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Two Different Export-Oriented Growth Strategies
Accumulation and Distribution in Turkey and South Korea

Abstract: The aim of the paper is to compare the relationship between distribution, growth, accumulation, and employment in Turkey and in South Korea. These countries represent two different cases of export-oriented growth. The results of the structural adjustment experiences of both countries are in striking contrast to orthodox theory; however, they also present counterexamples to each other in terms of policies of economic integration. The paper tests whether accumulation and employment are profit-led in these two countries by means of a post-Keynesian open economy model, which includes a demand-driven labor market and a reserve army effect in the Marxian sense. 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 results show that decreasing the wage share does not stimulate accumulation, growth, and employment. Interestingly, the relation between wage share, investment, growth, and employment is similar in both Turkey and South Korea; however, the former experienced low and the latter high growth rates due to different export-oriented growth strategies. The explanation for this difference is found in the field of institutions, power structures, and state policies.

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Many developing countries in the late 1970s and 1980s implemented structural adjustment programs, shifting from import-substituting industrialization strategies to export-oriented growth strategies. The main goal of these orthodox structural adjustment programs was to manage the integration of countries into the global economy, shifting the source of effective demand from the domestic to the international market. Incomes policy and labor market deregulation toward procapital redistribution were major components of this process, which held that greater market openness and higher profits would stimulate growth; accumulation in export-oriented, labor-intensive sectors; and, consequently, employment. However, after years of implementing orthodox structural adjustment programs, as suggested by the International Monetary Fund (IMF) and the World Bank, many developing countries found themselves in a vicious cycle of high profit shares, 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. The experiences of many developing countries show that there was no rise in investments in export sectors following the enactment of structural adjustment policies, and hence, realized export increases were based on increases in capacity utilization as opposed to new investments. This, in turn, prevented high growth in employment and 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 structural adjustment programs in many countries, many governments and the IMF suggest that the solution to the problem of low accumulation and low employment is to be found within the labor market, and, consequently, macroeconomic policy attempts to enhance accumulation and growth are waning. In order to present a coherent analysis of the reasons behind the failure of the orthodox structural adjustment policies, and to propose alternative economic policies, the dynamic interaction between distribution, demand, accumulation, and employment need be analyzed.

The aim of the paper is to compare the relationship between distribution, growth, accumulation, and employment in Turkey and South Korea, which offer 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 counterexamples to one another in terms of their manner of integrating with the world economy. This in turn provides a basis for comparing different integration policies. Turkey, which has been a strict follower of the standard recipes of the IMF and the World Bank, offers an interesting case of the inability of high profits to stimulate investments and employment. South Korea is a counterexample to the orthodox struc-
tural 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 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, Turkey has ended up with decreasing wage share, low growth, low investment, and low employment, and South Korea ended up with increasing wage share, high growth, high investment, and high employment. State intervention in setting the investment climate in South Korea is the essential factor behind this striking difference.

Toward analyzing the dynamic relations between distribution, growth, accumulation, and employment in these two countries, 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; see also Marglin and Bhaduri, 1990), which is a more general formulation of earlier neo-Kaleckian models by Rowthorn (1982), Dutt (1984), Taylor (1985), and Blecker (1989), derived from Kalecki (1971). 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, this as opposed to the orthodox structural adjustment programs that 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, the latter defined as a low rate of accumulation accompanied by a high profit share. The allowance for variable capacity utilization in these models gives rise to the possibility of a wage-led regime, that is, 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 to structural adjustment problems in developing countries.

The Model

The model presented here is a post-Keynesian open economy model, based on Bhaduri and Marglin (1990). The two important extensions of the model presented here are employment and its effect on income distribution. These 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 presents a summary of the model.
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—government is left out of our analysis. Although differences in state policies have importantly informed the respective investment climates in Turkey and South Korea, the differences lie mostly in the microeconomics of public intervention. Therefore, the otherwise obvious alternative of public budget balance does not capture the complicated effects of industrial policy. Due to the technical limits of measurement, as well as of econometrics, other variables that could reflect public policy—such as export subsidy, differential interest and exchange rates—also cannot be incorporated into our existing model.

