QUALITY OF ECONOMIC GROWTH IN ĐÀ NẴNG

by MEcon. ÔNG NGUYÊN CHƯƠNG*
& MEcon. TRẦN NHƯ QUỲNH**

In modern economics, economic growth is assessed quantitatively and qualitatively. For example, an economy not only gains high and stable growth rates but also has ability to deal with external upheavals; structure of industry is modernized; contribution of TFP is high; its competitiveness is beefed up incessantly; and it ensures social welfare, poverty alleviation and environmental protection. From a macroeconomic aspect, the paper analyzes and evaluates the quality of economic growth in Đà Nẵng in 1997-2009 employing economic indicators of short, medium and long terms. Findings show that the quality of economic growth is improved; changes in its structure of industry are quick and positive, and linked with changes in structure of resources and comparative advantages; the TFP is enhanced; and socioeconomic policies are reformed and perfected.

Keywords: Quality of economic growth, changes in structure of industry, inputs, ICOR, TFP.

1. Economic growth

After becoming a city directly responsible to the central government, Đà Nẵng has gained important socioeconomic achievements and breakthroughs in mobilization and concentration of resources on development as a socioeconomic center of Central Vietnam and Western Highlands, and deep integration into the world economy. In the years 1997 – 2009, Đà Nẵng gained high and continuous growth rates. In 1997-2000, its average growth rate was 9.4% a year. During the Asian financial crisis, however, it suffered decreases in foreign direct investment and export value. In 2001-2005, it regained a high growth rate of 13.2% on average (the national average was 7.7%). In 2006-2009, although Chanchu and Xangsane storms and 2008-09 global economic crisis made the FDI and export value fall considerably, Đà Nẵng still maintained a high growth rate of 9.8% while the national average was 6.7% (see Figure 1).

Besides economic growth, personal income in Đà Nẵng also improved, rising from VND4.8 million a year in 1997 (or 3.9 million based on fixed 1994 price) to VND27.7 million (or 10.3 million based on fixed 1994 price) in 2009. No family suffered hunger and ratio of poor family fell from 5.7% at the end of 2006 to nearly 0% at the end of

* *Economics University- Đà Nẵng University*
** *Institute of Socioeconomic Development Research*

