Mini Review

Sustainable Bonds Issuance and Muti Stakeholders Governance

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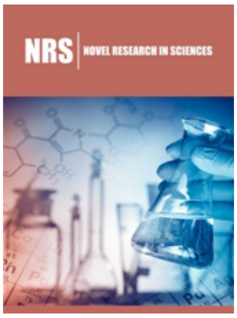

Abstract

We have viewed that issuance of bonds is increasing in the periods of social crises such as climate change problems, financial crises and Covid 19 pandemic. However, the digital industrial revolution brings reconstruction of stakeholders. The structural changes of stakeholders brought by the new industrial revolution influence initiatives to achieve sustainable communities. The short-term remedies with issuing a large amount of government bonds require great cooperation with inside stakeholders including national banking system. To achieve sustainability in global communities we should make vital decentralized systems functionable. This paper argues in the long-term policies that outside and external stakeholders decline the amount of and raise the interest rates in issuing bonds to construct sustainable communities.

Keywords: Covid 19 pandemic; Decentralized systems; Digital industrial revolution; Global market and government failures; Inside; Outside; External stakeholders

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Since the 1980s developing scale of global market economies has propelled remarkably global economies in contrast with slow growth of governmental economies. Theories of the new liberalism provoked deregulation of market rules. Multinational corporations have taken the following wind of massive innovation of ICT and led enlarging global markets. However, growing global communities have brought global market and governmental failures such as climate change problems, financial crises and Covid 19 pandemic. As the global government has not been stablished yet, we should make new approach to prevent global market and government failures. The digital industrial revolution fucuses on structure of stakeholders regarding evolution of the communication system in global and local communities. While the corporation makes the stable relationship with many stakeholders in markets and institutional relations, occasional connections with other stakeholders could improve its productivity. The former stakeholders are defined by the inside stakeholders and the latter are stated by the outside stakeholder. Although the external stakeholders in bonds issuance are not directly concerned with market transaction, they could develop social relations by enacting regulations and legislations. The theory of multi stakeholders implies that the corporation is not only for-profit companies but also nonprofit organizations. The notation of nonprofit organizations is applicable for exploring performance of public corporations. Global communities have overcome Global financial crisis 2008-09 and Greek financial crisis 2015 by forming global cooperative mechanisms of private public partnerships [1]. To mitigate Covid-19 pandemic major countries activate positive governmental supports for economic damages as well as medical cares of the infectious disease. While governments are raising funds for the pandemic by issuing governmental debts, they provide urgent and appropriate supports for an individual resident. In a long perspective, we should proceed to construct resilient economies and societies on health crises. It is assumed in this article that resilient communities are constructed with public bonds finance. Achievement of resilient communities depends on fund raising from public bonds. Practical policies for this pandemic show that development of effective methods to prevent infectious diseases improve digitalization of industries. Tanaka [2,3] demonstrates that the digital industrial revolution raises the influence of the outside stakeholders. A principal and agency model of game theories exhibits global sustainable mechanism that consist of the corporation and the stakeholders. The corporation is assumed to obtain net profit Π(x) such as by financing medical projects with issuing bonds x. The social project is performed with n stakeholders. The financing mechanism issuing bonds could compensate the deficit of social projects. It is assumed that bonds issuance presents declining marginal net profit. The bonds are purchased by inside stakeholders who obtain benefit directly from the social projects and with inside and outside stakeholders who are concerned only with market matters. The social projects are supposed to provide compensating payments for external stakeholders. The corporation makes each stakeholder i payment t_i. The total payment t mathematically describes the summation $t = \sum_i^n = 1 t_i$. The stakeholder i evaluates the benefit of bond issuance by the function $V_i(x, t_i)$. To specify the structure of muti stakeholders i and j are classified into positive stakeholders, $\frac{\partial v_i}{\partial x} \geq 0$ and negative stakeholders, $\frac{\partial v_j}{\partial x} < 0$. As inside stakeholders could bring great internal network benefit, increasing valuation possibly happens. As outside stakeholders must obey market rule, they are expected to receive decreasing evaluation of products. External stakeholders take negative marginal benefit from market transaction such as environmental pollutions. To simplify the analysis, we take the following assumption. While inside stakeholders (i=1,⋯,(n0) are defined by positive stakeholders, outside and external stakeholders (i=n0+1,⋯,n1; n1+1,… ,n) are featured as negative stakeholders. Tanaka [2] demonstrates that the digitalization of industries increases outside stakeholders than inside stakeholders. Tanaka [4] states the objective maximizing function (1) for the corporation. Asymmetry information between the corporation and stakeholders occurs in communication mechanism. β(x) and γ(y) mean sensitive indexes or weights that the corporation obtains for evaluation of inside and outside stakeholders. αi writes the target that stakeholder i request for the corporation $\varphi\{\alpha_i - V_i(\chi, t_i)\}$ exhibits regulation and legislation to secure evaluation of stakeholder i.