Equation (1) (see Table 1) defines the investment decision of private firms, such that the rate of accumulation (investment/capital stock) is a positive function of
expected profitability, which is proxied by profit share and capacity utilization. This function separates the demand-side effect of wages on investment from the cost-side 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.

Equations (3) and (4) incorporate international trade into the model by defining the 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 rate of accumulation and capacity utilization. Profit share is taken as an indicator of international competitiveness, thus global market share, in order to simplify the model. Due to the limitations of a VAR model, we need a variable that would serve both as an indicator of distribution and international competitiveness. Although domestically we are assuming procyclical markups, we consider the markup rate fixed at the international level, such that export prices change 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, via a reserve army effect, reflecting the bargaining power of workers.

The labor market is portrayed by Equation (6). 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, following Stockhammer (2004b; 2004c).

Finally, Equation (7a) represents the goods market equilibrium. Solving Equation (7a) for \( \tilde{z} \) 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 the capacity utilization rate. Equation (7b) will substitute the goods market equilibrium condition in the SVAR analysis.

The outcome of the relationship between capacity utilization and profit share distinguishes two types of growth regimes, namely “stagnationist” and “exhilarationist.” 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.

Finally, the relationship between accumulation and profit share defines the accumulation regime, 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 $\partial g / \partial \pi$) and its indirect effect via the positive international demand effect ($\partial g / \partial z \cdot \partial z / \partial nx \cdot \partial nx / \partial \pi$) and the negative domestic consumption effect ($\partial g / \partial z \cdot \partial z / \partial \pi$), the sign of the total derivative, $dg / d\pi$, 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, otherwise it is wage-led.8

Thus far, the model has been presented without considering its dynamic structure. Following the discussion of the method of estimation in the third section, we will discuss the data problems associated with estimating the model in the fourth section, and the sixth section will be devoted to the specification of the contemporaneous and intertemporal relationships within the system.

Method of Estimation

The significant, theoretical contributions in the literature about wage- versus profit-led regimes of accumulation and growth has only slowly attracted empirical work concerning 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 thus contemporaneous interaction cannot be observed. Gordon (1995a; 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 address 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 (2004a) presents separate estimations for accumulation and employment for advanced capitalist countries. Hein and Ochsen (2001) present reduced-form estimates for accumulation in advanced capitalist countries incorporating the effect of rentier’s income. Empirical studies on developing countries are of particular interest to 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 (1999–2000) 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 merits, it fails to represent the system aspect that is crucial to the
theoretical model, and it does not present a complete macroeconomic 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 SVAR analysis (Bernanke 1986; Sims 1980, 1986).

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 results in the use of 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 further comments on VAR models are appropriate here. First, because of the systems approach, exogenous shift variables 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 changes in price competitiveness, are exogenous variables that we could consider in our model. However, because 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. Because 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 rather on impulse response functions. Impulse functions trace the dynamic impact of a shock on a variable on all other variables in the system.

The Data

This section concentrates on the data problems involved in testing the model, as outlined in the second section. We will deal with problems arising from lack of proper data for certain variables, as well as choose the best way to measure some others.

