

Conference Paper

Addressing Innovation Competitiveness of Batam Free Trade Zone: What Went Wrong?

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Abstract

Indonesia has put huge interest on the development of special administrative area for improving its national economy. Thus, the Batam Free Trade Zone (FTZ) was opened in the 1970s. However, rapid development on the island only started in the 1990s after a boost from Singapore-Johor-Riau triangle plan, led by the former. Following the high investment period, institutional changes affected by 1998 crisis and political reform has brought down investment climate in Batam. Not only did Batam almost lost its unique status as promoter of export oriented region in Indonesia, but also it suffered from the existence of the newly autonomous local government in the municipal level. The former event affected the fiscal structure of the zone, while the latter created long-lasting friction between the FTZ Authority (BP Batam) and the city government of Batam. These so called institutional problems are the highlight of this study. Classical studies suggest that development of a duty free zone could promote development through investment flows and export growth. However zone's competitiveness depends on several key variables. According to Global Competitiveness Report, institutions, along with other basic variables need to be maintained before stepping into the next stages which focused on innovation. To answer the problems, a survey was conducted in the mid-2015 involving 17 firms from different areas of the zone. Relationships between variables were established using Fischer's Exact Test. Result indicates that there are significant relationship between institutions and innovation, judging by research, designing, and development related activities, under 0.05 alpha level. The problem lies in the conflicts between the FTZ Authority and the local governments, as the latter continued to dominate the institutional settings. The author interpreted that weak vision towards FTZ policy and zero-sum approach by key actors contributed the most to the failure of the zone in promoting innovation.

Keywords: Batam, free trade zone, competitiveness, institution, innovation

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1. Introduction

Ever since the success of export oriented approach applied by a number of East Asian countries, particularly Japan, Indonesia has been very interested in replicating the model. Japan was the first to apply the model, followed by typically small Asian countries such as Taiwan, Hong Kong, and South Korea. In the 1980s the second tier followers of the model emerge, albeit larger countries than the previous. The pattern resembles the flying geese formation, with Japan in front being the leader of the formation, a prediction first observed by Akamatsu (Kumagai, 2012). The model promised a success in terms of industrial advancement of a country.



Graph 1: Location of Batam FTZ in the Malacca Strait. (Source: www.googlemaps.com)

To pump export in the post economic reform in the 1970s, the government needs to invite significant amount of investment, as in the early stage of market economy Indonesia didn't have enough savings to be turned into industrial investment. Therefore, a designated area with a preferential policy was set up in a small island near busy area of Malacca strait (see graphic 1). The area was named Batam Free Trade Zone, and it was first opened at the end of 1978.

The zone was very strategically located, in a close proximity to the much more developed Singapore. Following the location, a set of fiscal incentives is employed (see table 1). In its early days, the zone was designed to be the better competition to Singapore, a strategy which then completely failed as Batam was not ready in supporting foreign investment. After a brief period, the Indonesian government shifted

strategy by seeking the benefit from Singapore’s excessive growth, or famously known as the ‘balloon theory’ [12]. The theory was proposed by BJ Habibie, then the first director of Batam FTZ.

TABLE 1: Incentives in the Batam Free Trade Zone. (Source: Wong and Ng, 2009)

No.	Type of Taxes	In Batam FTZ	Other regions
1.	Import Tariff	0%	5-15%
2.	VAT	0%	10%
3.	Luxury goods tax (PPnBM)	0%	10-50%
4.	Income tax (up to 5 or 10 years)*	0%	25%
5.	Foreign ownership	100% allowed for export oriented firms	49% after 5 years
6.	Land lease	80 years	30+20 Years
7.	Double taxation avoidance	58 countries	

However during the first ten years after being opened, foreign investors still overlooked Batam [1]. Lack of reliable infrastructure support and poor governance at that time served as the main reason for this. Only after the formation of the Singaporean-led growth triangle in 1989 that Batam was able to attract significant amount of foreign investment. Through the plan, investors were given assurance regarding Singapore’s support for the development of Batam FTZ. The triangle includes Batam island (then part of Riau province) along with Johor as part of Singapore’s growth expansion plan [10]. The plan is more commonly known as the Sijori plan, which stands for Singapore-Johor-Riau growth triangle.