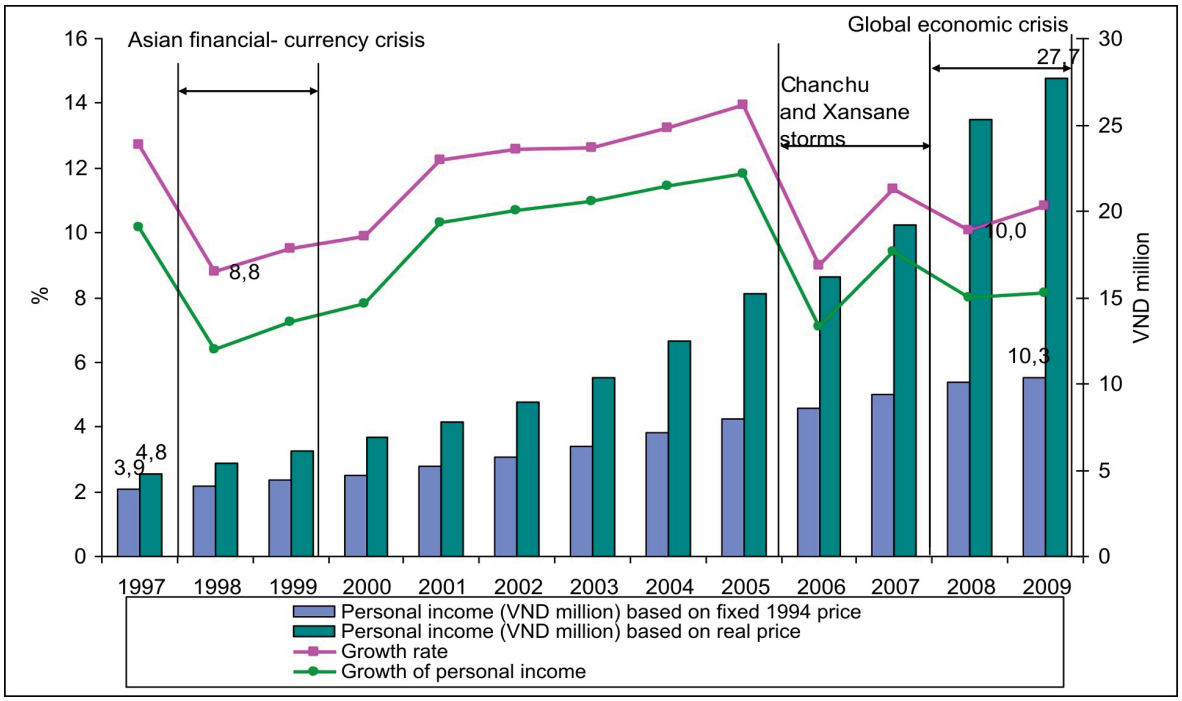


Figure 1: Đà Nẵng economic growth in 1997 – 2009

Source: Authors' calculations based on data from Đà Nẵng Statistics Office

2010 according to national standards; or from 7.67% to 0.77% in the same period according to Đà Nẵng standard. Social welfare was ensured and living standard was enhanced steadily.

2. Changes in structure of industry

In 2001-2005, manufacturing sector played the most important role in municipal economic development and growth rate. Its contribution to the growth rate was always higher than that of service sector. The years 2006-2009 witnessed a strong growth of the services sector when its rose by 19.03% a year, much higher than the municipal growth rate and accounted for 8.8 point percentage in the municipal growth rate of 10.7% (see Table 1).

The structure of industry kept changing positively when share of the service sector increased steadily (see Table 2) and degree of change was high, over 80° (see Figure 2). Trend of development of the service sector and change in the structure of industry is gradually similar to the trend of modern economy. It allows us to say that development of the service sector is playing a more important role compared with manufacturing and agricultural sectors in the economic policy of Đà Nẵng.

Table 1 : Growth rate and contribution of sectors to gross output (%, point percentage)

	Growth rate (%) 2001 - 2005	Contribution to gross output (point percentage)	Growth rate (%) 2006 - 2009	Contribution to gross output (point percentage)
Gross output	15.83	15.83	10.7	10.70
Agriculture	6.76	0.52	-0.33	-0.20
Manufacturing	25.59	10.66	6.49	3.05
Service	9.18	4.65	19.03	8.80

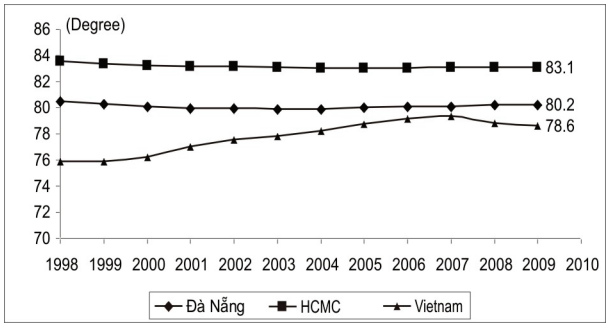
Source: Nguyễn Thị Như Liêm & Trần Như Quỳnh (2010)

Table 2: Gross output by sectors (%)

Sector	1997	2000	2005	2009
Agriculture	9.70	7.86	5.13	3.91
Manufacturing	35.31	40.25	50.19	44.58
Service	54.99	51.89	44.68	51.51

Source: Đà Nẵng Statistical Yearbooks 2000, 2005 and 2010

Figure 2: Degree of change in structure of industry by sector 1998-2009 [1]



Source: Authors' calculation based on data from GSO and Statistics Offices of Đà Nẵng and HCMC

Along with changes in the structure of industry, structure of labor also witnessed high mobility of labor that shows itself in a fall in working population in the agricultural sector, from 33% in 1997 to 9.54% in 2009 while the part of workforce in the service sector rose slowly from 37.2% in 1997 to 42.46% in 2005 and increased quickly to 57.38% in 2009. In the same period, the part of working population in the manufacturing sector varies between 30% and 35% (see Table 3). These data show that development of the service sector can attract a large number of laborers, especially from the agricultural sector.

