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December 2001

WORKINGPAPER SERIES
Number 38

POLITICAL ECONOMY RESEARCH INSTITUTE

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Two Different Export-oriented Growth Strategies under a Wage-led Accumulation Regime: *à la Turca* and *à la South Korea*

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version 1.9

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A later version is published in *Emerging Markets Finance and Trade*, 41(1), 65-89, 2005. Former versions were presented at the Annual Conference of Union of Radical Political Economics at ASSA, January 4-6, 2002, Atlanta; Annual Conference of Heterodox Economics, July 9-10, 2002, Dublin, and 6th METU International Conference in Economics, September 11-14, Ankara. The present version benefited from the discussions there.

ABSTRACT

The aim of the paper is to compare the relationship between distribution, growth, accumulation and employment in Turkey and South Korea. These countries represent two different export-oriented growth experiences. Thereby they provide examples for comparing different economic policies. The paper tests whether accumulation and employment are wage-led in these two countries by means of a post-Keynesian open economy model. The model, in addition to the goods market, includes a demand-driven labor market and a reserve army effect in the Marxian sense. The model is estimated in a structural vector autoregression form. The results show that decreasing the wage share does not stimulate accumulation, growth and employment.

JEL classification: E120, E270, E650, O110

Keywords: Accumulation, distribution, export-oriented growth, structural adjustment, post-Keynesian economics

1. Introduction

Many developing countries have implemented structural adjustment programs, shifting from import substituting industrialization strategies to export oriented growth strategies in the late 1970s and 1980s. The main goal of these orthodox structural adjustment programs was to manage the integration of the country into the global economy, shifting the source of effective demand from the domestic market to the foreign market. The incomes policy and a deregulation of the labor market to achieve a pro-capital redistribution have been major components of this process, with the promise that greater openness and higher profits will stimulate growth, accumulation in export oriented labor intensive sectors and consequently employment. However, after years of implementing orthodox structural adjustment programs, suggested by the IMF and the World Bank, many developing countries ended up being trapped in a vicious cycle of high profit shares accompanied by low accumulation rates and stagnant growth in employment, in spite of a massive increase in exports and ever higher degrees of flexibility in the labor market[1]. The experiences of many developing countries show that there has not been a rise in investments in export sectors after structural adjustment policies, and hence export increases have been based on increases in capacity utilisation, rather than new investments. This in turn has prevented a high growth rate in employment, as well as a productivity-led growth in real wages. Moreover, the stagnation in manufacturing investments and low growth rates in employment has gone hand in hand with high profit rates.

In spite of the failure of the structural adjustment programs in many countries, the governments, as well as the IMF, are suggesting that the solution to the problem of low accumulation and low employment is within the labor market, and consequently the links with macroeconomic policy targeting to enhance accumulation and growth are weakening. In order to present a coherent analysis of the reasons behind the failure of these policies and to propose alternative economic policies, there is need to analyze the dynamic interaction between distribution, demand, accumulation and employment.

[1] See Taylor (1988), Amsden and Hoeven (1995), Akyüz (1995), Toye (1995), Boratav et al (1996) and Amadeo (1996) for a review of the growth patterns in developing countries during the implementation of structural adjustment policies.

The aim of the paper is to compare the relationship between distribution, growth, accumulation and employment in Turkey and South Korea, which are examples for two very different export-oriented growth experiences. The results of the adjustment experiences of both countries present a striking contrast to the expectations of orthodox structural adjustment programs, however they also present counter-examples to each other in terms of their ways of integrating to the world economy. This in turn provides a basis for comparing different policies for integrating to the world economy. Turkey, which has been a strict follower of the standard recipes of IMF and the World Bank, is an interesting case to illustrate the inability of high profits to stimulate investments and employment. South Korea is a counter-example to the orthodox structural adjustment programs in the sense that it has implemented an export-oriented growth strategy within a controlled financial system and foreign trade regime based on active industrial policies. The country experienced high investment, growth and employment even during periods of an increasing wage share. Thus the relation between wage-share, investment, growth and employment is the same in both Turkey and South Korea, namely positive; however one has ended up with decreasing wage share, low growth, low investment, low employment, and the other with increasing wage share, high growth, high investment, high employment. The state intervention in setting the investment climate in South Korea is the factor, which accounts for this striking difference.

For analyzing the dynamic relation between distribution, growth, accumulation and employment in these two cases, we will utilize a post-Keynesian open economy model, augmented by a demand-driven labor market and a reserve army effect in the Marxian sense. The model developed here is an extension to the model of Bhaduri and Marglin (1990), which is a more general formulation of earlier neo-Kaleckian models by Rowthorn (1982), Dutt (1984), Taylor (1985) and Blecker (1989). The merit of a post-Keynesian model for our purposes is that it highlights the dual function of wages as a component of aggregate demand as well as a cost item as opposed to the orthodox structural adjustment programs, which perceive wages merely as a cost item. Depending on the relative magnitude of these two effects, post-Keynesian models distinguish between profit-led and wage-led regimes, where the latter is defined as a low rate of accumulation being accompanied by a high profit share. The allowance for variable capacity utilisation in these models gives rise to the possibility of a wage-led regime, i.e. a higher rate of

accumulation as a result of an increase in wage share if the demand effect on investment is stronger than the profit effect.

The model is estimated in a structural vector autoregression (SVAR) form, in order to capture the complex simultaneous interaction between distribution, accumulation, growth and employment within a systems approach. This model, and the method of estimation are the two innovations of this paper in addressing the crucial policy issues related with structural adjustment problems in developing countries.

The paper is structured as follows: Section two summarizes the model to be estimated. Section three discusses the method of estimation. Section four focuses on data problems. Section five presents the differences in the export-oriented growth strategies in Turkey and South Korea, and the stylized facts about distribution, accumulation, capacity utilization and employment. Section six specifies the model to be estimated. Section seven discusses the results of the SVAR estimation based on this specification, as well as some further issues about institutions, power structures and state policies that aren't directly addressed by the model. Finally Section eight derives the conclusions.

2. The model

The model presented here is a post-Keynesian open economy model, based on Bhaduri and Marglin (1990). It consists of behavioral functions for investments, savings, and international trade defining the goods market; the producer's equilibrium curve, which relates capacity utilization and labor market pressures to the distribution of income; and an employment equation. For the sake of simplicity, considering the constraints on degrees of freedom, in addition to the difficulty in estimating the behavior of the public sector, it is left out of analysis[2].

2 This makes sense in the case of Turkey, given the structural change in public spending, which became increasingly more dominated by interest payments, and the widely used practice of tax exemptions to promote exports, which breaks the link between growth and public sector income. For South Korea active state policies are crucial in determining the business environment. However, the significance of the public sector is particularly related with the state intervention to the decision making process of the firms, which we will discuss in depth in evaluating the

The goods market part of the model is similar to that in Bhaduri and Marglin (1990). The two important extensions of the model presented here are employment and its effect on income distribution. Firstly, producer's equilibrium, that is income distribution, is determined not only by the pricing behavior of firms, but also by a reserve army effect, reflecting the bargaining power of the workers. Secondly, employment is explicitly modeled by a version of Okun's Law, following Stockhammer (2000b and 2000c). These two extensions incorporate the labor market into the analysis, allowing an interaction between distribution, accumulation, capacity utilization and employment, rather than implicitly defining labor demand as a passive outcome of the system. Table 1 below presents a summary of the model.

Table 1: Summary of the model

Accumulation	$I/K=g^I(\pi, z)$ $+ \ +$	(1)
Private savings	$S_p/K=s\pi z$	(2)
Exports	$X/Y=x(\pi)$ $+$	(3)
Imports	$M/Y=m(\pi, z, I/K)$ $- \ + \ +$	(4)
Producer's equilibrium	$\pi=p(z, E/N)$ $+ \ -$	(5)
Employment (Okun's Law)	$\Delta E/N=e(I/K, \Delta z)$ $+ \ +$	(6)
Goods market equilibrium	$g^I=g^{St} \equiv s\pi z - (X/Y - M/Y)z$	(7a)
Capacity utilization implied by the goods market equilibrium	$z=z(\pi, I/K, (X/Y - M/Y))$ $- \ + \ +$	(7b)

where I/K=investment/capital stock

π=profit share

z=capacity utilization proxied by output/capital ratio $(Y/K)^3$

S_p/K=Private savings/capital stock

s=marginal propensity to save out of profits

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results.

3 In order to abstract from the changes in potential output/capital ratio (Y*/K) we define capacity utilization, z, by capital productivity, thus z=Y/K=(Y/Y*)(Y*/K).

X/Y=Exports/output

M/Y=Imports/output

E/N=employment rate (employment/working age population)

g^{St}=growth rate of total savings (private and foreign).

Equation (1) defines the investment decision of private firms, such that the rate of accumulation (investment/capital stock) is a function of expected profitability, which is proxied by profit share and capacity utilization[4]. Both capacity utilization and profit share are expected to have a positive effect on investment, other things being constant. This function separates the demand side effect of wages on investment from the cost effect, making the end result of a change in distribution ambiguous.

Equation (2) models private saving behavior, such that private domestic savings normalized by the capital stock is a positive function of profit share and capacity utilization. For simplification it is assumed that a constant fraction, s, of profit income is saved, whereas there is no saving out of wages.

Equation (3) and (4) incorporate international trade to the model by defining export intensity of production (exports/output) as a positive function of profit share; and import penetration (imports/output) as a negative function of profit share and a positive function of the level of domestic activity, which is determined by the rate of accumulation and capacity utilization. The profit share is taken as an indicator of international competitiveness, in order to simplify the model[5]. Although domestically we are assuming pro-cyclical mark-ups, we are taking the mark-

4 By using the profit share rather than the profit rate as the measure of profitability in the investment function along with the rate of capacity utilization, Bhaduri and Marglin (1990) presents a more general formulation that includes the earlier stagnationist, neo-Kaleckian models as special cases.