The Sijori plan make way for the creation of the first industrial park, the Batamindo, which opened in 1992. It is a joint venture operation between Singapore and Indonesia, in which the Singaporean part operates the park while the Indonesian counterpart provides facilities and support [13]. Since then, a growing number of industrial estates began to operate in Batam. To date, there are around 1700 foreign companies doing their business inside around 20 industrial parks [5].

Batam FTZ has actually brought significant development on the island for the last thirty years. But its accomplishments were tarnished by a significant lack of development in the more advanced sector, which are innovation and business sophistication. Entering its fourth decades, the zone was expected to be the perfect example of how an economy can improve its industry through export orientation and free trade mechanism, as suggested by classical theories using Heckscher-Ohlin model [4] which then combined with Ricardo-Viner model [9]. The finding is that establishment of

a duty free zone or free trade zone can improve national welfare through export promotion.

Confirming the above result from empirical evidences, Farole and Akinchi (2011) shows that a preferential policy can enhance industrial competitiveness by way of attracting FDI. They observed that the early wave of regional preferential policy was mainly aims at providing fiscal incentives to value added industries and improving investment climate, while the latter generation of zone policies is giving more attention in improving backward linkages. However, in contrast with both authors, Millberg (2007) found out that the evidence of backward linkages is minimum in many duty free areas, with only 3 - 9% of domestic component contributing to FDI activities. Taiwan and South Korea were the exception to this, with their domestic shares of FDI production were rose to more than 20%. The problem with the backward linkages was due to lack of transfer of technology from foreign companies to their domestic counterparts, according to Millberg.

The condition explained by Millberg was somewhat similar with Batam FTZ, as shown by some recent studies. Not only that the backward linkage is very limited in the island, industrial upgrading is also very limited. Study by van Campenhout and de Graaf (2013) in the electronic industries in Batam showed that industries only involved with "low value-adding activities such as production and procurement", while higher value adding activities such as marketing, design, and development are rare and limited. The two authors describe industrial upgrading, by borrowing UNCTAD concept in 2013, as "the development to higher value-adding, more knowledge-intensive activities in a specific region" [2]. Further study by van Grunsven (2014) explains that the electronic industries in Batam were outgrowth in a wide margin by Johor Iskandar development region, its competition. From these empirical studies based on the electronic industries, it can be concluded that innovation and business sophistication is not evidence in Batam yet.

This paper aims at explaining the institutional problems related to the failure of industrial upgrading in Batam FTZ. Institutions, together with governance and infrastructure, are considered as key variables which served as basic requirements that must be sufficed before continuing into a more advanced step (Global Competitiveness Report, 2014) that is industrial upgrading. More focus in this paper will be given to the dynamics between the FTZ Authority (BP Batam) and the local government.

2. Methodology

The research was done during summer 2015, for two weeks between August and September, applying mostly quantitative approach. To grasp the abstract idea of competitiveness, 1-5 Likert scale is used ranging from very disagree (1) to very agree (5). The author considered perception survey as a better and easier way to comprehend level of competitiveness. Thus the usage of the Likert scale in this research. Unit of research is manufacturing firm that have been operated in Batam for at least three years, and are oriented in export. Data were collected using questionnaire from 4 industrial parks in Batam FTZ.

Samples were drawn using simple random technique, with 10 samples expected to be gathered in each parks. Questionnaires are sent by post or through email. After distributed, only 17 returned and fit for analysis (see sample distribution in table 2).