One major problem is the absence of data for capital stock in national statistical sources. Therefore, our analysis uses the ratio of private investment to GDP. Consequently, GDP growth rate 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 of the concept of “potential GDP” in that it is a NAIRU (nonaccelerating inflation rate of unemployment) concept and is consistent with a post-Keynesian framework. In addition, there are
problems associated with 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. First, given the quite different nature of unpaid family worker status and the significance of underemployment in the agricultural sector, particularly for the female labor force, we exclude the agricultural sector from our analysis. Second, the employment variable is defined as the rate of employment in the theoretical model in order to capture 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 the total working age population in the nonagricultural sector is the appropriate variable, rather than share of employment in the labor force, which excludes the nonparticipants. Taking the labor force as the denominator limits the pressure exerted on the bargaining power of labor to those who are only actively looking for work. This ignores a significant portion of the population who are nonemployed but who are not actively looking for a job either because they are discouraged or are involved in nonmarket work. The distinction between nonemployment and unemployment is particularly important in developing countries with declining levels of labor force participation rates, particularly for the working-age female population, and with increased rates of urbanization. Measuring the potential labor supply for the nonagricultural sector is a not a trivial problem. Although agricultural employment is almost entirely a rural occupation, the opposite is not true: industrial employment can also take place in rural areas. Therefore, the denominator cannot be limited to the urban population. The alternative of using the whole working-age population to measure the potential workforce creates an additional problem. The ratio of nonagricultural employment to total working-age population also reflects the sectoral transformation of employment from agriculture to industry. As a result, we use nonagricultural employment in levels (in logarithms), excluding the demographic trends about changes in the working-age population, as well as sectoral changes in employment. While the level of employment is not as good a measure of labor market pressure as the employment rate, it can be a better measure toward evaluating the employment creation capacity of an economy.

The obvious disadvantage of the nonagricultural sector is that the demand effect of the agricultural sector is excluded. In parallel to our choice about measuring employment on the basis of nonagricultural employment, indeed 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. Since the share of agriculture in total investment is expected to be small, we assume that this distortion will not have a critical effect on our results.

The profit share is calculated as 1 – (the share of wage payments in GDP) in the nonagricultural sector. Our variable therefore reflects the movements in real wages
in relation to output. However, there may be measurement problems: First, there is the issue of taxes. The savings differential, through which profit share is expected to effect consumption, works from net income—that is, post-tax income—whereas profit share measures pretax income distribution. The same is true for the profit share in labor demand. If there are significant changes in the tax wedge between post-tax wages and gross compensation, the profit share may be a bad proxy. However, since tax structures change slowly, it would be surprising if this problem dominates the VAR estimations. Second, the profit share is value-added minus labor compensation. Thus, it includes the incomes of the self-employed as profits, whereas wage payments of management (who are distinguished from the other wage earners in terms of their relation to the production process) are counted as wages. Also, rent and interest earnings are included in profits. These issues certainly deserve further research, though they are beyond the scope of the present paper. Profit share seems to be a meaningful variable, because it is significantly (negatively) correlated with real wage in both Turkey and South Korea.10 The profit share variable is therefore not dominated by noise due to measurement errors. Moreover, considering the scope of this paper—which is to question the policy prescriptions of orthodox structural adjustment programs and profit share variables—interest income is not entirely irrelevant. The proponents of these programs have long argued that deregulation of markets, including financial markets, will foster investments via higher savings. If the empirical analysis shows that our profit share does not stimulate investments, this argument is empirically unjustified, although the mechanism behind it has to be further analyzed.

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, because a VAR consists of autoregressive distributed lag (ADL) equations, it shares the latter’s desirable time series properties. In a seminal paper, Sims et al. have shown that “the common practice of attempting to transform models to stationary form by difference or cointegration operators whenever it appears likely that the data are integrated is in many cases unnecessary” (1990, p. 136). In particular, in an ADL estimation, any coefficient that can be written as a coefficient on an I(0) variable is consistent and has standard distributions (see also Watson 1994; Hamilton 1994). In our context, these are all estimated coefficients other than those on the constant and the trend.

Two Different Export-Oriented Growth Strategies

This section presents the export-oriented growth experiences of Turkey and South Korea in terms of the relationship between distribution and growth, and 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 the implementation of an orthodox structural adjustment program, as typically prescribed by the IMF and the World Bank. As opposed to Tur-
key, the export-oriented growth strategy of South Korea dates back to the early 1960s under very different national institutional structures and with a very different division of labor in the global economy.\textsuperscript{11}

The export orientation à la Turca was via a strict procapital redistributational mechanism, where a drastic decline in wage share has made the adjustment of capital to the consequences of the new trade regime possible without any deterioration in profitability (Boratav et al. 1994; Metin Özkan et al. 2001; Onaran 1999; Onaran and Yentürk 2003; Şenses 1989; Yeldan 1995; Yentürk 1997). Overall, the “success” of the export-led industrialization policy of Turkey was due mainly to the shift of industrial capacity toward international markets via a significant contraction of real wages, excessive export subsidies, and real devaluations rather than new investments.

