

"Olive-Style" Integration Strategy and Modeling Technology Application for Regional Industrial Economic Development

Yong Liu¹ and Yazhou Xiong¹

¹*School of Economics and Managements, Hubei Polytechnic University, Huangshi
435003, Hubei Province, China
llyong@126.com*

Abstract

"Olive-style" Integration Strategy(OIS) is a new strategy model, We borrow deeply familiar western sports term "grab type football" to intuitive, vividly described the top-level design of regional economic development strategy. OIS of the mechanical effect of single tower cable-stayed bridge, for the regional government based on the existing resources conditions, regional geographic features, economy, technology, environment, investment environment, the local social and cultural environment, carefully cultivate and develop the new succeeded alternative industries, which is scientific and effective to achieve the optimal allocation of limited resources area and the strategic reorganization of industrial structure(Including primary industry, secondary industry and tertiary industry), industry value chain smile curve, Which should play a positive guiding role to speed up regional industrial economic development.

Keywords: *OIS, Modeling Technology Application, Single Tower Cable-stayed Bridge, Mechanical Effect, Regional Industrial Economic Development*

1. Introduction

In the process of regional economic globalization and integration, a country, a region, a enterprise, can grasp the history of global or regional economic integration development opportunities and build their own industry value chain, successfully in a global industry value chain in the world, an integral part of direct involvement in the future and fate of the future. Otherwise, only will be marginalized yourself in danger.

By 2020, China's reform in important fields and crucial links on decisive results, form a complete system, scientific and standardized, effective operation system, to make various aspects system more mature more shape. The market plays a decisive role in the allocation of resources, the economic system reform is the key of the comprehensively deepen reform, the core problem is to correctly handle the relationship between government and market, the market plays a decisive role in the allocation of resources and better give play to the role of the government [1]. How to start a new vantage point, the new driver development strategy, its economic structure transformation, pull the balanced development of strong industry value chain integration and reverse the regional development pattern of economic development and transformation of developing unbalanced, uncoordinated and unsustainable problem with conditions, break through the current economic system and mechanism of restriction. OIS in the regional industry value chain to construct the volatilization of single tower cable-stayed bridge mechanics principle of cluster effect and the chain effect, can be a powerful boost to handle the relationship between the government and the market. Otherwise, the interests of the regional economic and social development of relevant subject can not comb form systematic and methodical and balancing mechanism, can carry out in accordance with the industrial economic value chain link forceful, orderly and nodose guidance and

support, caused by urban industrial economy value chain each link related interest subjects have not been able to bring out the best in each other [1-2]. Instead, it is in the east wall down elsewhere, attend, contradictions increasingly prominent (Figure 1).

