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Reorientation of Surabaya's Economic Structure: Shifting Base Sectors and Growth Dynamics 2016–2021

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ABSTRACT
Surabaya City is the largest economic center in East Java Province, with a contribution consistently above 24 percent to the total Gross Regional Domestic Product (GRDP) of 38 regencies/cities in East Java in the 2018-2021 period. However, this contribution shows a downward trend from 24.35 percent (2018) to 24.03 percent (2021), while the city's GRDP growth rate remained above the East Java Province average throughout 2016-2019 before both contracted due to the Covid-19 pandemic in 2020. This phenomenon of declining share alongside relatively high growth indicates a structural shift that warrants a sectoral approach to study. The novelty of this research lies in the unification of aggregate growth data, sectoral Location Quotient (LQ) analysis results, and data on the city's GRDP share to the province into a coherent discussion framework, while triangulating the LQ results with other independent studies using different data coverage to test the consistency of the findings. This study aims to identify the basic and non-basic sectors of the Surabaya City economy and the shifting patterns of their shares in East Java Province in the 2016-2021 period, using a quantitative descriptive method based on secondary data on the GRDP of Surabaya City and East Java Province by business sector published by the Central Statistics Agency (BPS). The findings show that eleven of the seventeen sectors are classified as basic sectors (LQ>1) on average for the 2016-2021 period, with the highest LQ in the Corporate Services sector (2.93) and the Provision of Accommodation-Food and Beverage (2.76), while the Manufacturing Industry sector remains non-basic (LQ 0.64) despite its large nominal value; these values are consistent with the results of independent calculations by other studies using slightly different data ranges (2017-2021), strengthening the reliability of the findings. In conclusion, the structure of the Surabaya economy in the 2016-2021 period is dominated by the services and trade sectors as the basis for growth, amidst a gradual downward trend in their share of the GRDP of East Java Province, which is in line with the theory of industrial agglomeration-deglomeration to metropolitan buffer areas.

Keywords: *economic structure, base sector, Location Quotient, share of GRDP, Surabaya City*

INTRODUCTION

Regional economic growth is always related to structural changes in each economic sector towards higher levels of productivity (Kuznets, 1971). This structural change is generally marked by a shift

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in dominance from the primary to the secondary sector, and, in later stages, to the tertiary or service sector (Adisasmita, 2013; Arsyad, 2010). Within the framework of regional economics, this shift is closely related to the economic base theory, which distinguishes between the base sector (oriented towards exports outside the region) and the non-base sector (oriented towards meeting the region's own needs) as the main drivers of a region's growth (Richardson, 1991; Sjafrizal, 2012). The city of Surabaya, as the capital of East Java Province and the second-largest metropolitan city in Indonesia, is one of the regions experiencing this structural dynamic most significantly, given its role as a center of trade, services, and industry in eastern Indonesia.

Surabaya City Statistics Agency (BPS) data shows that the growth rate of Surabaya City's GRDP experienced an upward trend in the 2016-2019 period, reaching a peak of 6.19 percent in 2018, before experiencing a contraction due to the COVID-19 pandemic in 2020 and gradually recovering to grow 4.29 percent in 2021 (Prayitno, 2023). Throughout this period, Surabaya's growth rate was consistently above the average for East Java Province, continuing a pattern that had been seen since 2011-2015, when Surabaya's growth ranged from 6-7.6 percent per year, higher than both East Java and the national average during the same period (Surabaya City RPJMD 2016-2021, sourced from Surabaya City Statistics Agency, 2016).

On the other hand, Surabaya's contribution to the total GRDP of 38 regencies/cities in East Java actually showed a downward trend, from 24.35 percent in 2018 to 24.03 percent in 2021 (Diskominfo Jatim, 2023). This combination of a relatively high growth rate but a declining share indicates a structural shift that requires further examination: whether this shift reflects the strengthening of certain basic sectors, or rather a relative weakening of Surabaya compared to surrounding buffer areas such as Sidoarjo, Gresik, and Pasuruan Regencies, which are also growing rapidly.

The study of Surabaya's basic sectors is not new, and several previous studies have used different datasets. Mareta (2011) identified Surabaya's leading sectors for the 2007-2011 period as electricity and water, construction, wholesale and retail trade, information and communication, financial services, and business services. Hariyoko & Puspaningtyas (2020) reinforced these findings for the 2013-2018 period, identifying business services (LQ 3.06), accommodation and food and beverage provision (LQ 2.82), and financial and insurance services (LQ 1.94) as the three sectors with the highest specialization. Prayitno (2023) continued the analysis for the 2016-2021 period and found a similar pattern: eleven basic sectors with LQ >1, dominated by services and trade, while the manufacturing industry sector was classified as non-basic (LQ 0.64) despite its significant nominal contribution to GRDP. Independently, Abdillah (2024) recalculated the LQ of Surabaya City for a slightly different period (2017-2021) using the publication of the BPS of East Java Province (2022) as part of a study of the potential income of the Arek East Java region, and obtained LQ values that were consistently very close to the results of Prayitno (2023) for the same ten basic sectors.