5 Bowles and Boyer (1995) use the profit rate as an indicator of international competitiveness. As the profit share is affected by unit labor costs, which is conventionally taken as an indicator of competitiveness, it can be assumed that profit share and exports will be positively related. However, an increase in the profit share caused by an increase in the mark-up would certainly not be an indicator of improved competitiveness. Yet, since it is widely argued that the

up rate fixed at the international level, such that export prices changes due to changes in input costs.

Equation (5) represents the supply-side of the model, defining the producers equilibrium, such that profit share is a positive function of the rate of capacity utilization and a negative function of the rate of employment. The former is in common with the model in Marglin and Bhaduri (1990), and is derived from the assumption that firms use a mark-up over unit labor costs to set prices, and that the mark-up varies pro-cyclically with the rate of capacity utilization. The latter, that is the effect of employment rate, represents the reserve army effect in a Marxist framework. This is an extension of the basic Marglin and Bhaduri model because it allows labor market outcomes to have a genuine feed back in distributional struggle. Marglin and Bhaduri (1990) like Bowles and Boyer (1995) assumed that employment moves in parallel with capacity utilization. Thus the modification of the producers' equilibrium only becomes important in conjunction with our different view of the labor market.

The labor market is portrayed by Equation (6). Different from Bhaduri and Marglin (1990), this equation defines the change in the rate of employment as a positive function of accumulation and the changes in capacity utilization, which is a variation of Okun's Law separating out the impact of accumulation and capacity utilization on employment rate. Bhaduri and Marglin (1990) take the short term view that employment depends on capacity utilization. Since we are interested in a

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stagnationist impact of a redistribution of income at the expense of wage earners is moderated in open economies via increased export competitiveness, estimating export performance as a function of distribution makes sense in a model relating accumulation, distribution, capacity utilization and employment. Nevertheless, the impact of distribution on import demand is ambiguous since a rise in the profit share might also have an additional impact of increasing the demand for imported consumption goods. Additionally, the real exchange rate, which is also effected by international capital flows and policy decisions of the public sector, is an important component of international competitiveness. Bearing these problems in mind, we proceed with our simple assumption.

medium term model, the creation of capacity, as well as capacity utilization will determine employment[6].

Finally, equation (7a) represents the goods market equilibrium, where the growth rate of private capital stock equals the growth rate of total savings, where $s\pi z$ is the private domestic savings, and $-NX/Y.z = -(X/Y-M/Y).z$ is foreign savings, both normalized by the capital stock[7].

Solving equation (7a) for z gives the capacity utilization rate implied by the goods market equilibrium. Equation (7b) separates the relative impact of accumulation, distribution, and net foreign demand on capacity utilization rate. Accumulation is expected to have an immediate positive effect on capacity utilization, via increased demand, which dominates a negative effect via increased capital stock. An increase in the profit share, other things being constant, is expected to have a negative impact assuming that the propensity to consume out of profits is lower than that out of wages. An increase in net exports is expected to have a positive impact. Equation (7b) will substitute the goods market equilibrium condition in the SVAR analysis, which is discussed in Section six.

The final outcome about the relationship between capacity utilization and profit share distinguishes two types of growth regimes, namely stagnationist and exhilirationist. A stagnationist regime is defined as a regime where a lower profit share is associated with a higher level of capacity utilization. In contrast, when a higher profit share goes along with a higher capacity utilization the growth regime is defined as exhilarationist. The relationship between capacity utilization and profit share is ambiguous depending on the relative magnitudes of the domestic and international demand effects.

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6 Bowles and Boyer (1995) differentiate between aggregate demand and aggregate employment regimes, but in their model rate of employment is taken as an indicator of capacity utilization, assuming a one-to-one and unchanging relationship between the two.

7 In the empirical estimations, public savings are assumed to be captured by the constant term and the trend.

Finally the relationship between accumulation and the profit share defines the regime of accumulation, such that when a higher rate of accumulation accompanies a lower profit share, the regime is defined as wage-led, and the opposite case is defined as profit-led. Depending on the relative magnitudes of the direct positive effect of profit share on accumulation (the partial derivative $\partial g^I/\partial\pi$) and its indirect effect via the positive international demand effect ($\partial g^I/\partial z$. $\partial z/\partial nx$. $\partial nx/\partial\pi$)[8] and the negative domestic consumption effect ($\partial g^I/\partial z$. $\partial z/\partial\pi$), the sign of the total derivative, $dg^I/d\pi$, is either positive or negative. If the direct profit effect and the international demand effect of a lower wage share is high enough to offset the decline in domestic consumption, then accumulation is profit-led, and otherwise it is wage-led[9].

So far the model has been presented without considering the dynamic structure. Following the discussion of the method of estimation in Section three, we will discuss the data problems associated with estimating the model in Section four, and Section six will be devoted to the specification of the contemporaneous and inter-temporal relationships within the system.

3. Method of estimation

The significant theoretical contributions in the literature about wage-led vs. profit-led regimes of accumulation and growth has only slowly attracted empirical work on both advanced capitalist and developing countries. Bowles and Boyer (1995) estimate a similar model to the one presented here for advanced capitalist countries, and analyze the relative magnitudes of partial elasticities by means of a single equation approach for each component of the model, where the variables interact only through lags and contemporaneous interaction cannot be observed. Gordon (1995a and 1995b) analyzes the relationship between distribution, capacity utilization and investment by means of a single equation approach based on a "social structuralist" macro-model, as well as an atheoretical VAR model. Hein and Krämer (1997) also adress the issue of distribution, accumulation and growth but present no rigorous test. Bhaskar and Glyn (1995) focus only on the response of investment to profit share and capacity utilization. Stockhammer (2000a) presents separate estimations for accumulation and employment for advanced capitalist

8 $\partial nx/\partial\pi=\partial x/\partial\pi - \partial m/\partial\pi$

9 See Bhaduri and Marglin (1990), Blecker (1989 and 1999), and Bowles and Boyer (1995) for an analytical discussion about the wage-led and profit-led regimes in open economies.

countries. Hein and Ochsen (2001) present reduced form estimations for accumulation in advanced capitalist countries incorporating the effect of rentier's income. The empirical works on developing countries are of particular interest for this work. Yentürk (1998a) analyzes the relationship between profitability and investments for tradable and nontradable sectors, and Onaran and Yentürk (2001) analyze the response of investment to demand and profitability for Turkey. Seguino (1999) estimates the rate of capital accumulation as a positive function of wage share and capacity utilization for the manufacturing sector within a single equation framework for South Korea. Sarkar (1992) questions the empirical validity of the stagnationist thesis for India, but does not present a formal test.

The major shortcoming of this literature, from a methodological point of view, is that the issue of simultaneity is not addressed. All the works quoted above use a single equation approach with lagged explanatory variables. While such an approach has its own merits, it fails to represent the system aspect that is crucial to the theoretical model, and does not present a complete macroeconometric analysis of the overall interaction between distribution, demand, accumulation and employment.

The main methodological motivation behind this study is to model the dynamic relationship between distribution, accumulation, capacity utilization and employment considering both lagged and contemporaneous interactions within a systems approach, that goes beyond the limited framework of comparative statics. Consequently we employ a structural vector autoregression (SVAR) analysis.

The general form of a vector autoregression (VAR) model is:

$$B.y(t) = Dd(t) + A(i)y(t-i) + e(t) \qquad (8)$$

where y is a vector of variables, i=1,…,p denotes the number of lags to be used in the model, d(t) is a vector of deterministic variables, which may include a time trend as well as a constant. The $e_j(t)$'s are i.i.d. N(0, I) innovations. The matrix B represents the contemporaneous interaction among the variables. This general form cannot be estimated, since the matrix B is not known. Thus the form in which the VAR is in fact estimated is:

$$y(t) = B^{-1}Dd(t) + B^{-1}A(i)y(t-i) + u(t) \quad (9)$$

This formulation can readily be estimated, since it only relies on lagged values as explanatory variables. Intuitively, each variable is assumed to depend on lagged values of all other variables in the system. When referring to a VAR estimation in the empirical section below, we refer to an estimation of equation (9). It is crucial to note that in (9) contemporaneous interactions among variables are suppressed and surface in the properties of the error term.

The vector u(t) of the reduced form errors is related to the vector e(t) of innovations by the following system of structural equations:

$$u(t) = B^{-1}e(t) \quad (10)$$

$u_j(t)$ are assumed to have zero mean, constant variances, and are serially uncorrelated, but because of the matrix B^{-1} there has to be contemporaneous correlation between innovations.

The structure of matrix B distinguishes between two types of VAR models: standard VAR and structural VAR. In standard, nonstructural VAR, B^{-1} is a lower triangular matrix, according to the so-called standard Choleski decomposition (Sims, 1980). In structural VAR (SVAR), B is specified on the basis of economic theory, where without loss of generality the diagonal elements of B can be normalized to unity (Bernanke, 1986; Sims, 1986). The specification of B corresponds to specifying the zero off-diagonal elements[10]. The structural parameters are estimated by maximum likelihood.

SVAR allows for a richer model of interaction because it does not impose restrictions on the contemporaneous interaction between the variables by imposing a triangular structure on the covariance matrix of the error terms. Standard VARs are a special case of SVAR.

[10] The number of moment restrictions is equal to the number of nonzero parameters in B^{-1}. But even if the number of free parameters equals the number of nonzero elements of the matrix B^{-1}, identification is not guaranteed, due to the existence of simultaneity in the system.

An alternative estimation technique could be to develop a system of simultaneous equations. However this comes together with the problem of defining proper instrumental variables to deal with endogeneity, and mostly ends up with using simply the lagged values of the endogenous variables. SVAR is superior in the sense that it not only encounters the lagged relationship, but also incorporates the contemporaneous interaction between the variables.