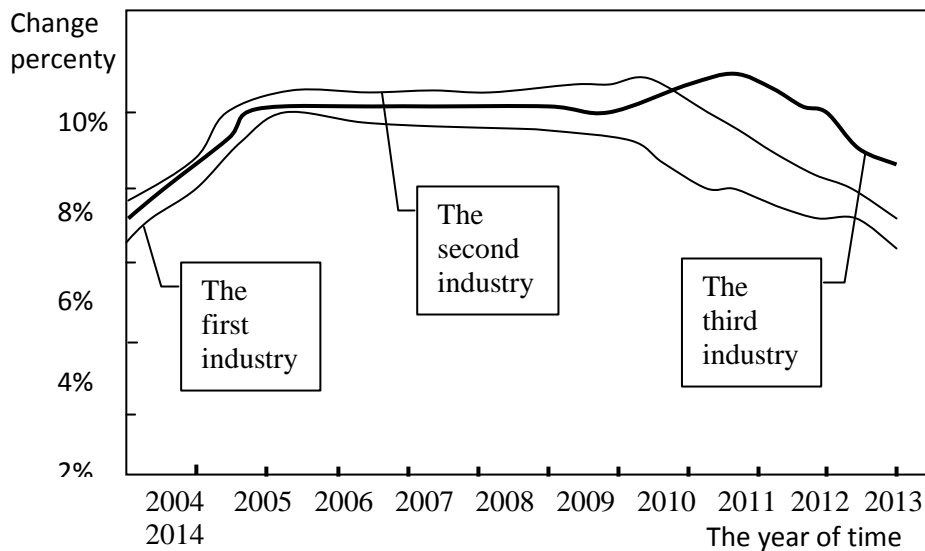


Figure 1. China's Regional Industry Economic Trends

Based on research results at home and abroad on the basis of realizing the great revival of the Chinese nation, we adhere to the "Chinese dream" vision in view of the existing deficiency or limited space to carry out the research. Its significance lies in exploring the Chinese economy is in a critical period economic structure transformation, at the same time, the slow economic growth and economic downward pressure increased [3]. The ecological environment shall be further improved and so on a series of economic management and social problems, put forward own prospective, strategic and scientific point of view. This topic research helps for regional economic structure transformation and the organic integration. Integration of collaborative development is handled in a timely manner, keep the coordinated development of economy and society, ecological environment improvement optimization has its profound strategic guiding significance and reference value.

2. OIS Model

OIS is a new strategy model, We borrow deeply familiar with western sports term "grab type football", to intuitive, vividly described the top-level design of regional economic development strategy. At the same time, through the "endogenous" and "exogenous" on the strategic perspective of the development of the regional industrial structure, economic structure transformation, we study the exogenous and endogenous system based on the SWOT matrix analysis (Figure 2).

Endogenous environment factors	Strengths (S)	Weaknesses (w)
Exogenous environment factors		
Opportunities (O)	SO (growth strategy) strategic positioning of regional Industrial Economic Development	WO (reverse strategy) strategic positioning of regional Industrial Economic Development
Threats (T)	ST(defender strategy) strategic positioning of regional Industrial Economic Development	WT(retrenchment strategy) strategic positioning of regional Industrial Economic Development

Figure 2. SWOT Matrix Analysis of Strategic Positioning of Regional Industrial Economic Development

"Exogenous" mainly studies the image of the city and urban nature localization, including reshape the opening to outside world under the new historical period of the international and domestic new image, and which studies in the two social properties as emerging city in planning management connotation on the new definition of a new growth pole of China's economic development, new urbanization area in Midwest, inland open cooperation demonstration zone and "two type" society construction area. "Endogenous" mainly studies government function and market function orientation, resources integration of the long-term development of the integrated optimization of strategic management issues, including regional energy, the shortage of capital and talent, between the urban and rural areas. As a whole, the unreasonable layout and ecological function zoning, market function poorly revealed the situation between the inter-city infrastructure, then derived the social burden, high unemployment, weak human resources development, the urban and rural contradictions of ecological environment, the traditional industry downturn [1-4]. With the rise of emerging industries need to be addressed, a series of problems are studied.

Main ideas and methods would use jargon in the field of chemistry and biology noun, it summed up as: Under the planning idea of regional economic development, the government fiscal and taxation financial and investment is guided by OIS policy support is the catalyst for the transformation of industrial structure of regional economy. The regional government will open upstream and downstream industry chain, and emphasisly support midstream abdomen with "grab olive type" integration of the strategic planning is the purifying agent for the transformation of industrial structure of regional economy. "Olive type" diversified industrial structure is to realize the regional economic integration strategy preservatives in the transformation of industrial structure. OIS of the integration of urban and rural resources is the transformation of the industrial structure to promote regional economic antioxidant [5]. Environment friendly harmonious society is the evolution of the industrial structure to promote regional economic transformation.

If regional government fundamentally solve the challenge for the regional economy to realize urban and rural development, as a whole, infrastructure interconnectivity, industry coordinated development, to build ecological civilization, public service sharing, and to deepen the planning intention of opening to the outside world, which must speed up the pace of industrial structure, economic structure transformation of development mode. In domestic and international, on the basis of the pilot and the existing research results, regional government must try to establish OIS theory through the planning and development model, from science, engineering, economics, management and other cross discipline theory Angle of view to analyze and solve problems, and make scientific strategy of regional economic development model of macroscopic orientation, the establishment of urban agglomeration coordinated development mechanism, create advantage of industrial clusters, construct modern service industry agglomeration area and the development of modern agriculture base. A the same time, regional government must transfer inter-regional industry, undertake orderly propulsion, and speed up industrial transformation and upgrading. Regional government must build regional characteristics of the modern industry system, and objectively and systematically explore and study a series of deep-seated problems about the transformation of economic structure [6].