The gap seen in these studies is the absence of a study that specifically links the results of the sectoral LQ with the trend of Surabaya City's share of East Java Province's GRDP within a single discussion framework, while also triangulating the results of two independent LQ calculations (Prayitno, 2023; Abdillah, 2024) to test the consistency of the findings before concluding the city's economic structure. The 2016-2021 period was chosen as the focus of the study because it is the only time span for which data, both aggregate growth, sectoral LQ from two independent sources, and GRDP share to the province, are officially available, complete, and cross-verifiable at the time of this article's writing; while official publications of GRDP by 17 business fields for Surabaya City and East Java Province for 2022 and beyond are not yet available in a format that allows for accountable independent LQ calculations. This article brings together all of this data, sourced from official publications by Statistics Indonesia (BPS) and official releases from regional/provincial governments that are verifiable and publicly accessible.

Based on the description, the formulation of the research problem includes:
(1) problem recognition, namely the contradiction between the relatively high growth rate of Surabaya's GRDP and its share of East Java's GRDP which tends to decline; (2) identification of research questions, namely what sectors are the economic base of Surabaya City in the 2016-2021 period; (3) the scope of the complexity of the problem, which involves the impact of the Covid-19 pandemic on the sectoral structure; and (4) research objectives, namely analyzing the base sectors and patterns of Surabaya City's GRDP share in East Java Province in the 2016-2021 period based on available and verified official data.

The objectives of this study are: (1) to identify the basic and non-basic sectors of the Surabaya City economy for the 2016-2021 period based on Location Quotient analysis; and (2) to analyze the shifting pattern of the share of Surabaya City's GRDP towards East Java Province during the same period as an early indication of regional structural dynamics.

RESEARCH METHODS

This study uses a quantitative descriptive approach by utilizing secondary data in the form of Gross Regional Domestic Product at Constant Prices (GRDP ADHK) 2010, according to 17 business fields for the City of Surabaya and East Java Province, for the period 2016-2021, sourced from the official publication of the Central Statistics Agency (BPS) of Surabaya City and BPS of East Java Province. Data on GRDP growth rates and sectoral Location Quotient tables for 2016-2021 are based on the results of Prayitno's (2023) processing, which has been published in Economics and Business: Periodical Publication of the University of Surabaya. Data on the contribution (share) of Surabaya City's GRDP to the GRDP of 38 regencies/cities in East Java for 2018-2021 are sourced from the official release of the Communication and Informatics Office of East Java Province (2023),

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which cites the publication of BPS of East Java Province. For historical context, the data on the GRDP growth rate of Surabaya City, East Java Province, and nationally for the 2011-2015 period are sourced from the 2016-2021 Surabaya City RPJMD (Bappeko Surabaya, 2016), which cites the official publication of the Surabaya City BPS in 2016.

Location Quotient (LQ) analysis is used to determine the basic and non-basic sectors of the Surabaya City economy by comparing the role of a sector in the city's economy with the role of the same sector in the provincial economy (Richardson, 1991; Yogi, Pradono, & Aritenang, 2020), with the formula:

$$LQ = (Si / Ni) / (S / N)$$

where Si is the added value of sector i in the GRDP of Surabaya City, Ni is the total GRDP of Surabaya City, S is the added value of sector i in the GRDP of East Java Province, and N is the total GRDP of East Java Province. The value of LQ>1 indicates a basic sector (a leading sector with an export orientation outside the region), LQ=1 indicates a self-sufficient sector, and LQ<1 indicates a non-basic sector that has not been able to meet the needs of its own region (Tarigan, 2005; Halim, 2004).

To test the reliability of the LQ results restated by Prayitno (2023), this study triangulated them by comparing them with the results of an independent LQ calculation by Abdillah (2024) using a different official data source (BPS publication of East Java Province, 2022) for a slightly different year range (2017-2021). This triangulation is methodologically important because the two studies were conducted by different researchers, with data periods that are not entirely identical. Hence, the concordance of their results strengthens the validity of the findings without relying on a single source.

As a complement to the LQ analysis, data on the share of Surabaya City's GRDP to the total GRDP of East Java Province is used to illustrate the direction of shifts in Surabaya's relative position in the provincial economy from year to year, which within the framework of the agglomeration-deglomeration theory (Kuncoro, 2012) can indicate a redistribution of economic activity, particularly the manufacturing industry, to metropolitan buffer areas around the core city.

