

Original Article

# The Institutional Quality and Trade: Evidence from Vietnam

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**Abstract** - This paper investigates the relationship between the institutional quality and trade growth in Vietnam (both in- and out-trade flows), especially the institutional quality in the current paper focuses on the domestic institutions. The domestic institutions are proxied by the provincial competitiveness index (PCI). The outcomes confirm that the better provincial institutional quality is, the higher trade growth gets. However, only some sub-indices positively affect both export and import growth; the other sub-indices solely impact either export or import flows, even some sub-indices only impact the trade growth of the lower-PCI-mean group.

**Keywords** – PCI, import value, export value, domestic institutions.

## I. INTRODUCTION

The effect of institutional quality on trade has been attracting attention in the literature. It has been claimed that better institutional quality facilitates trade growth. The strengthening institutional quality is the way to ensure and facilitate the existence of a level playing field for individual economic agents. Consequently, the abuse of market power to exploit the rent-seeking activities by monopolizing trade in those agents' favour is restricted. High institutional quality could facilitate and implement legal right enforcement and social policies, which could promote trade growth by improving infrastructure and the domestic business environment, and is a source of comparative advantage for exporters. Conversely, low-quality institutions restrain bilateral trade cause of raising in the cost of international exchange.

Álvarez et al. (2018) used bilateral trade for 186 countries during 1996-2012 to investigate two elements of institutions affecting export growth. They find that the institutional quality at destinations and the differences in institutions between exporting and importing countries are the factors for facilitating bilateral trade. For the same purposes, Beverelli et al. (2018) use the bilateral trade data covering the period 1996-2006 and the gravity model to take into account the export effect of the institutional quality. The difference with Álvarez et al. (2018) is that Beverelli et al. (2018) add the intra-national trade in the gravity model to account for the multilateral resistance, where intra-national trade is the difference between the

total manufacturing value and total export value. The positive relationship between export growth and institutional quality is also found in their work. Ojeaga et al. (2014) also confirm that high institutional quality significantly promotes export growth. The special point in Ojeaga et al. (2014) is that they include both domestic and international institutional quality to capture the effect of the institutional quality on export growth. To measure the international institutional quality, as Álvarez et al. (2018) and Beverelli et al. (2018), utilize the data from World development indicator (WDI), while for the domestic institutions, infrastructural, judicial, and civil administrative measures are used. Francois and Manchin (2013) estimate the trade effect of institutional quality and infrastructure in developing countries. To account for the institutional quality, they use the indicators measured by the Fraser Institute. A positive relationship between the export growth from the North and the institutional and infrastructure quality is found.

Vietnam has conducted an annual business survey to assess the role of institutional quality in creating a favourable business environment for private investment since 2005. Based on this survey, the PCI is measured for each province. The PCI score is summarized from the weighted scores of ten sub-indices. The PCI is an important indicator that potentially impacts the decision of current and new investors in which place they do their businesses.

Many studies in Vietnam investigate the effect of the PCI on attracting provincial foreign direct investment (FDI), private investment, and economic growth. Tran et al. (2009) use the firm-level data in 2005 and the PCI indicator in 2006 to explain the different performances of firms across provinces. The estimated results show that some components of the PCI spur the firms' performance, such as labour policies, land access, and tenure, but some other components lag the firms' one. For the same purposes, Chu Thi Mai Phuong (2017) uses the PCI indicator to proxy for the quality of the institutions and the revenue and value-added to proxy for the firms' performance. She finds that the effect of the PCI on firms' performance is different across the types of firms (FDI, small-medium, and state-owned enterprises). Su and Bui (2017) use the PCI from 2005 to 2013 as a proxy for



government quality to investigate the effect of two government roles' dimensions (the other government dimension is its size) on promoting private investment. They suggest that the improvement of government quality is a key factor to increase the private investment effects of government size. Nguyen and Van Dijk (2012), Nguyen et al. (2013) also find out the effect of government quality on private firms' strategies, investment, and performance. The differences in attracting FDI across provinces also result from the differences in across-province governance quality. That relationship is investigated by some researchers, such as Nguyen Ngoc Anh and Nguyen Thang (2007), Malesky (2007), and Doan and Lin (2016).

