Growth Regimes and Uneven Development in Open Economies: Demand and Distribution Regimes in the context of Global Value Chains

Arpan Ganguly

SARChI Industrial Development Working Paper Series

WP 2021-05

August 2021

science & innovation
Department:
Science and Innovation
REPUBLIC OF SOUTH AFRICA

National Research Foundation

SARChI
SARChI Chair:
Industrial Development

UNIVERSITY OF JOHANNESBURG

Growth Regimes and Uneven Development in Open Economies: Demand and Distribution Regimes in the context of Global Value Chains

DSI/NRF SOUTH AFRICAN RESEARCH CHAIR IN INDUSTRIAL DEVELOPMENT

Arpan Ganguly

SARChI Industrial Development Working Paper Series

WP 2021-05

ISBN 978-1-77630-383-0

August 2021

About the South African Research Chair in Industrial Development (SARChI-ID)

The DSI/NRF South African Research Chair in Industrial Development conducts research, builds capacity and undertakes public and policy engagement in the field of industrial development. Activities focus on research projects; training and supervision of graduate students; hosting postdoctoral fellows and research visitors; and various projects, often in conjunction with partners, such as conferences, workshops, seminars, training courses, and public and policy engagements. SARChI Industrial Development is hosted at the University of Johannesburg, where it operates as a centre located in the College of Business and Economics.

Funding acknowledgement

The South African Research Chairs Initiative (SARChI) was established in 2006 by the then Department of Science and Technology (DST), now known as the Department of Science and Innovation (DSI), and the National Research Foundation (NRF). The Chairs are designed to attract and retain excellence in research and innovation at South African public universities. The funding support of the DSI and the NRF through Grant Number 98627 and Grant Number 110691 for the South African Research Chair in Industrial Development has made this working paper series possible.

Recommended citation

Ganguly, A. (2021). Classifying Growth Regimes in Open Economies: Global Value Chains, Demand, Distribution and Economic Growth. SARChI Industrial Development Working Paper Series WP 2021-05. SARChI Industrial Development, University of Johannesburg.

Disclaimer

Working Papers can be downloaded from https://www.uj.ac.za/faculties/cbe/SARCID in PDF (Adobe Acrobat) format.

Abstract

This paper aims at theoretically and empirically analysing the interactions between demand and supply in the context of the Global Value Chains (GVC). First, we develop a theoretical framework, inspired by the recent Structuralist and Post-Keynesian literature, to establish the demand and distribution regimes in the scenario of globalized production chains. We define (1) a demand regime from the balance of payments constrained literature (Blecker & Setterfield, 2019), focusing on trade, investment, and a country's position in the GVC. (2) A distribution/supply regime, defined in terms of employment, value-added, and costs. From the theoretical framework, we select proxies to characterize each of the two regimes. Inspired by the approach used by Braunstein et al. (2020), we then use Principal Component Analysis (PCA) to summarize the regimes. The PCA allows us to identify patterns of growth and distribution for distinct countries and regions, classifying them in a four-fold typology. The dataset consists of 38 countries, and the data sources come from the World Development Indicators (WDI), World Input Output Database (WIOD), Trade in Value Added (TiVA), and the Penn World Tables (PWT). On one hand, this paper contributes to structuralist growth models that typically estimate demand and distribution regimes independently, thereby offering a unified narrative on regimes of economic growth in the context of GVC. On the other hand, the four-fold typology depicts how growth dynamics differ distinctly by geographical regions and how globalization has retained and accelerated processes of uneven development globally.

Keywords: Trade globalisation, Global value chains, Aggregate demand, Income distribution, Growth regimes

JEL codes: F4, F6, O4, O57

About the Authors

Arpan Ganguly, DSI/NRF South African Research Chair in Industrial Development, College of Economics and Business, University of Johannesburg.

Acknowledgements

This work was supported by the South African Research Chairs Initiative of the Department of Science and Technology and National Research Foundation of South Africa (Grant No. 98627).

Contents

List of Tables

List of Figures

1. Introduction

Comparative analysis of capitalist growth regimes and the role of trade and globalization in determining it has been widely studied in structuralist macroeconomic models. The dominant strand establishes this link on the demand side by modelling the role of aggregate demand. Another strand models the supply side by emphasizing the importance of income distribution as the key determinant. However, linking the external orientation of the macro economy with growth and development using both demand and supply-side channels simultaneously has not been explicitly investigated. This manuscript fills this gap by first synthesizing these channels to construct a conceptual framework of analysis, and then estimating a variety of growth regimes. The analysis highlights that despite economic growth tying up nations in a unified process of capital expansion, the nature and regime of accumulation will differ based on how global capital interacts with local or regional conditions of production and work.

Debates on economic growth have revolved around possibilities of income convergence or divergence across developed and developing nations. Data in the second half of the twentieth century provided evidence on income convergence in a few large East Asian economies, while smaller developing economies struggled to catch up to advanced nations in terms of income per capita. Specifically, unconditional convergence has been argued in the neoliberal era in the modern parts of the economy rather than the economy as a whole, as Rodrik (2012) finds evidence of absolute convergence in manufacturing but not in overall income per capita. However, as developing nations increasingly get integrated into global supply chains, a globally uniform argument of income convergence does not remain valid as regional variations in underlying macroeconomic structures and dynamics of economic growth become imperative to explore. It brings into question the 'one size fits all' approach to trade and industrial policy traditionally prescribed by neoliberal policy, which has not been compatible with sustained periods of economic growth in developing countries. Limitations of this approach can be attributed to its lack of emphasis on underlying structures of demand and income distribution.

This paper tests this interdependent relationship using principal components analysis (PCA) on a sample of 38 countries. Most empirical studies analyse the demand and distribution side independently, a gap this paper fills by treating these channels in an integrated framework. Based on demand and distribution scores, countries are mapped over time into four distinct quadrants or regimes of growth, critically highlighting how growth outcomes are not uniform across geographical regions. The regimes are Profit-led Profit-squeeze (advanced economies), Profit-led Wage-squeeze (emerging economies), Wage-led Wage-squeeze (transition economies of East Europe), and Wage-led Profit-squeeze (West European social democratic nations).

This study contributes to the global value chain (GVC) tradition by noting that the degree of external competitiveness varies between advanced and emerging nations, which differently impacts the distributional conflict between wages and profits. In emerging nations, growing

competitive pressures on subcontracting firms along with state-promoted labour flexibility regimes negatively affect the distributional conflict, as economic growth goes hand in hand with downward pressure on real wages and wage share. Moreover, it contributes to the structuralist development tradition by unifying a wide range of structuralist growth models to highlight localized or regional variations in regimes of growth.

Section 2 presents the theoretical framework which identifies demand and distribution (supply) side channels linking external orientation and economic growth using structuralist (post-Keynesian and neo-Kaleckian) models. Section 3 identifies variables and discusses the data used to construct distinct component scores for demand and distribution. Section 4 justifies the use of PCA for estimation purposes and highlights estimation specifications. Section 5 discusses the mapping and distribution of sample countries into four regimes of globalization and growth, and finally, section 6 concludes.

2. Conceptual Framework of Analysis: Demand, Distribution, and Economic Growth in Open Economies

This section constructs a conceptual framework that links external integration to economic growth via channels of aggregate demand and income distribution. Contrary to traditional neoclassical growth theory (NGT), we model the supply side using income distribution which is consistent with heterodox growth theories (HGT) in the post-Keynesian and neo-Kaleckian tradition. It is motivated by structuralist open economy models of demand, distribution, and growth, particularly those of Blecker and Setterfield (2019), Blecker (2010, 2016), Bhadhuri and Marglin (1990), and Barbosa-Filho and Taylor (2006).

The rationale for using HGT over NGT is motivated on several grounds. Firstly, NGT views the long run to be characterized by a steady-state which the economy reaches irrespective of the policy chosen and is stable to shocks. HGT models it as a series of short and medium run phases or as a fully adjusted stage where profit rates across sectors are equalized (Blecker and Setterfield, 2019, pp. 8-9). Secondly, NGT considers growth to be supply-driven while HGT (except for neo-Marxian models) considers it to be demand-driven as resource supply and productivity merely limits growth but does not determine it (ibid, pp. 9-10). Finally, NGT focuses on technical relations of production wherein marginal productivity determines factor prices and income distribution. HGT theorizes both social and technical relations, being influenced by the surplus approach in Classical theories of value and distribution. Thus, HGT is more adept at envisioning aggregate demand and functional income distribution as interacting endogenously to determine different types of growth.

With external integration as the entry point, HGT literature can be classified into two broad groups. One strand studies the *demand relationship* – how income distribution affects effective demand and in turn capacity utilization and growth, while the second strand studies the *distribution relationship* – how demand affects distribution and growth (Blecker, 2016).

Section 2.1 models the link between external integration and growth via the *demand* linkage that result in *wage-led* or *profit-led* regimes. Section 2.2 models the *distribution* linkage that results in *wage-squeeze* and *profit-squeeze* regimes. Section 2.3 synthesizes these linkages to classify four distinct regimes of globalization and growth.

2.1 External Competitiveness, Demand Relation, and Growth

Post-Keynesians view output and utilization capacity (to a lesser extent) to be entirely determined by aggregate demand in both the short and long run. The underlying distributional conflict between wages and profits is seen to determine changes in demand, giving rise to the demand relationship (depicted by demand curve DD). This section describes how external integration or competitiveness affects growth via the demand relationship in the medium-run.

As nations integrate into global supply chains, growth gains are strongly mediated by changes in a country's external competitiveness, which is typically measured using real exchange rates (RER) as a proxy. In the short-run real exchange rate is exogenously determined by 'managed' or 'floating' exchange rate regimes adopted by monetary authorities, while in the medium run it changes endogenously when nominal exchange rates or the difference between domestic and foreign inflation rates change. The exogenous effect, however, is better justified in open rather than closed economies (Bhadhuri and Marglin, 1990).

