NORTH-HOLLAND

Journal of Policy Modeling
23 (2001) 821–824

Journal of Policy Modeling

Economic note

Note on a computable general equilibrium model for Ghana Identifying growth areas

Samuel N. Addy*

Center for Business and Economic Research, The University of Alabama, 149 Bidgood Hall, Box 870221, Tuscaloosa, AL 35487-0221, USA

This note concerns identification of target sectors for development in a Sub-Saharan African (SSA) country, Ghana. Such target identification requires economy-wide analysis for which computable general equilibrium (CGE) models, the most recent of economy-wide modeling techniques, are well suited. Although the technique is becoming commonplace, there are relatively few CGE models of SSA countries in particular, even though these are the countries in greatest need (see Addy, 1998). The development literature recognizes several engines for economic growth including infrastructure and equipment investment, trade- or export-led growth, technological change, institutional development, and human capital development (see, e.g., Blomstrom 1996; Ito & Krueger 1995; Todaro 1994). The focus here is on investment in infrastructure and equipment (i.e., investment in physical capital) as an engine for growth.

To identify key sectors, investment in each sector is simulated separately, and the change in real GDP is used to rank the sectors. The simulations involve exogenous increases in investment expenditure of one billion cedis for new factor capital formation, by sector of destination. In many SSA countries, foreign direct investment (FDI) forms the major portion of investment. Thus, to investigate the effects of source of investment capital, the simulations are conducted under two scenarios: FDI and domestic capital investment (DCI). The scenarios depict the extremes of several possible combinations of capital from both sources. The results are shown in Fig. 1.

* Tel.: +1-205-348-6191; fax: +1-205-348-2951.
E-mail address: saddy@cba.ua.edu (S.N. Addy).

0161-8938/01/$ – see front matter © 2001 Society for Policy Modeling.
PII: S0161-8938(01)00062-X

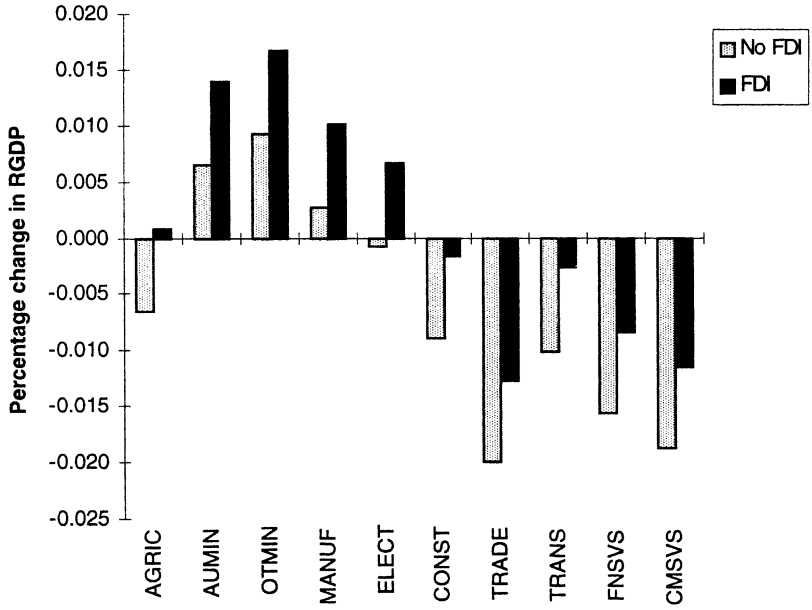

Fig. 1. Leading sector identification. Sector definition: AGRIC: Agriculture, hunting, fishing, forestry; AUMIN: Gold mining: OTMIN: Other mining: diamonds, manganese, bauxite, quarrying; MANUF: manufacturing; ELECT: Electricity, gas & water; CONST: Construction; TRADE: Wholesale and retail trade, restaurants & hotels; TRANS: Transport, storage & communication; FNSVS: Finance, insurance, real "estate" & business services; CMSVS: Community, social, & personal services.

The model employed is a long-run comparative static model with 10 sectors for production and consumption, two mobile primary factors of production (capital and labor), one household, one enterprise, the government (included as a nonoptimizing agent), and the rest of the world. It is at a greater level of disaggregation than existing models of the Ghanaian economy, and investigates both micro- and macroimpacts. Competitive market behavior and full factor employment are assumed with equilibria in product and factor markets, and aggregate nominal flows. The "small country assumption" is made, so that world prices of imports and exports are exogenous, but there is imperfect substitution on both imports and exports. The numeraire price is the GDP deflator so that all prices and flows are real. For the simulations, investment flows in through an exogenous increase in the current account deficit in the case of FDI. In the DCI case, the investment capital is generated from forgone consumption.

Three major implications emerge from the analysis. The first, most obvious and yet surprising, is that a mining-led development strategy seems much more favorable than an agricultural led strategy. This is interesting because agriculture contributes the most to the economy. This relative ranking may hold even in times of low commodity prices since Ghanaian mining operations enjoy low production costs. In general, the results indicate that an industrialization develop-

دریافت فوری ← متن کامل مقاله

ISIArticles
مرجع مقالات تخصصی ایران

✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
✓ امکان دانلود نسخه ترجمه شده مقالات
✓ پذیرش سفارش ترجمه تخصصی
✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
✓ دانلود فوری مقاله پس از پرداخت آنلاین
✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات