

Article

Assessing the Conditions for Industrial Value Added in Small Businesses in Namangan Region

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Abstract: This study examines changes in the industrial and export activity of small businesses in Namangan Region during 2021–2025 and compares the conditions for value added formation across its city and districts in 2024. A two level assessment combines a four indicator base year index with a five indicator territorial index. The former rose from 1.000 in 2021 to 1.718 in 2025, driven particularly by industrial output and exports. The latter ranged from 0.093 in Torakorgan to 0.664 in Namangan city. Since district intermediate consumption is unavailable, estimated industrial value added applies a region wide coefficient of 0.3534 to district small business output. Consequently, both indices measure relative conditions and estimated capacity rather than observed firm level value added or its causal determinants. The results support differentiated measures for industrial cooperation, investment and higher value processing.

Keywords: small business; industrial value added; composite index; Namangan Region; regional disparities; export activity.

1. Introduction

Industrial output alone does not show how much new value is created: a rise in sales can coincide with a rise in intermediate inputs. Value added is the difference between output and intermediate consumption [1]. For local policy, this distinction matters when comparing small businesses that differ in production scale, investment, export performance and participation in regional industry. This article adapts the supplied regional assessment to examine how these observable conditions developed over time and how they differ across Namangan Region.

The study asks two related questions. First, how did industrial output, industrial participation and export activity change between 2021 and 2025? Second, which territories showed stronger combined conditions for value added formation in 2024? The analysis is descriptive. It does not identify individual firms, observe their actual input costs or establish causal effects [2].

2. Materials and Methods

The annual series and the district indicators come from the Namangan Regional Statistics Department statistical bulletins for 2021–2025 and its 2024 small entrepreneurship and industrial statistics, as reported in the source manuscript. Monetary values, percentages and computed results in the tables below reproduce the source; table headings and place names have been translated into English. The temporal and territorial

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assessments use different indicator sets because the 2025 annual investment share was not available on a comparable basis in the source.

Table 1. Indicators used in the dynamic assessment

Code	Indicator	Economic interpretation	Direction
X1	Small business industrial output	Scale of industrial production	+
X2	Small business share of regional industrial output	Participation in regional industry	+
X3	Small business exports	External market result	+
X4	Small business share of total exports	Export orientation	+

For each annual indicator j , the 2021 based index is $B_{jt} = X_{jt} / X_{j,2021}$. The dynamic composite index is the arithmetic mean of its four components: $I_{dyn,t} = 0.25(B_{1t} + B_{2t} + B_{3t} + B_{4t})$. Its baseline equals 1.000 in 2021. A value of 1.718 therefore describes the joint movement of these four indicators relative to 2021; it is not a measurement of a 71.8% increase in value added. The manuscript contains an isolated “0.24” beside an equal weight statement, whereas its equation and reported index use 0.25 for each of four components; the reproducible equation is used here.

For the territorial assessment, the regional gross industrial value added of UZS 11,294.3 billion divided by industrial output of UZS 31,958.9 billion in 2024 gives an approximate coefficient of 0.3534. District estimated small business value added is calculated by multiplying district small business industrial output by this same coefficient. This estimate is a proxy for comparison; it is not district observed value added. Five positively oriented indicators are then scaled using $z_{ij} = (x_{ij} - \min x_j) / (\max x_j - \min x_j)$. The source combines entropy and equal weights and reports the final index as $IVAF_i = 0.3347z_{1i} + 0.1837z_{2i} + 0.1455z_{3i} + 0.1298z_{4i} + 0.2063z_{5i}$. Here z_1 is estimated value added, z_2 estimated value added per active industrial firm, z_3 the small business share of industrial output, z_4 the small business share of investment, and z_5 the ratio of newly established to active industrial firms. Rounded coefficients in the accompanying table are retained as printed in the source.

3. Results

Table 2. Small business industrial and export indicators in Namangan Region

Year	Industrial output, UZS billion	Share of industrial output, %	Exports, USD million	Share of total exports, %
2021	7,174.3	46.5	253.5	51.2
2022	8,331.8	44.8	262.6	45.2
2023	9,831.0	48.9	242.5	43.4
2024	15,970.3	54.1	294.2	49.3
2025	22,154.4	55.3	390.3	54.0

Industrial output grew from UZS 7,174.3 billion to UZS 22,154.4 billion over the observation period, while its share of regional industry rose from 46.5% to 55.3%. Export performance was less uniform: export value and the share of total exports both weakened in 2023, followed by gains in 2024 and 2025. The index accordingly moved only modestly through 2023 and then accelerated [3].