Table 3: Labor structure by sectors (%)

Sector	1997	2000	2005	2009
Agriculture	33.00	28.23	19.39	9.54
Manufacturing	29.80	31.83	38.15	33.07
Service	37.20	39.94	42.46	57.38

Source: Đà Nẵng Statistical Yearbooks 2000, 2005 and 2010

Gross investment in Đà Nẵng rose considerably in all sectors but its structure has been relatively stable since 2000. The service sector accounts for the biggest share, from 60% to 65% (especially in real estate, hotel, transport and telecommunications) followed by the manufacturing sector, from 30% to 35% (see Table 4).

Table 4: Investment by sectors (%)

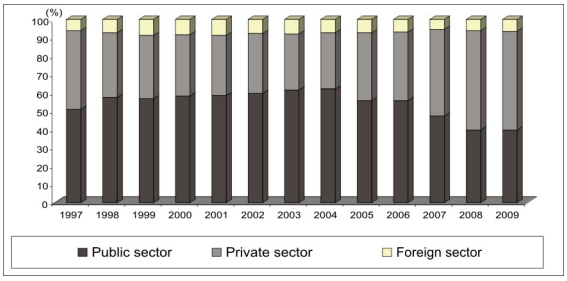
Sector	1997	2000	2005	2009
Agriculture	1.20	2.58	0.84	0.3
Manufacturing	57.16	34.15	33.74	35.7
Service	41.64	63.27	65.42	64.0

Source: Đà Nẵng Statistical Yearbooks 2000, 2005 and 2010

Along with changes in the structure of industry, resources also witnessed a positive transition appropriate to the trend of economic development. Changes in the structure of industry and of labor among sectors are relatively similar but investment structure changed faster than the structure of industry does. Full attention must be paid to this feature when working out policies on mobilization and allocation of investment for long-term development.

Structure of sectors also changed positively, foreign and private sectors took more important roles; but this change took place slowly. In 2000-2009, the public sector still accounted for 40% - 50% of the gross output while the foreign one accounted for only 7% (see Figure 4). More measures should be taken to enhance the dynamic role of non-public sectors.

Figure 3: Gross output by sectors [2]



Source: Đà Nẵng Statistical Yearbooks 2000, 2005 and 2010

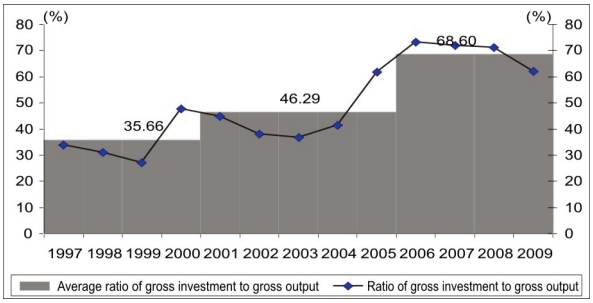
3. Contribution of inputs

a. Capital:

Investment in Đà Nẵng in recent years has increased strongly. Ratio of gross investment to gross output rose from 33.91% in 1997 to 47.69% in 2000 and reached its peak of 73.35% in 2006. On average, this ratio increased by 35.66% in

1997-2000; 46.29% in 2001-2005 and 68.6% in 2006-2009 (see Figure 5). The fast increase allowed expansion of production scale, replacement of technologies, improvement in infrastructure and creation of jobs. It also reflected a better accumulation of capital and ability of Đà Nẵng to attract capital from the outside.