Some more comments on VAR models are appropriate here. First, because of the systems approach, exogenous shift variables do have little meaning in VARs unless they have strong effect. In our case variables that are relevant to investment decisions such as the rate of return in financial markets, risk factors, cost of capital goods, and the real exchange rate to reflect the changes in the price competitiveness could be some of the exogenous variables to be included. However, since our focus is on the interaction of the endogenous variables, we do not include exogenous variables.

Second, VAR analysis is a systems approach. It traces effects through an entire system rather than looking at one equation at a time. Since VARs involve lagged values of all dependent variables, multicollinearity problems are inevitable. Therefore inference in a VAR model does not focus on t-values and their significance, but on impulse response functions. Impulse functions trace the dynamic impact of a shock to one of the variables on all other variables in the system.

4. The data

This section concentrates on the data problems involved in testing the model outlined in Section 2. We will deal with problems arising from lack of proper data for certain variables, as well as choosing the best way of measuring some others. The definitions of variables and data sources are in Appendix A.

One major problem is the absence of data for capital stock in the national statistical sources. Therefore the analysis uses the ratio of private investment to GDP[11]. Consequently, growth rate

11 This lack of data is particularly a problem for the case of Turkey, where there also is no research available to construct capital stock series for the aggregate economy. Therefore for

of GDP is used as a proxy for capacity utilization instead of the output/capital ratio. In order to check for robustness, the ratio of GDP to potential GDP is also used. Potential GDP is estimated as a function of a constant term and a time trend. However, there are serious critiques about the concept of a "potential GDP" in that it is a NAIRU concept and is consistent with a post-Keynesian framework. Also there are problems about the method to estimate "potential GDP". Therefore, we will base our analysis on the results using GDP growth rate.

Another data restriction is related to two problems that stem from the measurement of employment. Firstly, given the quite different nature of unpaid family worker status and the significance of underemployment in the agricultural sector, particularly for female labor force, as well as for male, we exclude agricultural sector from our analysis. Secondly, the employment variable is defined as the rate of employment in the theoretical model, in order to capture the labor market pressure on profits via the reserve army effect, as well as to reflect the employment creation capacity of the economy. In this sense the share of employment in total working age population in the non-agricultural sector is the appropriate variable, rather than the share of employment in labor force, which is simply 1-unemployment rate. Taking the labor force as the denominator limits the pressure exerted on the bargaining power of labor to people, who are only actively looking for work. This ignores a significant portion of the population who are non-employed, but are not looking for a job actively either because they are discouraged or involved in non-market work. The distinction between non-employment and unemployment is particularly important in developing countries with declining levels of participation rates particularly for

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comparison purposes we preferred to stick with investment share for South Korea as well. Penn World Tables by International Comparisons Projects provide data about capital stock. But comparing the net change in capital stock (after depreciation) with the investment figures available in national data sources in terms of trend and correlations points out serious differences in the measurement of investment variable in this database. Yet, in order to check for robustness, the initial year of capital/ output ratio in Penn World Tables was used as a benchmark to construct the capital stock series for Turkey. Although it could be expected that the use of investment/GDP as opposed to the rate of accumulation would decrease the possibility of a wage-led outcome in our model, the main results of the estimations are quite robust to the use of rate of accumulation as opposed to investment/GDP ratio. Nevertheless, we prefer to base our analysis with the existing data on investment/GDP.

female working age population, following increased rates of urbanization. However, measuring the potential labor supply for the non-agricultural sector is a non-trivial problem. Although agricultural employment is almost totally a rural occupation, the opposite is not true. Therefore the denominator cannot be limited to urban population. The alternative of using the whole working age population to measure the potential work force creates an additional problem. The ratio of non-agricultural employment to total working age population also reflects the sectoral transformation of employment from agriculture to industry. As a result, we use non-agricultural employment in levels (in logarithms), abstracting from the demographic trends about the changes in the working age population, as well as the sectoral changes in employment. While the level of employment is not as good a measure of the labor market pressure as the employment rate, it can be a better measure to evaluate the employment creation capacity of the economy.

In parallel to our choice about measuring employment on the basis of non-agricultural employment, investment, profit share, growth and exports also have to be adjusted to exclude the agricultural sector. However for South Korea, we have been unable to exclude agriculture from the investment , export, and import data; so we will assume that the ratio of those variables to value added is the same in the nonagricultural sector as it is in the aggregate. For South Korea, the calculation of the profit share in the nonagricultural sector also has some problems. The details of calculation are in the data appendix. For Turkey, the only problem is related to imports, where it is not possible to exclude imports of agricultural goods due to data limitations, however the share of agricultural imports in total imports is negligible.

Except for the logarithm of employment, our variables are already defined in ratios; and intuitively it is unlikely that these variables exhibit a unit root. Also since VAR is by nature an autoregressive distributed lag model (ADL), which have desirable properties even in the face of unit roots, spurious correlations between unit root variables are prevented.

5. Two different export-oriented growth strategies

This section presents the export-oriented growth experiences of Turkey and South Korea, comparing the outcome in terms of the relationship between distribution and growth, accumulation and employment. Turkey experienced a major structural change in 1980 by shifting

from an import substituting industrialization strategy to an export-oriented growth model via implementing an orthodox structural adjustment program, as typically prescribed by the IMF and the World Bank. As opposed to Turkey, the export-oriented growth strategy of South Korea dates back to early 1960s under very different national institutional structures and a very different division of labor in the global economy[12].

The export orientation *à la Turca* was via a strict pro-capital re-distributional mechanism, where a drastic decline in the wage share has made the adjustment of the capital to the consequences of the new trade regime possible without any deterioration in profitability (Boratav et al, 1994; Yeldan, 1995; Yentürk, 1997; Onaran, 1999). The beginning of the period was characterized by a severe repression of labor rights, accompanied by a military coup and the new institutional setting was retained by the consequent civil administrations. Export oriented trade policies, import liberalization, deregulation of financial and product markets, upward adjustments particularly in the prices of foreign exchange, energy and industrial goods, went along with high profit shares thanks to the decline in wages. The only exception to this general trend has been the few years after the liberalization of capital movements in 1989, which prepared the ground for real wage increases via the increase in domestic demand due to expansionary fiscal policies and an appreciated domestic currency, which leads to a decline in non-labor input costs. However these unsustainable fiscal and monetary policies soon created a 'twin deficits' problem. When this process ended in a severe crisis in 1994, stabilization in the economy was again maintained through real wage declines, leading to an erosion in the real wage gains of the post-1989 period. Overall, the "success" of the export led industrialization policy of Turkey owed mainly to a shift of industrial capacity towards international markets via a significant contraction of real wages, excessive export subsidies and real devaluations. This strategy of export promotion was unable to stimulate new productive investments in industry.

Adjustment in South Korea was based neither on mere wage repression nor an unlimited deregulation of product and financial markets. The state's effort to discipline not only labor but

12 See Öniş (1992, 1995 and 1995b) for a detailed and comprehensive comparison of the East Asian and more specifically South Korean export-oriented industrialization with the Turkish experience.

also capital as part of its export-oriented growth strategy, is what sets the South Korean way of integrating into the world economy apart from *à la Turca* adjustment, as well as from a variety of Latin American experiences. The only similarity is that, the so-called South Korean "capital discipline" was also the product of a consensus between the state and the big business, and this consensus has played a central role in determining the investment climate. Including the shift in the state-chaebol power dynamics in favor of the chaebol in the recent years due to market liberalization, the whole set of state policies before and after this period have to be taken as a derivative of the requirements of various steps of capital accumulation in South Korea in a continuous spectrum. The export-oriented growth strategy which took-off under a military regime that lasted for 35 years was totally a controlled integration process to the world economy. Even the structural adjustment program (Comprehensive Stabilization Program) implemented by the support of IMF after the crisis of 1979 has not changed this climate. A nationalized financial sector, dual interest rates and rationing in the credit markets as a means of subsidizing exports, and controls over foreign direct investments and restrictions on foreign exchange conversions shaped the business environment until the mid or late 1980s (Amsden, 1989). The state also directed foreign loans to targeted industries and provided guarantees of loan payment eliminating the risk of default. The relationship between corporations, the financial system and the government has led to extremely high rates of private corporate savings and investments, and created an investments/profits/savings nexus which resolved the main macroeconomic constraints on economic growth (Singh, 1998). High investments, and consequently high exports have brought together the successful movement of the country up the industrial ladder to the production of capital and skill-intensive goods. The competition policy in South Korea was oriented towards creating dynamic efficiency, i.e. high long-term productivity growth rate by measures, operating at both the industry and firm level, which sometimes restricted competition and sometimes encouraged it (Amsden and Singh, 1994). Labor market policies were also a very important component of state policies in addition to trade, industrial and financial market policies. Repressive labor laws, limited union activity, and gender discrimination have determined the boundaries of distributional struggle so as not to interrupt the growth process (Amsden, 1987; You and Chang, 1993; You, 1994). There were maximum wage rates set by the state, but the state has also encouraged the firms to raise wages within these limits. As a result a sustained and predictable increase in wages in a conflict-controlled environment, rather than low wages have been important in maintaining high demand, high growth and high accumulation.

Improvements in productivity have been the key to this virtuous circle of growth (Amsden, 1989; Mazumdar, 1994).

Figure 1a and 1b below shows the profits/GDP, and private investment/GDP throughout the period for which data are available for Turkey and South Korea. In Turkey an increasing trend in the profit share with the exception of early 1990s, has led to either declines in the rates of investment (investment/GDP) or at best has not created a remarkable improvement. After the sharp decline in the post-1980 period, investment rates only reached the historically high levels of the import-substituting period in late 1980s, following the rise in domestic demand due to higher wage shares during 1989-93. The low and volatile investment rates after years of implementation of structural adjustment policies are striking, given the substantial increases in profitability and major improvements in exports.