Table 3. Dynamic composite index relative to 2021

Year	Dynamic composite index	Change against 2021, %
2021	1.000	–
2022	1.011	+1.1
2023	1.057	+5.7

Year	Dynamic composite index	Change against 2021, %
2024	1.378	+37.8
2025	1.718	+71.8

The increase to 1.718 in 2025 mainly reflects a large increase in nominal industrial output and a rise in export value. Because the source series is reported at current monetary values and no price deflator is supplied, the output component cannot be interpreted as real production growth. A strengthening of the composite index indicates more favorable measured production and market conditions, without establishing that product level value added increased by the same proportion [4].

Table 4. Indicators of value added formation by city and district in 2024

Territory	Estimated VA, UZS bn	Estimated VA per firm, UZS mn	Small business industry share, %	Investment share, %	Firm renewal, %
Namangan city	2,119.8	1,456.9	60.3	86.9	13.88
Mingbulak	151.3	1,375.1	40.2	34.0	46.36
Kasansay	324.5	1,111.2	46.3	90.6	22.60
Namangan district	538.3	1,882.2	81.1	56.1	12.59
Naryn	209.8	1,110.1	99.9	71.8	24.87
Pop	245.2	1,290.5	78.2	89.9	21.58
Torakorgan	161.9	615.7	7.6	62.8	15.97
Uychi	389.7	1,401.7	70.2	93.0	15.11
Uchkurgan	136.3	816.2	41.9	88.3	23.95
Chartak	106.0	662.6	43.3	81.4	20.63
Chust	202.7	726.6	25.4	77.5	16.49
Yangiqorgan	171.3	775.2	99.9	88.1	39.82

Namangan city leads in the estimated absolute value added proxy, whereas Namangan district has the highest estimate per active industrial firm. Mingbulak has the largest firm renewal ratio; Uychi has the highest small business investment share; and Naryn and Yangiqorgan have the largest small business shares of industrial output. These different strengths justify an index with several components. The same regional coefficient was applied to all districts, so estimated value added per firm largely reflects output per firm under an assumed common value added ratio [5].

Table 5. Final weights in the territorial composite index

Indicator	Weight
Estimated value added	0.33
Estimated value added per firm	0.18
Small business share of industrial output	0.15
Small business share of investment	0.13
Industrial firm renewal ratio	0.21
Total	1.00

The source chart reports composite scores from 0.093 for Torakorgan to 0.664 for Namangan city. Figure 1 translates its district labels and reproduces its twelve scores without changing their order or values. The source text reports the leading follow up

scores as 0.47 for Yangiqorgan and 0.42 for Namangan district; its chart gives the more precise values 0.465 and 0.420, respectively [6].