Figure 4: Ratio of gross investment to gross output



Source: Authors' calculation based on data from Đà Nẵng Statistics Office

Capital construction accounted for 70% - 75% of gross investment in 2000 – 2008 while working capital attracted only 10% (see Table 5). Regarding sources of finance, domestic sources supplied some 85% of the gross investment. Public investment accounted for some 35% while the share of foreign one started to increase but its rise was not stable.

Investment per laborer increased quickly over years, from VND4.99 million in 1997 (equaling 167% of the national average) to 9.34 million in 2000; 24.24 million in 2005 and 38.78 million in 2009 (some three times higher than the national average. This ratio was especially high in the service sector (see Table 6).

Table 6: Investment per laborer
(VND million based on real price)

Year	Vietnam	Đà Nẵng	Agriculture	Manufacturing	Service
1997	2.98	4.99	0.18	9.58	5.59
2000	3.99	9.34	0.85	10.02	14.79
2005	8.02	24.23	1.05	22.00	36.48
2009	14.85	38.78	1.14	41.90	43.25

Source: Authors' calculation based on data from GSO and Đà Nẵng Statistics Office

b. Labor:

Đà Nẵng labor resource rose from 387,658 persons in 1997 to 613,718 persons in 2009 increasing by 3.9% a year while its labor force rose from 299,574 to 442.818 persons, by 3.3% a year, in the same period. With high ratios of participation in labor force (from 75% to 80%, see Table 7), the labor force could meet the demand for labor by companies in the city, but the better part of this labor force consists of laborers from other provinces. Đà Nẵng has become an economic cen-

Table 5: Structure of gross investment (real price) (%)

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
By class										
1. Capital construction	76.79	74.25	71.67	70.9	75.61	70.3	70.06	56.75	72.06	70.4
2. Working capital	12.42	11.96	11.15	9.11	6.83	7.28	7.08	11.48	9.52	10.5
3. Others	10.79	13.79	17.18	19.99	17.56	22.42	22.86	31.77	18.42	19.1
By source										
1. Domestic sources	91.35	94.64	91.93	91.00	91.11	92.80	90.73	88.47	84.96	83.06
Public investment	44.07	62.79	32.73	37.19	35.56	35.50	30.93	23.99	29.96	22.34
Bank credit	17.46	18.32	24.26	16.37	25.96	27.46	25.47	20.36	23.39	29.27
Equity capital	20.36	6.34	30.39	29.14	24.33	24.78	30.45	38.10	26.66	26.97
Others	9.47	7.20	4.55	8.29	5.26	5.07	3.88	6.02	4.95	4.48
2. Foreign source	8.65	5.36	8.07	9.00	8.89	7.20	9.27	11.53	15.04	16.94

Source: Đà Nẵng Statistical Yearbooks 2000, 2005 and 2010

ter that could attract migrant workers from all over the country.

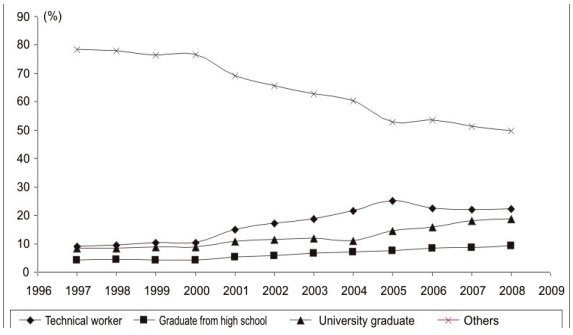
Table 7: Growth of labor resource and labor force (%)

	1997-2000	2001-2005	2006-2009
Labor resource [3]			
Labor resource to population	57.94	59.31	66.37
Growth rate	2.17	3.56	5.78
Labor force			
Ratio of participation in labor force [4]	77.66	80.61	74.69
Growth rate	2.49	3.37	4.03

Source: Authors' calculations based on data from Đà Nẵng Statistics Office

The quality of labor force in Đà Nẵng was also enhanced to meet the market demand. Its structure changed positively. Share of trained labor rose from 21.56% in 1997 to 50% in 2008. Highest increased was found in the army of technical workers in 2000 – 2005 and in group of laborers with university degrees in 2005 – 2008, which made ratio of laborers with university degree to the labor force rise from 1:10 to 1:4 (see Figure 6). However, shortage of well-trained labor still exists in Đà Nẵng.

