Supply chain management performance measurement in the development of Indonesian new capital using SCOR method

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Abstract. Isu yang hangat diperbincangkan akhir-akhir ini di masyarakat adalah diskusi tentang wacana pemindahan ibu kota baru Indonesia. Proses pemindahan ibu kota baru membutuhkan banyak sumber daya baik sumber daya manusia maupun material yang berkualitas, sehingga dapat diproyeksikan apakah ibu kota baru dapat dipindahkan dalam waktu yang sangat singkat. Logistik dan rantai pasok adalah dua hal yang tidak dapat dipisahkan dalam proses pergerakan barang dan jasa. Manajemen rantai pasok dalam pembangunan ibu kota baru meliputi material, alat berat, pelayanan SDM, dan pemasok. Tujuan dari penelitian ini adalah untuk mengembangkan kerangka kerja dari pengukuran kinerja rantai pasok dengan menggunakan metode SCOR. Melalui riset SCOR, dapat ditelusuri kemana saja yang perlu menghasilkan lebih banyak dalam hal sumber daya manusia dan material yang dibutuhkan di masa mendatang, sehingga pemerintah dapat membangun kerangka indikator yang harus dicapai dan ditargetkan.

Kata kunci: ibu kota baru, logistik, rantai pasok, sumber daya, SCOR.

Abstract. The current issue of the Indonesian people is that there is a discussion about the discourse of moving the new capital city. The process of moving capital city requires a lot of qualified human and material resources, but whether we can see whether it is possible for the capital city to move in a very short time. Logistics and supply chains are two things that are not separated in the process of moving goods and services. Supply chain management in the construction of new capital city includes material, heavy equipment, human resource services and suppliers. The objective of this research is to develop the framework of supply chain performance measurement using SCOR method. Through SCOR research, can be traced anywhere that needs to produce more in terms of human resources and materials needed in the future, then the government needs to build a framework of indicators that must be achieved and targeted.

Keyword: new capital city, logistic, supply chain, resources, SCOR.

1. Introduction

The capital city is an identity of a country which has a very important role in government. The capital city must be able to integrate governmental and political activities, business and all activities that can coordinate holistically from all regions. Indonesia has a capital city named Jakarta, where almost 70% of the country's activities are in Jakarta. Jakarta has become an extraordinary magnet from all parts of Indonesia with the hope that in the Capital City will get a better job. The migration of citizens outside Jakarta to Jakarta, both from educated circles and those who do not have the readiness to try their luck in Jakarta is a problem why Jakarta is a very crowded city. The discourse of moving into a solution that will certainly be strategic towards improving the quality of the nation going forward. However, the focus examined and examined here is the supply chain in the process of moving the capital, both in terms of logistics and supply chain.

The city is a place where residents are densely populated, houses are grouped, and the livelihoods of residents are not agriculture. Meanwhile according to Bintarto in Marangkup & Eka (2006), the city in geographic review is a cultural landscape caused by natural and non-natural elements with symptoms of population concentration that is quite large, with a pattern of life that is quite heterogeneous and materialistic compared to the region behind him, urban concepts that can at least be seen from four points of view in limiting the city, result in an understanding of the city in plural dimensions and so far none of the city benchmarks can apply in general.

The study of the transfer of the capital has been done by Schatz (2003) revealing that moving the capital (physically moving the center of the country from one location to another) is the usual way (not as strange as it seems) that is done to create the shape of a country. In this study it was revealed that there was a link between
the politics of geography and national development in moving the capital. Capital transfers are often not only done on the basis of rational-technique alone, but more often not only on the basis of rational-technique alone, but more than that there are political and social reasons that are carried out in the transfer. Moving the capital is one of the innovative ways to form a state (building states) and national character (national identification). This policy is a big policy that most leaders do not dare to do because of the large financial, logistical and political costs. Like political policies, capital removal policies are influenced by various factors. Differences in perspective will produce a variable that is different from variables taken with other perspectives. From the analysis that has been done, it can be concluded that the transfer of the capital (especially in the analysis of the move of the capital of Kazakhstan from Almaty to Astana) is not only done based on rational-technical reasons, but rather it is done on the basis of social and cultural considerations such as the formation of national and state character. The transfer of the capital is also greatly influenced by the pattern of the country such as state government, cultural distribution, and the condition of the country after imperialism. Another important thing that was discovered was when the location of the capital's move was often competed in the formation and consolidation of the government (which often caused controversy), even though the controversy had the tendency to disappear after the election of a new capital.