$$NB = \pi(x) + \beta(x)\sum_{i=1}^{n_0}\left\{V_i\left(x, t_i\right) - y_i\right\} + \gamma(y)\sum_{i=n_0+1}^{n_1}\left\{V_i(x, t_i) - y_i\right\} - t - \sum_{i=1}^{n}\varphi\left\{\alpha_i - V_i(x, t_i)\right\} \quad (1)$$

The first order differentiation condition of maximization derived from (1) is written by

$$\frac{d\pi}{dx} = \sum_{i=1}^{n_0} - \left\{\frac{d\beta(x)}{dx}(V_i(x, t_i) - y_i + \beta(x)\frac{\partial V_i(x, t_i)}{\partial x}\right\} - \gamma(y)\sum_{i=n_0+1}^{n_1}\frac{\partial V_i(x, t_i)}{\partial x} - \Sigma_{i=1}^{n}\frac{d\varphi_i}{d(\alpha_i = V_i)}\frac{\partial V_i(x, t_i)}{\partial x} \quad (2)$$

The implication of the expression (2) is illustrated by producing Figure 1. In the above expression the right side social marginal evaluation curve of x depicted by 0G and 0F. Raising β(x) shifts the marginal curve toward rightward. Enhance of γ(y) turns the marginal curve toward leftward. Considering that the left side of the expression presents down sloping marginal benefit curve. The social crises such as corona virus pandemic raise the relative weight of evaluation by inside stakeholder and increase issuance of social bonds. The equilibrium is presented by the point D. After global communities overcome the critical situation, global communities will seek to achieve a new sustainable economies and societies. When innovation of digital technologies brings global communities to decline bonds issuance from x*to x**and to raise market interest rates (form p* to p**) of bonds. Tanaka [5] explores the green bonds issuance in multi stakeholders' communities. Figure 1 exhibits new normal situation by the point B.

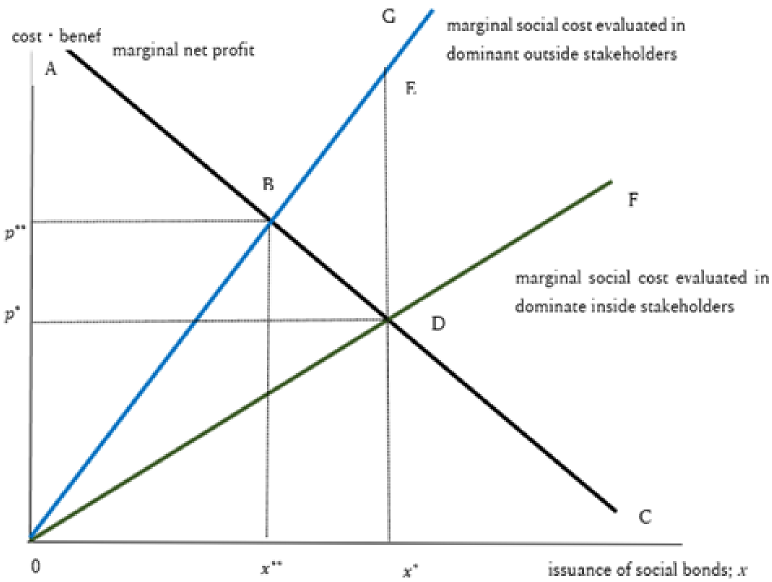

Figure 1: Issuarnce of social bonds and stakeholder dominance.

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