Trade is also considered a fundamental driver of economic growth, and the positive relationship between trade and institutional quality is proved in literature. Many studies utilize data from the World development indicator (WDI) to proxy for international institutions. The finding effect of domestic institutions on both the export and import flows is rarely. The PCI indicator can serve as the domestic institutional quality of provinces in Vietnam because it is measured based on the aspects of administrative management and institutions (more details in the next part). However, none of those Vietnamese studies evaluates the trade effect of the PCI. The current paper investigates the relationship between the PCI and trade growth, where both export and import flows are included. Trade data is for all 63 provinces during 2016-2018. The estimated results confirm that higher institutional quality promotes more export and import growth. To evaluate in more detail the effect of the PCI on trade growth, the sub-indices are utilized instead of the PCI. As recommended by Su and Bui (2017), the effect of the sub-indices might be different among dissimilar PCI scores. We separate 63 provinces into two groups, a group includes all provinces having PCI scores above the mean of the PCI, and the other includes all provinces having PCI scores below the mean of the PCI. The estimated results show that some components of the institutional quality do not significantly affect trade flows, and some others impact only the trade growth of the lower-PCI-mean group. Only labour policy and proactivity indices have a significantly positive effect on both export and import growth.

The remaining parts of the paper are structured as follows: Part 2 is the introduction of the PCI; part 3 is data and estimate models; part 4 is estimated results, and the last part is the conclusion.

## II. THE PROVINCIAL COMPETITIVENESS INDEX

The PCI, which is carried by two organizations, the Vietnam Competitiveness Initiative (VNCI) and the Vietnam Chamber of Commerce and Industry (VCCI), was first introduced in 2005. The survey has been conducted across all provinces since 2006 to figure out why and which determinants impact the efficiency of governance in economic development, creating jobs, and the governance practices among provinces. To measure the PCI, ten sub-indices are quantified as follows:

- Entry costs for start-up businesses: this index measures the total time taking a firm in all steps to start a business, such as registering, acquiring land, and the necessary licenses. The longer it takes, the more business opportunities for firms to lose.
- Land access and tenure: A measure of firms' easy land access in terms of possessive, enough land for firms' expansion, the effective land prices, and the duration of land tenure. The easier the land access and tenure are, the more dynamic private firms are.
- A transparent business environment and equitable business information: The information about the proper planning and legal documents necessary for firms running their business is whether or not easy to access and is equitably available; whether the new policies and laws are announced and predictably implemented to firms. Information is an important resource of firms, so transparent and equitable business information is a solution to fair competition.
- Time costs: A measure of how time firms spend on bureaucratic compliance and on closing their operations for inspection, which is conducted by local regulatory agencies. This index is measured from nine sub-indices. The higher the time costs are, the more time firms waste and close their operations.
- Informal charges measure the informal charges firms need to pay and how they obstacle firms' business operations. The informal charges are quantified from some indicators, likely the rent-seeking phenomenon in handling administrative procedures for businesses, and informal charges delivered expected results, etc.
- Policy bias: A measure of how discriminant treatment in terms of incentives, policies, and access to capital between state-owned, corporations, and non-state enterprises.
- Proactive and creative provincial leadership in solving problems for enterprises: A measure of how provinces implement central policies and design their own initiatives for private sector development.
- Business Support Services: A measure of provincial services for the private sector in the promotion of trade, provision of regulatory information to firms, business making, provision of industrial zones or industrial clusters, and technological services.
- Labor training policies: A measure of how provincial authorities effort to promote labour skills and to assist in matching between labour supply and demand.
- Legal institutions: A measure of how the private sector confines the provincial legal institutions in solving the dispute resolution or lodging appeals against corrupt official behaviour.