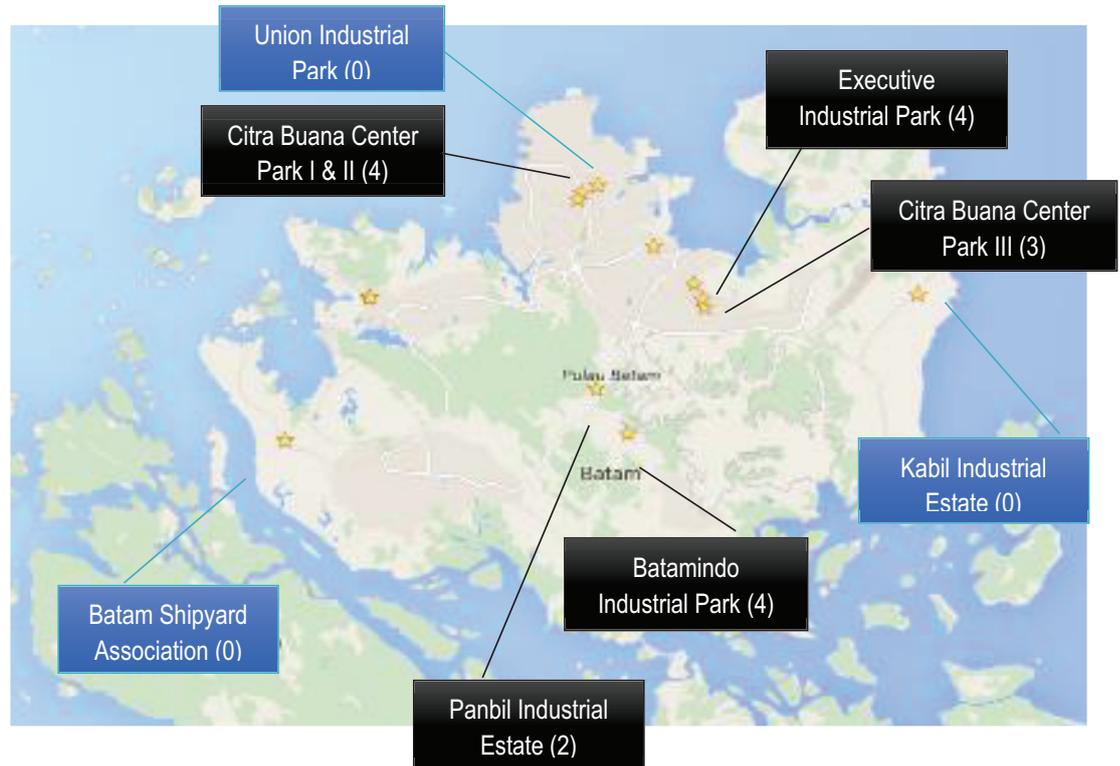
TABLE 2: Distribution of Questionnaires. (Source: Author)

Industrial Parks	Expected	Collected
Citra Buana Center Park	10	7
Batamindo Industrial Park	10	4
Executive Industrial Park	10	4
Panbil Industrial Estate	10	2
Total	40	17

The geographical distribution of the questionnaires is shown in Graphic 2 below, including several parks that was targeted for the research but eventually unable to be accessed.

Considering the limited number of samples, violation of assumptions is expected during analysis. Exact test, following Fischer [7] is used as it's known to be more accurate with small numbers of data. Each cell of the 2x2 table are labeled as *a*, *b*, *c*, and *d*. The test used hypergeometric probability function which placed each cell in the formulation as following:

$$P = \frac{\binom{a+b}{a} \binom{c+d}{c}}{\binom{n}{a+c}} = \frac{(a+b)! (c+d)! (a+c)! (b+d)!}{a! b! c! d! n!}$$



Graph 2: Spatial Distribution of Samples. (Source: Author)

3. Result and Discussion

3.1. On competitiveness

The result of the survey shows that overall competitiveness scores for the Batam FTZ is 2.98. The overall result was not something that is really bad, but it was also a result that the government cannot be too proud of. Among 12 variables, institutions, business sophistication and innovation are among the competitiveness variables that scored lowly (see table 3). Meanwhile, productivity is considered as the highest variable of competitiveness.

One of highest component of competitiveness according to the result are infrastructures, both basic and advanced. This came as no surprise as the government spent decades on building more and more reliable infrastructures, especially roads and ports. Major development plans were carried out under the coordination of the FTZ Authority, particularly under the 2007 FTZ policy. Out of 12 tested variables, these two are the least problematic.

The biggest surprise of the survey is the level of labor productivity, which scored the highest (3.34). It seems to reflect that most of the manufacturing companies are

satisfied with labor production output, under a given wage level. Estimated average yearly revenue (for the past three or four years) of the respondents varied. 41% of them were having revenue between USD 500,000 and 2 million, while 29% are having yearly revenue between USD 2 million and 5 million. Three firms (18%) are recorded to have more than USD 10 million of yearly revenue. The positive result is something that closely affected by their own management, such as training programs and adequate standard operating procedures. The low wage level in the region, especially when compared to the other neighboring areas, might also contribute significantly to the result.