Adjustment in South Korea, in contrast to Turkey, as well as to a variety of Latin American experiences, was based neither on mere wage repression nor on an unlimited deregulation of product and financial markets. A nationalized financial sector, dual interest rates, rationing in the credit markets as a means of subsidizing exports, controls over foreign direct investments, and restrictions on foreign exchange conversions shaped the business environment until the mid or late 1980s. High investments, improvements in productivity, and consequently high exports have propelled the successful movement of the country up the industrial ladder to the production of more capital and skill-intensive goods (Amsden 1989; Amsden and Singh 1994; Mazumdar 1994; Seguino 1999–2000; Singh 1998). A sustained and predictable increase in wages in a conflict-controlled environment, rather than low wages, have been important in maintaining high demand and high accumulation (Amsden 1987; You 1994; You and Chang 1993). On the other hand, state interventions in South Korea have led to a tendency of near overaccumulation in South Korea.\textsuperscript{12}

Figures 1a and 1b show profits-to-GDP and private investment-to-GDP ratios throughout the period for which data are available for Turkey and South Korea. In Turkey, an increasing trend in profit share, with an exception in the early 1990s, has led to either declines in the rates of investment (investment/GDP) or, at best, has not created a remarkable improvement. In South Korea, the negative relationship between the profit share and investments is more pronounced, with the exception of the early 1990s, yet the trends are just the opposite of Turkey.

Some other stylized facts pointing out the key issues need to be addressed in terms of the links between distribution, accumulation, and employment. Since the 1970s, annual average growth rates (in the nonagricultural sector), investment rates, employment growth rates, and export/GDP ratios in South Korea have been remarkably higher than those in Turkey. South Korea, which started with a much lower per capita GDP, reached a comparable level already as of 1978, and since then has reached much higher levels. Comparing the profit share data is harder due to problems in calculating these variables. The figures for the manufacturing industry are more comparable, and they indicate that profit share in South Korea was higher than in Turkey during the period of 1970–79 and lower during 1980–93.\textsuperscript{13}
The stylized facts for both countries provide important evidence that point out the doubtfulness of a profit-led regime, albeit with different outcomes: decreasing wage share, low growth, low investment, and low employment in Turkey; and increasing wage share, high growth, high investment, and high employment in South Korea.
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 the second section, our matrix of endogenous variables, $y$, and the $B$ matrix are defined as follows:

$$
\begin{bmatrix}
I / Y \\
\pi \\
X / Y \\
y \\
M / Y \\
z \\
E
\end{bmatrix}
\Rightarrow
\begin{bmatrix}
b_{11} & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & b_{22} & 0 & 0 & 0 & 0 & 0 \\
0 & b_{32} & b_{33} & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & b_{44} & b_{45} & 0 & 0 \\
b_{51} & b_{52} & b_{53} & 0 & b_{55} & 0 & 0 \\
0 & 0 & 0 & 0 & b_{65} & b_{66} & 0
\end{bmatrix}
$$

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.

Obviously, VAR analysis is sensitive to the ordering of the variables. We will rely on our theoretical assumptions to determine the direction of causality and contemporaneous interaction among variables. The significance of the estimated contemporaneous effects measures how successful our theoretical assumption is about ordering. Other than these contemporaneous effects, the lagged effects shall be effective for all variables. Granger causality tests are not used to determine the direction of contemporaneous causality, because this tests the significance of lagged effects only.

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 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 with a lag to growth as well as employment. Thus, in addition to investment, distribution is also contemporaneously exogenous.