Insert Figure 1a and 1b

In South Korea the negative relationship between the profit share and investments is more pronounced. Particularly the decreases in the profit share during 1976-79 and 1982-91 that went together with an increase in the investment rate. The early 1990s are exceptional in terms of this relationship, where the increased militancy of the labor movement after the democratization movement of 1987 might have increased uncertainty and risk perceptions of the firms, leading to pessimism. However, the negative relationship becomes pronounced again after 1997 following the economic crisis -this time with increasing profit share and decreasing investment rate. South Korean capital has also adjusted to the crisis via decreased wage share.

Table 2 shows some stylized facts pointing out the key issues that need to be addressed in terms of the links between distribution, accumulation and employment. The figures show the averages of the common sample of 1970-97 for both countries, as well as five-years period averages.

Annual average growth rates (in non-agricultural sector) in South Korea have been remarkably higher than those in Turkey, with respect to both 1970-97 average and five years period averages, including the import substituting industrialization period of Turkey. Turkey has just caught up with South Korea in terms of growth rates in late 1990s. South Korea, compared with

Turkey, has started with a much lower GDP per capita, has come up to comparable level already as of 1978, and since then has reached much higher levels. The high investment rates of South Korea have been influential in this process, which also led the economy up the industrial ladder. This accumulation and growth pattern have also shaped the employment creation potential of the economy, resulting in much higher growth rates in employment (in non-agricultural sector).

Table 2: Summary of some stylized facts (period averages)

	Real GDP per capita in constant dollars (1985 internat. Prices)	GDP growth rate in non-agricultural sector	Private investment / GDP	Employment growth rate in non-agricultural sector	Profits/ GDP in non-agricultural sector	Exports/ GDP	Imports/ GDP	Net Exports/ GDP
Korea								
1970-97	3717	8.59	27.26	5.22	79.48	31.40	34.75	-3.35
1970-74	1213	9.06	21.79	5.60	81.18	22.52	30.34	-7.82
1975-79	1916	10.04	26.96	8.03	82.15	30.46	35.70	-5.24
1980-84	3303	6.92	25.77	3.78	82.00	37.16	42.98	-5.82
1985-89	6291	9.77	27.05	6.08	78.95	37.58	34.42	3.16
1990-94	9080	7.69	31.95	4.00	75.50	30.09	31.99	-1.90
1995-97	14206	7.03	31.25	2.92	76.23	32.33	34.93	-2.60
Turkey								
1970-97	2751	5.52	15.04	3.49	70.51	7.90	13.41	-5.51
1970-74	1379	6.56	14.35	5.12	68.15	3.93	7.28	-3.35
1975-79	1877	5.16	15.38	4.24	68.25	3.10	8.62	-5.52
1980-84	2589	4.50	11.44	2.69	74.10	8.15	14.17	-6.02
1985-89	3890	5.54	14.05	3.24	74.15	11.35	15.57	-4.22
1990-94	4863	4.19	17.16	2.40	66.16	9.86	15.48	-5.62
1995-97	6137	8.28	19.76	3.09	73.42	13.07	23.33	-10.25

Source: World Bank World Tables for Real GDP per capita. For other variables see Appendix A.

The high investment rates of South Korea have supported the international competitiveness of the country, leading to much higher export/GDP ratios, as well as lower current account deficits, particularly compared with the export-oriented growth era of Turkey.

Comparing the profit share data is harder due to problems in calculating these variables. The figures for manufacturing industry[13] are more comparable and they indicate that profit share in

13 The wage share data for manufacturing industry are from the World Bank database on floppies for 1970-93. World Bank stopped the release of manufacturing wage share data after 1993.

South Korea was higher than Turkey during the period of 1970-79 and lower during 1980-93. Nevertheless, the significant improvements in productivity in Korea and the labor disciplining policies of the government that have been omnipresent for most of the past thirty years might have depressed wage shares in Korea in general compared with other countries although it may be rising through time (You, 1994; Seguino, 1999).

However, the differences in the rates of investment and growth are much more striking between the two countries, going beyond the differences in profit shares. The state intervention in setting the investment climate in South Korea is the factor which accounts for this striking difference, leading to a tendency of over-accumulation in South Korea.

The stylized facts for both countries, as can be seen both from Figure 1 and the period averages in Table 2, provide important evidence that point out the likelihood of a wage-led regime, albeit with different outcomes: decreasing wage share, low growth, low investment, low employment in Turkey and increasing wage share, high growth, high investment, high employment in South Korea.

Based on this evidence, there are four main questions that need to be addressed for the case of both countries by the empirical analysis: What is the relative responsiveness of accumulation to distribution and growth? What is the impact of distribution on growth? How does the pro-capital redistribution effect employment? What is the link between foreign trade, and accumulation and employment?

6. Specification of the SVAR Model

Defining a SVAR model is a matter of specifying the contemporaneous relations between the variables, namely the B matrix. According to the theoretical model in Section 2, our matrix of endogenous variables, y, and the B matrix are defined as follows:

$$y = \begin{vmatrix} I/Y \\ \pi \\ X/Y \\ M/Y \\ z \\ E \end{vmatrix};$$

$$B = \begin{vmatrix} b_{11} & 0 & 0 & 0 & 0 & 0 \\ 0 & b_{22} & 0 & 0 & 0 & 0 \\ 0 & b_{32} & b_{33} & 0 & 0 & 0 \\ 0 & b_{42} & 0 & b_{44} & b_{45} & 0 \\ b_{51} & b_{52} & b_{53} & 0 & b_{55} & 0 \\ 0 & 0 & 0 & 0 & b_{65} & b_{66} \end{vmatrix}$$

with the expected signs being $b_{32}, b_{45}, b_{51}, b_{53}, b_{65}>0$; $b_{42}, b_{52}<0$. All the diagonal elements are positive by definition. Note that the zeros in the B matrix depict no contemporaneous interaction, but the lagged interaction between the variables will still be at work.

We assume that investment decisions respond both to profit share and capacity utilization with a lag, considering the time lag between investment decision and the expenditure.

Problems arose in estimating simultaneous contemporaneous effects. In particular, the model was unable to attribute specific effects in the simultaneous interaction between growth and the profit share. The standard errors of the model increased significantly in this specification. In order to simplify the model, it was assumed that the profit share responds to growth, as well as employment with a lag. Thus in addition to investment, distribution is also contemporaneously exogenous.

Also since our capacity utilization variable is the growth rate, imports are only a function of z, not of I/Y. The same is also true for the employment equation. In addition, the employment variable (in logarithms) has to be introduced in difference form in the employment equation, whereas it has to be used in level form in the profit share equation in order to reflect the labor market pressures. The autoregressive distributed lag (ADL) specification of the VAR model will automatically make the necessary transformations, if the employment equation has to be

specified in difference form[14]. Finally, the equation for the contemporaneous interactions for z does not include imports. This equation reflects the components of demand, and the effect of imports is assumed to be captured via profit share, which is one of the determinants of imports. This modification has the additional advantage of decreasing the computational complexity by way of decreasing the number of simultaneous interactions in the system. Without imposing this restriction, the model was unsolvable.

The model includes two lags to control for the problems that might arise from autocorrelation and non-stationarities in the time series. VARs give consistent results even in the presence of unit roots (Sims, Stock and Watson, 1990) if more then one lag is employed. The employment of higher number of lags is not considered because it will not add much in the case of annual data, and also it will further reduce the already low degrees of freedom due to the lack of sufficiently long time series data.

Consistent with the aim of the paper, which is to analyze the impact of distribution on accumulation, capacity utilization and employment, our main focus will be on the responses of investment, growth and employment to a one-time shock -an innovation- to the profit share. The impulse response functions offer an advantage in interpreting results within a systems approach. The response of a variable to an innovation to another variable in the system is not equivalent to the partial derivatives that are the outcomes of standard regression models. Different from comparative statics, the response to an innovation incorporates the combined response of the variable to all the changes created in the system following a shock to one of the variables. VAR models also help to trace the interaction through a time period.

7. Estimation results

14 In this case the autoregressive coefficients will add to unity.

This section first presents the SVAR estimations based on the contemporaneous interactions as defined in Section six, and then analyses the impulse response functions. The estimation period is 1965-97 for Turkey, and 1970-2000 for South Korea[15].

The VAR results of OLS estimations are presented in Appendix B. However we don't discuss them explicitly since they are already incorporated in the impulse response functions. VAR estimations, in general, tend to suffer from multicollinearity problems that lead to low t-statistics. This is why impulse responses are of particular interest.

A trend is included in the VAR model to capture long-term effects such as structural shifts in trading relationships, or domestic and international financial markets that are not causally affected by variations in the system. The trend is significant in some equations. The models are also estimated without trend, and the results are fairly robust between estimations with and without trend.

Table 3 presents the SVAR estimation results for Turkey and South Korea, namely the entries in matrix B^{-1} of contemporaneous correlations among error terms.

15 The periods are determined by data limitations. For Turkey, stylized facts point out that both 1970s and the post-1980 period are similar in terms of the direction of the link between distribution and accumulation and growth. For South Korea, the accumulation regime might have changed after the democratization process in 1987, i.e. from early 1990 until the crisis of 1997. However, it is impossible to perform separate estimations for too short time-periods.

