Chapter 1
Asymmetric Equilibrium Adjustment between Employment and Economic Growth in Côte d'Ivoire:
A Consistent Momentum Threshold Autoregressive Model

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ABSTRACT

In this chapter, the author investigate the possibility of asymmetry in the relationship between employment in the modern private sector and economic growth as measured by real Gross Domestic Product (GDP). The analysis is based on a threshold cointegration model. The use of a momentum threshold autoregressive model led to the rejection of the hypothesis of no cointegration, implying that the cointegration relationship between employment and real GDP is asymmetric. The error correction model developed thereafter suggests that in the short-run, when employment is above its long-term trend, the disequilibrium is adjusted via a decreasing of real GDP. However, it seems like adjustment does not occur when employment is below its equilibrium value. This indicates that restrictive macroeconomic policies that affect the labor market can lead to a persistent employment crisis in the modern private sector.

1. INTRODUCTION

Before the 1980s, employment policy in Côte d'Ivoire[1] was linked to economic growth (Ministère du Plan, 1977). However, since then, employment policy depends not on the development of activities but on specific employment strategies. The reason for this policy change was the lack of a framework based on a relationship between employment dynamics and economic growth, as projections obtained within the macroeconomic framework are not linked to labor market indicators. Therefore, it is not possible to measure the impact of macroeconomic policies on employment. The 2002 version of the Poverty Reduction Strategy Papers (PRSP) (Office of

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the Prime Minister, Ministry of Planning and Development, 2002), a document developed to reduce the poverty rate in the country, projected an economic growth rate of 3 percent in 2002, 4.5 percent in 2003 and more than 5 percent from 2004 to 2007 (Office of the Prime Minister, Ministry of Planning and Development, 2002: p. 14). Unfortunately, the PRSP did not assess the impact of these macroeconomic goals on employment so that it is unknown if these goals would reduce the unemployment rate.

Although a better understanding of the relationship between employment and growth is important for guiding employment policies, there are not enough studies about Côte d'Ivoire. One of the rare studies is that of N'zué (2001). N'zué used a symmetric cointegration approach and found jobless growth in the modern private sector of Côte d'Ivoire during the period 1975-1995. The implicit assumption embodied in the symmetric approach is that expansion and contraction have the same absolute effect on employment or unemployment. Yet, some authors found that labor markets respond differently during expansion and contraction (Courtney, 1991; Holzer and Montgomery, 1993; Jaramilo, Schiantarelli, and Sembenelli, 1993; Schalk and Untietd, 2000; Döpke, 2001; Harris and Silverstone, 2001). The problem is that if the adjustment process between employment (unemployment) and growth is not symmetric and economic contraction has a different effect on employment than expansion; then symmetric models give misleading policy advice.

This chapter examines the relationship between employment and economic growth during contraction and expansion and tries to determine whether asymmetric adjustment exists in the relationship between economic growth and employment in Côte d'Ivoire. We use cointegration analysis, specifically, the Momentum Threshold Autoregressive (MTAR) model. We show that the adjustment between employment and economic growth is asymmetric, with a significant adjustment to positive shocks, but not to negative ones.

The rest of the chapter is set out as follows. Section 2 briefly outlines the method of analysis. Section 3 presents the data and the empirical results. Section 4 provides a summary of the findings and policy implications.

2. ECONOMETRIC METHODOLOGY

To examine the relationship between employment and growth of GDP, our methodology starts with the linkage between employment and output, another version of the Okun law(see: Boltho and Glyn, 1995; Padalino and Vivareli, 1997; Islam and Nazara, 2000).

$$E_t = \alpha + \beta Y_t + \mu_t \qquad \beta > 0 \tag{1}$$

E_t is the logarithm of the persons employed and Y_t the logarithm of real output, μ_t is a random error term, *and* α and β denote parameters.

The econometric methodology we use is outlined as follows. Before estimating Equation (1), and to avoid spurious regression, we investigate the stochastic properties of the series by implementing the Augmented Dickey-Fuller test (Dickey and Fuller, 1979, 1981). If the series are stationary in first differences, we test for cointegration relationship in the two variables. The procedure consists first in estimating via Ordinary Least Squares (OLS) the long-run equilibrium relationship exhibited in Equation (1). The existence of this long-run relationship involves stationary μ_t in the second step procedure given by:

$$\Delta\hat{\mu}_t = \rho\hat{\mu}_{t-1} + \varepsilon_t \tag{2}$$

where ε_t is a white-noise disturbance. If $\rho < 0$, the long-run equilibrium relationship (1) characterized by symmetric adjustment (2) is accepted. However, the standard cointegration framework in (2) is misspecified if the adjustment process is asymmetric. Therefore, Enders and Granger