In this sense, changes in the exchange rate (ER) impacts growth differently depending on how income distribution affects aggregate demand. The resulting demand structure can be twofold – wage-led demand and profit-led demand. If an increase in the wage share increases demand (by boosting consumption over investment or trade balance) then demand is wage-led (Kalecki, 1954; Steindl, 1952), which is depicted by an upward sloping demand curve with wage share and utilization on the two axes. Otherwise, if higher wage shares decrease demand, then the demand regime is profit-led and depicted by a downward sloping demand curve (Bhadhuri and Marglin, 1990). Wage and profit-led demand regimes depend on how income distribution affects underlying components of aggregate demand (consumption, investment, and trade balance).

In wage-led demand regimes, consumption plays the key role as the positive effect of higher wage shares on consumption dominates any positive effect on investment and trade balance. If an ER depreciation increases wage shares, consumption rises as the marginal propensity to consume out of wages (labour income) exceeds those out of profits (capital income) . Currency depreciation makes imports cheaper and exports costlier by increasing labour cost per unit of output, thus worsening trade balance. The effect on investment, however, would remain ambiguous as investment demand will depend on the profitability of investment. If investment responds weakly to lower profit shares (given a nascent capitalist class domestically), growth in investment demand cannot outweigh the increase in consumption from a higher wage share (ibid, 1990). Though corporate investment may decline, investment

in housing or labour-saving technologies may increase (on the supply side) (Blecker and Setterfield, 2019). However, the overall effect on investment will be positive if consumption is strongly wage-led. Thus, in such regimes, consumption boosts effective demand thereby increasing output, growth, and real wages which in turn keeps consumption demand high.

Alternatively, in profit-led regimes, investment plays a key role as the positive effect of higher profit shares on investment demand and trade balance outweighs the negative effect on consumption from a lower wage share. ER depreciation increases profit shares (due to higher mark-ups) and investment demand responds strongly to changes in profitability (due to an energetic capitalist class), which increases output, growth, and employment.

Bhadhuri and Marglin (1990) point out the importance of the 'trade effect' on demand and output in an open economy. The trade effect is positive if depreciation increases RER relative to inflation rates, and given Marshall-Lerner (ML) conditions hold, export and import elasticities of demand become greater than one. The effect is stronger in open economies that have a higher initial share of trade in GDP and export and import elasticities. In emerging nations, however, trade balance may improve with a significant lag considering J-curve effects. In profit-led regimes, with depreciation, the positive trade effect dominates the positive effect on output and utilization making the open economy more profit-led (ibid, pp. 386-387; Blecker, 2018).

In wage-led regimes, however, the trade effect has an ambiguous impact on output and growth. Higher real wages do not compensate for the negative cost effect on international price competitiveness from increased reliance on the foreign market. Importantly, the wage-led regime can acquire a profit-led character as open economies pursue strategies focused on boosting trade surplus by depressing labour costs. This is particularly important for outward-oriented developing countries pursuing export-led growth strategies, as relying on a depreciated currency to boost the external competitiveness of exports may not be useful if demand is wage-led.

2.2 External Competitiveness, Distribution Relation, and Growth

This section describes the impact of trade on growth via the distribution relationship which is typically depicted using a distribution curve (DC) with wage share and utilization (output) on the two axes. In wage-led demand regimes, if higher output and demand decreases wage share then the distributional regime is wage-squeeze (downward sloping DC). In profit-led regimes, if higher demand boosts wage shares thereby squeezing out profits the distributional regime becomes profit-squeeze which further induces firms to undertake labour-saving technological change (Blecker and Setterfield, 2019). Growth stimulates technological change (by changing productivity growth) which in turn impacts the distributional conflict.

The distribution relationship is typically modelled in HGT in Marx-Goodwin cycle models (Goodwin, 1967; Marglin, 1984) or neo-Goodwin models of Barbosa-Filho and Taylor (2006), Stockhammer et. al. (2011), and Blecker (2010). In the medium run, the distribution

relationship or regimes are affected by changes in RER, wages, prices, and mark-ups. While nominal exchange rates are typically driven by managed exchange rate regimes, inflation rates are affected by distribution shares. RER changes when the nominal exchange rate or the gap between domestic and foreign inflation rates changes. On the other hand, wages, prices, and mark-ups respond endogenously to changes in worker's bargaining power and firm's pricing decisions (first proposed in Weintraub, 1958; also see Dutt, 1990).

The link between income distribution and inflation was first proposed in the conflicting claims approach (Rowthorn, 1977). Nominal wages are set by workers who target the wage share which changes with labour productivity, while prices are set by firms who target higher profit mark-ups which is an implicit function of the wage share (Blecker, 2010, ibid, p. 11). Such conflicting claims between workers and firms give rise to inflation if both groups increase nominal wage and prices to meet their target levels. Changes in labour productivity also impact the distributional conflict. Increases in labour productivity induce workers to target a higher wage share while firms' moderate price increases as unit labour costs rise slowly (Blecker and Setterfield, 2019, p.215).

Blecker (2010) incorporates medium-run open economy effects by modelling the impact of RER on wages, prices, and distributive shares. Mark-ups are modelled as an increasing function of the RER such that a depreciated currency induces firms to target a higher mark-up, which increases profit shares. Conversely, wage share increases if depreciation decreases the firm's mark-ups. On the other hand, a depreciated currency also induces workers to target a higher nominal wage given the rising cost of imported consumer goods. It is worth noting that ER changes the gap between actual and the target wage share, the wage share itself doesn't change.

Now, incorporating demand into the analysis requires linking wage or price setting to output or utilization. Assuming an inverse relationship between output and unemployment rate, a lower unemployment rate will increase worker's bargaining position enabling them to target a higher wage share. As regards price setting, utilization rates can increase or decrease firms' target mark-ups depending on demand conditions. When demand and sales volume are depressed, firms target a lower mark-up with higher utilization. When demand is robust, firms can raise prices without loss in sales, thus targeting a higher profit share. Productivity growth also affects this distribution relationship. In the medium run, productivity increases either with higher utilization as firms invest in new capital equipment or with higher wage shares as firms invest in labour-saving technologies (Kaldor, 1961, though originally noted in Verdoorn, 1949).

Thus, the DC curve and its slope reflect the nature of the distributional regime. Firstly, a wage- or profit-led demand regime can coexist with a profit squeeze distribution regime (Bowles and Boyer, 1988). Depicted by an upward sloping DC, the positive effect of output and employment growth on real wage outweighs any potential positive effect on prices and productivity. Secondly, the distribution regime is wage-squeeze (downward sloping DC) when

price and productivity growth exceeds growth in nominal wages (Kiefer and Rada, 2015). A third possibility, not modelled here, is that of a U-shaped DC where wage shares fall with utilization initially but then increase beyond a threshold (Nikiforos and Foley, 2012).

However, shifts in DC are induced by the underlying source of distributional conflict between wages and profits, which can alter the wage or profit-led properties of a given regime. Blecker (2010) identifies two such sources – change in worker's bargaining power and firm's monopoly or oligopoly power. An increase in worker's bargaining power (in countries with strong unions and labour market regulations) will endogenously decrease RER but increase wage shares, causing the downward-sloping DC to shift to the right. In a wage-led regime, loss in export competitiveness alongside lower profit shares negatively impacts investment demand making the open economy more wage-led in demand and more profit-squeeze in distribution. An increase in a firm's oligopoly power will decrease both RER and wage shares, causing the upward-sloping DC to shift to the right. Output and profit shares rise to make the economy more profit-led in demand and more wage-squeeze in distribution. Thus, underlying sources of distributional conflict change the steady-state equilibrium position of a given demand regime, making demand regimes theoretically difficult to establish and thus becomes an empirical question (Blecker and Setterfield, 2019).

2.3 Classifying Globalisation-Growth Regimes

Now we can synthesize the demand relation (DD curve) and the distribution relation (DC) for an open economy to generate four regimes of globalization and growth. The position of a country within the value chain impacts external competitiveness by affecting changes in the RER. As noted earlier, it can be induced by monetary authorities exogenously setting the target nominal exchange rate or via endogenous changes in the nominal exchange rate or inflation.

2.3.1 Profit-led Profit-Squeeze Regime

Firms situated at higher nodes of a chain face less competitive pressures being embedded in cordial inter-firm networks or governance structures (Gereffi, 2018; Barrientos et. al, 2010). Supported by a strong currency and significant market power within the chain, these countries (or firms) enjoy higher competitiveness in external markets. They have a higher initial share of trade in GDP and elasticities of exports and imports are greater than one (assuming ML conditions hold), depicting strong trade effects.

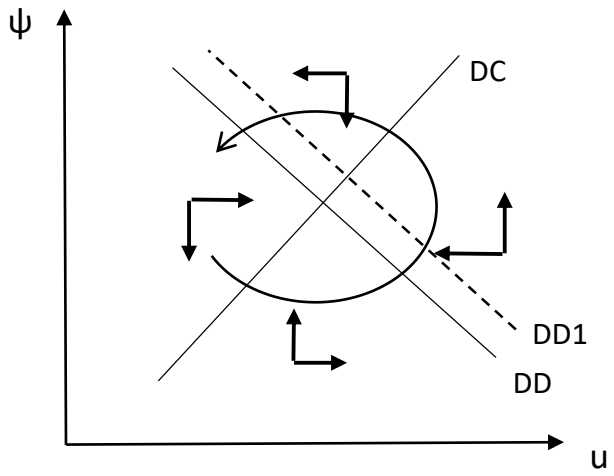
On the demand side, GVC participation enhances core competencies of firms which increase profit shares that in turn increase aggregate demand by stimulating investment. The possibility of exploiting higher mark-ups and prices from the positive 'trade effect' induces higher investment by lead firms, which increases their offshoring activities. Investment and trade balance improves as both respond more strongly to change in profitability, and

consumption plays a weaker role in driving demand. This results in a profit-led demand regime that sees an increase in effective demand, output, and employment.

In such profit-led regimes, the distributional conflict results in a profit-squeeze. Higher demand increases output or utilization by a small amount for two reasons. Sales volume does not compensate for the loss in profit margin per unit of sale and technical change (or labour productivity) does not keep up with growth in labour force participation. Investment in skill development, training, and incentive structures for the workforce (by firms) boost wages. Gains to high-skilled labour in GVCs in advanced nations have been well noted in recent data (Pahl and Timmer, 2019). Given higher bargaining power and the presence of strong labour market regulations, higher output or demand goes hand in hand with an increase in real wages and the wage share, thereby squeezing out profits.

