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**Income convergence? Evidence of  
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Venus Khim-Sen Liew and Yusuf Ahmad

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**Title:** Income convergence? Evidence of Non-linearity in the East Asian Economies: A Comment<sup>ψ</sup>

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**Abstract:**

This study demonstrates the usefulness of Kapetanios et al. (2003) test in differentiating the two stages of income convergence—long run convergence and catching up. A re-examination of the “Four Asian Dragons” economies, in which their income differentials with respect to Japan have been identified as non-linear stationary in Liew and Lim (2005), reveals that the economy of Hong Kong, Korea and Singapore are catching up, while Taiwan has yet to catch up, with the Japan economy.

**JEL Classifications:** C32, F43, O40

**Key Words:** long run convergence, catching up, non-linear, stationary tests, income differentials.

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<sup>ψ</sup> We, not our institutions, are responsible for the views expressed in this paper.

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# **Income convergence? Evidence of Non-linearity in the East Asian Economies: A Comment**

## **1. Introduction**

The income convergence hypothesis states that despite the differences in initial income, poorer and richer economies may eventually converge in term of economic growth rate. The validity of this hypothesis may be studied via, among others, subjecting the time series of income differential between poorer and richer economies to stationary test (see for instance, [Bernard and Durlauf 1995](#)). In this respect, a stationary income differential is taken as evidence of income convergence between the two contrasting economies. This interesting issue of income convergence has drawn the attention of many empirical researchers and policy-makers. Nonetheless, income convergence hypothesis has previously been scrutinized using linear testing framework in the literature and effort from non-linear perspective is little.

The work of [Liew and Lim \(2005\)](#), which breaks through the linear testing environment, demonstrate that, in sharp contrast to the non-linear approach, the linear (Augmented Dickey-Fuller) stationary test was incapable of detecting any income divergence between Japan and all other East-Asian economies under studies. Remarkably, the authors detected the presence of non-linearity in the income differentials of Japan and the rest of East-Asian economies based on formal linearity test procedure of [Luukkonen, Saikkonen and Teräsvirta \(1988\)](#). They further adopted the recently developed non-linear stationary test of [Kapetanios, Shin and Snell \(2003\)](#)