Discourse about moving the capital out of Jakarta must be understood as an important process before determining a major decision to move the capital out of Jakarta or keep Jakarta as the country’s capital. Rukmana (2010) revealed that experience from various countries shows that the relocation of the capital was not merely driven by consideration of the condition of the old capital which was already overcrowded and the lack of infrastructure and urban facilities. Political and socio-economic considerations are also important factors in the decision to move the country’s capital. Meanwhile there are three common reasons for moving the capital, namely political considerations, socio-economic considerations, and physical considerations. Political considerations are often the main consideration in moving the capital. In this consideration useful for enhancing national cohesion, building symbols of national revival, and representing better ethnic diversity is a consideration used by the governments of Brazil, Nigeria and Pakistan in moving their respective capitals.

Rawat (2005) conducted a research on global-local perspectives on the removal of capitals stating that in fact, the policies of moving capital in its history were mostly carried out by strong and ambitious leaders when compared to democratic forces. This is because of the difficulty of efforts - which involve political alliances - to convince the public that the large costs incurred by government resources are not wasted and beneficial. Furthermore, the emergence of new capitals in the mid-20th century came to represent the hopes and dreams of a newly independent country. This shows that many countries moved their capital to rebuild their country from adversity. The movement of the capital is not only seen in the local perspective, but also a global perspective to create a city that has a hybrid culture, cosmopolitan, and has good global competitiveness that is connected in international networks. In his research on the relationship between politics and geography in the European region, Dascher (2000) analyzes the relationship between the influence of political forces in the capital and regional political forces and their impact on the economy. In the analysis, two conclusions were drawn, namely (1) moving the capital is a must, but with a grace period, and it should not be as a discourse anymore; (2) the capital city of the country remains in Jakarta but the relocation of several departments and centers of activity has been transferred outside Jakarta.

In the case of the discourse on moving capital in Indonesia, this discourse is considered to be very possible because in the Constitution of the Republic of Indonesia and its Amendments, it does not or does not yet regulate explicitly on this matter. In Chapter II paragraph (2) of the Constitution of the Republic of Indonesia, it is written: People’s Consultative Assembly meets at least once every five years in the national capital. In the Constitution there is no article that states where and how the national capital is regulated. Thus, there is high flexibility in regulating including moving the national capital. Furthermore, in research on ISIP Jakarta’s internal public opinion and literature analysis, it shows that in the next five years the discourse of capital movement must have been followed up seriously by related parties. First, in general (34%) respondents responded that the idea of moving the capital in Indonesia was just a discourse, and there were 25% of respondents who were optimistic that the move of the capital should be realized within the next 10 years. Second, the majority (46%) of respondents agreed with the idea of moving the capital in turn between provinces in Indonesia or between three time zones. Third, the reasons are the main consideration for the transfer of state capital. Most votes (17%) of respondents require that the location is not yet solid. As many as 16% of respondents require a conducive and strategic location. Approximately 14% of respondents require efficient travel from the old capital. Fourth, how to move the capital city. The majority (33%) of respondents view the move of the capital to be carried out with technical measures such as phasing out the presidential office, departments, parliaments and foreign embassies (Yunia and Rozi 2007).
2. Literature Review

Supply Chain Operation Reference Model
In 2002, the Supply Chain Council (SCC) introduced and developed a known supply chain performance measurement framework (SCOR) to describe the management process associated with all phases involved to meet customer demand. There are five main supply chain management processes defined in this model, namely: plan, source, make, deliver, and return.

Supply Chain Performance Measurement
Management in the business world is often identified with the terms logistics and operation management. But for service-based business activities in the SCM process is how consumers are satisfied with the performance results of a service company or can also be interpreted A series or network of companies that work together to create and distribute products or services to end customers. In general, existing efforts put more emphasis on improving performance in the process. Some opinions that state the definition of supply chain management include the following:

1. Supply chain is a strategic approach to achieving qualified efficiency and measuring SCM performance in an industry which is very important and requires a framework in developing SCM chains (Sillanpaa, 2012)
2. Green supply chain management in the business world both manufacturing and services becomes a very important strategy for sustainable business for companies to obtain and improve international competitiveness effectively by using the SCOR model as a SCM framework, building a performance evaluation indicator system is very important. important for the whole of the SCM chain both from the financial, operating and environmental indicators of the supply chain (Wang, 2013).
3. In SCM a theoretical model is developed to measure the implementation of supply chain management practices both at the company level and supplayer by using survey instruments to determine the performance of the design, methodology and approach used by the company (Hamister, 2011)
4. The paradigm of using SCM to improve organizational competitiveness is that SCM ensures increased efficiency and effectiveness of product transfer and information sharing between complex hierarchies at all levels of the company's business, besides SCM relating to strategies and technologies that effectively manage SCM broadly, in performance measurement the organization (PM) and metrics have a lot of attention from researchers and practitioners for the identification of performance measures, which in turn form the basis for building a framework for measuring SCM performance (VKSunnapwar, et al, 2013)
5. In a business development of a universal framework for the selection of SCM system performance measurements is to find out the supply chain performance categorization which consists of 3 types of identification in which performance measures become the necessary assessment components in supply chain performance measurement systems consisting of: resources, outputs and flexibility by developing volume and delivery flexibility and performance measurement SCM has flexibility measures for the supply chain, and collaborative steps or a mix of new product flexibility and flexibility. SCM models that utilize this can more truly characterize the supply chain system and produce the right configuration effects, thus enabling the development of a more complete, accurate, and effective model for measuring company performance (Beamon, 2014).
6. From some of the above understanding, an understanding of SCM can be drawn, namely SCM not only regulates the process of production activities from upstream to downstream but also as a measure of the performance of the process or the flow of good information, services ranging from quality supplier to customer service and customer satisfaction becomes a priority In the main flow of SCM, all these units are sought in order to improve and as a reference for continuous improvement in order to achieve customer loyalty and satisfaction.

3. Method

In the SCOR method there are two variables used to identify SCM performance, i.e. dependent variable and independent variable. In this study the dependent variables used are supply chain management performance in SCOR schemes namely Matrix level 1 plan, source, make and deliver.

1. Plan; Processes relating to the balance between targets and realization and what has been planned especially in planning the development of the New Capital City.
2. **Source:** Processes related to the preparation of human resources, supporting facilities to meet the development of the existing construction world and the relationship of government cooperation with suppliers and consumers

3. **Make:** Processes related to improving the quality of regional and city layout planning in building a new capital city.

4. **Deliver:** The processes relating to the provision of prospective graduates with civil or construction expertise in accordance with the development of the construction world or labor market demand. The second free variable is a variable whose change does not depend on other variables so that this variable is used in accordance with the conditions and characteristics that exist in each company so that between one company with another company is likely to be different in determining the variable for the company.

The independent variables in this study are five dimensions in the construction supply chain namely matrix Level 2 Supply chain reliability, Supply chain responsiveness, Supply chain flexibility, Supply chain cost and Supply chain asset management efficiency. Identification KPIs on Matrix level 3:

- Reliability: Corporate Reliability
- Responsiveness: Speed of time responding to any changes that occur
- Flexibility: Flexibility with every change
- Assets: Company supporting facilities and facilities
- Cost: Costs required by the company and identification of KPIs on Matrix level 3.

4. **Result and Discussion**

The intended data collection is all data collected to measure SCM performance in the new capital city through SCM plan, source, make and deliver performance activities in determining which KPIs should be improved in the four SCM activities in the Indonesian Government and what strategies the Government should take.

