Growth theory and the growth models perspective: insights from the supermultiplier.

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Introduction

The study of macroeconomic phenomena is a fundamental ingredient of Comparative Political Economy (CPE) studies. Varieties of Capitalism (Hall and Soskice, 2001), firmly anchored to a standard, mainstream interpretation of economics, dominated CPE in recent years. Its (almost) exclusive focus on the supply side ensued disheartening policy implications. Supply-side growth theories led the VoC literature to investigate mainly corporate finance systems, industrial relations regimes, and vocational training systems, almost ignoring the role of demand.

Baccaro and Pontusson have been among the most vocal critics of VoC, indicted for its overlooking of macroeconomic outcomes such as unemployment, inflation, and growth and the relations between inequality and growth (Pontusson and Baccaro, 2020). On the constructive side the authors, in a seminal work (Baccaro and Pontusson, 2016), introduced the Growth Models perspective, to bring proper macroeconomic analysis back into the comparative analyses of advanced capitalism. This meant, mainly, shifting the attention to the demand-side and embracing a demand-led growth perspective, in order to understand how the different components of demand are mobilized within a national growth model.

Demand-led growth theories, which have a long-standing tradition in the context of Post-Keynesian economics (Lavoie, 2014; Hein, 2014; Blecker and Setterfield, 2019), have been growingly appearing, in recent years, better equipped to deal with contemporary phenomena that represent real puzzles for supply-side economics. Among the several examples that could be made, it is possible to mention the secular stagnation

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(Summers, 2015), hysteresis of potential output (Blanchard et al., 2015), and the failure of austerity policies to restore growth and economic prosperity (Hein, 2016; Girardi et al., 2020). Furthermore, the focus on demand aggregates and income distribution allows to investigate who benefits from a given growth model. Demand-led growth theories, hence, can incorporate Streeck's (2016, pp. 245) proposal that "with capitalism comes conflict — not technocratic disagreement over optimal coordination, but distributional conflict".

The demand-led approach, however, is not a monolith but rather an archipelago, with its own internal debates and nuances and a number of alternative constructions to describe the growth process. As we will try to argue, the Kaleckian model, adopted by Baccaro and Pontusson, has several theoretical flaws, which can potentially hinder the Growth Models perspective's potentialities. Recently, however, another approach has been gaining traction withing the Post-Keynesian scientific community, based on the Sraffian supermultiplier approach.

In this paper, we argue that the supermultiplier approach is a growth theory compatible with the Growth Models perspective advanced by Baccaro and Pontusson and has advantages over other approaches. We will show that the central concept for the supermultiplier - the autonomous components of demand, which comprise government spending, export and debt-financed consumption – play a fundamental role for the Growth Models perspective. The supermultiplier can provide the formal analysis of demand-led growth, while CPE can illuminate the political and social aspects that determine growth in the long run. Ultimate determinants of growth in advanced economies are not to be found in the intricacies of economic modeling but in the political and social determinants of the autonomous demand components. We will also illustrate our arguments through a supermultiplier decomposition of GDP growth in the United States, Japan, Germany and Sweden.

In the first section we expose the utility of demand led-growth theories for political economy analysis. In the second section we compare Kaleckian and Sraffian growth theories. The third section shows how the concepts of autonomous demand and the supermultiplier can be used to compare growth models. Finally, we illustrate our theoretical arguments by showing a supermultiplier growth decomposition.

New Keynesian shortcomings in Comparative Political Economy

One of the main critiques raised by Baccaro and Pontusson (2016) to New-Keynesian economics, and in particular to its influence on CPE, centers on the fact that, in the aforementioned theoretical approach, growth is immune to demand variables in the long run. Only technology and labor supply - hence, supply-side variables - would affect growth rates, while aggregate demand would only be capable of causing short-run deviations from a pre-determined long-run path (Carlin and Soskice, 2014). In this framework, analyzing the political economy of demand aggregates is hardly meaningful, being confined to short-run growth or the first stages of crises. In the long run, on the other hand, New-Keynesian economics is restricted to the discussion of institutional features, innovation and other policies that affect labor supply (as migration, female labor, and the rate of participation). Therefore, New Keynesian economics brings no real novelty with respect to the established VoC approach, limiting cross-fertilization between CPE and macroeconomics.