Since our capacity utilization variable is the growth rate, imports are only a function of $z$, not of $I/Y$. The same is 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 labor market pressures. The ADL specification of the VAR model will automatically make the necessary transformations if the employment equation has to be specified in difference form. 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 nonstationarities in the time series. VARs give consistent results even in the presence of unit roots (Sims et al. 1990) if more than one lag is employed. The employment of a 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-term series data. Quarterly data would have improved the results significantly, but unfortunately, quarterly data does not exist for investments before 1987 for Turkey.

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. 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.

**Estimation Results**

This section first presents the SVAR estimations based on the contemporaneous interactions as defined in the previous section, and then analyzes the impulse re-
response functions. The VAR results of OLS estimations are available upon request. The estimation period is 1965–97 for Turkey, and 1970–2000 for South Korea.16

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.

The estimated VARs for both countries are stable (stationary) since all inverse roots of the characteristic AR polynomial have modulus less than 1 and lie inside the unit circle. Autocorrelation LM tests indicate that autocorrelation is not a major problem. However, the null hypothesis of no autocorrelation is rejected in Turkey for the first and second lags ($p$-values around 0.10) in the employment equation, and in South Korea for the second and third lags in the profit share equation ($p$-values 0.028 and 0.053). There is no heteroscedasticity problem in either model.

The SVAR estimation results of contemporaneous correlations will not be reported due to space limitations, and analysis will basically reply on the impulse response figures. However, a couple of notes on the contemporaneous correlations are in place. The contemporaneous coefficients have the expected signs, with the exception of the 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 Okun’s Law. For Turkey, the profit share has a highly significant, positive, and 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 does not perform well for either country. The coefficient of both growth and profit share are insignificant. There may be various aspects behind this result common to both countries. First, profits might be unable to capture the price competitiveness of imports. Second, 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, though the simple VAR results do not verify this argument. Additionally, for the case of South Korea, the effect of activist state policies on foreign trade explains part of the poor performance of the estimates 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- or profit-led. A response is called wage-led if the cumulative ef-
fect of the impulse responses on a shock to the profit share is negative (or profit-led if positive) after three years.\textsuperscript{17}

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 South Korea and Turkey, respectively. Figures 2a and 3a show the responses of investment to the profit share. The impulse 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.

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 with the single equation estimates provided by Onaran and Yentürk (2001) for the 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 (1999–2000) for the manufacturing sector, which 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 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 term. In Turkey, the effect turns positive in the next period; however, it takes three periods for the growth rate to recover.\textsuperscript{18} In South Korea, the negative effect continues for another period, and then dies away. The recovery of the growth rate is due to 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
Figure 2. Impulse Responses for Turkey

a. Impulse response of $I/Y$ to a one standard error shock in profit share

b. Impulse response of $I/Y$ to a one standard error shock in $z$

c. Impulse response of $z$ to a one standard error shock in profit share

d. Impulse response of $E$ to a one standard error shock in profit share

e. Impulse response of $E$ to a one standard error shock in profit share

f. Impulse response of $E$ to a one standard error shock in $I/Y$

g. Impulse response of profit share to a one standard error shock in $z$

h. Impulse response of profit share to a one standard error shock in $E$

Note: The dots represent $±2$ standard errors.
Figure 3. Impulse Responses for Korea

a. Impulse response of $I/Y$ to a one standard error shock in profit share

b. Impulse response of $I/Y$ to a one standard error shock in $z$

c. Impulse response of $z$ to a one standard error shock in profit share
d. Impulse response of $E$ to a one standard error shock in profit share

e. Impulse response of $E$ to a one standard error shock in $z$
f. Impulse response of $E$ to a one standard error shock in $I/Y$

g. Impulse response of profit share to a one standard error shock in $z$
h. Impulse response of profit share to a one standard error shock in $E$

Note: The dots represent ±2 standard errors.
also has a persistence in the next periods, offsetting the profit effect. Also, investment decisions are highly path dependent; slowdowns 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, 3e, and 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 regarding the estimation results is the response of distribution to growth and labor market pressures, as can be seen in Figures 2g, 2h, 3g, and 3h. Although distribution does not immediately adjust to changes in demand and balance-of-power relations in the model, the lagged effects are significant and are in the expected direction for Turkey, at least in the short term. In South Korea, the labor market pressures on distribution are effective, whereas procyclical markup behavior is not observed. Distribution seems to be determined more independently from goods market conditions in South Korea.