Figure 6: Quality of labor force



Source: Đà Nẵng Statistical Yearbooks 2000, 2005 and 2010

c. Efficiency of use of inputs:

- Use of capital:

ICOR of Đà Nẵng tended to increase over years. The average ICOR rose from 2.7 in 1997 – 2000 to 3.6 in 2001 – 2005 and 3.5 in 2006 – 2009; and it is always higher than the national average (see Table 8) , This shows that (i) the economy becomes more capital-intensive; (ii) profitability of capital tends to decrease, especially in the service sector; and (iii) major investment projects are mainly in such fields as tourism, hotel, telecommunication and real estate.

Table 8: ICOR based on real prices (without latency)

Year	Vietnam	Đà Nẵng	Agriculture	Manufacturing	Service
1998	2.47	2.23	1.40	2.68	1.77
1999	3.37	2.12	2.31	1.02	3.21
2000	3.63	3.50	1.67	2.47	4.81
2001	4.30	3.35	1.11	1.90	5.43
2002	3.67	3.94	3.06	2.35	5.86
2003	3.08	4.16	1.65	1.67	8.30
2004	2.86	3.60	3.88	1.53	7.74
2005	2.77	3.15	0.58	1.79	5.72
2006	3.00	9.67	-1.84	-22.93	4.83
2007	3.14	4.26	2.16	3.93	4.70
2008	1.81	2.77	0.33	1.88	3.57
2009	4.09	3.98	0.43	3.72	4.30

Source: Authors' calculations based on data from GSO and Đà Nẵng Statistics Office

- Use of labor:

Labor productivity in Đà Nẵng rose quickly over years. Value of the average labor productivity increased from VND12.7 million per laborer in 1997 – 2000 to 17.2 million in 2001 – 2005 and 21.6 million in 2006 – 2009; and it is some two times higher than the national average. The manufacturing sector enjoyed the highest growth of labor productivity, which helped improve economic efficiency and changes in the economic structure. The growth of labor productivity is still low in the service sector, which shows that labor quality in this sector failed to meet its trend of and potentials for development (see Table 9).

c. Total factor productivity [7]

In the years 1998 -2000, Đà Nẵng economic growth relied mainly on intensive use of capital and labor because after being separated from Quảng Nam Province, it needed big investments in infrastructure projects, which shadowed effects of TFP (share of TFP in this period was below zero). In 2001 – 2005 when increases in investment became stable, contribution of TFP to economic growth rose considerably and reflected a better use of resources. This tendency prevailed in the years 2006 – 2009 but the share of TFP got lower because of bad effects of Chanchu and

Table 9: Labor productivity (GDP per laborer) based on 1994 fixed price (VND million per laborer)

Year	Vietnam	Đà Nẵng	Agriculture	Manufacturing	Service	Growth of productivity (%)
1997	6.37	11.88	3.5	14.29	17.38	
1998	6.6	12.48	3.66	15.52	17.38	5.07
1999	6.75	12.94	3.68	16.32	17.62	3.68
2000	7.23	13.42	3.87	16.76	17.5	3.7
2001	7.46	14.36	3.97	17.45	19.25	7.01
2002	7.84	15.65	4.02	19.88	20.38	8.96
2003	8.22	16.72	4.35	20.37	21.76	6.9
2004	8.7	18.83	4.84	24.27	22.21	12.57
2005	9.19	20.62	6.37	28.54	20.21	9.51
2006	9.67	20.01	7.05	28.09	18.18	-2.94
2007	10.2	20.63	8.65	28.94	17.98	3.09
2008	10.56	22.38	8.99	29.29	20.59	8.46
2009	10.82	23.34	8	29.77	22.18	4.3