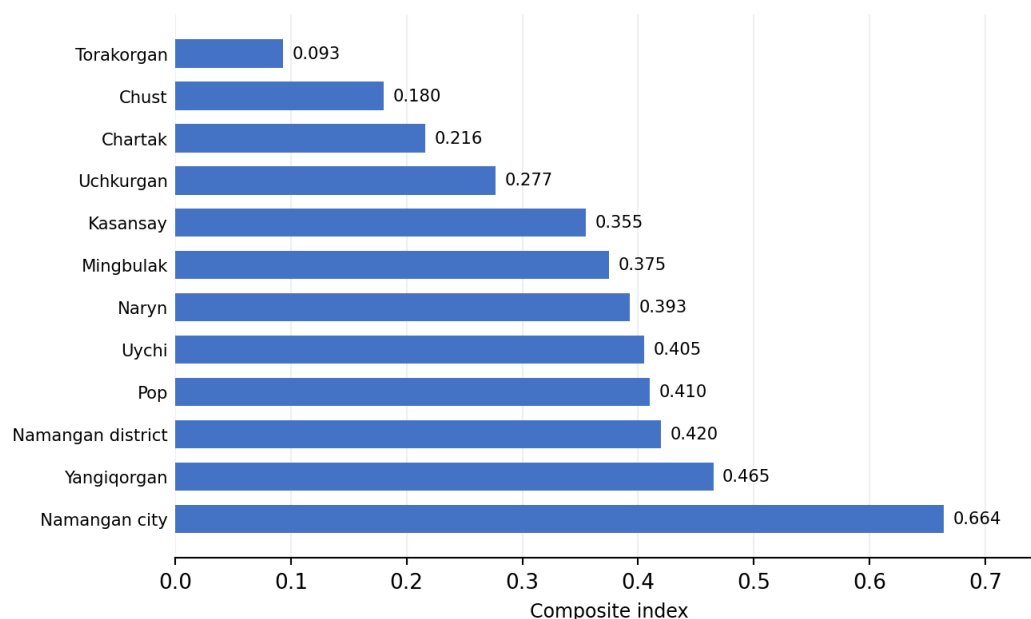


Figure 1. Composite index of value added formation across Namangan city and districts

The source groups territories into four levels using quartiles near 0.26, 0.38 and 0.41. Higher scoring territories include Namangan city, Yangiqorgan and Namangan district; the lowest scores are in Torakorgan, Chust and Chartak. The categories identify relative scores within this set of twelve territories. Small differences close to cutoffs should not be treated as sharp economic distinctions [7].

4. Discussion

The two levels of assessment reveal different aspects of small business industrial development in Namangan Region. The dynamic index shows that the measured conditions for industrial production and export activity improved considerably between 2021 and 2025. The territorial index, however, shows that these conditions were distributed unevenly across the city and districts in 2024. Taken together, the results suggest that region wide growth should be examined alongside differences in the scale, intensity and structure of local production [8].

The dynamic composite index increased from 1.000 in 2021 to 1.718 in 2025. Most of this increase occurred after 2023, when small business industrial output and exports rose substantially. Industrial output reached UZS 22,154.4 billion in 2025, compared with UZS 7,174.3 billion in 2021, while exports increased from USD 253.5 million to USD 390.3 million. The change was less uniform in the intervening years: export value and the small business share of total exports both declined in 2023 before recovering. This pattern indicates that expansion in industrial output did not consistently translate into stronger external market performance throughout the period [9].

The 2025 index value requires careful interpretation. Its increase of 71.8% relative to the 2021 baseline represents the combined movement of four indicators: industrial output, the small business share of regional industrial output, export value and the small business share of total exports. It does not mean that actual value added or production efficiency increased by 71.8%. In addition, the monetary output series is reported in nominal terms, and the source does not provide a price adjusted series. Part of the measured increase may therefore reflect changes in prices. Establishing whether firms created more value per unit of output would require information on intermediate consumption and production costs [10].

The territorial results show why aggregate output is insufficient for assessing local performance. Namangan city recorded the highest estimated absolute value added, at UZS 2,119.8 billion. Namangan district, however, had the highest estimated value added per active industrial firm, at UZS 1,882.2 million. These figures describe different dimensions of industrial activity. The first reflects the scale of production concentrated in a territory, whereas the second provides an indication of production intensity under the study's estimation method. A district with a smaller industrial base may consequently perform well on a per firm measure even when its aggregate output is lower [11].

Other indicators also identify different local strengths. The small business share of industrial output reached 99.9% in both Naryn and Yangiorgan. Uychi recorded the highest small business share of investment, at 93.0%, while Mingbulak had the highest industrial firm renewal ratio, at 46.36%. None of these individual results establishes overall superiority: a high share may coexist with a relatively small production base, and a high rate of new firm formation does not show whether those firms will sustain production or create greater value. Their contribution to the analysis lies in showing which conditions are relatively strong in each territory [12].

The composite index brings these dimensions together. Its scores range from 0.093 in Torakorgan to 0.664 in Namangan city, with Yangiorgan at 0.465 and Namangan district at 0.420. Namangan city's leading position is closely associated with its large estimated value added. Yangiorgan combines a high small business share of industrial output with a relatively high firm renewal ratio, while Namangan district performs particularly well on the estimated value added per firm measure. The ranking thus reflects several forms of strength rather than a single development path [13].

At the lower end of the index, a low score should not be interpreted as proof that a territory lacks industrial potential. Torakorgan, for example, has a small business share of industrial output of 7.6%, which reduces its relative score under the selected indicators. The index describes the measured role and conditions of small businesses within the territory's industrial activity; it is not a direct measure of the value created by every industrial enterprise there. The scores are also relative to the twelve territories included in this assessment. Differences close to the proposed group boundaries should therefore be treated with caution [14].

