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Common and uncommon sources of growth in Asia Pacific ☆

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ABSTRACT

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This paper embarks to analyse the role of exports and investment supposed to be major sources of economic growth in Asia Pacific. Therefore at first, the cointegration properties of exports, capital formation and GDP are examined in vector error correction models (VECMs). The results confirm the crucial role of exports and investment in the Asian growth dynamics. In a second stage, the structural shocks are identified by short- and long-run restrictions. These shocks, as well as the corresponding dynamic responses, are then correlated across all sample countries to provide insight into the depth of regional coherence. At last, the identified trends are explained by various macroeconomic variables. *J. Japanese Int. Economies* **23** (1) (2009) 20–36. Universität Mannheim, L 7, 3-5, D-68131 Mannheim, Germany.

1. Introduction

Since the 1970s, the Asian Pacific region has witnessed an incomparable economic upswing, which has later on been called the "Asian miracle". Countries, which had traditionally relied on policies such as import substitution and national subsistence switched to an enduring export-orientated strategy. This change coincided with the take-off of foreign direct investments mostly conducted by multinational firms intending to tap new markets and striving for profitability increases. In addition, high

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domestic savings enabling continuous investment were backing the sustained development. Nevertheless, these vibrant dynamics are not common to all the region's nations, thus leaving several economies in a pre-take-off state of relative stagnation. The appearance of severe crises, most recently in 1997/98, additionally harmed the image of self-enduring growth.

The exceptional development dynamics of the last decades are inconceivable without the sustained influence of exports and investment. The close connection of those two growth drivers with technological progress, acquisition of knowledge and market liberalisation set up two major steering forces behind the remarkable economic success, drawing attention of several strands of literature: The role of exports in the Asian economies has been analysed for example by Krueger (1985). Nelson and Pack (1999) provide a critical review on the approaches favouring a key function of capital accumulation in the Asian growth processes. The literature about identifying structural shocks as driving forces is mainly based on the theory of optimal currency areas and was initially influenced by Bayoumi and Eichengreen (1994). These authors specified output and inflation vector autoregressive models in order to isolate one persistent supply and one transitory demand shock, but did not deduce restrictions from the presence of common stochastic trends.

Given the above considerations, I believe it is worthwhile to pursue the following key questions in the present analysis: Is it possible to detect export and investment trends driving the GDP growth dynamics? Which roles can be assigned to each of these trends? Is there any evidence for regional coherence in the sense of similarity between the structural innovations, and what are special characteristics for example of the "Asian tigers"? Finally, which are determinants of the identified trends?

This paper approaches the outlined issues in the context of an empirical time series analysis, which will be proceeded on an aggregated macro-level. The examination works with cointegration restrictions, which are imposed on reduced-form VECMs. In this, I explicitly consider the recent structural breaks in the Asian economies. In the second step, long- and short-run restrictions are deduced from the model properties and economic considerations. In the identified model structure, the growth effects are examined using impulse responses and variance decompositions. Additionally, the structural shocks are compared among the nations and explained by relevant macroeconomic variables. Combining this stringent time series analytical framework with an integrated economic approach makes up the contribution of the underlying paper.

In order to knit my research to a theoretical line, I start out to present the basic economic concepts of export and investment dynamics, which underlie my empirical modelling. Section 3 introduces the econometric techniques with emphasis on cointegration and identification. Afterwards, the results of the reduced-form and structural models are presented and analysed in Section 4. In the end, the summary gives a concluding overview.

2. Economic foundation

Since the seminal work of Solow (1956), literature on economic growth has mostly concentrated on the determination of steady state paths. Therein, the neoclassical approach stresses that due to diminishing marginal returns in the aggregate production function, deviations from the equilibrium growth rate can only be transitory. Especially, the development of capital accumulation has no long-run effect on growth rates, which are determined by exogenous technological progress. As a reaction, the endogenous growth theory, with its origins in Romer (1986) and Lucas (1988), essentially makes model-inherent mechanisms prevent the growth rates from falling quasi automatically. The most prominent examples are endogenous technological change and human capital augmentation.

The outstanding development the newly industrialised countries in Asia Pacific have taken in the last decades casts doubt on the implications of the neoclassical approach. However, in an empirical time series context a long-run link between stationary growth rates and non-stationary real investment, as predicted by endogenous growth models, seems rather problematic (see Jones, 1995). For now abstracting from this theoretical debate, this paper focuses on real capital formation and exports as drivers of the partly rapid expansion of income levels in the Asian Pacific region, as assumed in several strands of literature. In the following, major theoretical justifications for the important roles of the chosen variables in growth processes are given. First of all, both exports and investment are com-