Source: Authors' calculations based on data from GSO and Đà Nẵng Statistics Office

Table 10: Contribution of inputs to economic growth according to regression method

Year	Growth rate	Labor growth rate	Capital growth rate	Contribution of capital to economic growth	Contribution of labor to economic growth	Contribution of TFP to economic growth	Relative contribution of capital to output growth (%)	Relative contribution of labor to output growth (%)	Relative contribution of TFP to output growth (%)
1998	8.8	25.46	3.49	8.62	2.1	**-1.92**	98.01	23.85	***-21.86***
1999	9.5	21.05	5.46	7.13	3.29	**-0.92**	75.05	34.58	***-9.63***
2000	9.88	32.62	5.79	11.05	3.48	**-4.66**	111.85	35.28	***-47.13***
2001	12.23	31.67	4.76	10.73	2.87	**-1.36**	87.68	23.42	***-11.11***
2002	12.56	27.72	3.26	9.39	1.96	**1.21**	74.75	15.59	***9.66***
2003	12.62	26.66	5.21	9.03	3.14	**0.45**	71.55	24.87	***3.58***
2004	13.2	21.01	0.56	7.12	0.34	**5.75**	53.9	2.54	***43.56***
2005	13.91	19.42	4.2	6.58	2.53	**4.8**	47.3	18.19	***34.5***
2006	8.95	23.82	11.29	8.07	6.79	**-5.91**	90.13	75.88	***-66.01***
2007	11.33	18.36	7.69	6.22	4.63	**0.49**	54.86	40.84	***4.3***
2008	10.05	18.16	1.59	6.15	0.96	**2.94**	61.22	9.55	***29.23***
2009	10.81	15.89	5.92	5.38	3.56	**1.87**	49.78	32.95	***17.27***
1998-2009	11.36	19.25	5.2	6.52	3.13	**1.71**	57.42	27.54	***15.05***

Source: Authors' calculations based on data from Đà Nẵng Statistics Office

Xangsane storms and the global economic crisis 2008 – 09 (see Table 10).

Contribution of TFP to Đà Nẵng economic growth in 1998 – 2009 was comparable to cases of South Korea, Malaysia and Thailand in the years 1990-2000 (with many similarities in development level) (see Table 11). Generally speaking, Đà Nẵng economic growth is capital-intensive; its development is more extensive than intensive and use of resources is not much effective.

Table 11: Contribution of TFP to economic growth in some Asian countries

	South Korea	Malaysia	Thailand
1990	1.11	3.20	3.92
1991	3.68	3.90	1.28
1992	0.37	2.90	-0.10
1993	0.56	3.40	2.74
1994	2.91	3.40	2.86
1995	3.68	2.30	2.31
1996	3.90	2.50	0.68
1997	2.72	2.60	-6.28
1998	-8.47	-8.40	-10.89
1999	8.50	2.60	3.36
2000	-	3.90	-

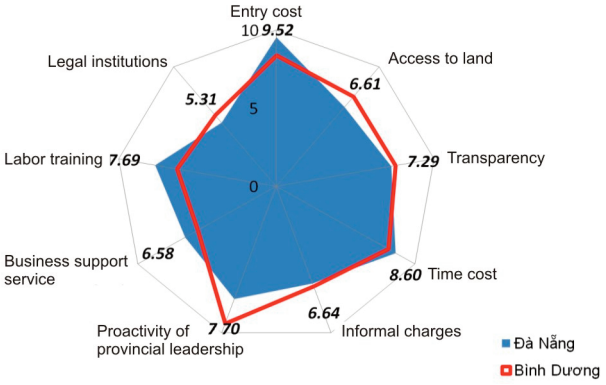
Source: ADB (2007), Asian Development Outlook 2007

d. Provincial Competitiveness Index-PCI [9]

In recent years, many policies have been introduced by Đà Nẵng government to improve the business climate, facilitate development of all sectors, enhance local competitiveness, and integrate into the world economy, such as reducing land rental, offering tax cuts and exemptions, cutting prices of various services, giving preferential treatment to investments in prioritized fields, accelerating the administrative reform, and amending policies to create better conditions for development projects (mortgage of land use right, quick land clearance, guarantee for investment, etc.).

The Đà Nẵng government has also dealt actively with legal obstacles to investment (administrative procedures and control over implementation of investment projects, etc.). As a result, its business climate is always considered as better than other provinces and cities. In terms of PCI standing, Đà Nẵng has been among provinces of best business climate for the past four years: It was second only to Bình Dương in 2005-2007 and took the first place from 2008 onwards. Some components of the PCI of Đà Nẵng, however, are still low or very low, such as "access to land and stability of land use" (ranked 26 among 63), "informal charges" (23/64), and "legal institutions" (36/63) (see Figure 6).

Figure 6: PCI of Đà Nẵng and Bình Dương in 2009



Nguồn: VCCI/VNCI (2009)

4. Some policy implications

Some policy implications for Đà Nẵng in the coming years could be drawn from results of above analyses.

Firstly, changes in the structure of industry could be accelerated by adopting policies to encourage technological-intensive industries with good comparative advantages, such as services and supporting industries with a view to increasing the shares of services and manufacturing sectors and turning Đà Nẵng into a center of finance, service and tourism of Central Vietnam and Western Highlands.

Secondly, quality of human resource and labor productivity could be improved by policies on education and training, development of high-quality human resource, encouragement to technological study and application, thereby increasing contribution from TFP and enhancing the quality of economic growth in a long run.

Thirdly, Đã Nẵng economy has become increasingly capital-intensive when more and more capital is mobilized and investment in the service sector is on the increase while the profitability tends to lower. It is necessary to adopt policies on allocation

of capital to industries with comparative advantages and high added value, improvements in use of capital, and control over excessive investment in real estate, especially from funds held by the State.

Fourthly, enhancing managerial skills is a good way of increasing the share of TFP. Although its business climate has been improved continuously (its PCI is of the highest level in Vietnam), Đà Nẵng had better perfect its legal infrastructure and administrative reform with a view to making it more transparent and convenient, thereby attracting more foreign and domestic investment, creating a climate of fair and active competition, and improving corporate competitiveness.

Fifthly, it is necessary to adopt new policies to help companies cut production cost, including costs of inputs and intermediary cost. For the time being, municipal government can offer lower prices for public goods and services (water and power supply, post and telecommunications, logistics and administrative services, etc.)

Sixthly, economic development cannot be separated from local marketing programs. This can be achieved by allocating resources more effectively, and accelerating trade and investment promotion (through events, forums, and mass media, etc.). Publicity for Đà Nẵng is a duty for not only local authorities but also companies and the public■

References

1. Collins, S., and Bosworth, B., (1996), "Economic Growth in East Asia: Accumulation verse Assimilation", *Brooking Papers on Economic Activity* 2, pp.135-203.

2. Hayami, Y., and J. Ogasawara, (1999), "Changes in the Source of Modern Economic Growth: Japan Compared with the United States", *Journal of the Japanese and International Economics*, No. 13, pp.1-21.

3. Nguyễn Thị Như Liêm và Trần Như Quỳnh (2010), "Một số vấn đề về thực trạng phát triển khu vực dịch vụ của thành phố Đà Nẵng", *Phát triển Kinh tế-Xã hội Đà Nẵng*, No. 1+2.