Thus, in a profit-led profit-squeeze regime, a higher wage share decreases demand (via the demand relation) while higher output boosts wage shares (via the distribution relation). Typically depicted with a downward sloping demand and an upward sloping distribution curve, the long-run steady-state equilibrium in such regimes is stable.

Figure 1: Profit led demand with Profit Squeeze



Notes: Long-run steady state equilibrium is stable. Profit led demand is shown by a downward sloping demand curve on wage share and utilization axes. Lower wage shares or higher profit shares increase demand. Profit squeeze is depicted by an upward sloping distribution curve where higher output in profit led regimes increases wage shares.

A demand shock that shifts the economy to DD1 in the short run increases output (utilization) which increases wage shares that in turn puts downward pressure on output as firms seek to reduce excess capacity. Shifts in DC, however, are induced by a change in the sources of distributional conflict. Higher bargaining power of workers or lower monopoly power of firms shifts DC to the left. Lower output decreases wage shares which in turn increases investment in excess capacity. In both cases, the economy returns to the steady-state in a counter clockwise spiral given any exogenous shock in demand or distribution.

2.3.2 Profit-led Wage-Squeeze Regime

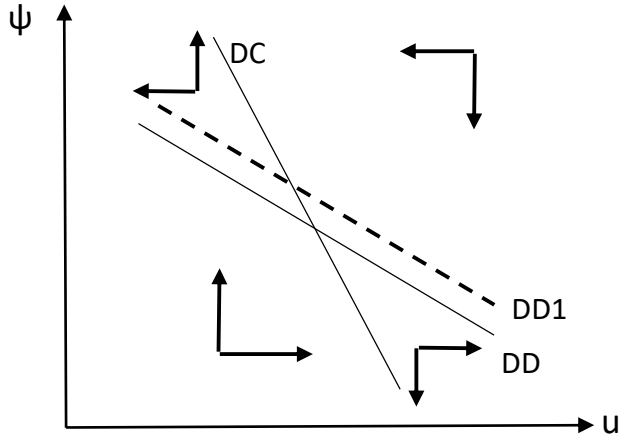
Countries in this regime depict lower levels of external competitiveness being integrated at lower nodes of GVCs. Given embeddedness in captive inter-firm networks or governance structures, firms face intense competitive pressures from external account liberalization and have little or no bargaining power vis-à-vis lead firms. Such nations use ER depreciation as a tool to enhance integration and boost export potential and trade balance. Lower initial share of trade to GDP along with low export and import elasticities add to their weak competitive advantage in external markets.

On the demand side, GVC participation does not significantly enhance the core competencies of subcontracting firms. Firms adopt cost-cutting labour market strategies to remain viable internationally which alongside a depreciated currency boosts export volume, which leads to a redistribution of income towards profits (rather than wages). Investment demand and trade balance respond strongly to change in profitability and play the key role (over-consumption) in boosting effective demand. This leads to a *profit-led* demand regime, where state-led incentive structures to boost export-oriented industries continue to enhance further participation in supply chains. Output, utilization, and employment increase along with a decrease in real wages.

On the distribution side, depreciation increases export volume due to lower prices of exported goods. Higher sales volume outweighs any loss in profit margin per unit of sale for subcontracting firms and labour productivity growth exceeds the growth of the labour force. Firms do not sufficiently invest in the skill development of their workforce and face lower bargaining power within the chain, further decreasing real wages. The distributional conflict results in a *wage-squeeze* as external orientation is associated with a redistribution of income in favour of profits thereby squeezing wages.

Thus, in a *profit-led wage-squeeze* regime, higher wage shares decrease demand while higher output increases profit shares. Depicted with a downward sloping demand and distribution curve, the growth regime tends to be *unstable.*

Figure 2: Profit led demand with Wage Squeeze



Notes: Long-run steady state equilibrium is unstable, also referred to as Saddle path instability. Profit led demand is shown by a downward sloping demand curve on wage share and utilization axes. Lower wage shares or higher profit shares increase demand. However, wage squeeze is depicted by a downward sloping distribution curve where higher output in profit led regimes increases profit shares.

If the wage squeeze effect is strong, the slope of the demand curve becomes flatter than that of DC. Given a demand shock that shifts the demand curve right to DD1, the new short-run equilibrium is to the left of the long-run steady state. Lower output increases wage shares which induce firms to reduce output further. The economy moves away from the steady-state in an explosive manner, worsening the distributional conflict. With greater external integration the regime becomes more and more profit-led in demand and wage-squeeze in distribution and can be characterized as a "*race to the bottom*" or exploitative regime as it ends up depressing both utilization and wage shares.

However, the type of distributional regime will crucially depend on the source of distributional conflict. Irrespective of whether demand is wage- or profit-led, the higher bargaining power of workers will change the distributional regime from wage-squeeze to profit-squeeze (by increasing wages), resulting in an upward sloping DC. Conversely, an increase in the oligopoly power of firms within the chain will enhance wage-squeeze tendencies of the regime even further, making it more exploitative.

2.3.3 Wage-led Profit-Squeeze Regime

Countries in this regime are integrated into cordial inter-firm governance structures at higher nodes of the value chain and depict high levels of external competitiveness. They perform high value-added tasks within the chain and invest in the skill development of their workforce, thus increasing real wages and wage shares in aggregate income.

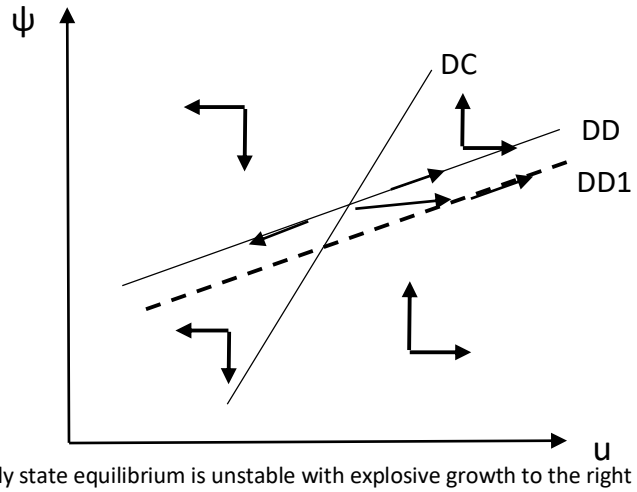
In terms of demand, ER depreciation increases wage shares which positively affects effective demand, resulting in a wage-led demand regime. Consumption demand responds more strongly to changes in profitability (or higher wage shares) than investment or trade balance and plays the central role in boosting demand in wage-led regimes.

On the distribution side, since the rise in output or utilization is small in wage-led regimes, the volume of sales does not compensate for the loss in profit margin per unit of sale. Technical change or productivity growth fails to keep up with the growth in the labour force. High-road models of labour at the firm level along with strong labour regulations allow for sustained upward pressure on real wages and the wage share. In this sense, growth in capital accumulation, output, and employment in such regimes are not large enough to induce a redistribution of income in favour of profits. The distributional conflict results in a profit-squeeze as high levels of external competitiveness go hand in hand with higher real wages, thereby squeezing out profits.

Wage-led profit-squeeze regimes can be depicted using upward-sloping demand and distribution curves. If the demand curve is steeper than DC, then the distribution regime is

weakly profit-squeeze (Blecker and Setterfield, 2019) and cooperation between labour and capitalists is possible despite demand being wage-led (Bhadhuri and Marglin, 1990). On the other hand, the distribution regime is strongly profit squeeze if the demand curve is flatter than DC.

Figure 3: Wage led demand with Profit Squeeze



Notes: Long-run steady state equilibrium is unstable with explosive growth to the right of the steady state, if profit squeeze effect is strong. The economy is crisis prone in the long run with periodic booms and busts. Wage led demand is shown by an upward sloping demand curve on wage share and utilization axes. Lower profit shares or higher wage shares increase demand. However, profit squeeze is depicted by a steeper upward sloping distribution curve where higher output in wage led regimes increases wage shares. Stability can arise if profit squeeze effect is weak, in which case the slope of the DC is flatter than DD.

The medium-run steady-state equilibrium in such regimes is unstable if the profit-squeeze effect is strong. A demand shock that shifts the demand curve to DD1 causes the new short-run equilibrium to be below DC which increases wage shares and in turn output levels further. To the right of the steady-state equilibrium, wage share and output growth reinforce each other resulting in explosive growth (Blecker and Setterfield, 2019). On the other hand, a change in the underlying source of distribution, for instance, an increase in the oligopoly power of firms, will shift DC to the right thereby inducing a wage-squeeze (despite the regime being wage-led). However, limits to this expansionary growth can be induced by fiscal austerity, debt crisis, or monetary contraction (ibid, p. 228). External integration in such regimes does not generate sustained economic growth as the economy experiences crises in the long run.

2.3.4 Wage-led Wage-Squeeze Regime

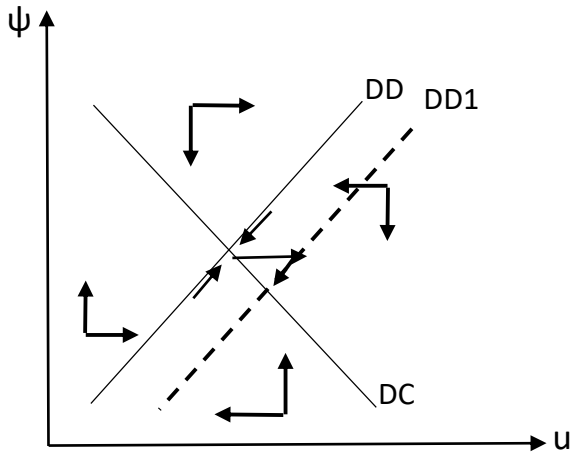
Finally, countries in this regime depict weak external competitiveness and are integrated at lower nodes of GVCs. Being situated in captive governance structures, firms fail to enhance core competencies within the chain or invest in the skill development of labour. GVC integration is primarily in terms of backward linkages and gains in domestic value-added (DVA) remain elusive. The lack of export-led growth stimulus in these nations further adds to the downward pressure on profit shares.