A first reaction to Baccaro and Pontusson (2016) can be found in Hope and Soskice (2016), in which the authors defend the choice of using mainstream macro for the purpose of analyzing growth models and question the usefulness of Post-Keynesian macroeconomics. They argue, in particular, that the 3-equation model, as exposed in Carlin and Soskice (2014),[4] is the most coherent framework for comparative studies of growth. This theoretical tool does not need to rely on conventional and unplausible assumptions of mainstream macroeconomics as rational expectations and perfect foresight and would be analytically superior for two reasons: (1) supply and demand are analyzed in a single coherent framework, and (2) monetary and fiscal policy are built in the model (Hope and Soskice, 2016).

In the construction defended by Hope and Soskice (2016), the main tenets of the New-Keynesian paradigm are preserved: there is no permanent trade-off between inflation and unemployment, and money is neutral in the long term. Those features derive from the assumption of a non-accelerating inflation rate of unemployment (NAIRU) not affected by hysteresis,[5] with "*a vertical Phillips curve, set at a unique rate of*

[4] A Post-Keynesian critique of this model can be found in Lavoie (2015).

[5] See Stockhammer (2008) for an encompassing analysis of the NAIRU and how it can be interpreted by different schools of thought. The author, in particular, proposes a Post-Keynesian view in which the NAIRU is influenced by and converges to the actual rate of unemployment (i.e., there is hysteresis in the NAIRU), determined mainly by aggregate demand.

unemployment free of any influence arising from aggregate demand" (Lavoie, 2015, p. 137) in the long run. As a consequence, policies that expand aggregate demand can only affect output in the short run, causing temporary fluctuations in the output gap.

The 3-equation model is, then, built by design in such a way to rule out *a priori* any long-run effect of fiscal policy on production and growth.[6] Fiscal policy has to adjust itself and to conform to the equilibrium output level that corresponds to "*the output of the structural or supply-side features of the economy that lie behind the wage-setting and price-setting curves*" (Carlin and Soskice, 2014, p. 63), so it has, at the best, only an auxiliary role. Let us assume, for example, that a country applies an austerity package, and the output gap becomes negative. The Central Bank will fine-tune the monetary policy and lower the interest rate, so exports and investment will grow until the output gap closes (Hope and Soskice, 2016, p. 12). According to this view, hence, no permanent effects on output or employment follow from austerity, which on the other hand has the beneficial effect of improving the health of the public budget. In fact, Carlin and Soskice (2014, p. 530) argue that in spite of a short-term recessive impact, "*fiscal consolidation is likely to be beneficial for GDP in the long term*", revealing an endorsement of the now discredited expansionary austerity tale. Be as it may, it is hardly disputable that Carlin and Soskice's New Keynesian model cannot explain long-term contractionary effects of austerity, a feature that has been acknowledged also by some of the most influential mainstream economists,[7] and the related issue of secular stagnation.

In comparison, the extension to the long run of the Keynesian principle of effective demand is at the hearth of Post-Keynesian economics. On the one hand, macroeconomic policy may be included in short-run Post-Keynesian models in a similar fashion as done by New Keynesian 3 equation models (Summa 2016, Lavoie 2014). The most interesting aspect, however, lies in the fact that, for demand-led growth models, fiscal policy has direct effects on long-run growth as well. If one considers also that, regarding monetary policy, Post-Keynesian authors have anticipated New Keynesians in analyzing money as endogenous and interest rates as a policy determined variable (Lavoie, 2014), it seems not to far-fetched to argue that the Post-Keynesian perspective

[6] Equivalently, even if monetary policy is included, it takes the form of a semi-automatic rule, usually a Taylor Rule. Changes in interest rate are able to bring output to its potential, but not to change the long-term growth rate.