4. Nguyễn Văn Quỳ (2000), *Hệ thống tài khoản quốc gia và phân tích kinh tế trong công tác kế hoạch (National Accounts System and Economic Analysis in Planning)*, Thống Kê Publisher, Hà Nội.

5. Rodrik, D., (1997), "TFPG Controversies, Institution and Economic Performance in East Asia", *NBER Working Paper*, No. 5914.

6. Romer, D. (2000), *Advanced Macroeconomics*, McGraw-Hill/Irwin

7. Trần Thọ Đạt (2005), *Các mô hình tăng trưởng kinh tế (Model of Economic Growth)*, Thống Kê Publisher, Hà Nội

8. VCCI/VNCI (2009), "Báo cáo PCI năm 2009" (Report on PCI in 2009), retrieved from http://www.pcivietnam.org/reports.php

9. Young, A., (1993), "Lesson from the East Asian NICS: A Contrarian View", *NBER Working Paper*, No. 4482.

10. Young, A., (1995), "The Tyranny of Numbers: Confronting the Statistical Realties of East Asian Growth Experience", *Quarterly Journal of Economics*, pp.641-680.

Note

[1] The WB formula for change in structure of industry is:

$$\cos\varphi = \frac{\sum_{i=1}^{n} S_i(t_2).S_i(t_1)}{\sqrt{\sum_{i=1}^{n} S_i^2(t_2).\sum_{i=1}^{n} S_i^2(t_1)}}$$

where: $S_i(t)$ is share of industry i in GDP of year t, and φ : is angle between two vectors of economic structure ($0^o \le \varphi \le 90^o$), if $\varphi = 0^o$: no change in the structure of industry takes place, and when $\varphi = 90^o$: the biggest change happens.

[2] Not including contribution from import duty

[3] Labor resource = Population of working age

[4] Ratio of participation in labor force = Ratio of labor force to working population

[5] ICOR can be determined according to two approaches:

- Without latency:

$$ICOR = \frac{\Delta K}{\Delta Y} = \frac{I_t}{Y_t - Y_{t-1}}$$

- With some latency (one period):

$$ICOR = \frac{\Delta K}{\Delta Y} = \frac{I_t}{Y_{t+1} - Y_t}$$

where I is investment and Y is output (GDP)

[6] ICOR in 2006 was very high and rejected because part of Đà Nẵng gross output was lost due to Chanchu and Xangsane storms.

[7] TFP variable measures contribution of all inputs other than capital and labor when calculating the economic growth. All of these factors are called collectively technological advance (replacement of technology, improvement in labor quality and management, etc.). TFP can be used for evaluating efficiency of use of inputs: growth based on increases in capital and labor is considered as extensive and it is intensive when based on an increased TFP.

TFP growth can be determined according to two approaches:

- Growth accounting:

$g_{TFP}=g_Y - (r_K/Y)g_K - (wL/Y)g_L$

- Regression:

$g_{TFP}=g_Y - \alpha g_K - \beta g_L$

where g is growth, Y is output (GDP), K is capital, L is labor, r is return of capital, w is wage, α: hệ số co giãn của sản lượng theo vốn, β: hệ số co giãn của sản lượng theo lao động.

[8] Capital (K) is measured approximately by formula:

$$K_t = (1-\delta)\, K_{t-1} + I_t$$

where K is accumulated capital, I: Annual incremental capital, δ : capital depreciation ratio (δ=0,05), and 1997 is selected as the base year: $K_{1997}=GDP_{1997}$. Various tests (t, Augmented Dickey-Fuller, F, Ramsey, and Breusch-Pagan/Cook-Weisberg) are conducted, and estimated regression result of Cobb-Douglas production function is: $Y = 6{,}63K^{0{,}34}L^{0{,}60}$.

[9] PCI is conceived as comparative advantages of a province or city in terms of geographical location, natural resources, technical infrastructure, IT infrastructure, high-quality human resource, business climate, policies on investment and proactivity of provincial leadership.