| Table 1 The supply chain performance matrix on the main island |
|---------------------------------------------------------------|
| **The Region** | Labor | Asphalt | Cement | Concrete | Steel | Heavy Equipment | Asphalt Button |
|----------------|------|---------|--------|----------|-------|----------------|----------------|
| Sumatera       | Reliability Not complete | Complete | Complete | Complete | Complete | Complete | Complete |
|                | Completeness | Complete | Complete | Complete | Complete | Complete | Complete |
|                | Flexibility Not complete | Complete | Complete | Complete | Complete | Complete | Complete |
|                | Assets Not complete | Complete | Complete | Complete | Complete | Complete | Complete |
|                | Cost Not complete | Complete | Complete | Complete | Complete | Complete | Complete |
| Kalimantan     | Reliability Complete | Complete | Complete | Not complete | Not complete | Complete | Complete |
|                | Completeness | Complete | Complete | Not complete | Not complete | Complete | Complete |
|                | Flexibility Complete | Complete | Complete | Complete | Not complete | Complete | Complete |
|                | Assets Complete | Complete | Complete | Complete | Not complete | Complete | Complete |
|                | Cost Complete | Complete | Complete | Complete | Complete | Complete | Complete |
| Jawa           | Reliability Not complete | Complete | Complete | Not complete | Not complete | Complete | Complete |
|                | Completeness | Complete | Complete | Not complete | Not complete | Complete | Complete |
|                | Flexibility Complete | Complete | Complete | Complete | Not complete | Complete | Complete |
|                | Assets Complete | Complete | Complete | Complete | Not complete | Complete | Complete |
|                | Cost Complete | Complete | Complete | Complete | Complete | Complete | Complete |
| Bali-NTT       | Reliability Not complete | Complete | Complete | Not complete | Not complete | Complete | Complete |
|                | Completeness | Complete | Complete | Not complete | Not complete | Complete | Complete |
|                | Flexibility Complete | Complete | Complete | Complete | Not complete | Complete | Complete |
|                | Assets Complete | Complete | Complete | Complete | Not complete | Complete | Complete |
|                | Cost Complete | Complete | Complete | Complete | Complete | Complete | Complete |
| Maluku - Papua | Reliability Complete | Complete | Complete | Complete | Complete | Complete | Complete |
|                | Completeness | Complete | Complete | Complete | Complete | Complete | Complete |
|                | Flexibility Complete | Complete | Complete | Complete | Complete | Complete | Complete |
|                | Assets Complete | Complete | Complete | Complete | Complete | Complete | Complete |
|                | Cost Complete | Complete | Complete | Complete | Complete | Complete | Complete |
| Sulawesi       | Reliability Complete | Complete | Complete | Complete | Complete | Complete | Complete |
|                | Completeness | Complete | Complete | Complete | Complete | Complete | Complete |
|                | Flexibility Complete | Complete | Complete | Complete | Complete | Complete | Complete |
|                | Assets Complete | Complete | Complete | Complete | Complete | Complete | Complete |
|                | Cost Complete | Complete | Complete | Complete | Complete | Complete | Complete |
Labor
Construction human resources are dominated by skilled workers, only 8.1% of certified workforce (of the total construction workforce/national construction workforce). From the data of the Indonesian Construction Services Development Board of Indonesia (LPJK), the number of national skilled workers is only 471,404 (70.2%) and the number of construction experts is 200,225 (29.8%). From 4,361,272 students, only 13.63% interested in engineering majors (see Table 2). As much as 34% of all engineering graduates are in the field of computer science-informatics engineering, while civil engineering graduates are the main force in infrastructure development, and only 10% of all engineering graduates.

### Table 2 Interest distribution in Indonesia from 2010 to 2016

| Specialization | Interest | % |
|----------------|----------|---|
| Education      | 1,605,363| 36.81 |
| Economy        | 800,256  | 18.35 |
| Technique      | 594,706  | 13.64 |
| Social         | 589,062  | 13.51 |
| Health         | 318,944  | 7.31  |
| Agriculture    | 155,709  | 3.57  |
| MIPA           | 102,487  | 2.35  |
| Religion       | 84,230   | 1.93  |
| Humanities     | 77,003   | 1.77  |
| Art            | 33,512   | 0.77  |
| **Total**      | **4,361,272** | **100.00** |

Source: PII, 2019

### Table 3 Specialization distribution of engineering graduates in Indonesia from 2010 to 2016

| Specialization                                      | %  |
|-----------------------------------------------------|----|
| Computer Science – Informatics Engineering          | 34 |
| Computer Science – System Information               | 21 |
| Civil Engineering                                    | 10 |
| Electrical Engineering                               | 7  |
| Mechanical Engineering                               | 6  |
| Industrial Engineering                               | 6  |
| Architecture                                         | 4  |
| System Computer                                      | 2  |
| Chemical Engineering                                 | 2  |
| Others                                               | 8  |