RESULTS AND DISCUSSION

Dynamics of GRDP Growth in Surabaya City

For context, Table 1 shows that during 2011-2015, Surabaya's GRDP growth rate was consistently above the East Java Province and national averages, although all three showed a slowing trend leading up to 2014-2015 due to global economic instability (Bappeko Surabaya, 2016). This pattern continued in the main study period of 2016-2021, as presented in Table 2: Surabaya's growth increased steadily in 2016-2018, reaching a peak of 6.19 percent, before slowing in 2019 (6.09 percent) and contracting sharply in 2020 due to the COVID-19 pandemic. Recovery occurred in 2021 with growth of 4.29 percent

(Prayitno, 2023).

Table 1. GRDP Growth Rate: Surabaya vs East Java vs National, 2011-2015 (percent)

Region	2011	2012	2013	2014	2015
City of Surabaya	7,13	7,35	7,58	6,73	5,97
East Java Province	6,44	6,64	6,08	5,86	5,44
National	6,46	6,23	5,78	5,02	4,79

Source: Surabaya City RPJMD 2016-2021, Table II.15 (Bappeko Surabaya, 2016), sourced from Surabaya City BPS.

Table 2. GRDP Growth Rate of Surabaya City, 2016-2021 (percent, y-on-y)

Year	2016	2017	2018	2019	2020	2021
GRDP Growth Rate (%)	6,00	6,13	6,19	6,09	-4,8*	4,29

*Source: Prayitno (2023), Economics and Business: UBAYA Periodical Publication, 27(2), Table 1, sourced from BPS Surabaya City (2022). *The 2020 value of -4.8% follows the narrative in the source; this figure reflects the contraction of Surabaya's GRDP due to the Covid-19 pandemic.*

Surabaya City Base Sector (2016-2021 Period)

The results of the LQ analysis in Prayitno's (2023) study, presented again in Table 3, show that of the 17 business fields, eleven sectors were classified as basic sectors (LQ>1) on average for the 2016-2021 period. The sectors with the highest LQ were Corporate Services (2.93) and Accommodation, Food and Beverage Provision (2.76), followed by Financial Services (1.88). This is consistent with Surabaya's character as a service and trade city that serves the needs of the Gerbangkertosusila region more broadly. Interestingly, the Manufacturing Industry sector is classified as non-basic (LQ 0.64) even though nominally it is the second largest contributor to GRDP in East Java, indicating that the role of Surabaya's processing industry is relatively smaller compared to industrial districts/cities such as Sidoarjo, Gresik, and Pasuruan, which serve as buffer zones for the Greater Surabaya industry (Prayitno, 2023). Other non-basic sectors include Agriculture, Forestry, and Fisheries (LQ 0.01); Mining and Quarrying (LQ 0.00); Government Administration (LQ 0.56); Education Services (LQ 0.89); and Other Services (LQ 0.99).

Table 3. Results of Location Quotient (LQ) Analysis of Surabaya City, Average 2016-2021

Sectors/Business Fields	Average LQ 2015-2021	Classification
Agriculture, Forestry, and Fisheries	0,01	Non-base

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Mining and Quarrying	0,00	Non-base
Processing Industry	0,64	Non-base
Electricity and Gas Supply	1,36	Base
Water Supply and Waste Management	1,59	Base
Construction	1,07	Base
Wholesale and Retail Trade	1,52	Base
Transportation and Warehousing	1,72	Base
Accommodation and Food and Beverage Provision	2,76	Base
Information and Communication	1,14	Base
Financial Services	1,88	Base
Real Estate	1,53	Base
Corporate Services	2,93	Base
Government Administration	0,56	Non-base
Education Services	0,89	Non-base
Healthcare Services	1,17	Base
Other Services	0,99	Non-base

Source: processed from Prayitno (2023), Economics and Business: UBAYA Periodical Publication, 27(2), based on 2010 ADHK GRDP data from BPS Surabaya City and BPS East Java Province.

Triangulation with Independent LQ Calculation Results

To test the reliability of the findings in Table 3, Prayitno's (2023) LQ results are compared with independent calculations by Abdillah (2024) using official publications from Statistics Indonesia (BPS) of East Java Province (2022) for a slightly different period (2017-2021), as part of a study of the potential income of the Arek Jawa Timur region. Table 4 shows that for the same ten basic sectors, the two calculations are highly consistent: seven of the ten sectors have identical LQ values to two decimal places, while the remaining three sectors (Water Supply-Waste Management, Transportation-Warehousing) differ by no more than 0.04 points. This consistency, despite the two studies being calculated independently by different researchers and using data sets that are not entirely identical, strengthens the reliability of the conclusion that the Corporate Services,

The Accommodation-Food and Beverage Provision and Financial Services sectors have consistently been the most specialized basic sectors in Surabaya throughout the second half of the 2010s and into the early 2020s.