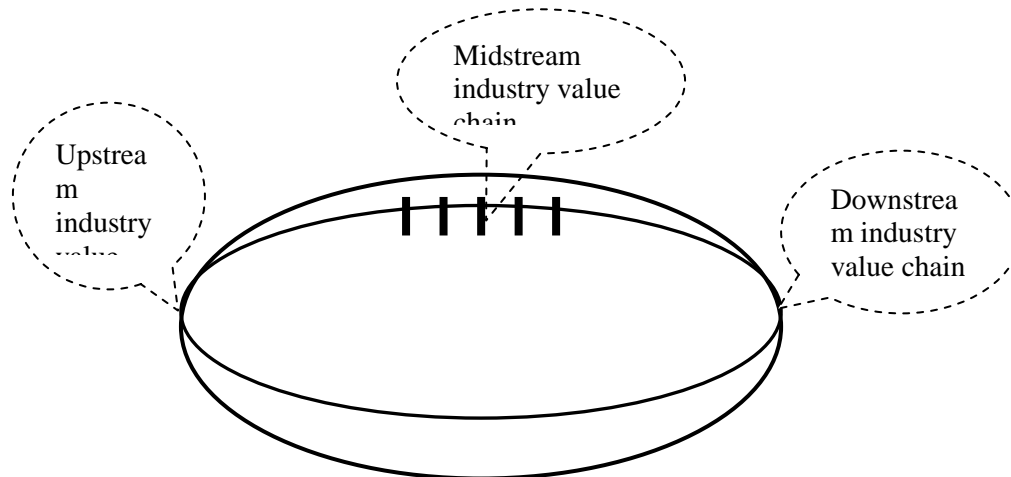


Figure 3. OIS Model

OIS is based on "middle heavy, light ends" principle to build integration industry value chain extension strategy (Figure 3). Seize the industry (Including the first, second, third industry) value chain extension of upstream, midstream and downstream industry economy development regulation. Industry value chain end is put to market controlling industry upstream of the industry, animal husbandry fishery resources, science and education industry, infrastructure, ecological environmental protection, *etc.*, on the other side is also put to market regulation industry downstream of the commodity market sales at all levels, cultural tourism, *etc.*, And in the industry midstream seize the industry raw materials, components, semi-finished products processing, refined processed, manufactured goods, finance, service and circulation industry, which is focused on by the government to balance a strategic vision [7]. Under the condition of the government support ability is limited, OIS can be solved in the development strategy of constructing the government to focus resources on seizing the industry value chain in the midstream of the economy, mostly on both ends of the link is solved by folk resources and market equilibrium. To better solve in city management system and highlights the contradictions of interests mechanism, better and faster develop the regional

economic structure transformation of the historical problem of both opportunities and challenges, regulation of the regional economic and social development must be provided a scientific rigorous methods and tools [8].

OIS in the regional industry value chain to construct the volatilization of single tower cable-stayed bridge mechanics principle would be a powerful boost to deal with the relationship between regional governments and markets, and we further explore its physical mechanics principle, horizontal tension and vertical gravity (Figure 4).

2.1. Horizontal Tension

Based on its force analysis, by the main girder cable gravity, the single tower cable-stayed bridge of two symmetrical along the direction of the cable tension can be decomposed into a tension level to the left and the right direction. Because the two forces is symmetrical, the left and right forces could be cancelled each other in the process of drawing, which realize the balance of the horizontal tension stress (Figure 4).

2.2. Vertical Gravity

Similarly, based on its force analysis, gravity by girder, the stay cables would be on the single tower symmetrical along the direction of the cable tension, in addition to the horizontal tension. At the same time, it can be decomposed into vertical gravity, its reaction to the cable tower is vertical downward force of gravity. Girder of gravity into the vertical downward force on the cable tower. In this way, downward power to the single tower cable-stayed bridge achieve the balance of the vertical downward force of gravity support (Figure 4).