Table 3: Structural VAR Results: The contemporaneous interaction between the error terms[(1)]
(The elements of B^{-1}, where $u=B^{-1}e(t)$)

	Turkey	South Korea
Estimation period (after adjusting for lags)	1965-97	1972-2000
I/Y		
Innovation	0.927	0.971
	[0.00000]	[0.00000]
π		
Innovation	1.843	0.496
	[0.00000]	[0.09222]
X/Y		
π	0.323	-12.442
	[0.01171]	[0.08300]
Innovation	1.068	8.264
	[0.00000]	[0.10714]
M/Y		
π	0.320	-1.089
	[0.41630]	[0.63308]
z	0.047	-1.021
	[0.82585]	[0.23658]
Innovation	1.664	2.295
	[0.00004]	[0.01555]
z		
I/Y	0.910	0.778
	[0.11339]	[0.00420]
π	-0.940	-1.706
	[0.06098]	[0.00200]
X/Y	0.111	0.208
	[0.87742]	[0.26841]
Innovation	2.397	1.037
	[0.00001]	[0.00000]
E		
z	0.002	0.005
	[0.03836]	[0.00000]
Innovation	0.010	0.005
	[0.00000]	[0.00000]

(1) p-values in parenthesis. A trend and a constant is added to VAR model. Estimation period is determined due to availability of data. Computations by Easyreg, Bierens (2000).

The coefficients have the expected signs with the exception of foreign trade block in South Korea, and are mostly quite significant. The contemporaneous positive demand effect of investments and the negative consumption effect of profits on growth are confirmed. Exports also have a positive demand effect, though insignificant. The strong positive contemporaneous relationship between growth and employment is in line with the Okun's law. For Turkey, the profit share has a highly significant positive contemporaneous effect on exports, capturing the degree of competitiveness of the exports. For South Korea, this positive effect shows up only with a lag. The equation for imports doesn't perform well for both countries. The coefficient of both growth and the profit share are insignificant. There may be various aspects behind this result, which may be common to both countries. Firstly, profits might be unable to capture the price competitiveness of imports. Secondly, if the propensity of demand for imported goods out of profit income is higher than that out of wage income, the competitiveness effect of a higher profit share may be offset by the increase in the demand for luxurious imported goods. Finally the price elasticity of the demand for imports can be rather low in developing countries, which have a high degree of import dependency, not only for capital goods, but also for intermediate inputs. It may also be argued that lagged responses to relative prices (which are supposed to be captured by the profit share) are more important, however the simple VAR results do not verify this argument. Additionally, for the case of Korea, the effect of active state policies on foreign trade explains part of the poor performance of the estimations of exports and imports.

In the following, we refer to the impulse responses of accumulation, growth and employment to innovations in the profit share when discussing whether the regime is wage-led or profit-led. A response is called wage-led (profit-led), if the cumulative effect of the impulse responses on a shock to the profit share is negative (positive) after three years[16].

The results of the impulse responses are suggestive, although the confidence intervals are large in many cases. Figure 2 and 3 show the impulse response functions for Korea and Turkey respectively. Figures 2a and 3a show the responses of investment to the profit share. The impulse

16 This definition is admittedly somewhat arbitrary, but the rationale should be clear. VAR analysis is appropriate for short run analysis. ~~Four~~Three years might be considered a rather long concept of the 'short run', however the indirect effect that are of interest here, take some time to work themselves out.

response of investment to the profit share incorporates the direct profit effect, as well as the indirect effects of the change in profit share on the system via international and domestic demand.

Figure 2 and 3

In Turkey an innovation to the profit share creates a negative response of investment rate in the next period, and the shock continues for another period, and then dies without leading to any significant improvement in investment. These results are in line with the empirical evidence about the stagnant investment rates in spite of increasing profit share, as well as the single equation estimates provided by Onaran and Yentürk (2001) for manufacturing industry. However the standard errors are high, and although the results clearly show that accumulation is not profit-led, they do not indicate a strong wage-led regime as well.

In South Korea an increase in the profit share creates a strong and persistent negative effect on accumulation. These results point at a strongly wage-led accumulation regime, and indicate that lower profit share goes along with higher investment rates. This result is consistent with the results provided by Seguino (1999) for the manufacturing sector, who estimates the rate of capital accumulation as a positive function of wage share and capacity utilization within a single equation framework. However, our model goes beyond the limits of this reduced form estimation in explaining the simultaneous interaction between distribution, demand and accumulation.

In both countries, the response of accumulation to growth is significantly positive, verifying the Keynesian emphasis on demand in determining the investment decisions, as can be seen from the impulse response functions in Figures 2b and 3b.

The indirect effects of the profit share on accumulation become clearer when the impulse response functions of growth to the profit share that are shown in Figures 2c and 3c are explored. An increase in the profit share is immediately transformed into a decline in growth, indicating a stagnationist regime in both countries in the short-run. In Turkey the effect turns positive in the next period, however it takes three periods for the growth rate to recover[17]. In South Korea the

17 Note that the impulse response graphs shown here are not cumulative, rather they show the

negative effect continues for another period and then dies away. The recovery of the growth rate is due to the improvements in exports. Analyzing the overall impact of a shock to the profit share on growth in the impulse responses includes the indirect impact via export demand. This latter is expected to counteract the initial negative effect of an increase in the profit share through consumption demand. However, in Turkey it takes rather long –three periods- for the positive effect of increased exports to lead to a recovery, and in South Korea the recovery does not take place at all. The immediate decline in growth due to an increase in the profit share explains the decline in accumulation in the second period, and the demand effect also has a persistence in the next periods offsetting the profit effect. Also investment decisions are highly path dependent; a slow down in accumulation tend to be rather long lasting.

As an expected consequence of the inability of profits to enhance growth and accumulation, the employment regime is also wage-led in both countries. Figures 2d and 3d show the impulse response of employment to the profit share for the two countries. In South Korea the wage-led employment pattern is more evident, whereas in Turkey the cumulative negative effect dies away five periods later. Contrary to the arguments of neoclassical economics, a lower wage share does not stimulate employment. The initial decline in growth and accumulation provides a coherent explanation for the stagnation in employment in spite of the lower wage share. Figures 2e, 2f and 3e, 3f show the impulse response functions of employment to growth and accumulation for the two countries. The results show that demand is the main driving force behind employment, and accumulation is an important component to enhance the job creation capacity of the economy.

Another point that needs to be highlighted about the estimation results is the response of distribution to growth and labor market pressures. Although distribution does not immediately adjust to changes in demand and balance of power relations in the model, the lagged effects are significant and in the expected direction for Turkey. In South Korea, the labor market pressures on distribution are effective, whereas pro-cyclical mark-up behavior isn't observed. Distribution seems to be determined more exogenously in South Korea.

The model presented here indicates that both South Korea and Turkey have wage-led regimes, in fact, overall the macroeconomic parameters for the two economies as well as the corresponding

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response to the initial shock in each period.

impulse response function look remarkably similar. Nonetheless the countries have experienced rather different economic performances. In Turkey an increasing trend in the profit share throughout the structural adjustment episode has led to stagnant rates of investment, whereas in South Korea periods of decreases in the profit share have gone together with an increase in the investment rate. Thus, while the wage-led accumulation regime are part of the story, it needs to be complemented by an analysis of institutional settings and state policies, that affect accumulation through channels other than demand and distribution. The remainder of this section speculates about such factors.

The active industrial policies implemented by the state are key to understanding the high accumulation rates, which are quite independent of the profit share in South Korea. The financial structure and the government's intervention in channeling financial resources to industry, the export subsidies and import allowances have been the determinant aspect behind the high levels of investment moving in parallel with the wage share. Seguino (1999) refers to state's industrial and financial policies as "carrots" which the firms can reach only if they upgrade technologically. In this setting there are two consequences of an increases in the wage share: On the one hand, a reasonable level of wages helps to maintain the level of domestic demand, as we have already discussed above. On the other hand, high wages create a pressure on firms to upgrade technologically, preventing productivity growth from stagnating due to reliance on labor intensive, low-wage production methods. In spite of the profit squeeze created by higher wages, thanks to the subsidies and import allowances, the firms respond to higher wage shares by increasing investments in order to preserve their export performance so as to be able to go on receiving the subsidies, and other supports. This mechanism leads to positive effects on not only productivity but also effective demand. In sum, wage increases above productivity, i.e. a rise in unit labor costs and a decline in the profit share, may even further increase wages and employment. Within a business environment created by active state policies, there was a virtuous cycle of increasing wage share, high investment, high productivity, high growth in South Korea, as opposed to the Turkish case with the vicious circle of decreasing wage share, low growth, low investment, low productivity.

Contrary to South Korea, in Turkey the unregulated financial sector and the lack of a systematic industrial policy have favored financial investments against physical investments. Increased rates

of return in financial markets, higher volatility and uncertainty, and higher costs of capital have been the most significant factors behind the slowdown in accumulation in the 1980s (Yentürk, 1998; Onaran and Yentürk, 2001).

In the South Korean case, the irresponsiveness of investments to the profit share is also related with the allocation of bank credit by the state relying more heavily on the firms' performance in terms of exports rather than on the typical measures of profitability used by the financial intermediaries.

The response of investment rate to international competition provides a particularly interesting picture regarding this aspect of the black box of the accumulation regime. The comparison of Turkey and South Korea in this aspect is also very educational in terms of understanding the crucial differences between the two different approaches to export-oriented growth. Figures 2g and 3g show the impulse response of investment rate to export/GDP. In South Korea the response is very strong and persistent, whereas in Turkey the response hardly shows up with a lag of three years and is never too strong. Turkey's export growth based on low wages and increased use of existing capacity rather than new investments proves to be unable to stimulate investments, whereas in South Korea export competitiveness is the primary stimulus behind investment decisions of firms. In Turkey, investments are stimulated by domestic demand, whereas in South Korea exports are even more important than domestic demand. In Turkey exports increase when unit labor costs decline and domestic demand contracts, i.e. the increase in Turkey's exports is dependent on the creation of an exportable surplus in the domestic output. However in South Korea, exports are a systematic target of industrial policy, and competitiveness is based on improvements in productivity.