On the demand side, ER depreciation increases wage shares (decreases profit shares) which boosts effective demand, resulting in a wage-led demand regime. Consumption plays a key role in driving demand as investment and trade balance does not respond strongly to the decrease in profitability (from lower profit shares). The stronger response of consumption (over investment) in such regimes can be attributed to these nations having a lower level of inequality relative to profit-led nations. Thus, output, capital accumulation, and employment grow despite a decline in profit margins.

The distributional conflict, however, results in a wage-squeeze. Access to external markets and demand causes higher sales volume to compensate for any potential loss in profit margins. The pace of technological change (or labour productivity growth) outweighs the growth of the labour force. As countries enhance participation in GVCs, cheaper access to intermediate inputs and technology transfer increases labour productivity. However, in the presence of weak labour regulations, integration is not accompanied by an increase in real wages, which in turn increases output or utilization by a large amount (evident in a flatter DC differently from section 2.3.3). Despite demand being wage-led, higher profit shares squeeze out wages.

Thus, in a wage-led wage-squeeze regime, higher wage shares increase demand while higher output decreases wage shares. Depicted by an upward sloping demand and a downward sloping distribution curve, the medium-run steady-state equilibrium tends to be stable.

Figure 4: Wage led demand with Wage Squeeze



Notes: Long-run steady state equilibrium is stable, with an Overshooting in the short run. Wage led demand is shown by an upward sloping demand curve on wage share and utilization axes. Lower profit shares or higher wage shares increase demand. However, profit squeeze is depicted by a downward sloping distribution curve where higher output in wage led regimes decreases wage shares. The steady state overshoots in the short run in response to a demand shock but returns to equilibrium in the medium-run.

In the short run, the economy operates on the DD curve, and movements along the curve are always towards the steady-state equilibrium. Starting with an expansionary demand shock (to DD1), output (or utilization) overshoots in the short run. Since DC is below the new short-run equilibrium position, wage shares tend to decline along the DD1 curve which further

decreases output. This adjustment process restores the economy to the steady-state in the medium-run. Alternatively, a distributional shock, induced by an increase in workers bargaining power or a decrease in the firm's oligopoly power, shifts DC to the right. Wage shares increase along the new distribution curve which induces firms to decrease output, thereby returning to the steady-state. However, *steady-state equilibrium in this regime occurs at low levels of external competitiveness* (compared to the profit-led profit-squeeze regime).

The conceptual framework models medium-run dynamics, and associations may vary in comparison to short-run and long-run approaches. Moreover, *there is no guarantee that a country is perennially wage-led or profit-led*. A specific country can change from one regime to another depending on model specification or demand and distributional shocks, as is evident across a wide range of empirical studies.

3. Data: Estimating Aggregate Demand and Income Distribution

Before the data discussion, it is useful to highlight empirical findings on demand and distribution regimes in the literature, which allows for a better grounding of the PCA results of this paper. HGT tradition abounds with studies that estimate the effect of demand and distribution variables independently on output, utilization, and growth. Blecker (2010, 2018) groups all empirical studies into two broad categories.

Firstly, structural models estimate the impact of consumption, investment, exports, and imports on output or utilization, often treating income distribution as exogenous. The use of linear OLS regressions in these studies is problematic given simultaneity and omitted variable bias between structural variables. Evidence has found both profit-led and wage-led demand regimes across various samples of developed and developing nations. Wage-led demand has been identified in the Euro area (Stockhammer et al, 2009) or the US, UK, France, Italy, Japan, Turkey, and South Korea (Onaran and Galanis, 2012). Profit-led demand has been identified in the US and Japan (Naastepad and Storm, 2007) or small open economies of Australia, Canada, Argentina, China, India, Mexico, and South Africa (Onaran and Galanis, 2012). Importantly, countries like India, Mexico, or Argentina can shift from profit- to wage-led demand if wage share simultaneously increases in all nations.

Secondly, aggregative or system models estimate utilization rate (actual output by potential output) and wage share using VAR or simultaneous equation models. Potential output is typically imputed using the Hodrick-Prescott filter which is often criticized for giving rise to spurious dynamic cycles that are not validated in actual data (Blecker and Setterfield, 2019). More recent studies make use of the Hamilton measure alternatively. Studies have found wage-led demand in the long-run in the US, UK, France, and Mexico (Varghas Sanchez and Luna, 2014; Charpe et. al., 2018) and profit-led demand in the short run in the US and OECD countries (Kiefer and Rada, 2015; Nikiforos and Foley, 2012; von Arnim et al., 2014).

This manuscript does not estimate the impact of demand and distribution variables on economic growth specifically, instead, we map or group countries into four regimes based on

a select set of variables. On the demand side, the 'trade effect' is captured using measures of overall trade integration, GVC participation, forward or backward linkage, and private credit to GDP ratio. Determinants of distribution are measured using unit labour cost (labour compensation by value-added output), worker's bargaining power (or unemployment rate), labour productivity, exchange rate, and prices (or mark-ups).

3.1 Measuring Determinants of Demand

Data for the demand determinants are obtained from the Trade-in-Value-Added (OECD TiVA 2016) dataset, which is used to calculate final good and intermediate input measures of external integration. Firstly, overall trade integration is calculated using gross exports plus gross imports as a share of GDP, as gross exports and imports represent final demand measures of trade volume traditionally reported in standard trade statistics. Greater integration implies a strong trade effect that increases demand and output based on whether consumption or investment responds more strongly to change in profitability. If depreciation increases profit shares, investment demand outweighs consumption resulting in a profit-led regime (downward sloping DD). Conversely, the demand regime is wage-led if consumption responds more strongly than investment due to an increase in wage shares (upward sloping DD). Such a stronger response of consumption over investment can be driven by the prevailing level of income inequality. Countries with higher inequality will see a redistribution of income in favour of profits (profit-led demand) while those with lower inequality will witness an increase in wage shares (wage-led demand).

Secondly, GVC integration (trade in intermediate inputs) is measured using the sum of domestic value-added (forward participation) and foreign value-added (backward participation) in exports as a share of total exports. It captures upstream and downstream involvement in GVCs. Standard trade statistics double counts the value of intermediate inputs and does not capture GVC trade adequately (Koopman et. al., 2010). Forward and backward participation in GVCs is obtained from decomposing gross exports into their domestic value-added (DVA) and foreign value-added (FVA) content. DVA measures that part of a country's exports that enters another country's export production as an intermediate input while FVA captures the value of intermediate inputs from abroad used in domestic export production.

Contemporary studies have noted that value-added measures offer a distinctly different explanation of global trade patterns compared to final good measures. For instance, though China is heavily integrated in terms of gross trade volume, integration is much lower in value-added terms (Koopman, Wang, and Wei, 2008). Evidence shows greater fragmentation of trade since the 1990s as the share of FVA in exports has significantly increased across developing nations. Countries integrated at lower nodes of a supply chain (developing nations typically) will depict stronger backward linkages and weaker forward linkages relative to developed nations (Timmer et. al, 2014). If greater involvement in GVC's (in DVA or FVA terms) increases profit shares and induces investment, it will lead to a profit-led demand regime.

Finally, the private credit to GDP ratio is used as an additional variable to estimate aggregate demand, which is obtained from the World Bank's World Development Indicators (WDI) dataset. A higher ratio value is associated with a profit-led demand regime as greater and easier access to credit stimulates investment undertaken by domestic capitalists. Conversely, a lower ratio value is indicative of a wage-led demand regime as investment demand does not respond strongly when access to credit is limited (Oyvat et al, 2020).

3.2 Measuring Determinants of Income Distribution

External competitiveness significantly affects the distributional conflict between workers and firms. The underlying source of distributional conflict crucially determines the type of distribution regime in a country (Blecker, 2010). Advanced nations, being integrated into cordial inter-firm networks, invest in skill development of their workforce which boosts real wages thereby decreasing profit rates. Conversely, developing nations being situated in captive inter-firm networks, use currency depreciation and cost-cutting strategies to boost competitiveness while labour flexibility regimes increase informality and vulnerability of jobs. Real wage growth is sluggish as higher profits squeeze out wages, worsening the distributional conflict.

Functional income distribution is typically proxied using labour and capital shares in aggregate income. Evidence of falling labour shares globally has been amply noted (Karabarbounis and Neiman, 2014). In both wage and profit-led demand regimes, income distribution is determined by various sources such as worker's bargaining power, firm's monopoly or oligopoly power, exchange rate, labour productivity, and inflation (Blecker, 2016).

Firstly, the bargaining power of workers is a pivotal source of distributional conflict (Blecker, 2010) and is typically proxied using the unemployment rate. Higher bargaining power (lower unemployment rate) puts a downward pressure on profit shares thereby slowing productivity growth and investment demand due to a squeeze on profits. Conversely, lower bargaining power (higher unemployment rate) decreases wage shares inducing a wage-squeeze. Data on the unemployment rate is obtained from the WDI database.

Unit labour costs are a second key indicator of distributional conflict as it captures underlying changes in labour productivity (or technical change), and is measured as the ratio of total labour compensation to real output (or value-added in GDP). Higher labour costs per unit of output reflect a slowdown in labour productivity thus squeezing out profits, and vice versa. Socio-economic Accounts of the World Input Output Database (SEA WIOD, 2014) provides unique and systematic data on labour compensation, hours worked, and value-added in GDP for 40 countries and 34 industrial sectors from 1995-2011 The ratio of PPP-adjusted labour compensation and output variables are then used to calculate unit labour costs. Developed countries at higher nodes of a chain have lower unit labour costs due to higher productivity from more technological progress, while developing nations at lower nodes of a chain face higher labour costs due to sluggish technological change and lower levels of productivity.

