



FDI-Growth Nexus in Vietnam

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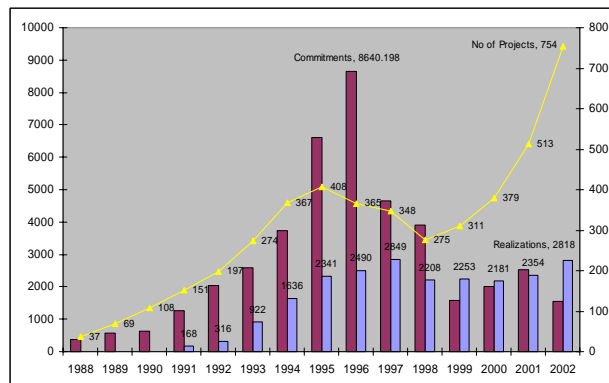
Outline of the Presentation

- Introduction
- Theoretical Underpinnings and Empirical Studies
- Estimating Capital Stock
- Growth-Accounting Results
- FDI and Domestic Investment
- FDI and Growth
- Conclusion

Introduction

- 1992-1997: annual economic growth averaged 8.8%;
- By the end of 2003, total FDI capital has reached more than USD 47 billion
- FDI has played a very important role in Vietnam's economic growth

Introduction (cont.)



Introduction (cont.)

- Very few studies on investigating the relation between FDI and economic growth in Vietnam-“management approach”(e.g. Pham Hoang Mai, K. Ohno)
- Data insufficiency and short time period
- More up-to-date data and a newly developed methodology: simultaneous determination of capital stock and TFP growth in Vietnam + regression analysis

Theoretical Underpinnings

- “resource gap” model
- “crowding out” effect
- neoclassical approach
- FDI and domestic investment
- FDI and economic growth

Empirical Studies

- standard growth-accounting framework
- estimation of growth equations based on neo-classical theory
- causality problem
- omitted variables
- non-stationary time-series data

Estimating Capital Stock -Methodology-

simultaneously determination of capital stocks
and TFP growth

$$YG = \omega .LG + (1 - \omega) .KG + TG$$

$$KG = I/K - \delta$$

$$K = [(1 - \omega)/(YG - \omega LG - TG + (1 - \omega)\delta)]I$$

Methodology (cont)

PIM

$$K(t+1) = (1-\delta)K(t) + (I(t) + I(t+1))/2$$

$$K(t-1) = [K(t) - (I(t) + I(t-1))/2] / (1-\delta)$$

Data Processing

- GDP growth rate
- economically active population
- compensation of employees
- depreciation
- real investment flow

Growth Accounting Results

- Capital stock in 1986 was VND 236,903 bil; in 2002 was VND 638,618 bil (1994 constant price);
- average annual rate of TFP growth (TG) is estimated to be 2.7697%; (3.05% [76-98] by Vu Quoc Ngu and 3.4% [86-00] by Tran Tho Dat)
- contribution of labor averaged 23.43%;
- contribution of capital averaged 36.97%;
- Contribution of TFP averaged 39.6%

Capital Stock Decomposition

- PIM Method
- foreign capital stock accounted for 38% total capital stock in 2002;
- FDI accounted for more than 25%;
- Domestic capital stock accounted for 63%

Decomposition of Capital Contribution to Growth

- Growth accounting approach
- Structural decomposition
- FDI contributes about 7% of total 37% of capital contribution

FDI and Growth Nexus

- Regression analysis
- FDI and domestic investment
- FDI and economic growth

FDI and Domestic Investment

Empirical Equation

$$GDCF_t = \alpha + \beta FDI_{(t-1)} + \gamma GDP_{(t-1)} + \varepsilon_i$$

FDI and Domestic Investment (cont)

- OLS estimates:

GDCF=-7.04 +0.021FDI(-1) +1.458GDP(-1)
t-stat (-4.12) (4.03) (10.2)

Adjusted R-squared: 0.98, Durbin-Watson stat=2.05

- Nonstationary, Cointegration and Error Correction Model
- Three series are non-stationary
- Three series are cointegrated by Johansen Cointegration test

FDI and Domestic Investment (cont)

- *Error Correction Model*

| | | | | |
|-------------|-----------------|-----------------|-----------------|-------------|
| DGDCF=0.167 | -0.198DGDCF(-2) | +0.0145DFDI(-2) | -0.747DGDGP(-2) | -0.18EC(-1) |
| t-stat1.31 | -0.89 | 2.17 | -0.359 | -2.47 |

FDI and Domestic Investment (cont)

- coefficient of the error correction term is highly significant with appropriate negative sign
- validity of long-run equilibrium relationship among the variables
- model converges rather slowly to the equilibrium, with nearly 20% of the discrepancy corrected in each period
- FDI generates not only short-run positive impacts on domestic investment but also in the long-run perspective

FDI and Domestic Investment (cont)

Sensitivity Analysis

- the positive coefficient of FDI remains highly significant
- The coefficient of FDI variable remains in very narrow interval
- the initial estimates are robust

FDI and Economic Growth

Empirical Equation (apply Barro and Sala-i-Martin)

$$YG = \alpha + \beta_1.DomKG + \beta_2.FDIG + \beta_3.ODAG + \beta_4.LG + \beta_5.TFPG + \beta_6.EG + \varepsilon$$

FDI and Economic Growth (cont)

OLS estimates

$YG = -0.014 + 0.125DomKG + 0.134FDIG + 0.045ODAG + 0.230LG + 0.229TFPG + 0.052EG$
t-stat(-0.01) (4.65) (7.47) (3.69) (0.89) (7.86) (3.54)
Adjusted R-squared: 0.98 Durbin-Watson: 1.51
Prob(F-statistic): 0.000

FDI and Economic Growth (cont)

- FDI are positively related with economic growth
- TFP growth is important determinant of economic growth
- The robustness of result is confirmed by sensitivity analysis

Conclusion

- a pioneering study in estimation and decomposition of capital stock in Vietnam
- Applying traditional approach: growth-accounting and econometrics
- FDI is found to be crowding-in domestic investment
- FDI is positively related with growth

Conclusion (cont)

two considerable drawbacks:

- the quality of data and sufficient length of time-series
- the methodology of statistical analysis (simple OLS, causality test)

However, results show that new wave of FDI inflow into Vietnam is needed



Thank you very much for your attention!