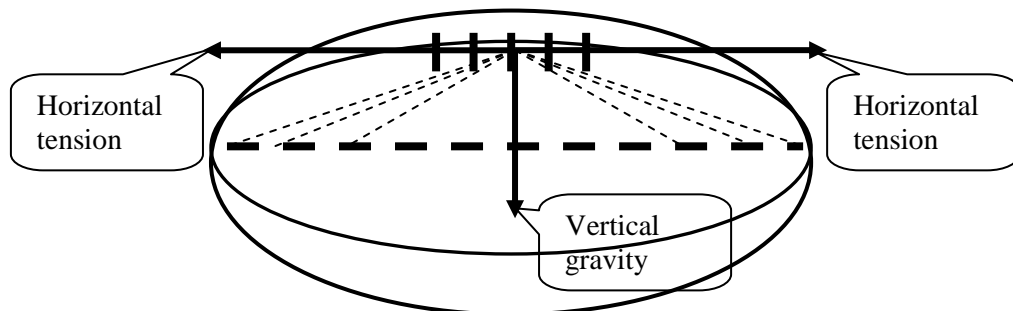


Figure 4. OIS Single Tower Cable-Stayed Bridge Mechanical Effects

3. Modeling Technology Application for Regional Industrial Economic Development

OIS is essentially under the control of the "middle" by the government to take the "gravity", which is controlled by the government focus on key macro industry value chain (Including primary industry, secondary industry and tertiary industry in the industry value chain) of the midstream reaches, and the market would be put on the upstream and downstream value chain link to the allocation of resources and control the level of competition of "tension" one primary activity model of balanced development strategy (Figure 4).

From the perspective of the physical and mechanical principles, we understand OIS modeling technology application for regional industrial economic development is at the macro focus on regulation of the rapid development of the industry value chain equilibrium power effect and mechanical effect of single tower cable-stayed

bridge effect are fundamentally similar theories, which also has a fit of fusion, highlights the single tower cable-stayed bridge physical mechanics principle.

3.1. OIS Single Tower Cable-Stayed Bridge Vertical "Gravity" Cluster Effect

Regional industry (Including primary industry, secondary industry and tertiary industry in the industry value chain) can form their own characteristics and competitive advantage, not just rely on one or a few large group enterprise (as well as profit or nonprofit), but also to see the industry value chain system, the industrial cluster effect, especially depending on the industry value chain midstream industry cluster effect. Otherwise, influence the extension and expansion of midstream would not reach industry value chain [9].

OIS in the industry value chain (Including primary industry, secondary industry and tertiary industry in the industry value chain) construction of single cable-stayed bridge in the vertical gravity of the cluster effect, mainly shows in the following two aspects: firstly, the rigid economic effect of industrial cluster is showed. Secondly, the flexible social effect of industrial cluster is also showed. At the same time, the vertical gravity of the cluster effect of physical and mechanical principles is showed (Figure 5).

