



Contents List available at VOLKSON PRESS  
**Economics & Management Innovations(EMI)**

DOI : <http://doi.org/10.26480/icemi.01.2017.121.123>



# Employment and Provincial Growth: Thailand 4.0 and Inclusive Growth <sup>1</sup>

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## ARTICLE DETAILS

## ABSTRACT

### Article History:

Received 02 october 2017  
 Accepted 06 october 2017  
 Available online 11 october 2017

### Keywords:

employment-GPP elasticity,  
 inclusive growth, Thailand 4.0.

This paper presents an analysis of employment growth and its relationship with provincial growth and productive structure of each province using panel data of 76 provinces over 2002 and 2014. The main results are: First, employment – GPP elasticity was estimated to be around 0.8 which is not a healthy sign for worker. Of note is that 1 million baht of GPP that used to generated 9 employee in early 2000s, now reduced to only 6 employee. Secondly, provincial inequality is high in Thailand with an estimated Gini coefficient of 0.48 in, which is decomposable into between-region and with-in region. Thirdly, it may be a ripe time for policy maker to evaluate a seemingly worrying employment situation and perhaps to design employment generation and workfare program to help worker in general and in particular the young graduates in order to achieve the goal of inclusive growth and Thailand 4.0.

## 1. Introduction

Our government has recently announced a national strategic plan under the so-called Thailand 4.0 that aims at raising capability of all productive sectors through value creation and innovation, with a political commitment that there would be no one left behind. This is taken to mean that we set a goal for inclusive growth and advancement in productivity. In this connection it maybe interesting to explore the growth path of employment and productive capacity at provincial level. Specifically this paper takes a close look at the relationship between employment and gross provincial products (GPP) with a presumption that economic growth should generate employment and income for millions of worker as well as entrepreneurial class.

This paper is set for two modest objectives: First, to present evidence on provincial growth and employment and from this dataset inference about provincial inequality and the gap between rich- and poor-provinces. Secondly, to estimate an employment-GPP elasticity from which we may sense whether or not growth is beneficial for worker in general.

This paper is organized into 5 sections. Section II after an introduction provides an institutional background and clarifies data source and terminologies. In section III empirical evidence are presented in graphs, tables with note and discussion. Section IV discusses implication on national plan with highlight on employment and income distribution. Section V concludes.

## 2. Background and Data

Economic growth has been a topic of interest since history till today. Since 1950s after the growth model pioneered by Robert Solow (1956) induced a number of empirical studies on economic growth and the contribution of capital, labor, and technological progress. Growth accounting model and TFP (total factor productivity) are byproducts of Solow's invention as analytical tool for policy makers and academics. Later on the New Growth theorists challenge the neoclassical growth model with primary focus on what are behind technological progress under the so-called "endogenous growth" and the highlight on R&D and strategic public policy to R&D expenditures. The New Growth theorists also challenges the concept of "decreasing returns" and, instead, contend that an "increasing returns" maybe more realistic and, if so, an growth rates between countries can be divergence, not convergence as assumed by the neoclassical growth model.

It maybe interesting to apply the growth model with Thailand's provincial data. Our dataset consists of: i) gross provincial products (GPP) compiled by the National Economic and Social Development Board which provides useful information on productive structure and growth performance by each province; ii) commercial bank loan by province, iii) the number of business establishment and workers registered as member of the Social Security. And from which we calculate annual growth rate of GPP and to test the contribution of labor and capital (as proxied by bank loan and the number of business establishment).

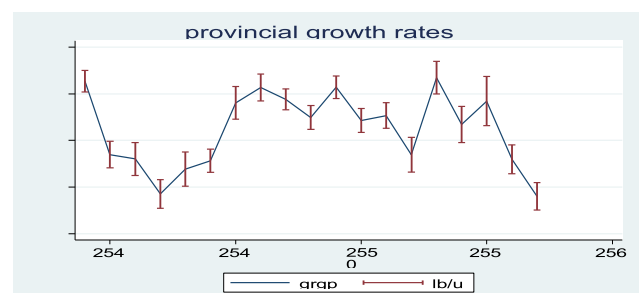
To make our message clear we employ notations to show the relationship.

Y = gross provincial products  
 Gy = growth of GPP  
 Gn = employment growth  
 y/n = GPP per capita  
 emy = employment intensity which refer to the number of employee per one million baht of provincial value added (GPP)  
 provincial employment elasticity (e) which refers to Gn / Gy through regression estimate.

## 3. Empirical Evidences

A panel data is compiled from various official statistics comprises of 76 provinces over 20 year- period (1995-2014) based on dataset as earlier described.

From Figure 1 the provincial growth rates averaged to approximately 5 percent per annum for the whole period, with fluctuation and downward dip between the 1997 financial crisis and the past recent years a recession following a mass political demonstration against the Yingluck government and, later on, the military takeover government regime in May 2014.



**Figure 1 Provincial growth rates between 1995 and 2014**

Source: NESDB, calculation by the author

**Table 1 Comparative statistics of GPP per capita by regions and their productive structure**

Region	GPP per capita Unit=baht	agriculture	industry percent in GPP	Service
Northeast	35,105	22.16	14.49	63.35
North	52,532	25.14	18.60	56.26
South	89,507	36.00	13.40	50.60
East	220,498	23.03	39.28	37.69
West	84,203	18.37	32.64	48.99
Central	127,836	15.48	40.07	44.46
greater BKK	244,493	3.38	49.30	47.32
Average	96,267	23.16	24.02	52.82

Source: NESDB, National Income Accounts for the period 1995 and 2014. All regional codes are identical to NESDB classification. The northeast region comprises of 20 provinces (in here only 19 because Buengkan not included); the north 17 provinces, the south 14, the east 8, and the west, the central and the greater each comprise of 6 provinces.