The consequence of this striking difference in the export-oriented growth strategies shows up also in the labor demand. The response of employment to an increase in exports is persistently negative in Turkey, whereas it is strongly and persistently positive in South Korea, as can be seen in Figures 2h and 3h. This result points at a very important policy implication indicating that the increase in competitiveness, which is maintained by low wages, does not transform into higher employment. Another important implication of the results for Turkey is that they provide counter-evidence to the expectations about an increase in labor intensity of production following

an increase in export orientation. These findings verify the argument that it is increasingly harder for developing countries to increase their competitiveness by labor intensive technologies in the global market. In spite of the fact that their exports may be more labor intensive with respect to the advanced capitalist countries, the capital intensity of most export oriented sectors are increasing (Wood, 1997; Yentürk, 1997; Günçavdı and Küçükçiftçi, 1999). However, the increase in capital intensity need not be a hindrance to employment growth as can be seen from the case of South Korea.

Another important factor behind the negative relationship between the profit share and investments in South Korea is closely related with the over accumulation tendency in the economy. This is a typical example of the survival strategy of a "Marxist firm" as opposed to a "Keynesian firm", which does not have the luxury of dying without a fight in spite of falling profits (Crotty, 1993). In a period of anarchic competition, firms do make investments in order to survive under intense competition. In order to keep up with other conglomerates, South Korean firms had to invest even in industries, which exhibit over-supply at a period when growth perspectives were starting to look poor and labor costs were rising (Wei Cheng, 1998). Investment decisions by South Korean capital have created excessive capacity growth funded by foreign debt (Yentürk, 1998b). Cheap finance in a way has exacerbated the tendency of the chaebol to get involved in everything. The dynamics of capitalist competition brings another dimension to the understanding of high accumulation rates, which are different from the institutionalist "active state" or "carrot and stick" scenarios that are proposed by Seguino (1999) or Amsden (1989).

An important point to be discussed as a consequence of this comparative analysis is the sustainability of the South Korean way of export-oriented growth. This strategy worked out in South Korea at its semi-industrialized stage of development since there continued to be potential for manufacturing industries to capital-deepen and the necessary capital goods and technologies were available from industrialized countries (Seguino, 1999). When the technological limits of this regime of accumulation are reached, the tools the state can use such as import allowances are rather limited. Also the problem of over-accumulation and the

consequent high dependence on exports is making the economy very fragile to changes in international demand, particularly in a world where financial movements are liberalized, and exchange rate volatility is high (Yentürk, 1998b; Adelman and Yeldan, 2000). Although it is outside the scope of this paper, the crisis of 1997 suggests the limits of the wage-led high accumulation model of South Korea and the sustainability of active state policies in the long run. Furthermore the limits are not only created by financial liberalization at an international scale but also are due to the tendencies created by over-accumulation in a competitive and stagnant world economy. There certainly is need for a paper titled "two different export-oriented growth strategies with wage-led accumulation regimes and two different versions of crisis".

To sum up, the model presented here just points at the end results that we observe. But the mechanisms that lead to wage-led regimes are much more complicated than a simple demand-led mechanism that can be observed on the surface. Indeed the complicated link between the wage share and investments could to some extent be uncovered with a model that decomposes the wage share into real wages and productivity. Such an analysis would provide an insight on how distribution, investments and technological change interfere. However, this will be the task of a forthcoming paper.

The incorporation of financial sector to the model would also improve the model. Unfortunately not only the limitations of SVAR, but also limitations regarding the data to measure these effects related with financial variables and expectations, leave these crucial aspects unexplored. Real interest rates are clearly unable to capture the full complexity of the structural change in the financial system for the case of Turkey, and the institutional complexity in the case of South Korea.

Another critical point is that the profit share variable that is used in the analysis is gross profits, which do not decompose the differences in the sources of capital income. Finally, our use of two

lags may be unable to capture the dynamics behind the building up of profit expectations and business confidence.

8. Conclusion

The aim of the paper was to compare the relationship between distribution, growth, accumulation and employment in Turkey and South Korea, which are two examples representing two very different export-oriented growth experiences. The results of the adjustment experiences of both countries present a striking contrast to the orthodoxy, however they also present a counter-examples to each other in terms of their ways of integrating to the world economy. The paper tests whether accumulation and employment are wage-led in these two countries by means of a post-Keynesian open economy model, augmented by a demand-driven labor market and a reserve army effect in the Marxian sense. The model is estimated in a structural vector autoregression form, in order to capture the complex simultaneous interaction between distribution, accumulation, growth and employment within a systems approach. This model, and the method of estimation are the two innovations of this paper in addressing the crucial policy issues related with structural adjustment problems in developing countries.

The estimation results show rather unambiguously that accumulation and employment are not profit led, and the growth regime is stagnationist, at least in the short run in both South Korea and Turkey. Although the results for Turkey do not point out a strong wage-led regime of accumulation, a high profit share clearly does not enhance investments. In terms of the effect of foreign trade, the results also indicate that a high profit share can only in the medium run create an increase in the export demand high enough to compensate for the decline in consumption out of wages. However, although both countries are close to wage-led accumulation regimes, the difference in their export-oriented growth strategies has led to quite different outcomes. In Turkey an increasing trend in the profit share throughout the structural adjustment episode has led to stagnant rates of investment, whereas in South Korea periods of decreases in the profit share have gone together with an increase in the investment rate.

Although the wage-led accumulation regime scenario and the effect of demand on accumulation explain part of this story, there certainly are more to that in explaining the striking difference in

investment rates between these countries. Within the institutional and class structures of these economies, there are many factors that determine accumulation other than demand and distribution. Within a business environment created by active state policies, there was a virtuous cycle of increasing wage share, high investment, high productivity, high growth in South Korea, as opposed to the Turkish case with the vicious circle of decreasing wage share, low growth, low investment, low productivity. An analysis that could incorporate the effect of different financial regimes would certainly shed more light on the determinants of accumulation and growth. Also a model that decomposes the effect of the wage share to the changes in real wages and productivity would better account for the links between distribution, demand, technological innovation, investments, and exports.

In spite of the fact that the empirical estimations are not fully capable of capturing all the interactions within the system, the responses of accumulation, growth and employment to distribution are suggestive in explaining some crucial aspects of the mechanism behind the inability of an export-oriented growth strategy relying on decreasing wage shares to stimulate a accumulation and employment. Following this basic conclusion, a couple of policy implications need to be brought into discussion. Firstly, the results suggest that a pro-capital income policy is neither a necessary nor a sufficient condition to achieve higher accumulation and growth, and wage suppression is unable to improve the growth rate of employment. On the contrary, the decline in domestic demand can have negative effects on growth if the improvements in international competitiveness are not strong and sustainable. Secondly, demand is the driving force behind employment. This result points at a very important policy implication indicating that the increase in competitiveness, which is maintained by low wages, does not transform into higher employment. The limits in creating employment via low wages and a growth regime based on the use of existing capacity, rather than new investments point out the significance of active policies to stimulate accumulation. This alternative line of economic policy necessitates a different perspective of international competitiveness, which is based on enhancing productivity. The Korean experience raises the question of the sustainability of such policies, however answering this question is beyond the scope of this paper and has to be left for future research.

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Appendix A: Definition of variables and data sources

Turkey:

Y: real GDP in nonagricultural sector, State Institute of Statistics (SIS), 1998.

I/Y: Private non-agricultural investment/Y, State Planning Organization (SPO), 2000.

π: Gross profits/Y in non-agricultural sector, Özmucur (1994) and Temel and Kelleci (1994)18.

z: annual growth rate of real GDP in nonagricultural sector (growth rate of Y)

X/Y: Exports of goods and services excluding agricultural exports /Y, SIS, (1998).

M/Y: Imports of goods and services /Y, SIS, (1998).

E: non-agricultural employment in natural logarithms, SIS, 1997 and Bulutay, 1995.

South Korea:

Y: real GDP

I/Y: Private investment/Y, (non-agricultural distinction wasn't available)

π: Gross profits/Y in non-agricultural sector, 1-wages/Y, where wages/Y are calculated as follows: wage share index=average monthly real earnings in non-agricultural sector index / labor productivity index in industry. Then using the data for wages/value added in manufacturing industry provided by the World Bank World Tables for 1993, the index is converted into levels.

z: annual growth rate of real GDP in nonagricultural sector

X/Y: Exports of goods and services /Y

M/Y: Imports of goods and services /Y

E: non-agricultural employment in natural logarithms

Source: National Statistical Office, Republic of Korea, http://www.nso.go.kr/eng/

18 The data after 1994 and before 1968 do not exist in these studies, therefore the percentage increase in profit/value added ratio in the private manufacturing industry is used to extend the existing time series.