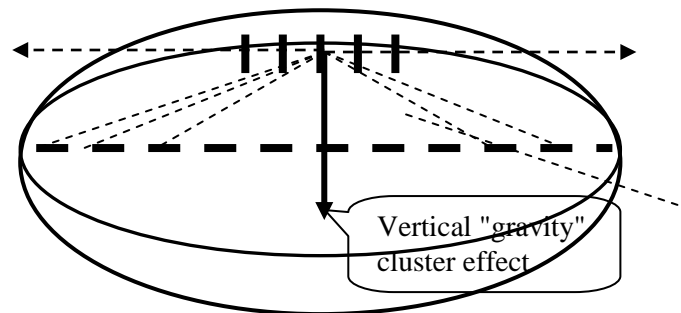


Figure 5. OIS Single Tower Cable-Stayed Bridge Mechanical Effects

3.1.1. Industry Value Chain of Midstream Industry Key Strategic Regulation, Guide and Support: Reveal the Rigid Economic Effect of Industrial Cluster: Industry cluster effect is based on industry value chain link of local industry value system, is an important foundation for rapid development of the regional economic equilibrium. The regional government industry value chain of midstream industry key strategic regulation, guide and support, which is the great outbreak of the rigid economic effect of industrial cluster. Firstly, which is the more conducive to build a cluster industry economy, the industry leader, the regional government reaches the midstream of the industry value chain key strategic regulation, guide, support, or introduce some leading enterprises to play a leading role. The extension of industry chain drive a batch of complementary supporting enterprise development, the industrial chain of complementary supporting enterprise development, as well as fission a new leading enterprises, and promote the development of new leading enterprises and agglomeration, which gradually forms the scale effect of industrial cluster, strongly promotes industry competitiveness to industrial economy, and brings the regional economic growth of rigidity. Secondly, which is more forcefully to promote the industrial economic structure transformation, the differentiation of combination, the regional government reaches the midstream of the industry value chain key strategic regulation, guide, support, for the industrial chain link, to differentially combined with comprehensive enterprise, which strengthens the linkage between industry inside to do bigger and stronger, gradually emerges professional, characteristics of enterprise group, and vigorously promote industrial economic structure transformation^[10]. Building a new industrial cluster support framework provides a cohesive force. Finally,

industry value chain is discussed, the midstream as the center of gravity and the linkage of the key products, leading industry would promote the complementary development of small and medium-sized micro enterprise, vigorously promote industrial economic structure transformation. We try to enter the international division of labor cooperation system and industry chain, which is rigid regional scale economy and scope economy development of effective way.

3.1.2. Industry Value Chain of Midstream Industry Key Strategic Regulation, Guide and Support to Reveal the Flexible Social Effect of Industrial Cluster: The regional government in the industry value chain of midstream key strategic regulation, guide and support, which helps to regional vigorously promote the development of green circular economy industry cluster and comprehensively strengthen resource conservation and environment friendly, which is the inevitable choice of transformation of the mode of economic development, and the only way for social effect is also flexible fermentation industry cluster [11]. Firstly, strong fermentation "two type" social effect is showed. Cluster effect can be emphasized to develop green cycle industrial economy as the center of gravity, adjusting and optimizing between industry structure, and also can change the past efforts to build high input, high consumption, high pollution economic development concept, which helps to establish a sustainable healthy development model. Thereby, which effectively reveals the development of economy, energy saving, prevent and control pollution and protect the environment of industry cluster economic flexible social effect. Secondly, building "friendly" regional brand culture fermentation effect can be emphasized to study innovative industry cluster economy as the core, which makes the regional government more willing to invest in relevant education, training, information, services, and the testing and other public facilities, which can make the industrial chain of each enterprise within the formation of social and cultural atmosphere of mutual learning and mutual cooperation, each other can share the market information and resources in the area (especially the flow of human resources), basic public facilities, such as complementary and mutually beneficial production capacity and the supply chain network, which forms a "friendly" regional brand culture. Enterprises build their own brand culture alone, which need huge capital investment. Through the overall strength of industrial cluster, enterprise can use industrial cluster effect. Therefore, the formation of "regional brand culture" is the result of many enterprise brand culture refining and enrichment. More extensive and sustained brand effect is a valuable intangible assets. Not only it is advantageous to the enterprise external exchanges, open up the domestic and international market, but also to improve the image of the whole area of industrial clusters, to expand investment and sustained and healthy development in the future would be laid the favorable social and cultural environment [12]. Compared with the single enterprise brand culture, the image is more intuitive, more own quiet condensation impact.

3.2. OIS Single Tower Cable-Stayed Bridge Horizontal "Tension" Chain Effect

According to Michael porter, if an enterprise would win and maintain competitive advantage, not only depends on its internal value chain, but also depends on the value in a larger system, industry value chain. OIS in the industry value chain (Including primary industry, secondary industry and tertiary industry in the industry value chain) build the single tower cable-stayed bridge in the chain effect of horizontal tension to the left and the right, which mainly manifest in the following two aspects: First, one is the denotative extension effect. Second, other one is the immanent effect. The horizontal tension of chain effects of physical and mechanical principles (Figure 6).