### Asphalts

### Table 4 Tools and transportation for Asphalt

| Tools and Transportation  | Total |
|---------------------------|-------|
| Asphalt Mixing Plant      | 260   |
| Concrete Batching Plant   | 89    |
| Generator Set             | 422   |
| Stone Crusher             | 180   |
| Tronton                   | 168   |
| Truk Mixer                | 258   |
| Dump Truk                 | 2475  |
| Truk Scale/Weight         | 53    |
Table 5  Asphalt work equipment for construction

| Tools                      | Total |
|----------------------------|-------|
| Air Compressor             | 359   |
| Asphalt Distributor        | 38    |
| Asphalt Finisher           | 420   |
| Bulldozer                 | 123   |
| Cold Milling               | 31    |
| Concrete Paver             | 21    |
| Excavator                  | 480   |
| Motor Grader               | 222   |
| Tandem Roller              | 388   |
| Three Wheel Roller         | 52    |
| Tire Roller                | 384   |
| Vibrator Roller            | 252   |
| Water Tanker               | 191   |
| Wheel Loader               | 367   |

Cements

Figure 1  Distribution of cement needs in Indonesia.

Table 6  Projection of cement production capacity in Indonesia up to 2024

| Company                        | 2018 | 2019* | 2020* | 2021* | 2022* | 2023* | 2024* |
|--------------------------------|------|-------|-------|-------|-------|-------|-------|
| PT Semen Padang                | 8,900,000 | 8,900,000 | 8,900,000 | 8,900,000 | 8,900,000 | 8,900,000 | 8,900,000 |
| PT Semen Gresik                | 19,200,000 | 19,200,000 | 19,200,000 | 19,200,000 | 19,200,000 | 19,200,000 | 19,200,000 |
| PT Semen Tonasa                | 7,400,000 | 7,400,000 | 7,400,000 | 7,400,000 | 7,400,000 | 7,400,000 | 7,400,000 |
| PT Solusi Bangun Indonesia     | 15,531,480 | 15,531,480 | 15,531,480 | 15,531,480 | 15,531,480 | 15,531,480 | 15,531,480 |
| PT Indocement Tunggal Prakarsa | 25,500,000 | 25,500,000 | 25,500,000 | 25,500,000 | 25,500,000 | 25,500,000 | 25,500,000 |
| PT Semen Baturaja              | 3,850,000 | 3,850,000 | 3,850,000 | 3,850,000 | 3,850,000 | 3,850,000 | 3,850,000 |
| PT Semen Kupang                | 400,000  | 400,000  | 400,000  | 400,000  | 400,000  | 400,000  | 400,000  |
| PT Semen Bosowa Maros          | 7,400,000 | 7,400,000 | 7,400,000 | 7,400,000 | 7,400,000 | 7,400,000 | 7,400,000 |
| PT Cemindo Gemilang            | 7,690,000 | 7,690,000 | 7,690,000 | 7,690,000 | 7,690,000 | 7,690,000 | 7,690,000 |
| PT Jui Shin Indonesia          | 1,800,000 | 1,800,000 | 1,800,000 | 1,800,000 | 1,800,000 | 1,800,000 | 1,800,000 |
| PT Sinar Tambang Arthalettari  | 1,800,000 | 1,800,000 | 1,800,000 | 1,800,000 | 1,800,000 | 1,800,000 | 1,800,000 |
| PT Semen Jawa                  | 1,800,000 | 1,800,000 | 1,800,000 | 1,800,000 | 1,800,000 | 1,800,000 | 1,800,000 |
| PT Conch Cement Indonesia      | 8,700,000 | 8,700,000 | 8,700,000 | 8,700,000 | 8,700,000 | 8,700,000 | 8,700,000 |
| PT Hong Sia Cement             | -      | -      | 3,000,000 | 3,000,000 | 3,000,000 | 3,000,000 | 3,000,000 |
| PT Semen Grobogan             | -      | -      | 3,000,000 | 3,000,000 | 3,000,000 | 3,000,000 | 3,000,000 |
| Total Capacity                 | 109,971,480 | 109,971,480 | 115,971,480 | 115,971,480 | 115,971,480 | 115,971,480 | 115,971,480 |
| Needs                         | 69,541,056 | 71,627,288 | 73,776,106 | 75,989,389 | 78,209,071 | 80,617,143 | 83,035,658 |
| Utilization (%)               | 48.8 %   | 65.1 %  | 63.6 %  | 65.5 %  | 67.5 %  | 69.5 %  | 71.6 %  |
| Growth in Needs (%)           | 4.8 %    | 65.1 %  | 63.6 %  | 65.5 %  | 67.5 %  | 69.5 %  | 71.6 %  |