TABLE 3: Batam FTZ Overall Competitiveness Score. (Source: Author)

Variables	Score	Remark
Productivity	3.34	Highly satisfied
Advanced Infrastructure	3.27	Slightly satisfied
Basic Infrastructure	3.22	Slightly satisfied
Financial market support	3.01	Indifferent
Labor market	3.00	Indifferent
Macroeconomic Condition	2.99	Indifferent
Goods market support	2.98	Indifferent
Business sophistication	2.91	Slightly not satisfied
Institutions	2.82	Slightly not satisfied
Governance	2.78	Not satisfied
Labor policy	2.76	Not satisfied
Innovation	2.63	Highly not satisfied

Institutions, as well as governance, are considered as key and basic variables that needed to be maintained in order to support industrial growth to the next stage that is maintenance and effectiveness (Global Competitiveness Report, 2014). Batam FTZ’s failure in providing competitive institutional setting is theoretically hampering its progress, as suggested by several studies [2, 11], while at the same time confirming Millberg’s (2007) finding.

The section below tries to establish a relationship between the problem of the key variables and the advanced variables.

3.2. What went wrong?

Batam FTZ's problem lies on several variables that considered as basic, such as institution and governance. Everywhere else in the world, mostly government or zone operator would give extra attention to improve their institutional setting as to be able to attract more investment to the zone. That is also the case in Batam. A special autonomous body (BP Batam) was formed in order to manage the zone. Its role was crucial during the 80s and 90s in providing assistance to foreign corporations. However, during the decentralization process following the 1998 reform, institutional changes had taken effect in the area. Local government (The City Government of Batam) with more autonomous power were introduced, resulting in a dual authority in the zone. Friction of power between the two institutions was perceived negatively by business, as proven by in this research (scoring 2.82 in institution and 2.78 on governance).

Under this huge power shift, local governments, both at the provincial and city level, began dominating the institutional settings (Wong and Ng, 2009). Governor and mayors took part in the council for the free trade zone, meaning that they have huge control over the direction of the Batam FTZ, undermining BP Batam's role as an independent operator of the zone. During 2005-2015 there were disputes between the city government of Batam with the FTZ Authority over several assets, in which it was dragging the zone's performance significantly. Under the shift towards the decentralization, local government was burdened with high responsibilities in developing their areas, however they only have little incentive in providing public service and investment as the fiscal structure doesn't match the change [11].

All of the problems during the introduction to decentralization were made worse with the attempt to remove preferential policy imposed by the IMF. In order to recover from 1998 Asian crisis, Indonesia seek help from the IMF, which resulted in the creation of the letter of intent. One of the points in the letter was that the government agrees to remove all VAT exemptions, including in the Batam FTZ [1]. Although eventually the attempt failed, this created confusion about the FTZ status in Batam, while at the same time local government has been able to grasp its ground in the island. The new, rebooted FTZ policy in 2007 didn't help much in settling down the problem. The damage has been done. Has the government stayed firm in supporting the FTZ status, despite the letter of intent with the IMF, the institutional problems would not be so huge.

Statistical analysis proved that the prolonging institutional conflict has brought undesired effect in Batam;s inability to expand on the innovation aspects. Chi-Square result (Table 4) suggest that under 0.05 alpha level, there are significant relationship

between institutions and innovation. The later variable consisted of two components. The first is related to research and development activity, which the zone lacks off. The result confirmed Campenhout and Graaf (2013) that found out the lack of industrial upgrading in Batam. Upgrading in this sense is the evident of a more value-adding and knowledge based activity, such as research, designing, and development activity. These tasks are largely still carried out by industries headquarter or regional head-quarter in Singapore.

TABLE 4: Chi-Square Tests (Insitutions and Innovation).

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4.898 ^a	1	.027		
Continuity Correction ^b	2.906	1	.088		
Likelihood Ratio	5.210	1	.022		
Fisher's Exact Test				.050	.043
Linear-by-Linear Association	4.609	1	.032		
N of Valid Cases	17				
a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 2.82.					
b. Computed only for a 2x2 table					

The second part of innovation variable is related to business sophistication, that is the ability of the foreign industry to strengthen backward linkage in the FTZ. One of the measurement is the ability of local industry to support foreign companies. Although the overall score only showing slight dissatisfaction, it came from the fact that access to foreign market is easy, not because of the reliability of local supplier.