The PCI score is measured based on the weighted scores of sub-indices. The weight for each sub-indices is adjusted per four years to update the state of reforms and new challenges for the Vietnamese economy. The changes of weights of sub-indices in the final provincial competitiveness index also provide an initial evaluation of which institutional factors impact more on the business environment. The weights of sub-indices from 2013 to

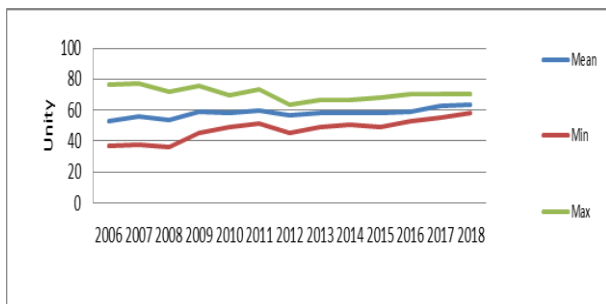
2018 do not change and are shown in Table 1. From Table 1, transparency, business support services, and labour training are the most important factors in the PCI, which means they impact the business environment more than the others, the next is the informal charges, and the last is the rest the sub-indices.

**Table 1. The Weights of Sub-Indices in Final Provincial Competitiveness Index from 2013 to 2018**

No.	Sub-index	Contribution
1	Entry cost	5%
2	Land access	5%
3	Transparency	20%
4	Time costs	5%
5	Informal charges	10%
6	Proactivity	5%
7	Business support services	20%
8	Policy bias	5%
9	Labor training	20%
10	Legal institutions	5%

Source: VCCI

A province has better institution quality (i.e., its business environment for the development of the private sector is better than others) if it has a higher PCI score. And if the PCI average is higher, the business environment of all provinces is improved. We glance at the PCI and its components during 2006-2018 to generally evaluate the improvement in institutional quality. We use the simple average to measure the PCI average. Some highlights are drawn. Firstly, the difference in max and min PCI scores has reduced over time. The score was arranged from 36.76 to 76.23 (the different point was 39.47) in 2006, while the different point in 2018 was only 12.02 points. Secondly, the minimum score has been increasing while the maximum score decreased in the first few years and has been increasing in the last some years. Thirdly, the PCI average has risen since 2006 (from 52.45 to 63.31). The increase in the PCI average shows that the institution's quality has been improved. The improving quality results from the improvement of the institutional quality of the low-PCI group more than the one of the high-PCI group (more details see Fig. 1).



**Fig. 1 The PCI Average During 2006-2018**

Source: VCCI

The increase in the PCI average results from the improvement of some sub-indices, such as entry costs, proactivity, business support services, labour policies, and law and orders. However, some sub-indices source the

reduction of the average of the PCI likely time costs, informal charges, and policy bias. This sub-indices downgrade over time. Some indices are improved mostly from the lower-PCI-score group, such as transparency (more details about the change of 10 sub-indices are provided in Fig. 2). To boost the provincial institutional quality, local governments (in provinces) should improve the quality of some sub-indices, such as the time costs, informal charges, and policy bias. The time costs reduction can save firms' resources and increase firms' time to operate. A dynamic economy cannot lack a fair competition market. The decrease in informal charges and policy bias contribute to building up a fair, competitive market. Local governments also improve further the good indices to supply a favourable business environment for the development of the private sector.

### III. DATA AND ESTIMATE METHODS

#### A. Data

Data for the current paper sources from Vietnam Customs, VCCI, and General Statistic Organization (GSO) for 63 provinces during 2016-2018.

Export and import data come from Vietnam Customs; export and import values are recorded only the total value of which a province exports and imports a year. We do not have destinations from which a province exports to and imports. The population and the income per capita are stemmed from GSO. The population and the income per capita are the proxies for the supply and consumption available in a province. The annual PCI and its components come from VCCI. Based on the PCI score, provinces' institutional quality is divided into 5 or 6 tiers (depending on the year). Those tiers include excellent, high, mid-high, mid-low, low, and very low once. However, the arrangement of a province in a tier is quite different across years. With the same score, a province might belong to different tiers across the years. For example, Vinh Long province got 62.6 points in 2016 did arrange in the excellent group, while Ben Tre province got 67.67 points in 2018 arranged in the high group. The amount of provinces in each tier is also different across the year. For example, in 2016, the number of provinces in excellent, high, mid-high, mid-low, low, and very low is, respectively, was 6, 16, 28, 6, 4, and 2, while in 2018, with the same order the number of turns was 2, 7, 32, 20, and 2 (none very low tier in 2018).

#### B. Estimate Methods

To investigate the role of institutions on trade growth in Vietnam, the model is used as shown in Equation 1.

$$\ln X_{it} = \beta_0 + \beta_1 PCI_{it} + \beta_2 \ln pop_{it} + \beta_3 \ln income_{it} + \delta_t + \sigma_{it} \quad (1)$$

Where  $\ln$  is the natural logarithm,  $X_{it}$  is the export/import value of province  $i$  at the time  $t$ ;  $pop_{it}$ ,  $PCI_{it}$ , and  $income_{it}$  are the population, the provincial competitiveness index, and the income per

capita of the province  $i$  at the time  $t$ .  $\delta_i$  is time-fixed effect to account for the macroeconomic shocks impacting on trade. The last term in Equation 1  $\varepsilon_{it}$  is the error term.

As found in the literature, the effects of sub-indices on FDI, private investment, or economic growth are not the same. Some indices have a significant positive effect, while others have a negatively significant effect, and some have an insignificant effect. We also evaluate the effect of sub-indices on trade flows. Instead of the PCI indicator, 10 sub-indices are used in Equation 2 as follows:

$\ln X_{it} = \beta_0 + \alpha_j Z_{ijt} + \beta_1 \ln pop_{it} + \beta_2 \ln income_{it} + \delta_i + \lambda_{it}$  (2) Where  $Z_{ijt}$  is the sub-index  $j$  of the province  $i$  at year  $t$ ;  $j$  represents for 10 indices: Entry costs, land access and tenure, transparency, time costs, informal charges, policy bias, proactivity, business support services, labour policy, and law and order, respectively.  $\lambda_{it}$  It is the error term. The other notations are the same as in Equation 1.

Before estimating the effect of the PCI and its components on trade growth, we summarize the variables and provide them in Table 2.

Table 2. Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Entry costs	185	7.905306	.6428024	6.409792	9.283225
Land access	185	6.219247	.6683577	4.158668	7.79348
Transparency	185	6.251732	.3763455	5.259631	7.251398
Time costs	185	6.668559	.7540338	4.908128	8.901896
Informal charges	185	5.575531	.8338109	3.340238	7.81816
Policy bias	185	5.297456	.8568117	3.115119	7.866987
Proactivity	185	5.383101	.7707069	3.410272	7.813844
Business support services	185	6.155292	.7344786	4.175933	7.81509
Labor training	185	6.252638	.7949953	4.46292	8.174574
Law and order	185	5.855194	.75652	3.857325	7.986376
PCI	185	61.55929	3.372575	52.98887	70.6944
Year	185	2016.989	.8208505	2016	2018
Export	185	3.42e+09	7.15e+09	11745	3.81e+10
Import	185	3.37e+09	7.68e+09	1553073	4.71e+10
pop	185	1491.095	1335.573	319	8598.7
Income per capita	185	36643.23	12955.61	14652	81876

Note: Trade value equals export value plus import value and measured by USD; the population and income per capita are measured by thousand people and thousand VND, respectively.

For each sub-index, the higher score a province receives, the better its institutional quality gets. Table 2 shows that the difference in some components of the institutional quality among provinces is not the same. For instance, for the transparency index, the gap between the maximum and minimum score only is 1.99, but for policy bias, this gap is 4.75. The gaps of sub-indices scores provide the different quality of institutions among provinces. The institutional quality in cases of transparency is quite similar across provinces, but in cases of informal charges, policy bias, proactivity, and law and order are quite different among them. Based on the sub-indices score provinces receive, they could know which aspects of institutions need to improve more to attract and facilitate the entrepreneurs.

#### IV. ESTIMATE RESULTS

The estimated results of the effect of institutional quality on trade in Vietnam are provided in Table 3, columns (1) and (2) represent export and import flows, respectively. The effect of the income per capita and

population on both export and import flows, although it is different in size but similar in signs. All of them have positive effects on export and import. The estimated results are quite the same as in the literature. When the population increases, the resources for producing goods increase, given other resources. Especially in the cases of Vietnam, the production process is mostly based on labour resources instead of capital. If the population increases 1%, the export and import flow increase 0.62% and 0.87%, respectively.