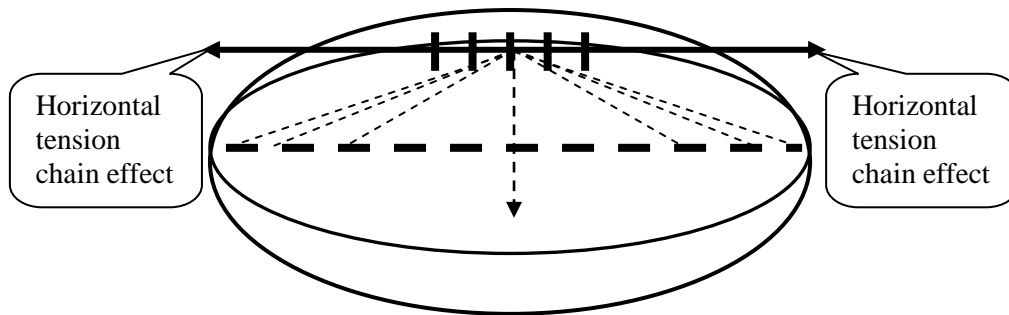


Figure 6. OIS Single Tower Cable-Stayed Bridge Horizontal "Tension" Chain Effect

3.2.1. Industry Value Chain Upstream and Downstream Industry Put and Not Loose to Reveal Denotative Extension Effect: The regional government put many industry at the ends of the industry value chain to a market for the allocation of resources, but rather scattered, which is to help the industry, the industrial division of labor and cooperation between the premise. As a result, the composition in the vertical intra-industry and inter-industry lateral expansion of the number at the ends of the value chain is increased, which actively promotes the market specialization collaboration, greatly demonstrates its denotative extension effect. First, which more helps the upstream and midstream to reach the chain ring in vertical intra-industry and inter-industry amount on the lateral expansion [13]. OIS single tower cable-stayed bridge left and right tension chain effects leads to the industrial value chain of breeding self ability. On the one hand is the amount of vertical intra-industry expansion, to create new enterprises with market conditions. On the other hand is the expansion of the between industry within the framework of the integration, for industrial linkage, resonance, cross, each new companies to provide strong relaxation force. Second, which actively promotes the market specialization and cooperation. Today, the trend of intra-industry division of labor is becoming larger, and OIS single tower cable-stayed bridge of tension horizontal left and right can effectively promote the chain effect of specialization and cooperation. On the one hand is to specialize, which gives full play to create the value chain of the enterprises, director of the respective relaxation and orderly market economic environment. We will do our best to make enterprises only focus on a task, to achieve industrial users enjoy more valuable service tenet, to expand value-added flow. On the other hand is for the value-added segment of the industry value chain in the links and continuous collaboration support [14]. The industry interdependence, mutual restriction between the enterprise always maintains equilibrium point on a reasonably and provides lasting centripetal force.

3.2.2. Industry Value Chain Upstream and Downstream Industry Put and Not Loose to Reveal Connotative Extension Effect: Regional governments put the market at the industry value chain ends to distribute resources, but rather to scatter, which is also to help the industry competition and cooperation between the premise. As a result, the composition of upstream and downstream chain ring in the vertical intra-industry and inter-industry transverse expansion, which actively advocates increasing market competition and cooperation, which also promotes the interests of the enterprise integration of market division, pulls the technical progress and reveals its connotation extension effect. First, it more helps to promote market within the industry specialization enterprise interest integration. OIS single tower cable-stayed bridge of horizontal left and right tension, helps to the chain effect of catalytic value