Appendix B1: Turkey VAR results (OLS estimations)

	I/Y_t	π_t	X/Y_t	M/Y_t	z_t	E_t
I/Y_{t-1}	0.462	-0.528	0.051	-0.495	0.368	0.001
	[0.01289]	[0.11715]	[0.84425]	[0.11795]	[0.52973]	[0.68861]
π_{t-1}	0.245	0.933	0.031	0.218	0.095	-0.001
	[0.02652]	[0.00000]	[0.83912]	[0.24690]	[0.78635]	[0.57583]
X/Y_{t-1}	-0.015	0.416	0.610	0.317	-0.212	-0.003
	[0.92081]	[0.11613]	[0.00283]	[0.20296]	[0.64615]	[0.10458]
M/Y_{t-1}	-0.370	-0.098	0.193	0.550	0.714	0.001
	[0.00130]	[0.63824]	[0.23048]	[0.00503]	[0.04923]	[0.57064]
z_{t-1}	0.331	0.314	0.208	0.142	-0.427	0.000
	[0.00001]	[0.02209]	[0.04919]	[0.27195]	[0.07380]	[0.97249]
E_{t-1}	6.946	-43.292	-51.656	-11.956	77.384	0.434
	[0.56117]	[0.04569]	[0.00198]	[0.55683]	[0.04006]	[0.00181]
I/Y_{t-2}	0.261	0.179	-0.292	0.439	-0.128	0.001
	[0.09986]	[0.53403]	[0.18880]	[0.10467]	[0.79864]	[0.77928]
π_{t-2}	-0.151	-0.390	0.059	-0.037	0.069	0.003
	[0.10457]	[0.02050]	[0.64969]	[0.81603]	[0.81363]	[0.01063]
X/Y_{t-2}	0.093	-0.499	-0.348	-0.330	0.306	0.000
	[0.45563]	[0.02703]	[0.04520]	[0.11952]	[0.43519]	[0.87985]
M/Y_{t-2}	-0.062	-0.230	-0.166	-0.250	0.129	0.002
	[0.63401]	[0.32954]	[0.36169]	[0.25796]	[0.75357]	[0.30460]
z_{t-2}	0.139	0.225	0.024	-0.027	-0.321	0.001
	[0.09010]	[0.12822]	[0.83654]	[0.84437]	[0.21284]	[0.32255]
E_{t-2}	-27.827	34.087	19.967	-15.600	-70.681	0.394
	[0.02295]	[0.12429]	[0.24291]	[0.45393]	[0.06696]	[0.00573]
constant	167.058	112.787	254.172	216.122	-67.216	1.300
	[0.00441]	[0.28889]	[0.00194]	[0.03049]	[0.71637]	[0.05689]
trend	1.032	0.600	1.641	1.457	-0.819	0.005
	[0.00511]	[0.36919]	[0.00143]	[0.02020]	[0.48085]	[0.22514]
s.e.	1.357	2.460	1.897	2.311	4.280	0.016
R-Square	0.899	0.754	0.964	0.938	0.407	0.998

p-values in parenthesis. A trend and a constant is added to VAR model. Estimation period is 1965-97 after adjusting for lags.

Appendix B2: South Korea VAR results (OLS estimations)

	I/Y_t	π_t	X/Y_t	M/Y_t	z_t	E_t
I/Y_{t-1}	1.699	-0.054	-0.834	0.725	0.634	0.012
	[0.00039]	[0.79447]	[0.26624]	[0.15614]	[0.32625]	[0.00108]
π_{t-1}	-1.905	0.001	0.653	-1.629	-0.867	-0.008
	[0.12407]	[0.99817]	[0.73612]	[0.21744]	[0.60344]	[0.37900]
X/Y_{t-1}	1.130	0.007	-0.258	0.162	0.831	0.009
	[0.00103]	[0.96221]	[0.63254]	[0.65797]	[0.07319]	[0.00110]
M/Y_{t-1}	-0.752	0.495	0.943	1.353	-1.188	-0.008
	[0.04328]	[0.00193]	[0.10527]	[0.00065]	[0.01783]	[0.00506]
z_{t-1}	-0.133	0.062	0.362	-0.041	-0.398	-0.001
	[0.68524]	[0.65745]	[0.48078]	[0.90721]	[0.36866]	[0.74308]
E_{t-1}	-97.186	-19.006	10.869	-118.814	-24.947	0.097
	[0.06646]	[0.40298]	[0.89567]	[0.03539]	[0.72656]	[0.81383]
I/Y_{t-2}	0.151	0.020	-0.185	-0.546	-0.059	-0.001
	[0.82341]	[0.94507]	[0.86094]	[0.44843]	[0.94822]	[0.91516]
π_{t-2}	0.590	-0.086	0.520	1.662	0.259	0.008
	[0.37946]	[0.76637]	[0.62086]	[0.02028]	[0.77462]	[0.12805]
X/Y_{t-2}	0.199	0.002	-0.284	-0.208	-0.012	0.000
	[0.66533]	[0.99003]	[0.69240]	[0.67078]	[0.98416]	[0.90067]
M/Y_{t-2}	-0.001	-0.072	-0.138	-0.430	0.651	0.003
	[0.99774]	[0.66080]	[0.81910]	[0.29527]	[0.20893]	[0.37827]
z_{t-2}	-0.367	0.103	0.303	0.043	-0.357	-0.002
	[0.03499]	[0.16677]	[0.26523]	[0.81689]	[0.12795]	[0.09779]
E_{t-2}	48.722	-12.285	22.506	97.260	-6.046	0.509
	[0.21546]	[0.46675]	[0.71468]	[0.02042]	[0.90916]	[0.09499]
constant	502.523	337.764	-348.873	185.672	315.129	3.233
	[0.32837]	[0.12582]	[0.66463]	[0.73489]	[0.64913]	[0.41711]
trend	1.132	1.374	-0.505	0.957	0.714	0.011
	[0.55279]	[0.09313]	[0.86559]	[0.63787]	[0.78112]	[0.47564]
s.e.	29.381	12.607	45.986	31.332	39.580	22.765
R-Square	0.784	0.925	0.729	0.802	0.511	0.998

p-values in parenthesis. A trend and a constant is added to VAR model. Estimation period is 1972-2000 after adjusting for lags.

Figure 1a: Private Investments/GDP and Profits/GDP in Turkey (1963-1997)

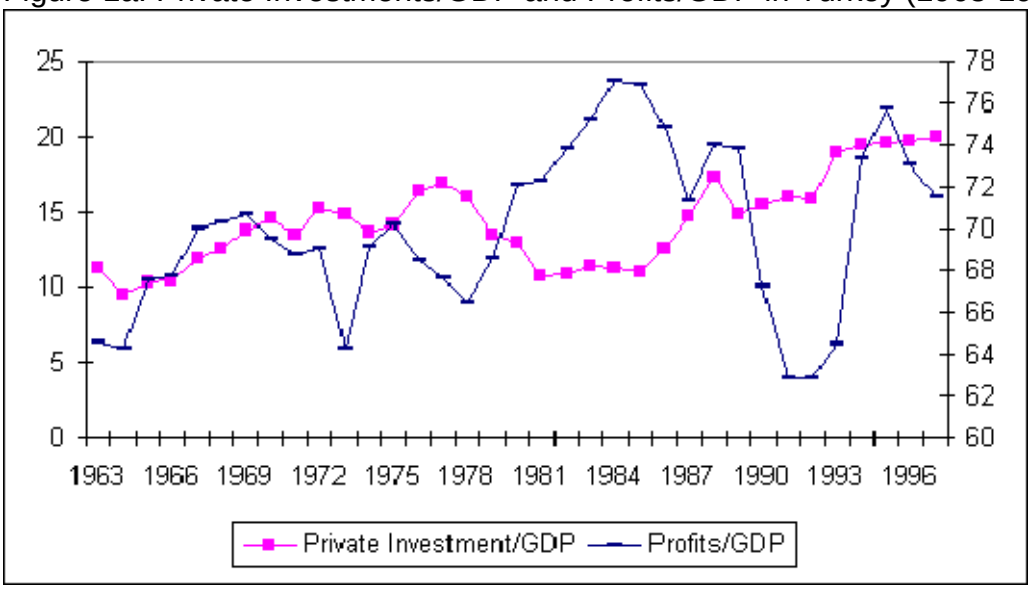


Figure 1b: Private Investments/GDP and Profits/GDP in South Korea (1970-2000)

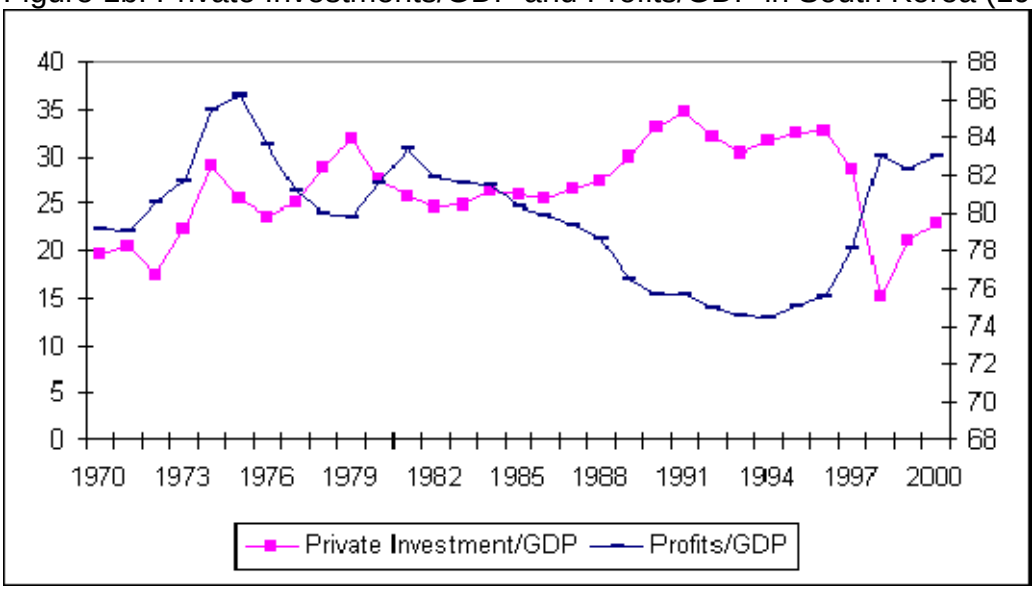
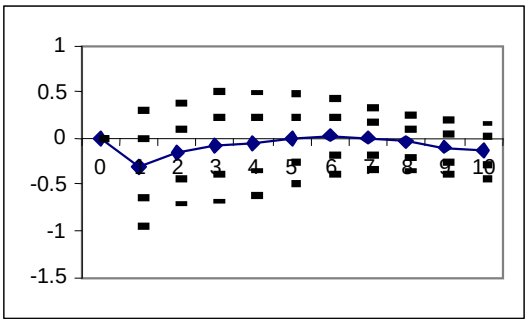
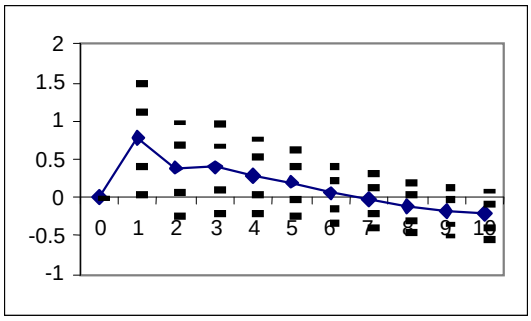