These findings provide a basis for differentiated policy priorities. In Namangan city, Namangan district and Yangiorgan, efforts can focus on deeper processing, product development and access to higher value markets. In Naryn, Uychi and Pop, existing participation in industry or investment may be supported through technological modernization and the production of export ready goods. For Uchkurgan, Kasansay and Mingbulak, attention to output per firm and the transition from basic production to finished products is particularly relevant. In Torakorgan, Chust and Chartak, stronger links between small firms and established industrial value chains, together with investment in production equipment, may address the weaker components identified in the assessment. These directions follow from the observed indicator profiles; the present study does not test their effects [15].

The main methodological limitation concerns the estimate of district value added. Because district level intermediate consumption is unavailable in the source data, the study applies one region wide industrial value added coefficient to small business output in every territory. The resulting values are comparable proxies, but they cannot capture differences in input costs, technologies or product composition between districts. Moreover, the territorial ranking depends on the selected indicators, their normalization and their assigned weights. Future analysis using firm level output and input data could measure value added directly and test whether the territorial ranking remains stable under alternative weighting methods.

5. Conclusion

Between 2021 and 2025, Namangan small businesses increased measured industrial output and exports, and the four indicator dynamic index reached 1.718 in 2025. In 2024, the territorial composite index showed substantial variation, ranging from 0.093 in Torakorgan to 0.664 in Namangan city. The results identify where production and market conditions appear stronger, while the absence of district intermediate consumption prevents a direct measurement of local value added efficiency. Improving the evidence base should be paired with district specific measures that connect smaller firms to industrial value chains, modernize production and increase the share of finished and export ready goods.

REFERENCES

- [1] C. Syverson, "What determines productivity?" *Journal of Economic Literature*, vol. 49, no. 2, pp. 326–365, 2011, doi: 10.1257/jel.49.2.326.
- [2] A. Szirmai and B. Verspagen, "Manufacturing and economic growth in developing countries, 1950–2005," *Structural Change and Economic Dynamics*, vol. 34, pp. 46–59, 2015, doi: 10.1016/j.strueco.2015.06.002.
- [3] N. Bloom, B. Eifert, A. Mahajan, D. McKenzie, and J. Roberts, "Does management matter? Evidence from India," *The Quarterly Journal of Economics*, vol. 128, no. 1, pp. 1–51, 2013, doi: 10.1093/qje/qjs044.
- [4] R. Karagiannis and G. Karagiannis, "Constructing composite indicators with Shannon entropy: The case of Human Development Index," *Socio-Economic Planning Sciences*, vol. 70, p. 100701, 2020, doi: 10.1016/j.seps.2019.03.007.
- [5] D. Rodrik, "Unconditional convergence in manufacturing," *The Quarterly Journal of Economics*, vol. 128, no. 1, pp. 165–204, 2013, doi: 10.1093/qje/qjs047.
- [6] A. Szirmai, *Socio-Economic Development*, Cambridge University Press, 2015.
- [7] F. L. Roberts, P. S. Kandhal, E. R. Brown et al., *Hot Mix Asphalt Materials, Mixture Design, and Construction*, NAPA Education Foundation, Lanham, MD, 1996.
- [8] GOST 9128-2013, *Asphalt concrete and polymer-asphalt concrete mixtures for automobile roads and airfields. Technical specifications*, M.: Standartinform, 2014.
- [9] GOST 8267-93, *Crushed stone and gravel from dense rock for construction works. Technical specifications*, M.: Standartinform, 1994.
- [10] GOST 8736-2014, *Sand for construction works. Technical specifications*, M.: Standartinform, 2015.
- [11] GOST 16557-2020, *Mineral powder for asphalt concrete mixtures. Technical specifications*, M.: Standartinform, 2020.
- [12] G. A. Huber and T. S. Shuler, "Providing Rut-Resistant Pavements using the Superpave Mix Design System," *Journal of the Association of Asphalt Paving Technologists*, vol. 61, pp. 598–618, 1992.
- [13] B. A. Turgunov and R. M. Hasanov, "Characteristics of climate-induced deterioration of asphalt concrete pavements in Uzbekistan," Year of publication unknown.
- [14] D. Jorgenson and K. Yun, *Productivity and Economic Growth*, Harvard University Press, 2001.
- [15] P. Krugman, "The Age of Diminished Expectations," MIT Press, 1994.