The income per capita has a positive effect on both export and import. If the income per capita increases, the consumers potentially increase to consume. Particularly, in the cases of Vietnam, the consumers like foreign goods more. If the income per capita increases 1%, the export and import increase 0.3% and 0.27%, respectively. More interesting is the effect of the PCI on export and import flows. The estimated results in Table 3 show that both export and import have benefits if the quality of domestic institutions is improved. The quality of a domestic institution is higher, which means the regulations related to

business activities are more effective. If a province increases one the PCI score, the export and import flow rise 9% and 12.3%, respectively.

**Table 3. The Effect of the Domestic Institutional Quality on Trade Flows in Vietnam**

VARIABLES	(1) lnexp	(2) limp
PCI	0.0900** (0.0444)	0.123*** (0.0444)
lnpop	0.617*** (0.209)	0.872*** (0.209)
lnincome	0.304*** (0.0325)	0.267*** (0.0325)
Constant	-18.24*** (2.604)	-18.73*** (2.605)
Observations	185	185
R-squared	0.586	0.590

*Note: Standard errors are in parentheses; \*\*\* is statistically significant at 1%; ln is the natural logarithm; the years' coefficients are omitted for briefly; exp is the export flow, and imp is the import flow.*

To investigate more details the effect of the quality of the domestic institutions on trade growth, instead of the PCI, we replace the PCI variable in Equation 1 with 10 sub-indices as mentioned above. Based on the PCI score, the provincial institutional performance is arranged in different tiers; the higher the PCI score, the better the provincial institutional performance. To further shape the relationship between the quality of domestic institutions and trade growth, besides estimating for the whole sample, we follow the suggestion of Su and Bui (2017) to divide the sample into two groups. Group 1 includes provinces that have the PCI score greater than the mean, and group 2 is the rest. The mean PCI score in this sample is 61.56. The estimated results are provided in Table 4.

The columns (1), (2), and (3) are the estimated results of the whole sample, higher-average-PCI score and lower-average-PCI score, respectively, for the export flow. The last three columns (4), (5), and (6) are the estimated results of the whole sample, higher-average-PCI score and lower-average-PCI score, respectively, for the import flow. The effect of sub-indices can divide into three categories. The first category includes the indices which have insignificant effects on both export and import growth. The second category encompasses the indices which have significant effects on both the whole sample and all groups (higher and lower the mean of PCI). And the third category comprises all other cases excepting the two above categories.

Entry costs, land access, tenure, and time costs have an insignificant effect on both export and import flows for all groups. Entry costs and land access, and tenure might affect more entrepreneurs who begin start-up businesses.

Proactivity and labour policies belong to category 2, and two indices positively impact both in and outflows. Interestingly, the lower-PCI-mean group's impact trade flows more than the higher-PCI-mean groups. Import growth of the higher (lower)-PCI-mean group increases by 61.2% (70.4%) and 77.9% (129.5%) if the provincial proactivity index and labour policy increase one score, respectively. With the same level of the increase in those two indices' scores, export growth increases by 69.3% (59.4%) and 40.9% (87.6%) for the higher (lower) PCI-mean groups, respectively. The efficiency of business operation depends much on the flexibility and creating of the regulators and the skills of the labour force. The provincial authorities organize the course to promote the labour's skills and to assist in the placement of local labour.

Transparency, informal charges, policy bias, business support services, and law and order belong to the third category. Surprisingly, transparency only affects the export flow as a whole sample. Informal charges, policy bias, and law and order affect export or import or both flows. Interestingly, these indices only significantly impact the lower-PCI-mean group. Informal charges have a positive effect on both export and import flows of the lower-PCI-mean group. If informal charges increase a point, the lower-PCI-mean group increases export (import) 87.9% (72.6%). Informal charges include charges that enterprises have to pay in their line of business, such as charges to handle the administrative procedures, delivering expected results and the charge rates. This result indicates that to handle the business process, the informal charges have to reduce in the lower performance tier, which means to promote the trade growth, the lower-PCI-mean group needs to improve this factor. Meanwhile, business support services and law and order indices only impact the export flow of the lower-PCI-mean group. If business support services upgrade a point, the export potential is facilitated and increases 99%. Conversely, the law and order index negatively affects export flow.

To boost the export and import growth, the lower-PCI-mean provinces need to upgrade the institutional quality in more aspects than the higher-PCI-mean provinces. For instance, they need to lower informal charges, more efficiency of business support services and the law and orders besides the improvement of proactivity and labour policies for both groups. Among all indices, the determinant which is the greatest impact on trade growth is the labour policy.

