial chain rely on sacrificing environment and welfare of laborer, which is the critical problem in mechanism of recycled material market.

(2) Three points are put forward to improve the recycling industry through comparison of participator, cost and benefit, market structure and administration between western countries. First, establish a management system capably of adapting and insuring the efficient operation of the recycling industry; secondly, the structure, competition and layout of the market should be updated in order to form a market structure propitious to development of the industry; thirdly, improve present administrative structure and set up multilevel administration, for the sake of good governance.

(3) Indensity and tendency of recycled material value chain is revealed in the paper through case study in Beijing and shijiazhuang market, as well as the main reason for the second pollution is found, which contributes to suggest that the future trend of recycled material management is to admission for effective competition and mature law system for the industry.

(4) A good case in point is the recycled plastic market in cangshuipu of yiyang city in hunan province. The estimation of benefit provides the practical proof for highlighting the importance of the analysis to policy. Feasible suggestion is put forward to solve the problem that small scale and large group, to

make it profitable and compensate the lost by introducing new mechanism.

(5) Through analysis of the reasons leads to the failure of market and invalid of the government, the contributors turned out to be the decentralization of decision making among individuals in the market, the situation of distracting from each other, difficulty in cooperating and forming a intergrade interest foundation. To solve these problems, some reasonable suggestions are available in the paper, including introducing the third party into the industry, forming a multilevel administration that embrace macro and micro administrative levels, setting up a organization where respective individual and participators joined together, coordinating and cooperating each other smoothly under a integrating interest foundation, which is helpful to implement the good governance.

4. There are several innovations in the paper as follows

(1) Series investigation from individual trash collector to respective users make it clear about the general situation of recycled material market and the detail information of production, price, division, and usage about the disposal material. The quantitative analysis on material and value flow in every step is carried out to offer the evidence for finding out the mechanism and problems of the industrial chain.

(2) The paper investigates the second pollution in the process of recycled material enterprises and estimate statistically cost and benefit considering environmental factors, suggesting management on this industry, which is helpful to constitute proper tax policy.

(3) Effective competition theory of industry economics is

made good use in interpreting problems exist in the market and case study play a vital role to apply the theory into practice.

(4) According to the foreign experience, considerate advice is put forward on how to bring corresponding individual into the industry and solid conclusion is available that establishing multilevel administration on the foundation of consummating management and market allocation is the ultimate solution to realize good governance.

5. Some issues to be further investigated and studied

(1) When it comes to the low quality plastic product, the investigation is not sufficient because of more importance attached on high quality plastic product, at the same time, the limitation of survey and unavailability of data restrains the further study on analysis of cost and benefit in the recycled material industry.

(2) More attention should be paid to the feasibility as to special administration in the industry and how to implement corresponding policy, in addition, what is the consequent of the act and possible side effects.

(3) One of the efficient countermeasures for effective competition of recycled material market is to carry through park management to the corporation which is accordance with certain standard. Nevertheless, further survey and investigation should be taken into account to find the method to guarantee the competitive power of the industry and avoid blindness investment and invalid management as well as improvement of governance in the view of logistical and information economics.

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