Table 4. Triangulation of LQ Results for Surabaya City: Prayitno (2023) vs Abdillah (2024)

Sectors/Business Fields	LQ Prayitno (2023), 2016-2021	LQ Abdillah (2024), 2017-2021
Electricity and Gas Supply	1,36	1,36
Water Supply, Waste Management	1,59	1,55
Construction	1,07	1,07
Wholesale and Retail Trade	1,52	1,52
Transportation and Warehousing	1,72	1,73
Accommodation and Food and Beverage Provision	2,76	2,76
Information and Communication	1,14	1,14
Financial Services and Insurance	1,88	1,88
Real Estate	1,53	1,53
Corporate Services	2,93	2,93

Source: Prayitno (2023), Economics and Business: UBAYA Periodical Publication, 27(2); Abdillah (2024), Journal of Development Economic Dynamics (JDEP), 7(1), 14-27, https://doi.org/10.33005/jdep.v7i1.476.

Share of Surabaya City's GRDP in East Java Province

Table 5 shows that although the growth rate of Surabaya's GRDP is relatively high (Table 2), the share of Surabaya City's GRDP to the total GRDP of 38 regencies/cities in East Java actually shows a consistent downward trend, from
24.35 percent (2018) to 24.03 percent (2021) (Diskominfo Jatim, 2023). The combination of these two findings of high growth but declining share can be explained through the agglomeration-deglomeration theory (Kuncoro, 2012): the buffer areas of the Greater Surabaya metropolitan area (Gerbangkertosusila), especially Sidoarjo, Gresik, and Pasuruan Regencies which are also the base of the manufacturing industry, grew relatively faster in the same period so that they also took part in the regional growth share, in line with the general pattern of deglomeration of capital-intensive manufacturing activities from the core city to surrounding areas that offer more land and lower operating costs (Diskominfo Jatim, 2023).

Table 5. Contribution of Surabaya City's GRDP to East Java Province's GRDP, 2018-2021 (percent)

Year	2018	2019	2020	2021
Surabaya's Contribution to the East Java's GRDP (%)	24,35	24,45	24,07	24,03

Source: East Java Province Communications and Information Service (2023), citing the official publication of the East Java Province BPS.

Overall, the LQ findings (with triangulation validation) and GRDP

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share in the 2016-2021 period complement each other: Surabaya's economic structure is dominated by the service sector (corporate services, financial services, real estate) and trade as the base sector with high specialization and consistency across studies, while the city's relative position to the total East Java economy has gradually declined along with the rapid growth of industrial areas in the buffer zone. This pattern is consistent with the urban economic base theory (Richardson, 1991) and the agglomeration-deglomeration theory (Kuncoro, 2012), in which the service and trade sectors are the main drivers of value added in core cities, while capital-intensive manufacturing activities tend to be decentralized to surrounding areas.

CONCLUSION

This study examines the basic sectors and the pattern of Surabaya City's share of GRDP in East Java Province during the 2016-2021 period, using official, verifiable data from BPS. Based on the Location Quotient analysis (Prayitno, 2023), the results of which were triangulated and proven consistent with independent calculations by Abdillah (2024), eleven of the seventeen sectors are classified as basic sectors, dominated by the corporate services sector, the provision of accommodation, food and beverage, and financial services, while the processing industry sector is actually non-basic despite its large nominal value. At the same time, Surabaya's share of East Java's GRDP decreased from 24.35 percent (2018) to 24.03 percent (2021), which is in line with the agglomeration-deglomeration theory, indicating relatively faster growth in metropolitan buffer areas.

The policy implication of these findings is the need for the Surabaya City government to strengthen synergies between the leading service sectors (finance, real estate, and corporate services) and the surrounding industrial buffer zone, so that Surabaya's role as a regional growth center for Gerbangkertosusila remains intact despite its declining share of the provincial GRDP. Academically, this study contributes by linking sectoral LQ results with GRDP share data within a coherent discussion framework and validating these findings through triangulation with independent calculation results—a methodological step rarely undertaken in similar sector-based studies. Further research is recommended to expand the study to the period beyond 2021 once the official publications of the GRDP of Surabaya City and East Java Province by 17 business fields for those years are fully available and verifiable, including conducting a full Shift-Share decomposition to precisely measure regional growth components, proportional shifts, and differential shifts in each sector.

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