**Table 4. The Effect of Sub-Indices on Provincial Trade Flows**

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	lnexp1	lnexp2	lnexp3	lnimp1	lnimp2	lnimp3
Enter costs	-0.294 (0.230)	-0.270 (0.242)	-0.183 (0.452)	-0.252 (0.208)	-0.212 (0.256)	-0.313 (0.386)
Land access	0.0943 (0.235)	0.0423 (0.296)	0.135 (0.347)	-0.210 (0.213)	-0.181 (0.313)	-0.233 (0.296)
Transparency	-0.482* (0.283)	-0.612 (0.387)	-0.305 (0.475)	-0.112 (0.256)	-0.143 (0.410)	-0.125 (0.405)
Time costs	-0.177 (0.210)	-0.234 (0.263)	0.353 (0.338)	-0.221 (0.190)	-0.105 (0.278)	-0.0725 (0.288)
Informal charges	0.503** (0.204)	0.0100 (0.299)	0.879*** (0.328)	0.413** (0.185)	0.0221 (0.316)	0.726** (0.280)
Policy bias	-0.229 (0.151)	-0.173 (0.188)	-0.131 (0.236)	-0.274** (0.137)	-0.357* (0.199)	-0.0454 (0.201)
Proactivity	0.571*** (0.203)	0.693** (0.265)	0.594* (0.316)	0.563*** (0.184)	0.612** (0.280)	0.704** (0.269)
Business support services	0.286 (0.199)	-0.0735 (0.250)	0.999*** (0.340)	0.126 (0.181)	0.0807 (0.264)	0.286 (0.290)
Labor training	0.479*** (0.177)	0.409* (0.231)	0.876*** (0.311)	0.927*** (0.160)	0.779*** (0.245)	1.295*** (0.265)
Law and order	-0.387** (0.177)	-0.315 (0.297)	-0.564** (0.227)	-0.267* (0.161)	-0.497 (0.314)	-0.284 (0.194)
lnpop	0.596*** (0.216)	0.787*** (0.256)	0.132 (0.371)	0.833*** (0.196)	0.642** (0.271)	0.733** (0.317)
lnincome	0.231*** (0.0380)	0.163*** (0.0478)	0.271*** (0.0615)	0.187*** (0.0345)	0.145*** (0.0505)	0.192*** (0.0524)
Constant	-6.366* (3.789)	4.582 (5.269)	-20.46** (7.822)	-6.491* (3.434)	2.937 (5.575)	-12.93* (6.674)
Observations	185	96	89	185	96	89
R-squared	0.648	0.563	0.713	0.714	0.619	0.754

Note: Standard errors are in parentheses; \*\*\*, \*\*, and \* are statistically significant at 1%, 5%, and 10%, respectively; ln is the natural logarithm; the years' coefficients are omitted for briefly; lnexp1, lnexp2, and lnexp3 (lnimp1, lnimp2, and lnimp3) represent for the export (import) flow of the whole sample, the higher-PCI-mean group, and the lower-PCI-mean group.

## V. CONCLUSION

The efficiency of the intervention of government's on trade, investment, economic growth, etc., is proved both in theory and empirical works. Many studies find out that the better institutional quality, the greater the trade growth. We also confirm that the relationship, especially in this case, is the relationship between domestic institutions and trade growth. Vietnam could raise the export and import growth by improving the domestic institution more. From the trend of the PCI score, the higher performance tier improves its institutional quality slowly than the lower performance tier in recent years. Therefore, the higher performance tier should find ways to upgrade the quality of the institutions.

The effect of sub-indices on export and import growth is different. Proactivity and labour policies significantly affect trade flows in all cases. Conversely, entry costs, time costs, and land access and tenure do not significantly impact trade growth. Particularly, informal charges, business support services only impact on export or import or both flows of the below-PCI-mean group. Based on identifying the impact of each index on trade, provinces are it easier to determine more exactly which aspects they should intervene to improve their institutional quality to promote their trade growth. Especially, the lower performance tier could upgrade the quality of institutions in more aspects (factors) than the higher performance tier to grow trade.