Figure 2
Turkey

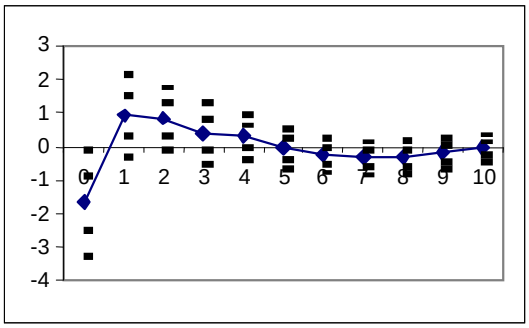
a: Impulse reponse of I/Y to a one std. error shock in profit share



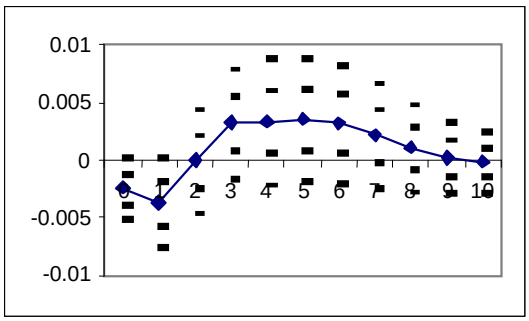
b: Impulse reponse of I/Y to a one standard error shock in z



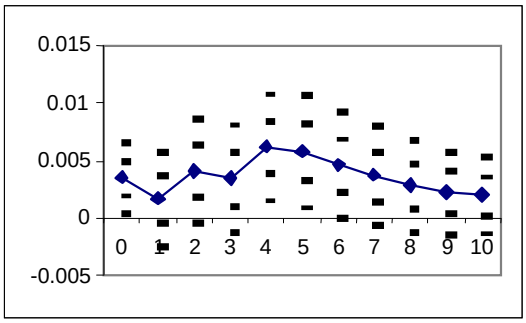
c: Impulse reponse of z to a one standard error shock in profit share



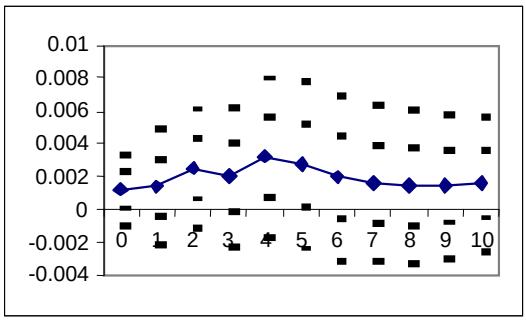
d: Impulse reponse of E to a one standard error shock in profit share



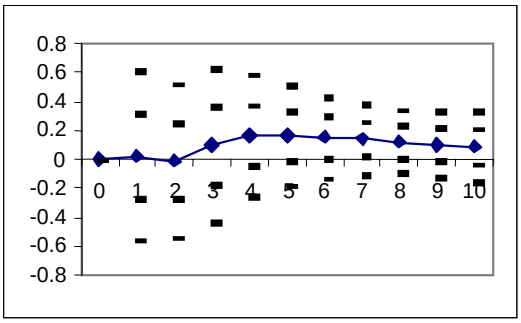
e: Impulse reponse of E to a one standard error shock in z



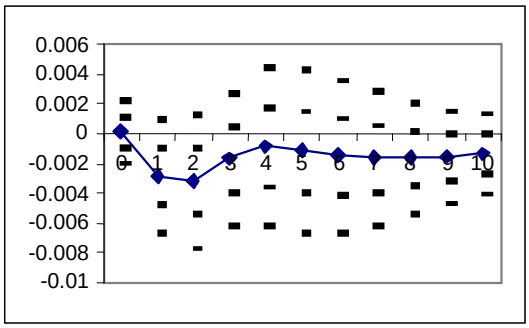
f: Impulse reponse of E to a one standard error shock in I/Y



g: Impulse reponse of I/Y to a one standard error shock in X/Y



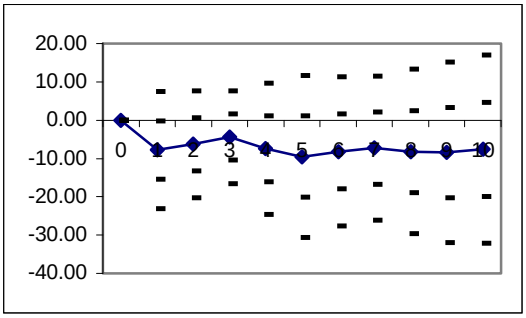
h: Impulse reponse of E to a one standard error shock in X/Y



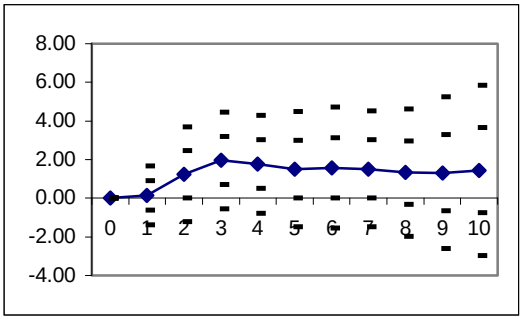
Note: The dots represent +/- 2 standard

Figure3
Korea

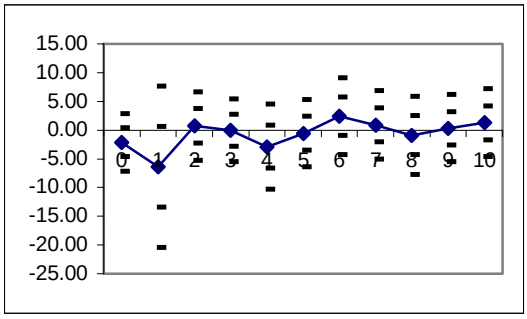
a: Impulse reponse of I/Y to a one std. error shock in profit share



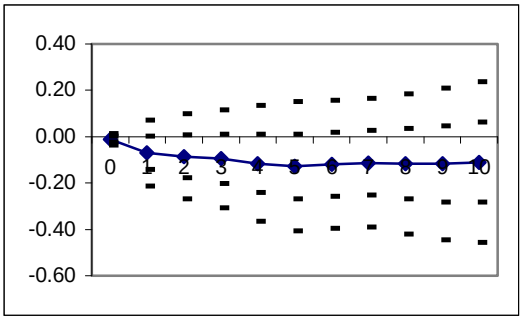
b: Impulse reponse of I/Y to a one standard error shock in z



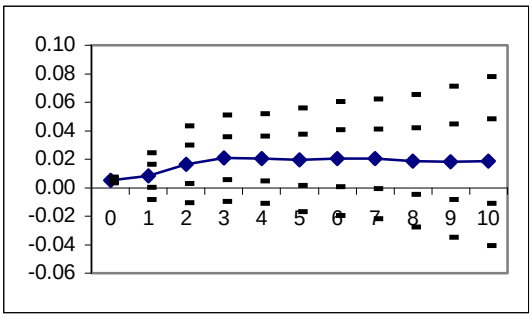
c: Impulse reponse of z to a one standard error shock in profit share



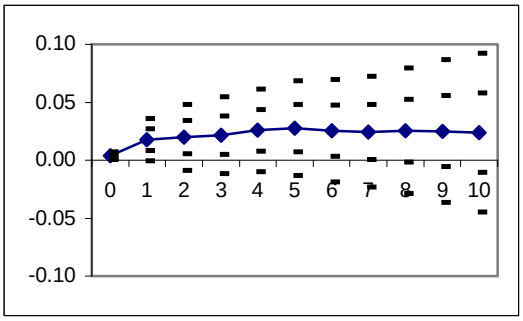
d: Impulse reponse of E to a one standard error shock in profit share



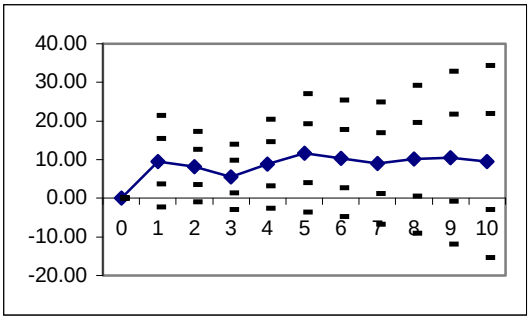
e: Impulse reponse of E to a one standard error shock in z



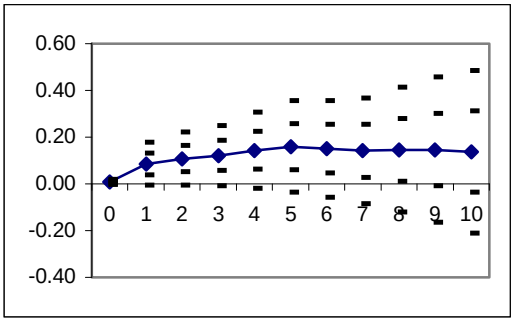
f: Impulse reponse of E to a one standard error shock in I/Y



g: Impulse reponse of I/Y to a one standard error shock in X/Y



h: Impulse reponse of E to a one standard error shock in X/Y



Note: The dots represent +/- 2 standard errors.