and profit on the industry value chain transfer, flow and integrate. On the one hand, for the value and benefits within the industry on the longitudinal movements in the high frequency, high speed and high concentration, which within the industry provided a wide range of integrated market economy macro environmental conditions [16]. On the other hand is between industry integration, in the same integration framework, for industrial linkage, resonance, cross, the interests of the enterprise integration, which provides strong adhesive force. Second, it pull technology innovation and progress. OIS single tower cable-stayed bridge of the chain effect of horizontal left and right tension, on the one hand, for the industry, the industrial enterprises sets up a broad, comprehensive, close economic and technological link. On the other hand, which can create a kind of the whole industry value chain in the virtuous cycle of innovation for enterprises, and the industry value chain constantly innovate. In this way, at the ends of the industry value chain enterprises not only can make innovation in line with market demand, and can realize the rapid innovation. Coordination with upstream and downstream link will quickly translate into product, technology innovation, quickly and effectively to the market, and then into the enterprise competitive advantage. The industry value chain and its each link enterprises is in a more advantageous position. There is no doubt that the synergistic effect of technology innovates and further causes industry value chain extending continuously, which realize industrial advantage.

4. Strategic Effects for Regional Industrial Economic Development

OIS of Strategic Effects for Regional Industrial Economic Development can help to the strategic reorganization of industrial structure and industry value chain smile curve(Figure 7).

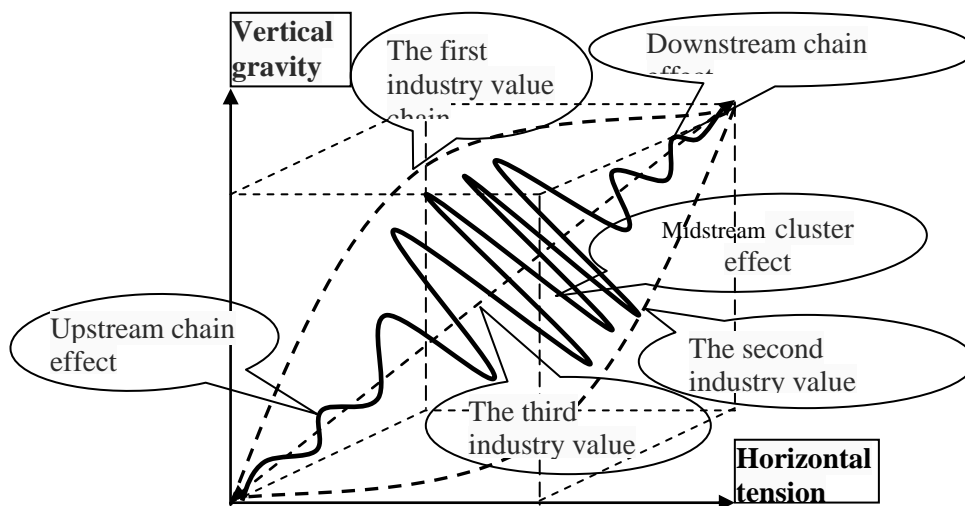


Figure 7. OIS Mechanical Effects and Industry Value Chain Smile Curve

At the same time, OIS of the mechanical effect of single tower cable-stayed bridge, for the regional government based on the existing resources conditions, regional geographic features, economy, technology, environment, investment environment, the local social and cultural environment, carefully cultivate and develop the new succeeded alternative industries, which is scientific and effective to achieve the optimal allocation of limited resources area and the strategic reorganization of industrial structure(Including primary industry, secondary industry and tertiary industry), Which should play a positive guiding role to speed up regional industrial economic development^[17].

5. Conclusion

Industry value chain (Include primary industry, secondary industry and tertiary industry) enterprise push and pull each other through the industry association effect on the mutual fusion and mutual coordination, so as to build a far greater than single enterprise points advantage and competitive advantage of cluster chain advantages. OIS of the mechanical effect of cable-stayed bridge, for the regional government based on the existing resources conditions, regional geographic features, economy, technology, environment, investment environment, the local social and cultural environment, carefully cultivate and develop the new succeeded with alternative industries, which is scientific and effective to achieve the optimal allocation of limited resources area and the strategic reorganization of industrial structure, industry value chain smile curve. Gradually formed diversified economic structure to support OIS of new mission, new pattern integration transformation, the steps of regional development is composed of solid and do not break fast line, to handle the relationship between the government and the market, which contribute to regional to realize China's dream.