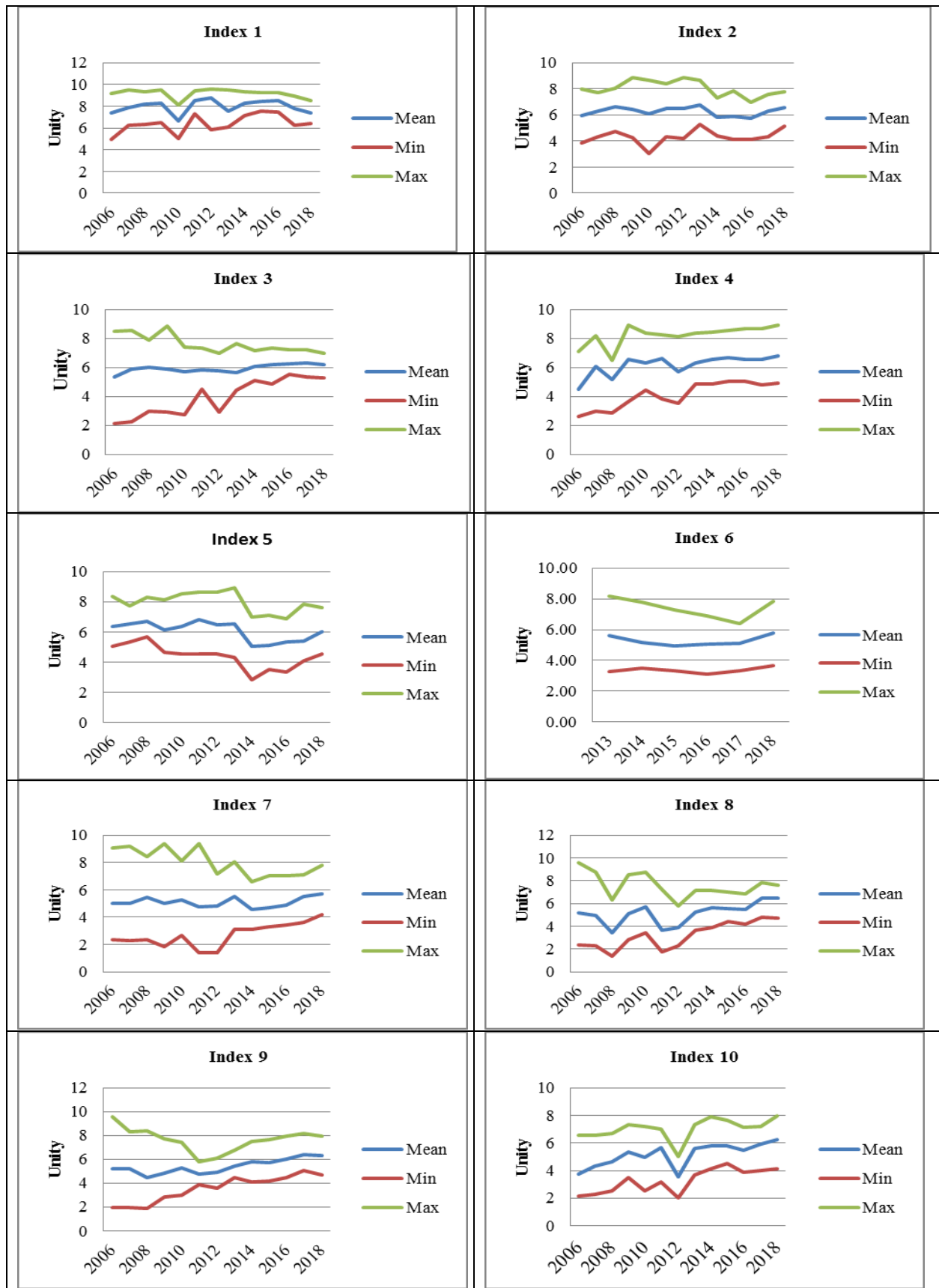


Fig. 2 Changes of Ten Sub-Indices Means During 2006-2018

Note: Indices 1-10 correspond to 10 sub-indices listed as follows: Entry costs, Land access and Tenure, Transparency, Time costs, Policy bias, Proactivity, Business Support Services, Labor policy, Law and Orders, respectively.

Source: VCCI

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