Real exchange rates capture external competitiveness and data is obtained from the Penn World Tables (PWT 9.1). Higher RER (currency depreciation) results in a wage-squeeze as the cost of imported consumption goods rises for workers. Export-led growth regimes often use depreciation as a tool to boost competitiveness. Only when export and import elasticities are greater than one and M-L condition holds, will depreciation end up increasing profit shares and generate export-led growth. The effect is stronger in profit-led regimes that have a substantially higher starting level of trade in GDP.

The impact of a firm's monopoly or oligopoly power on distributional shares is typically proxied using mark-up over prices. With an increase in oligopoly power, firms target a higher mark-up rate which puts downward pressure on the wage share resulting in a wage-squeeze. Price setting in turn depends on the target mark-up rate. Since data on mark-ups are hard to observe, we use prices of gross output as a proxy (obtained from SEA WIOD, 2014). Using prices of exports, imports, or output as a proxy for mark-ups or pricing power of firms can be justified as follows. Firms that enjoy higher oligopoly power within the chain can set higher prices (larger mark-up) without any significant loss in sales or profit margins. They have higher price-setting power relative to firms lower down the chain who simply perform tasks set by lead firms. As argued in the Prebisch-Singer hypothesis (or Latin American Structuralism), developing nations face deteriorating terms of trade (lower export prices) with lower price-setting power, determined by the weak responsiveness of capital accumulation to changes in income distribution (UNCTAD, TDR 2016, p. 101).

Finally, we use value-added per worker as a measure of labour productivity with data obtained from the WDI dataset. Higher labour productivity induces workers to target a higher wage share which in turn puts an upward pressure on wages thereby squeezing out profits (profit-squeeze). Conversely, lower productivity decreases the target wage share thereby causing a wage-squeeze.

3.3 Sample Overview

The above demand and distribution variables are estimated for a panel of 38 developed and developing economies from 1995-2011. The sample includes 19 developed, 8 emerging, and 11 transition economies of Eastern Europe. The choice of developing nations in the sample is motivated by the fact that these are all open economies that are rapidly integrating into global trade networks and have witnessed rapid industrialization in their recent developmental history. The period of study is restricted to 17 years as value-added trade data is only available for this period. Summary statistics for all variables used are listed at the end.

4. PCA Methodology

This section justifies the use of principal components analysis (PCA) to map 38 sample countries into four regimes of globalization and growth and discusses model specifications. PCA allows us to compare trade and growth regimes across countries and time. Post-

Keynesian theory emphasizes the interdependent and causal relationship between forces of demand and distribution. PCA offers an adequate empirical framework to address such simultaneous determination of macroeconomic variables in an open economy by estimating two distinct component scores for demand and distribution regimes. The empirical approach is inspired by Braunstein et al. (2020, 2017) who construct four regimes of social reproduction and economic growth.

PCA allows us to reduce or scale multiple dimensions into condensed scores to show correlations between variables as well as group countries based on similarities in underlying characteristics. The resulting components capture the sign and size of each original variable's contribution to the score. The first component captures variables with the maximum variance and each subsequent component captures increasingly lesser variation. PCA analysis can be problematic in instances of a large amount of missing data in the sample, which is not the case here[1]. We estimate scores for three different periods – 1995-2011, 1995-2007 (pre-crisis), and 2008-2011 (post-crisis) – to assess any change in country positions due to the 2007-2008 financial crisis.

Tables 1, 2, and 3 show the relative contributions (or loadings) of each demand and distribution side variable in the first component as well as the total variation explained by the first component of demand and distribution. Since all original variables have high variation across country and time, *log normalized values* have been used. For a clearer graphical presentation, component scores are averaged over 17 years such that each country's position is represented using a single data point.

Table 1: Loadings of First Component – Demand-score

Variable	1995-2011	1995-2007	2008-2011
GVC participation (FP+BP/Gross Exports)	0.56	0.56	0.56
Trade Integration (X+M/GDP)	0.58	0.58	0.59
Backward participation (FVA in exports)	0.59	0.59	0.58
Private Credit to GDP Ratio	0.02	-0.02	0.04

Notes: All variables are logged and are means over the specified time period. Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy is a useful test post-estimation, as it shows whether the number of loadings used is adequate for the purpose of creating a composite score. For 1995-2011, with these four measures, KMO stat for the demand score is 0.68 which suggests that sampling is adequate and using PCA is justified strongly.

It is pertinent to check if the relationship between variables described in the theoretical framework affirms the proxies used. On the demand side, all four variables (loadings) in component 1 are positively associated with the demand score. Higher levels of external integration (both in terms of overall and GVC trade), backward linkages, and private credit to GDP ratio are associated with a profit-led regime (downward sloping demand curve). More open economies tend to be profit-led in demand, as higher profit shares significantly increase

[1] Taiwan and Malta have been dropped from the sample to give a total of 38 countries. These countries do not have a systematic time series for value-added measures of trade for the sample period.

investment in export-oriented industries thereby boosting output and capital accumulation (Blecker, 2018). Backward linkages in GVCs also serve as an avenue for firms to boost profit shares by tapping on external demand for domestic labour or inputs. Greater access to credit further stimulates private investment thereby increasing profit shares. Massive increases in export and import volume in several emerging economies point to the primacy of investment in boosting demand. Improvements in external competitiveness increase output, growth, and real wages by boosting profit shares.

Table 2: Loadings of First Component – Distribution-score

Variable	1995-2011	1995-2007	2008-2011
Unemployment Rate (workers bargaining power)	-0.09	-0.15	0.06
Exchange rate	-0.35	-0.31	-0.41
Unit labour costs (labour compensation/output)	0.50	0.50	0.48
Prices (gross output) Industry	-0.50	-0.51	-0.49
Value-added per worker (Labour Productivity)	0.61	0.61	0.60

Notes: All variables are logged and are means over the specified time period. Signs on coefficients remain identical when unit labour cost is replaced with a measure of wage per hour. For the full time period, KMO stat for sampling adequacy is 0.55.

On the distribution side, unemployment rate, exchange rate, and gross output prices move in the opposite direction compared to unit labour costs and labour productivity. A higher unemployment rate implies lower bargaining power of labour which reduces the level of nominal wages or wage share targeted by workers thus causing a wage-squeeze. Currency depreciation increases the cost of imported consumption goods which negatively affects the wage share also squeezing out wages. Higher prices allow firms to set a higher target mark-up rate thereby causing a wage-squeeze. On the other hand, unit labour costs and labour productivity move in the opposite direction and are thus associated with a profit-squeeze. Higher costs of production decrease the mark-up rate set by firms while higher labour productivity induces workers to target a higher wage share, both resulting in a downward pressure or squeeze on profits.

Table 3: Cumulative Variation explained by First Component

Variable	1995-2011	1995-2007	2008-2011
Demand score	0.67	0.67	0.67
Distribution score	0.37	0.37	0.42

Regarding the model's overall explanatory power, the first component explains 67% variation on the demand side and 37% of the variation on the distribution side. For the sample countries, demand factors more strongly explain globalization-growth regimes compared to distribution side factors. Importantly, the PCA approach is adequate in separating sample

countries by high and low levels of external competitiveness as advanced and emerging nations lie to the right and left side of the Y-axis respectively.

5. Discussion of Results: Four-fold typology of Growth Regimes in an Open Economy

Figures 5, 6 and 7 show the distribution of advanced, emerging and transition economies across four globalization-growth regimes for each of the three time periods.

Figure 5: Globalisation-Growth Regimes: 1995-2011

Wage-led with Wage Squeeze:

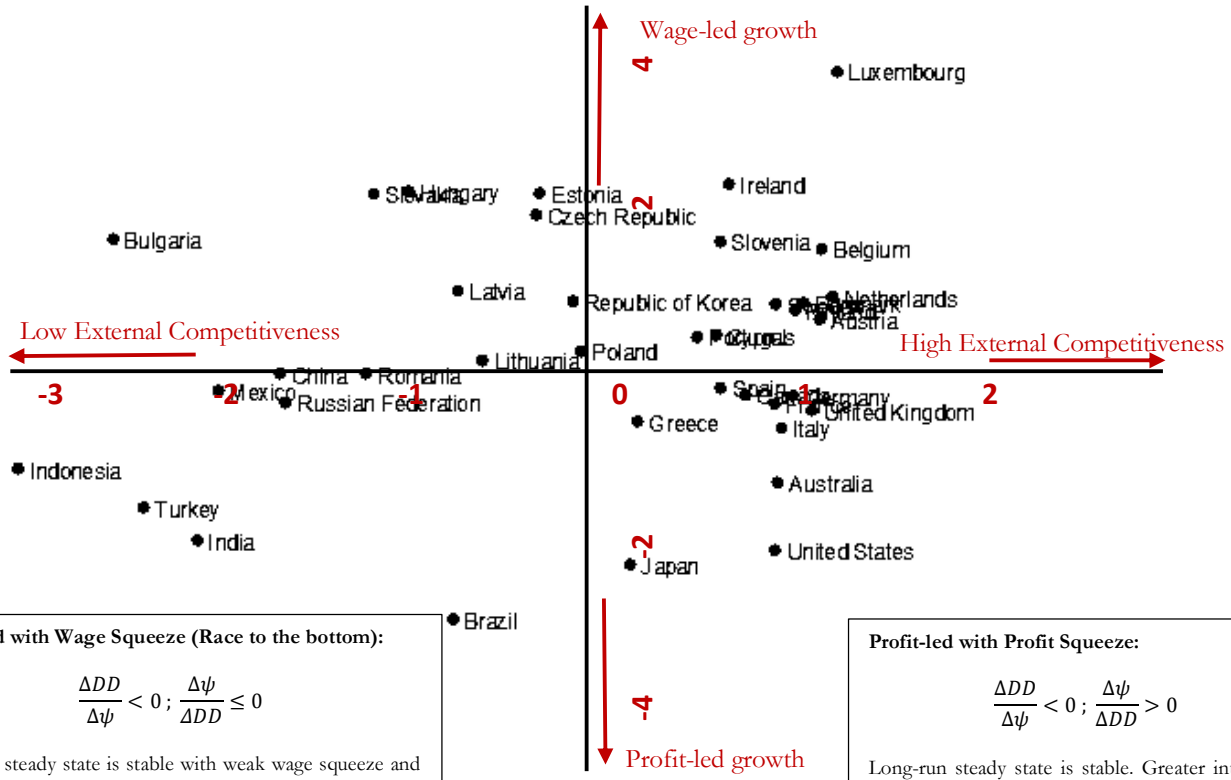
$$\frac{\Delta DD}{\Delta \psi} > 0\,;\ \frac{\Delta \psi}{\Delta DD} < 0$$

Long run steady state is stable. Greater integration increases wage shares and demand by boosting consumption. On the other hand, higher output increases sales volume and productivity which increases profit shares (squeezing out wages).