Acknowledgements

This work was financially supported by the key Social Sciences project of Huangshi Academy of Social Sciences (No.2015z045), Hubei Polytechnic University, the key teaching research project (NO.2015B14), also thank the reviewers for their detailed comments and suggestions that improved the quality and presentation of this study.

References

- [1] B. Huang and K.Chen, "Are Intergovernmental transfers in China Equalizing", *China Economic Review*, vol. 2, no. 3, (2012), pp. 534-551.
- [2] D. Rainey, "Inventing the Future Through Strategy, Innovation, and Leadership", American Scientific Publishers, Los Angeles, (2009).
- [3] L. A. Zhou, "Governing China's local officials: an analysis of promotion tournament model", *Economics Research*, vol. 7, (2007), pp. 36-50.
- [4] S. Sahibudin, "Centre Combining ITIL, COBIT and ISO/IEC 27002 in Order to Design a Comprehensive IT Framework in Organizations", University of Teknol, Malaysia, (2010).
- [5] "Strategy Deployment through Portfolio Management: A Risk-based Approach", Ernst & Young Ltd., (2010).
- [6] B. Mattoni, F. Gugliermetti and F. Bisegna, "A multilevel method to assess and design the renovation and integration of Smart Cities", *Sustainable Cities and Society*, vol. 15, (2015), pp. 105-119.
- [7] K. Wei, J. Gou and R. Chai, "Creation of Customer Evaluation Model in the Catering Industry Supply Chain Ecosystem", *Journal of System and Management Sciences*, vol. 4, (2014).
- [8] Y. Rashad, M. Tshepo and M. M. Uarba, "Project management and project integration management in relationship with service marketing", *International Conference on Management and Service Science*, Wuhan, China: IEEE Computer Society Press, (2011), pp. 1-4.
- [9] Qiao, Baoyun, M. Vazquez, Jorge, Xu and Yongsheng, "The Tradeoff between Growth and Equity in Decentralization policy: China's experience", *Journal of Development Economics*, vol. 86, no. 1, (2008), pp. 12-128.
- [10] C. Xu, "The fundamental institutions of China's reforms and development. *Journal of Economic Literature*", vol. 49, no. 4, (2011), pp. 1076-1151.
- [11] X. Fu and Z. Li, "The uncertainty and its strategies in enterprise supply chain", *Commercial Studies*, vol. 2, (2006).
- [12] H. L. Hsieh, C. P. Chen and Y. Y. Lin, "Strategic planning for a wetlands conservation greenway along the west coast of Taiwan", *Ocean & Coastal Management*, vol. 47, (2004), pp. 257-272.
- [13] C. S. Tang, "Perspectives in Supply Chain Risk Management", *International Journal of Production Economics*, vol. 103, no. 2, (2006).
- [14] H. B. Li and L. A. Zhou, "Political Turnover and Economic Performance: the Incentive Role of Personnel Control in China", *Journal of Public Economics*, vol. 89, no. 9, (2005), pp. 1743-1762.
- [15] J. K. Brueckner, "Strategic Interaction among Local Governments: An Overview of Empirical Studies", *International Regional Science Review*, vol. 26, (2003), pp. 175-188.
- [16] SAHINF and ROBISONEP, "Flow coordination and information sharing in supply chains: review, implication, and directions for future research", *Decision Science*, vol. 33, no. 4, (2002).

- [17] C. Antonelli, "The economics of path-dependence in industrial organization", *International Journal of Industrial Organization*, vol. 15, no. 6, (1997), pp. 643-675

Authors



Yong Liu, He is a full instructor of Hubei Polytechnic University (2009). He received his master degree in Business and Management School of Wuhan University (2005). His current research interests include different aspects of industrial strategy planning, human capital structure of strategic planning and regional economic development planning.



Yazhou Xiong, He is an associate professor, PhD candidate, School of Economics and Management, Hubei Polytechnic University. He obtained the M.S. degrees in Management Science and Engineering from Wuhan University of Technology, China, in 2005. His research interests include information management, electronic business, data mining, and decision science.