The installed capacity of the cement industry is already excessive, hoping that the Government will not issue permits for new plant construction until 2023. The cement industry continues to increase export volumes in order to achieve an optimal level of factory utilization which is above 70%. The cement industry is ready to meet the needs of cement, especially for property, infrastructure and other strategic projects. This has an impact on the demand for cement, especially bulk cement, which has increased every year. The cement industry encourages the use of environmentally friendly cement, both for housing and infrastructure projects.
To expedite the supply of cement to remote areas, development/extension (port docks) are intensified especially in areas where there are no packing plants. Strengthen the road with a concrete road so that the carrying capacity of large cargo trucks (500-600 zak) can run smoothly. The cement industry is ready to meet the needs of national cement until 2024.

**Concrete**

The current condition of production capacity in 2024 depends on the project plan of the ministry of public works and public housing and other investment projects.

| Years | Capacity of Production (Ton/Years) | Factory in Indonesia |
|-------|-----------------------------------|----------------------|
| 2014  | 24,566,513                        | 57                   |
| 2015  | 25,325,469                        | 58                   |
| 2016  | 26,776,333                        | 63                   |
| 2017  | 34,422,455                        | 7                    |
| 2018  | 35,679,433                        | 80                   |

Pessimistic target of 2024 increase in capacity of 5% per year 48 million tons per year, optimistic target of 2024 increase in capacity of 2% per year 40 million tons per year. With a note that each capacity of 1 million tons requires an investment of approximately 400 billion.

Domestic problems are sufficient but the price difference with imports is quite large with the proposal to ensure national production capacity. Then the current conditions the government limits imports in order to protect domestic producers by proposing to control the price of local products versus imports to a certain difference.

At present the Standard National of Indonesia (SNI) does not cover all products, because the cost of compiling SNI is sourced from the APBN, the preparation of SNI requires a large cost and quite a long time, with the proposed process of ratification of SNI being accelerated.

**Steel**

Portion of Steel in Construction Work:
- The value of steel works is around 30% of the value of construction works
- The use of steel in the construction sector is around 78% of all national steel consumption
  - 40% for infrastructure work and 38% for non-infrastructure
  - The use of reinforcing steel is about 32% of the total use of construction steel
  - National steel consumption will continue to grow. PTKS has and is developing facilities to anticipate consumption growth and support national development. Therefore government support is needed so that PTKS and the national steel industry can continue to grow
  - Imported steel products are still very high at around 50%, whereas the capacity utilization of the National Steel industry is still relatively low in the range of 35-66%.
  - Protection of the national steel industry as the mother of industry from the flood of products
  - Imported steel needs to be done either through tariff barrier or non tariff barrier.
  - National steel industry companies have implemented some 4.0-based technologies so that they are expected to support the performance of the national steel supply chain. In addition, the steel industry cluster construction plan will add to the existing capacity so that it can meet domestic steel needs.
  - Regarding the Indonesian National Standard (SNI) which is intended as a technical barrier, it is necessary to maximize the application of mandatory SNI for steel products including submission for products that do not yet have compulsory SNI, monitoring SNI in the domestic market and providing SPPTSNI to be more monitored and prioritize the interests domestic producer
  - Considering that in the case of the use of steel for construction, such as reinforcing concrete steel, steel elbows/profiles, and steel plates for buildings/roofs/buildings it is necessary to pay attention to the source of raw materials because they are related to the security and safety aspects of the building or building
It is expected that steel materials used by government projects do not use spent materials that do not use materials produced from factories with induction furnace technology, to avoid structural damage that can cause casualties, especially with conditions in Indonesia prone to earthquakes.

Figure 2  Indonesia’s light steel industry profile.  
Source: Indonesian Light Steel Producers Association-Asosiasi Produsen Baja Ringan Indonesia (APBRI)

Figure 3  Supply vs Demand of steel from 2013 to 2018.

• National steel consumption in 2018 of 15.1 million tons, this figure shows an increase of 11.03% from the previous year.
• Although consumption has increased, import volumes are still quite high with a market share reaching 50.3%.
• Whereas the national production supply after being reduced by exports (net production) only gets a market share of 49%.
Heavy Equipment

- Difficulties in anticipating heavy equipment needs from year to year result in huge inefficiencies.
- Excessive cost-of-doing-business: taxes, compliance regulations, labor.
- The government needs to provide fiscal and non-fiscal support to the heavy equipment industry because:
  - Strategic industries supporting development and foreign exchange earners
  - Indonesia has the potential to become a regional base of heavy equipment production
  - Can raise the degree of Indonesia to a high technology-based country.