Wage-led with Profit Squeeze (Climbing up the ladder):

$$\frac{\Delta DD}{\Delta \psi} > 0\,;\ \frac{\Delta \psi}{\Delta DD} \geq 0$$

Long-run steady state is stable with weak profit squeeze and unstable with strong profit squeeze. Greater integration increases wage shares and demand by boosting consumption. On the other hand, higher output decreases sales volume and productivity (as firms adapt labour saving technologies). Wage shares increase thereby squeezing out profits.



Profit-led with Wage Squeeze (Race to the bottom):

$$\frac{\Delta DD}{\Delta \psi} < 0\,;\ \frac{\Delta \psi}{\Delta DD} \leq 0$$

Long-run steady state is stable with weak wage squeeze and unstable with strong wage squeeze. Greater integration increases profit shares and demand by boosting investment. However, output grows with a downward pressure on real wages and distributional conflict deepens.

Profit-led with Profit Squeeze:

$$\frac{\Delta DD}{\Delta \psi} < 0\,;\ \frac{\Delta \psi}{\Delta DD} > 0$$

Long-run steady state is stable. Greater integration increases profit shares and demand by boosting investment. However, higher investment demand is sustained by higher real wages in the presence of strong labour protections by the state.

Figure 5 depicts the four regimes for the full sample period 1995-2011. The composite scores reflect context-specific values for each sample country, and countries with similar characteristics are positioned closer to each other. Most developed nations lie in the bottom

right-hand quadrant which represents profit-led demand with a profit-squeeze distribution regime. This regime includes the US, UK, France, Germany, Italy, Japan, Canada, Spain, Australia, and Greece. It aligns with evidence in structuralist and aggregative models that have identified profit-led regimes in the US (Barboso-Filho and Taylor, 2006; Nikiforos and Foley, 2012; Von Arnim et al., 2014), Japan (Naastepad and Storm, 2007), 13 OECD countries (Kiefer and Rada, 2015), and Australia and Canada (Onaran and Galanis, 2012).

In such regimes, high levels of external competitiveness increase profit shares which boost output and employment via the demand channel. Investment plays a key role in boosting demand as the effect of a higher profit share on investment or trade balance outweighs the effect on consumption demand. On the other hand, output and employment growth put upward pressure on wage shares relative to profit shares, resulting in a profit-squeeze. Economic growth in the medium run is stable as output growth goes hand in hand with an increase in real wages. However, growth in offshoring of tasks and skill-biased technical change in the industrial sector since the 1980s has contributed to the growing vulnerability of low-skilled labour in recent times in advanced nations. As Timmer et al. (2014) show, high-skilled labour and capital contribute the majority of domestic value-added in the exports of the US and other OECD countries. This implies that real wage gains are not uniform for all workers within GVCs and differ critically by skill levels.

All emerging or developing countries in the sample lie in the bottom left-hand quadrant, reflecting a profit-led demand regime with a wage-squeeze. It includes open economies of Mexico, India, China, Indonesia, Brazil, Turkey, Russia, Romania, and Lithuania. Though profit-led regimes have been identified in Argentina, China, India, South Africa, Mexico, and Brazil (Onaran and Galanis, 2012; Varghas Sanchez and Luna, 2014; Silva de Jesus et al., 2018), Obst and Onaran (2016) caution that such small open economies can switch from a profit-led to a wage-led regime when wage shares change simultaneously across them. Higher profit shares in emerging nations also increase demand as investment responds more strongly to changes in profitability than consumption.

Differently from advanced nations in the sample, higher output, utilization, and employment are not associated with a rise in wage shares or real wages. Labour productivity (or technical change) grows faster than the growth in the labour force and sales volume adequately offsets any loss in profit margin per unit of sale. It results in higher profit shares and profit rates (especially in state-supported corporate sectors) which put downward pressure on wages as firms resort to cost-cutting labour market strategies to remain viable competitively in external markets. Labour flexibility regimes in such countries further worsen the bargaining power of labour culminating in growing class tensions, thus economic growth being unstable in the long run.

Though advanced and emerging nations depict profit-led demand, the distributional conflict differs based on the firm's positionality within the production network. Low versus high external competitiveness critically impacts the redistribution of income between wage and

profits in profit-led regimes. In advanced nations, firms enjoy higher monopoly power while workers have greater bargaining power from being embedded in relational governance structures. Output growth is accompanied by growth in real wages, thus higher wage shares squeeze out profits. Being embedded in captive governance structures, developing country firms have no oligopoly power vis-à-vis lead firms while workers have limited bargaining power. State-supported export-led growth policies allow for an increase in profit shares at the cost of lower real wages, thereby squeezing out wages. A 'Race to the bottom' scenario emerges with greater integration negatively impacting utilization and wage shares, and the regime becomes increasingly exploitative.

Importantly, there is divergence in outcomes across emerging economies. South Korea (now a newly industrialized country or NIC) is located much closer to developed nations of Europe with high levels of external competitiveness and is weakly wage-led compared to other developing nations. In the pre-crisis years, however, South Korea lies in the top right quadrant, depicting tendencies of climbing up the value-added ladder. Growth in core competencies of Korean firms within GVCs is evident in the growing importance and global market share attained by firms such as Samsung, Hyundai, and LG since the 1980s. South Korean development experience well documents strong domestic demand conditions boosting investment, output, and real wages along with improvements in income inequality (Amsden, 2001). Export-oriented or vertically specialized industrialization has not engendered such processes of embedded autonomy for most other developing nations (Evans, 1995). India, Indonesia, and Turkey are closer to each other while China, Mexico, and Russia are closer together. China depicts higher levels of external competitiveness and weaker levels of wage-squeeze relative to other emerging nations, being situated closer to the origin.

About 50% of the sample countries are categorized as wage-led (quadrants I and II) while the remaining 50% are profit-led (in III and IV). Similarly, about 45% of sample countries are wage squeeze (II and III) with the remaining 55% being profit squeeze (I and IV).

Transition economies of Eastern Europe in the upper left-hand quadrant reflect wage-led demand with a wage-squeeze distribution regime. Low external competitiveness implies that consumption responds more strongly to changes in profitability than investment or trade balance. Demand increases despite being integrated at lower nodes of GVCs. However, a large increase in output in such wage-led regimes increases the sales volume of subcontracting firms and labour productivity (as firms adopt labour-saving technical change). These factors contribute to an increase in profit shares thereby squeezing out wages in such nations. Worker's bargaining power decreases while firms increasingly acquire more oligopoly power. However, relative to developing nations, transition economies have a lower level of income inequality and have seen greater gains in education, literacy, and wages. Thus, differences in wealth and income inequality can be one of the key channels explaining opposite demand regimes in the two country groups.

Finally, Austria, Belgium, Sweden, Finland, Netherlands, Denmark, Ireland, Portugal, Luxemburg, Slovenia, and Cyprus are in the wage-led profit-squeeze regime (upper right quadrant). Except for Belgium, Slovenia, Ireland, and Luxemburg, all countries in this quadrant are weakly wage-led being closer to the X-axis. It aligns with Obst and Onaran (2016) who find wage-led regimes for a sample of 11 OECD countries of Europe. These countries depict high levels of external competitiveness being integrated into cordial inter-firm networks which boost core competencies and real wages of labour. Firms enjoy oligopoly power within the chain while workers have higher bargaining power. External integration increases demand by having a positive effect on the wage share.

Consumption demand plays a key role in boosting demand as investment and trade balance do not respond strongly to changes in profitability. Though external competitiveness is high in such countries, the trade effect is weaker compared to the US, UK, China, Brazil, or India. As Blecker (2018) maintains, stronger trade effects are most likely to be associated with a profit-led regime. Growing output and employment alongside strong labour regulation and welfare safety nets increase real wages and wage shares putting downward pressure on profits. These economies have historically witnessed significant sustained growth in real wages alongside a greater redistribution of aggregate income in favour of wages. Economic growth, in the long run, is stable in these economies if the squeeze on profits is not strong enough to discourage new investment. This scenario is one of 'Climbing up the ladder’. Firms can enhance core competencies and move up the value chain by strengthening its forward linkages in trade and upgrading to high value-added tasks such as marketing, designing, and distribution.

Figure 6: Globalization-Growth Regimes: 1995-2007

Wage-led with Wage Squeeze:

$$\frac{\Delta DD}{\Delta \psi} > 0 \, ; \, \frac{\Delta \psi}{\Delta DD} < 0$$

Long run steady state is stable. Greater integration increases wage shares and demand by boosting consumption. On the other hand, higher output increases sales volume and productivity which increases profit shares (squeezing out wages).

Wage-led with Profit Squeeze (Climbing up the ladder):

$$\frac{\Delta DD}{\Delta \psi} > 0 \, ; \, \frac{\Delta \psi}{\Delta DD} \geq 0$$

Long-run steady state is stable with weak profit squeeze and unstable with strong profit squeeze. Greater integration increases wage shares and demand by boosting consumption. On the other hand, higher output decreases sales volume and productivity (as firms adapt labour saving technologies). Wage shares increase thereby squeezing out profits.

Profit-led with Wage Squeeze (Race to the bottom):

$$\frac{\Delta DD}{\Delta \psi} < 0 \, ; \, \frac{\Delta \psi}{\Delta DD} \leq 0$$

Long-run steady state is stable with weak wage squeeze and unstable with strong wage squeeze. Greater integration increases profit shares and demand by boosting investment. However, output grows with a downward pressure on real wages and distributional conflict deepens.