The model presented here indicates that neither South Korea nor Turkey have profit-led regimes; in fact, overall, the macroeconomic parameters for the two economies, as well as the corresponding 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 proceeded together with an increase in the investment rate. Thus, while wage-led accumulation regimes are part of the story, this 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 considers such factors.

It is interesting to compare the response of the investment rate to international competition in Turkey and South Korea because it highlights the crucial differences between the two approaches to export-oriented growth. In South Korea, the response is very strong and persistent, whereas in Turkey, the response is infrequent, has a lag of three years, and is never 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 the investment decisions of firms. In Turkey, investments are stimulated by domestic demand, whereas in South Korea,
exports are even more important than domestic demand. Exports increase in Turkey when unit labor costs decline (i.e., profit share increases) and domestic demand contracts. Thus, the increase in Turkey’s exports is dependent on the creation of an exportable surplus in the domestic output. However, in South Korea, a shock to profit share has no significant effect on exports. 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 is manifest also in 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. This result points at a very important policy implication indicating that an 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 counterevidence to the expectations about an increase in the labor intensity of production following an increase in export orientation.19

To sum up, the model presented here points to the end results that we observe. 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, however. Indeed, the complicated link between wage share and investments might 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 the financial sector would also improve the model. Unfortunately, the limitations of SVAR, but indeed the limitations of the data to measure the effects of related financial liberalization and expectations, leave a crucial part of investment behavior 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 of the institutional complexity in the case of South Korea.

Finally, our use of two lags may be unable to capture the dynamics behind the building up of profit expectations and business confidence.

**Conclusion**

The aim of the paper was to compare the relationship between distribution, growth, accumulation, and employment in Turkey and South Korea, two countries that represent two very different export-oriented growth experiences. The paper tests whether accumulation and employment are profit-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 constructed in structural vector autoregression form in order to capture the complex simultaneous interaction between distribution, accumulation, growth, and employ-
ment within a systems approach. This model, and an accompanying 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 that the growth regime is stagnationist, at least in the short term in both South Korea and Turkey. Although the results for Turkey do not suggest a strong wage-led regime of accumulation, high profit share there clearly does not enhance investments. In terms of the effect of foreign trade, the results also indicate that only in the medium term can a high profit share create an increase in export demand sufficient to compensate for a decline in consumption out of wages. However, although both countries are nearly 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 proceeded together with investment rate increases.

Although the wage-led accumulation regime scenario and the effect of demand on accumulation explain part of this story, there certainly more explanation is required considering the striking difference in investment rates between the countries. Within their institutional and class structures, for example, there are many factors that determine accumulation beyond demand and distribution. Within a business environment created by activist state policies, there was a virtuous cycle of increasing wage share, high investment, high productivity, and high growth in South Korea, as opposed to the Turkish case, with a vicious circle of decreasing wage share, low growth, low investment, and 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 changes in real wages and productivity would better account for the links between distribution, demand, technological innovation, investments, and exports.

Despite 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 reliant on decreasing wage shares to stimulate accumulation and employment. Following this basic conclusion, a couple of policy implications need further consideration. First, the results suggest that a procapital income policy is neither a necessary nor a sufficient condition to achieve higher accumulation and growth, and that wage suppression is unable to improve the rate of employment. On the contrary, a decline in domestic demand can have negative effects on growth if improvements in international competitiveness are not strong and sustainable. Second, it is shown that demand is the driving force behind employment. This result elicits a very important policy implication, indicating that increased competitiveness maintained
by low wages does not impart 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 suggest the need for more proactive policies to stimulate accumulation. This alternative line of economic policy necessitates a different perspective of international competitiveness, based on enhancing productivity. The South Korean experience raises the question of the sustainability of such policies; however, this matter is beyond the scope of this paper, and as such, has to be left to future research.