It remains the problem of both the central and local government to settle down institutional conflicts. Several measures has been carried out by the central government, such as to upgrade FTZ status into SEZ (Special Economic Zone) with the idea to limit city government's role [5]. Under the new concept, the zone operator would be responsible directly to the governor of Riau Island. However, it is yet to be seen the effect of this new regulation.

4. Conclusion

After investment booming in the early 1990s, Batam experienced another fallow period in the early of 2000s. The change of institutional setting through the introduction of decentralisation policy following the Law no. 22/1999 has brought poor

dynamics into the zone. Until around that time, Batam administration was held independently under the FTZ authority (BP Batam). The new regulation requires sharing of power between the two institutions, considering also the growing power of the provincial government. Frictions between these institutions has been dragging down investment climate in the area, including the inability to support industrial upgrading which related to value added and knowledge based activities such as research, design, and development. The zone also failed to strengthen backward linkage, which is the creation of strong local industries to support their foreign counterparts. An effort to reboot the strategy in 2007 has not been very fruitful. Batam remains progressing with a mixed result, with some notable investors relocating to neighboring countries such as Vietnam. To offset the duality problem, the central government has upgraded Batam's status from FTZ to an SEZ, however currently there is not enough evidence to judge the result yet. Only after the institutional settings are improved, that the island will be able to experience industrial upgrading. In turn, hopefully it can be a model of development for other areas in Indonesia.

References

- [1] Anas, Titiek, Yose Rizal Damuri, Moekti Sujachmoen, Kasan Muhri, dan HaryoAswicahyono. 2006. "Mempersiapkan Batam Sebagai Kawasan Ekonomi Khusus" Center for Strategic and International Studies Final Report, Jakarta: CSIS
- [2] Campenhout, Mathijs van, and Jasper R. de Graaf. 2013. "In Search for A Silver Lining: The Evolution of the E&E Industry of Batam" Master Thesis, University of Utrecht.
- [3] Farole, Thomas and Gokhan Akinci. 2011. Special Economic Zones: Progress, Emerging Challenges, and Future Directions. Washington: The World bank
- [4] Hamada, Koichi. 1974. "An Economic Analysis of the Duty Free Zone" *Journal of International Economics*, 4, 225-241
- [5] Jppn.com. 2015. "BP Batam Dibubarkan, Status FTZ Batam Menjadi KEK" *Jppn.com* <http://www.jpnn.com/read/2015/12/31/347765/BP-Batam-Dibubarkan-Status-FTZ-Batam-Menjadi-KEK-/page2> (Retreived on 3 September 2016)
- [6] Kumagai, Satoru. 2008. "A Journey Through the Secret History of the Flying Geese Model" Discussion Papers no. 158, http://www.ide.go.jp/Japanese/Publish/Download/Report/pdf/Ch2_Kumagai.pdf (retrieved on 19 September 2016)
- [7] Levine, David M, Timothy CKrehbiel, and Mark L Berenson. 2009. *Business Statistics: A First Course*, New York: Pearson

- [8] Millberg, William. 2007. "Export Processing Zones, Industrial Upgrading and Economic Development: A Survey", ILO Background Paper, Geneva: ILO
- [9] Miyagiwa, Kaz. 1986. "A Reconsideration of the Welfare Economics of A Duty Free Zones" *Journal of International Economics*, 21, 337-350
- [10] Toh Mun Heng. 2006. "Development in the Indonesia-Malaysia-Singapore Growth Triangle" SCAPE Working Paper Series No. 2006/06 31 March 2006, <http://www.fas.nus.edu.sg/ecs/pub/wp-scape/o6o6.pdf> (retrieved on 28 July 2016)
- [11] Van Grunsven, Leo, and Francis E. Hutchinson. 2014. "The Evolution of the Electronics Industry in the SIJORI Cross-Border Region" ISEAS Economics Working Paper no. 2014-2. Singapore: ISEAS.
- [12] Wong, Poh Kam and Ng Kwan Kee. 2009. "Batam, Bintan and Karimun – Past History and Current Development Towards Being A SEZ" ACI Working Paper, Singapore: NUS
- [13] Yeoh, Caroline, Feng Hao Chua, and Sylvie Tan. 2006. "Economics of Competition': A Study of Low-Cost Manufacturing Enclaves in Batam Island, Indonesia" *Academy of International Business, Southeast Asia Regional Conference*. Singapore: Lee Kong Chuan Business School.