Provincial inequality as measured by Gini coefficient averaged to 0.48 which can be read as “highly unequal” (of note: the Gini coefficient range from 0 to 1), and it can be decomposed into two components: i.e., within-variations and between variations. Table 2 indicates that the between-region inequality accounted for 55 percent and the within region 45 percent of total variations.

**Table 2 The Gini coefficient decomposable into “between-regions” and “within-regions”**

Gini coefficient		
overall Gini coefficient	0.484	100%
within variations	0.215	44.40%
between variations	0.269	55.60%

Source: NESDB, calculation by the author

Table 3 displays 2 important figures, i.e., number of business enterprises (in total) that registered with SSO and the number of workers (in total) from which ones can observe growth and fluctuation of employment over 13 years. Whereas the growth rates of enterprise rather stabled, the employment figures were volatile.

**Table 3 Employment growth**

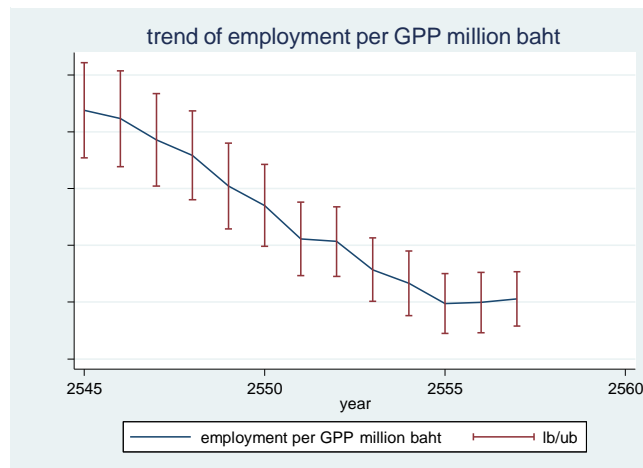
year	No of enterprise Unit	Employment 1000 person	enterprise % p.a.	Employment %p.a.
2002	301,518	6,900		
2003	324,079	7,434	7.22	7.45
2004	343,467	7,862	5.81	5.59
2005	362,559	8,225	5.41	4.52
2006	375,705	8,538	3.56	3.73
2007	381,506	8,781	1.53	2.81
2008	382,170	8,779	0.17	-0.02
2009	389,953	8,680	2.02	-1.13
2010	395,924	8,956	1.52	3.12
2011	403,802	9,049	1.97	1.03
2012	409,541	9,419	1.41	4.01
2013	416,546	9,774	1.70	3.70
2014	422,249	10,022	1.36	2.51
			2.81	3.11

Source: Social Security Office

Note: Due to data discontinuity, we chose to report employment figures after 2002 simply because there was change in the definition. Prior to 2002 the SSO registered those business enterprises whose employee greater than 10 persons, and later on, registered all business enterprises with at least one employee.

To analyze the relationship between GPP and employment, we first construct an index of employment intensity which refers to the number of employee to 1 million baht of GPP which is illustrated in Figure 2. Initially the employment intensity stood at 9 person per 1 million baht of

GPP with a clear decreasing trend over time, in recent years 1 million baht of GPP created 6 employed persons only.



An employment-GPP elasticity which stands for a percentage change in employment in response to one percentage change in GPP is inferred from Table 4. The coefficient of 0.81 implies that 100 percent change in GPP led to 81 percent change in employed persons which is significantly below 1.

**Table 4: the estimated relationship between employment and GPP**

Number of obs	=	1,520		
Number of groups	=	76		
Wald chi2(10)	=	2943		
Prob > chi2	=	0		
log of employment	Coef.	Std. Err.	Z	P>z
log of GPP	0.8105	0.0205	39.49	0.00
share of industry	0.0166	0.0016	10.30	0.00
share of service	0.0179	0.0017	10.74	0.00
regional dummy (northeast)				
North	0.2068	0.0773	2.67	0.01
South	0.2828	0.0834	3.39	0.00
East	0.3049	0.1029	2.96	0.00
West	0.2773	0.1101	2.52	0.01
Central	0.3173	0.1126	2.82	0.01
greater BKK	0.9508	0.1216	7.82	0.00
_cons	-6.8168	0.2741	-24.87	0.00
rho_ar	0.6182			
sigma_u	0.2138			
sigma_e	0.1687			

from national income account. Second, it maybe appropriate time to rethink about our employment policy if we are really serious about an “inclusive growth”. We believe that the government can play an important role to promote labor productivity and at the same time generate work for our manpower, especially the young and newly graduates.

**5. Concluding Notes**

This paper empirically investigates provincial growth and employment using a dataset that contain 76 provinces over twenty year span (1995-2014). And from which we note: First, the provincial growth paths have been fluctuating with downward trend, notably after the financial crisis and recently an unstable government regimes. Secondly, employment-GPP showed a downward trend and the employment-GPP elasticity less than unity (0.8) is not a good sign. Thirdly, that a high degree of inequality as confirmed by the Gini coefficient of 0.48 – we believe that the future government must take political responsibility in reducing spatial inequality through, perhaps, redistributive policy to help the less-productive provinces. Fourthly, it maybe a ripe time to rethink about employment generation or workfare programs to help workers and younger generation of manpower so that they can also benefit from Thailand 4.0 and along an inclusive growth concept.

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