Notes


2. In Turkey, public spending has increasingly become dominated by interest payments on the national debt, and the widely used practice of tax exemptions to promote exports breaks the link between growth and public-sector income. For South Korea, activist state policies have tremendous effect on the business environment. There is even state intervention in the decision-making processes of firms.

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

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

5. Bowles and Boyer (1995) also 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 markup would certainly not be an indicator of improved competitiveness. Yet, as it is widely argued that the 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, because a rise in the profit share might have an additional impact of increasing the demand for imported consumption goods. Additionally, the real exchange rate, which is also affected 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.

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

7. \( \frac{\partial n}{\partial \pi} = \frac{\partial x}{\partial \pi} - \frac{\partial m}{\partial \pi} \).

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

9. This lack of data is particularly a problem as regards Turkey, where there is also no research available to construct capital stock series for the aggregate economy. Therefore, for comparative purposes, we preferred to go 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 raises serious differ-
ences 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.

10. The correlation coefficient between the level of profit share and real wage for Turkey (1965–97) and Korea (1970–2000) is –0.51 and –0.48, respectively. The correlation coefficient between the difference of profit share and the percentage change in real wage is even higher, at –0.73 and –0.91, respectively. Real wage data is the total manufacturing wage for Turkey and the nonagricultural industry wage for Korea.

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

12. Overaccumulation tendency in the economy is an important factor that makes investments independent from the profit share in South Korea (Yentürk 1998b). Obviously the problem of overaccumulation 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 (Adelman and Yeldan 2000; Seguino 1999–2000; Yentürk 1998b). Although it is outside the scope of this paper, the crisis of 1997 suggests the limits of the high accumulation model of South Korea and the sustainability of active state policies in the long run.

13. The wage share data for manufacturing industry are from the World Bank database on floppies for 1970–93. The World Bank stopped compiling manufacturing wage share data after 1993. Economy-wide gross profits/Y in the nonagricultural sector for Turkey are calculated based on Özmuçur (1994) and Temel and Kelleci (1995). 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. For Korea, gross profits/Y in the nonagricultural sector is calculated based on data reported by National Statistical Office.

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

15. For South Korea, the results of the LR, FPE, AIC, SC, and HQ statistics all indicate that the use of three lags is optimum. For Turkey, the majority of the tests, thus FPE, AIC, and HQ, suggest the use of three lags, whereas the other two criteria suggest one lag. Since the use of three lags is impossible in our already brief time series, we preferred to use two lags for both countries, rather than one lag, in order to deal with time series problems.

16. The periods are determined by data limitations. For Turkey, stylized facts point out that both the 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; that is, from early 1990 until the crisis of 1997. Unfortunately, there is no standard test for structural breaks in a VAR. Instead the model could be estimated for subperiods. However, it is impossible to perform separate estimations for such brief time periods with the structural model. Thus, we rely on our observations on stylized facts to suggest that the direction of the relation between profit share and investment share is rather similar before and after the shift to export-oriented growth in Turkey. In South Korea, because no export-oriented policies were purely implemented in any subperiod, the structural break is less of an issue, and we assume that the few observations in the early 1990s will not dominate the long-term structure of the relation between distribution and accumulation.

17. This definition is admittedly somewhat arbitrary, but the rationale should be clear. VAR analysis is appropriate for short-term analysis. Three years might be considered a
rather long concept of the “short term”; however, the indirect effects that are of interest here take some time to work themselves out.

18. Note that the impulse response graphs shown here are not cumulative; rather, they show the response to the initial shock in each period.

19. 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 intensities of most export-oriented sectors are increasing (Wood 1997; Yentürk 1997). However, the increase in capital intensity need not be a hindrance to employment growth, as can be seen from the case of South Korea.

References


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