Profit-led with Profit Squeeze:

$$\frac{\Delta DD}{\Delta \psi} < 0 \, ; \, \frac{\Delta \psi}{\Delta DD} > 0$$

Long-run steady state is stable. Greater integration increases profit shares and demand by boosting investment. However, higher investment demand is sustained by higher real wages in the presence of strong labour protections by the state.

Figure 7: Globalization-Growth Regimes: 2008-2011

Wage-led with Wage Squeeze:

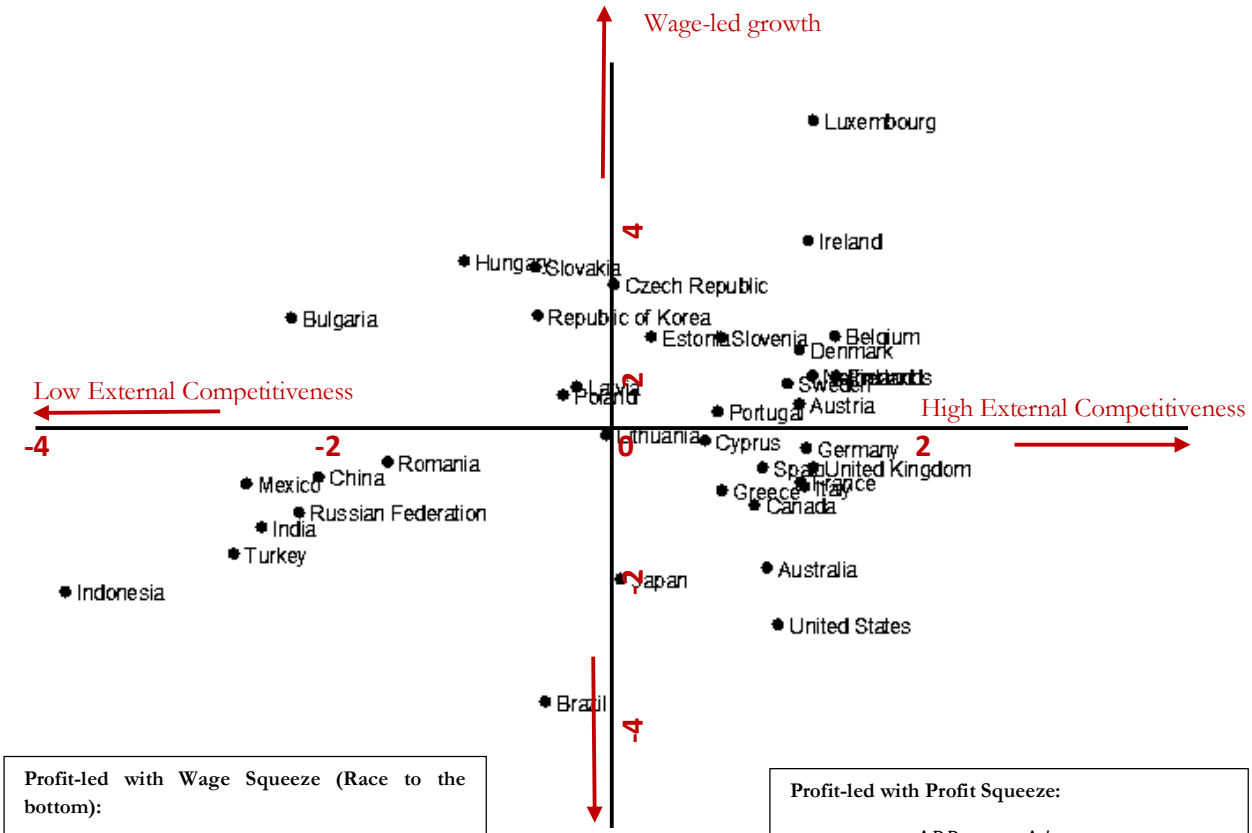
$$\frac{\Delta DD}{\Delta \psi} > 0 \, ; \, \frac{\Delta \psi}{\Delta DD} < 0$$

Long run steady state is stable. Greater integration increases wage shares and demand by boosting consumption. On the other hand, higher output increases sales volume and productivity which increases profit shares (squeezing out wages).

Wage-led with Profit Squeeze (Climbing up the ladder):

$$\frac{\Delta DD}{\Delta \psi} > 0 \, ; \, \frac{\Delta \psi}{\Delta DD} \geq 0$$

Long-run steady state is stable with weak profit squeeze and unstable with strong profit squeeze. Greater integration increases wage shares and demand by boosting consumption. On the other hand, higher output decreases sales volume and productivity (as firms adapt labour saving technologies). Wage shares increase thereby squeezing out profits.



Profit-led with Wage Squeeze (Race to the bottom):

$$\frac{\Delta DD}{\Delta \psi} < 0 \, ; \, \frac{\Delta \psi}{\Delta DD} \leq 0$$

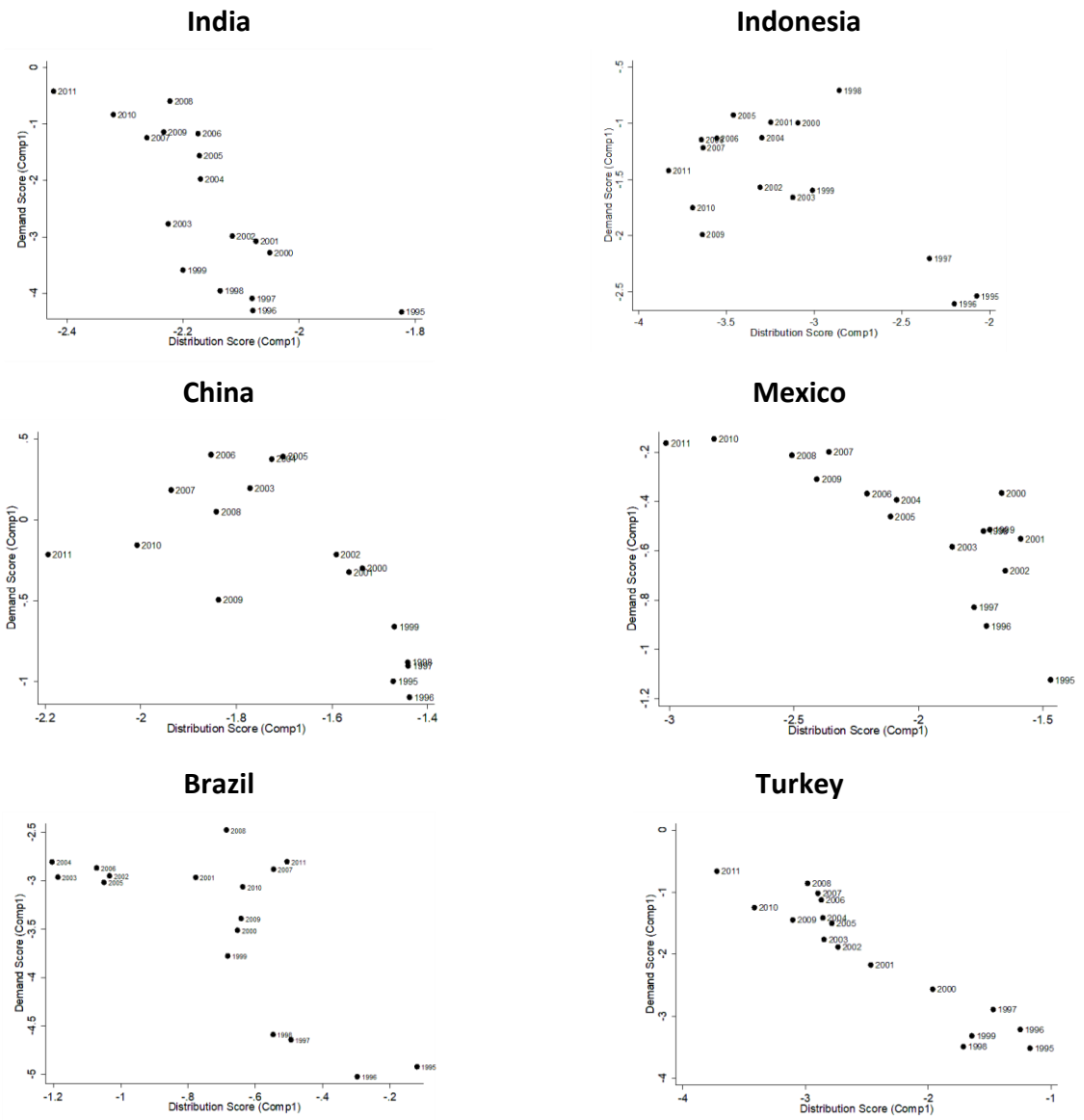
Long-run steady state is stable with weak wage squeeze and unstable with strong wage squeeze. Greater integration increases profit shares and demand by boosting investment. However, output grows with a downward pressure on real wages and distributional conflict deepens.

Profit-led with Profit Squeeze:

$$\frac{\Delta DD}{\Delta \psi} < 0 \, ; \, \frac{\Delta \psi}{\Delta DD} > 0$$

Long-run steady state is stable. Greater integration increases profit shares and demand by boosting investment. However, higher investment demand is sustained by higher real wages in the presence of strong labour protections by the state.

Figure 8: Time Paths for Select Emerging Nations



Figures 6 and 7 undertake the same analysis for the pre-crisis and post-crisis periods separately. Results show a similar distribution of countries in each quadrant with one notable difference. The mapping of countries in the post-crisis years varies in scale and magnitude relative to the pre-crisis sample. All country positions have shifted to the left on the graph, suggesting lower external competitiveness in the post-crisis years. The financial crisis of 2007-08 has critically affected domestic macroeconomic structures in developing nations changing their relative position compared to the pre-crisis years. Figure 8 shows the time path for a few select developing nations which establishes that the changing position of countries within a specific quadrant is due to variation in the component score over time. The negative demand shock from the economic slowdown in advanced nations can explain the shift in the relative position of emerging economies.