Asphalt prices are unstable because they are influenced by crude oil prices and international demand. Asbuton prices are more stable because they do not depend on fluctuations in crude oil prices.
5. Conclusion

The research succeeded in building a framework to measure the success of the relocation of the Indonesian capital. From the survey results, it is determined that Indonesia currently still lacks the human resources and materials needed to build a new capital city. In terms of labor in the regions of Sumatra, Java and Bali - NTT still lacks construction workers. Asphalt in Java is still inadequate, concrete in Kalimantan, Bali-NTT, Sulawesi is not enough, and asbuton in Kalimantan still tends to be unstable because it depends on crude oil fluctuations.

Through SCOR research, can be traced anywhere that needs to produce more in terms of human resources and materials needed in the future. Then the government needs to build a framework of indicators that must be achieved and targeted.

Information:
S = Supply
D = Demand
K = Supply Balance - Demand

Finally, in developing an integrated MPK supply chain system, it certainly cannot only rely on one party. To achieve this goal, collaboration and synergy between all stakeholders involved is certainly needed.

Reference

Beamon, B., M. (1999). Measuring supply chain performance, International Journal of Operations and Production Management. Vol. 19, No. 3, pp. 275-292.

Dascher, K. 2000. Are politics and geography related? Evidence from a cross section of capital cities. Public Choice. Vol. 105, pp. 373-392.

Hamister, J., W. (2012). Supply chain management practices in small retailers, International Journal of Retail and Distribution Management. Vol. 40, No. 6, pp. 427-450.

Hasibuan, S. & Dzikrillah, N. (2018). Supply chain performance measurement and improvement for Indonesia chemical industry using SCOR and DMAIC method. Journal of Engineering and Technology Management. Vol. 3, No. 3, pp. 146-155. doi: 10.21276/sjeat.2018.3.3.5.
Marangkup, H., Ulin, E. (2006). Identifikasi Pola Pengembangan Daerah Pinggiran dan Pola Jaringan Jalan Kota Semarang. [skripsi]. Semarang: Universitas Diponegoro.

Rawat, R. (2005). Capital City Relocation: Global-Local Perspective in The Search for an Alternative Modernity [internet]. [online 28 Februari 2013].

Rukmana, D. (2010). Pemindahan Ibukota Negara [internet]. Savannah (US): Savannah State University. http://bulletin.penataanruang.net/upload/data_artikel/edisi5i.pdf [online 28 Februari 2013].

Schatz, E. (2003). When Capital Cities Move: The Political Geography of Nation and State Building. Kellogg Institute. Vol. 303, pp. 1-29.

Schatz, E. (2004). What Capital Cities Say about State and nation Building. *Nationalism and Ethnic Politics*, Vol. 9, pp. 111–140. doi: 10.1080/ 13537110390444140.

Sillanp, I. & Pekka, K. (2012). The Literature Review of Supply Chain Performance Measurement in the Manufacturing Industry, *International Journal of Management and Production Engineering Review*, Vol. 3, no. 2, pp. 79-88.

Sutikno. (2007). Perpindahan Ibukota Negara Suatu Keharusan Atau Wacana? Di dalam Diskusi Sejarah, Kota dan Perubahan Sosial Dalam Perspektif Sejarah; 2007 Apr 11-12; Yogyakarta (ID): Balai Pelestarian Sejarah dan Nilai Tradisional Yogyakarta.

Vanany, I., Patdono, S., Dito, Y. (2005). Design of Supply Chain Performance Measurement System for Lamp Industry, International Conference on Operations and Supply Chain Management, Bali

Wang, F. (2013). The Study on Performance Measurement of Green Supply Chain Management, *International Journal Applied Mechanics and Materials*. Vol.411-414, no. 3, pp. 2742-2745.

Yunia, L., Rozi, S. (2007). Wacana Pemindahan Ibukota di Indonesia (Studi Kasus Opini Mahasiswa, Dosen, dan Karyawan IISIP Jakarta). IISIP Jakarta.