6. Conclusion

This paper contributes to the structuralist growth and development tradition by highlighting how integrating into a unified process of globalized capitalism impacts domestic macroeconomic structures differently giving rise to four distinct regimes of growth. Traditionally, structuralist growth theories model the demand and distribution relation independently and the impact of GVCs (rather than trade in general) on economic growth is not modelled explicitly. The proposed conceptual framework bridges this important gap in the literature by treating the interdependent relationship between demand and distribution in an integrated framework. Further, using PCA to estimate distinct component scores for demand and distribution highlights the geographically (or regionally) distinct impact of GVCs on economic growth. In doing so this work ties together a wide body of post-Keynesian and neo-Kaleckian structuralist theories to offer a unified narrative on regimes of economic growth.

Greater externalization of advanced and emerging nations can be associated with wage or profit-led demand and growth, though the distributional regime seems to be opposite across the two groups. In emerging and transition economies, however, higher output and accumulation are associated with a redistribution of aggregate income in favour of firms and a growing wage-squeeze due to higher profits. Particularly in the context of labour flexibility regimes pursued by developing countries to promote export-led growth, weakening of worker's bargaining power and growing market power of capitalists lies at the heart of the distributional conflict. 'Race to the bottom' dynamics is evident in emerging economies, where export-led growth has been associated with a squeeze on wages. On the other hand, sustained state investment in welfare and strong labour institutions explain the presence of profit squeeze tendencies in developed nations. Importantly, this analysis highlights how unifying into global capitalism differently affects underlying macroeconomic structures, thus generating uneven development globally. It expands on the GVC and dependency theory traditions by highlighting the localized and regionalized geographies of global value chain governance.

Empirical studies in the HGT tradition have found mixed results, and regimes identified in this paper can change if underlying sources of demand and distribution change simultaneously across countries. The effort has been to group countries that depict similar characteristics with respect to the underlying macroeconomic structure. Typically, HGT models the impact of trade and GVCs on economic growth via changes in external competitiveness, using real exchange rates as a proxy. This approach does not address the embeddedness or positionality of domestic economies and firms in global value chains or production networks. Thus, modelling a country's embeddedness on demand, distribution, and growth remains a potent area for future research.

References

Amsden, Alice. 1989. *Asia's Next Giant*. New York: Oxford University Press.

Barbosa-Filho, N.H., and L. Taylor. 2006. "Distributive and demand cycles in the US economy: a structuralist Goodwin model." *Metroeconomica* 57 (3): 389–411.

Barrientos, S., G. Gereffi, and A. Rossi. 2010. "Economic and Social Upgrading in Global Production Networks: Developing a Framework of Analysis." Working Paper 2010/03. Website address: www.capturingthegains.org/publications/workingpapers/index.htm

Bhaduri, A., and S. A. Marglin. 1990. "Unemployment and the real wage: the economic basis for contesting political ideologies." *Cambridge Journal of Economics* 14 (4): 375–93.

Blecker, A. Robert, and Mark Setterfield. 2019. "*Heterodox Macroeconomics: Models of Demand, Distribution and Growth*." Massachusetts: Edward Elgar Publishing Limited, USA.

Blecker, A. Robert. 2018. "An Introduction to Post-Keynesian Theories of Distribution and Growth: Alternative Models and Empirical Findings". Introductory Lecture, 22ndFMM/IMK Conference, "10 Years After the Crash: What Have We Learned?" Berlin, Germany, 25 October, 2018.

Blecker, A. Robert. 2016. "Wage-led versus profit-led demand regimes: the long and the short of it." *Review of Keynesian Economics* 4(4), accepted June 2016.

Blecker, A. Robert. 2010. "Open Economy Models of Distribution and Growth." Chapter 9 in "*A Modern Guide to Keynesian Macroeconomics and Economic Policies"*, edited by Eckhard Hein and Engelbert Stockhammer. Cheltenham, UK: Edward Elgar.

Bowles, Samuel, and Robert Boyer. 1988. "Labour Discipline and Aggregate Demand: A Macroeconomic Model." *American Economic Review* 78 (2): 395-400.

Braunstein, E., R. Bouhia, and S. Seguino. 2017. "Social Reproduction, Gender Equality and Economic Growth." December. Retrieved from https://stephanieseguino.weebly.com/uploads/2/3/2/7/23270372/braunstein_bouhia_seguino-1.pdf.

Charpe, Matthieu., Slim Bridji, and Peter McAdam. 2018. "Labour Share and Growth in the Long run." Working Paper Series, No. 2251 / March 2019 European Central Bank.

[Dataset] Groningen Growth and Development Center. Penn World Tables. Version 9.1.

[Dataset] OECD-WTO. 2016. Trade in Value Added (TIVA), December.

[Dataset] World Input Output Database (WIOD). 2014. Socio-Economic Accounts (SEA).

[Dataset] World Bank. World Development Indicator (WDI).

Dutt, A. K. 1990. "*Growth, Distribution, and Uneven Development."* Cambridge: Cambridge University Press.

Evans, Peter. 1995. "*Embedded Autonomy – States and Industrial Transformation*." Princeton: Princeton University Press.

Gereffi, Gary. 2018. "*Global Value Chains and Development: Redefining the Contours of 21st Century Capitalism*." Cambridge University Press, November.

Goodwin, R. M. 1967. “A Growth Cycle.” In *Socialism, Capitalism, and Growth*, edited by Feinstein, C. H. Cambridge: Cambridge University Press.

Kaldor, Nicholas. 1961. “Capital Accumulation and Economic Growth.” In “*The Theory of Capital”*, edited by F. A. Lutz and D. C. Hague, 177–222. St. Martins Press.

Kalecki, M. 1954. “*Theory of Economic Dynamics.”* Monthly Review Press. London: Unwin. Reprinted New York.

Karabarbounis, L. and B. Neiman. 2014. “The Global Decline of the Labour Share.” NBER Working Paper, No. 19136.

Kiefer, D. and C. Rada. 2015. “Profit maximising goes global: the race to the bottom.” *Cambridge Journal of Economics* 39 (5): 1333–50. September.

Koopman, R., W. Powers, Z. Wang, and S-J. Wei. 2010. “Give Credit Where Credit is Due: Tracing Value Added in Global Production Chains.” *NBER Working Paper Series*, No. 16426. National Bureau of Economic Research. Cambridge, MA.

Koopman, R., Z. Wang, and Shang-Jin Wei. 2008. “How Much of Chinese Exports Is Really Made in China? Assessing Domestic Value-Added When Processing Trade Is Pervasive.” NBER Working Paper, 14109.

Marglin, S. A. 1984. “*Growth, Distribution, and Prices.”* Cambridge, MA: Harvard University Press.

Naastepad, C. W. M., and Servaas Storm. 2007. “OECD demand regimes (1960-2000).” *Journal of Post Keynesian Economics* 29 (2): 211-246.

Nikiforos, M., and D. K. Foley. 2012. “Distribution and capacity utilization: conceptual issues and empirical evidence.” *Metroeconomica* 63 (1): 200–29.

Obst, T., and Ö. Onaran. 2016. “Wage-led growth in the EU15 member states: the effects of income distribution on growth, investment, trade balance, and inflation.” *Cambridge Journal of Economics*, advance access, 28 April, doi:10.1093/cje/bew009.

Onaran, Ö., and G. Galanis. 2012. “Is aggregate demand wage-led or profit-led? National and global effects.” *Conditions of Work and Employment Series*, No. 40. Geneva: International Labour Office.

Oyvat, C., O. Öztunalı and C. Elgin. 2020. “Wage-led versus profit-led demand: A comprehensive empirical analysis.” *Metroeconomica* 71 (3): 458-486.

Pahl, Stefan and Marcel P. Timmer. 2019. “Do Global Value Chains Enhance Economic Upgrading? A Long View.” *Journal of Development Studies* 56 (9): 1683-1705.

Rodrik, Dani. 2012. “Unconditional Convergence in Manufacturing.” *The Quarterly Journal of Economics* 128 (1): 165-204.

Rowthorn, E. R. 1977. “Conflict, Inflation and Money.” *Cambridge Journal of Economics* 1 (3): 215–239. September.

Silva de Jesus, C., A. R. Araujo and C. E. Drumond. 2018. “An empirical test of the Post-Keynesian growth model applied to functional income distribution and the growth regime in Brazil.” *International Review of Applied Economics* 32 (4): 428–49.

Steindl, J. 1952. "*Maturity and Stagnation in American Capitalism.*" Oxford: Blackwell; reprinted New York: Monthly Review Press, 1976.

Stockhammer, E., E. Hein and L. Grafl. 2011. "Globalization and the effects of changes in the functional income distribution on aggregate demand in Germany." *International Review of Applied Economics* 25 (1): 1–24.

Stockhammer, E., Ö. Onaran and S. Ederer. 2009. "Functional income distribution and aggregate demand in the Euro Area." *Cambridge Journal of Economics* 33 (1): 139–59.

Taylor, Lance, Duncan K. Foley and Armon Rezai. 2017. "Demand Drives Growth all the Way." Schwartz Center for Economic Policy Analysis. October.

Timmer, Marcel, A. A. Erumban, B. Los, R. Stehrer and G. J. de Vries. 2014. "Slicing Up Global Value Chains." *The Journal of Economic Perspectives* 28 (2): 99-118.

UNCTAD. 2016. "Trade and Development Report."

UNCTAD. 2013. "Global Value Chains: Investment and Trade for Development." World Investment Report. Geneva: United Nations Conference on Trade and Development.

Vargas Sánchez, G. and A. Luna. 2014. "Slow growth in the Mexican economy." *Journal of Post Keynesian Economics* 37 (1): 115–33.

Von Arnim, Rudiger, D. Tavani and L. Carvalho. 2014. "Redistribution in a Neo-Kaleckian Two-country Model." *Metroeconomica* 65 (3): 430-459. July.

Weintraub, S. 1958. "*An Approach to the Theory of Income Distribution."* Philadelphia: Chilton.

The South African Research Chair in
Industrial Development (SARChI-ID)
31 Henley Road, Auckland Park,
Johannesburg, South Africa

General enquiries:
Koketso Manyane - Dlangamandla
Email: koketsom@uj.ac.za
Tel: +27 011 559 7454