[7] See for example Blanchard and Leigh (2013), Fatás and Summers (2016) and Jordà and Taylor (2016). See also Deleidi et al. (2020) for a recent empirical estimation of fiscal multipliers that point to the permanent expansionary effects of public investment.

provides a richer setup for studying macroeconomic policy, an element that should be an essential ingredient of any analysis of the political economy of growth models.

This approach, indeed, rejects the concept of a long-run equilibrium unemployment rate independent from aggregate demand, which ties and *de facto* neutralizes macroeconomic policy. In the 3-equation model, monetary and fiscal policy cannot affect persistently unemployment, and deviations from the long-run equilibrium only affect the inflation rate (Carlin and Soskice, 2014). Conversely, Post-Keynesians fully acknowledge the existence of hysteresis in unemployment,[8] arguing that macroeconomic policy can affect both short and long-run unemployment. It is quite straightforward to realize how hard it is to reconcile hysteresis - *i.e.*, the notion that persistent deviations from equilibrium position affect the equilibrium itself - with the main conclusions of the New Keynesian 3-equation model (Storm and Naastepad, 2012; Stirati and Paternesi Meloni, 2018; Summa and Braga, 2020).

As already mentioned, Hope and Soskice identify a further reason that should warrant the superiority of mainstream macro, namely the joint analysis of demand and supply in a coherent framework. However, this (implicit) criticism to Post-Keynesian theory seems problematic as well. The cornerstone of every growth theory is the dynamic between supply and demand drivers. Therefore, it is inadequate to state that demand-led growth models do not include the supply side. The supply side is always present in these models, but in general productive capacity is expected to respond to demand drivers and not the other way around. Just to mention few contributions, it is possible to recall here demand-led growth models that employ input-output matrices to evaluate how specific demand drivers affect the productive structure (Freitas and Dweck, 2010) or the exploration of technological changes and progress in Balance of Payments constrained models (Araujo and Lima, 2007; Cimoli et al., 2010) and in autonomous demand-led models (Cesaratto et al. 2003; Nah and Lavoie, 2019; Deleidi and Mazzucato, 2021).

New Kaleckian growth theory and the growth models perspective

[8] See Blanchard and Summers (1986) and Ball (1999) for early and influential contributions on hysteresis. See Stanley (2013) and Girardi et al. (2020), among many others, for empirical evidence.

To study the political economy of growth and distribution, Baccaro and Pontusson (2016) rely on Kaleckian growth theory, and in particular on the main insights developed in the seminal work of Bhaduri and Marglin (Marglin and Bhaduri, 1990; Bhaduri and Marglin, 1990). The dichotomy between wage-led and profit-led regimes is the central divide in this approach. A wage-led regime implies that a higher wage share leads to higher economic growth. Workers have a larger propensity to consume out of income than capitalists. In this scenario, therefore, a shift in income distribution in favor of the working-class leads to higher consumption and, through the accelerator, higher investment, and faster growth. In a profit-led regime, on the other hand, the direct negative impact of higher wages on investment[9] and on net exports prevail over the positive boost given to consumption, with a negative net-effect on growth

Marglin-Bhaduri's model allows for both alternatives. The regime prevailing in a specific country is a matter to be investigated empirically and depends on the parameters of the model, in particular the relative sensitivity of the components of demand to the profit share and to the degree of capacity utilisation.[10]

The crisis of the Fordist accumulation regime (*i.e.*, the end of the Golden Age of Capitalism[11]) is the departure point of Baccaro and Pontusson's analysis. Decades of wage share decline, welfare state retrenchments and a drastic reduction of the role of the State in the economy curtailed demand engines. In the Post-Fordist era advanced economies face the challenge of finding new engines for growth. Two patterns in particular have surfaced, which have given rise to two main growth strategies: the export-led growth model and the (private debt-financed) consumption-led growth model. A new dichotomy emerges, which Baccaro and Pontusson consider as an evolution of the profit-led/wage-led one present in the Marglin-Bhaduri's model[12].

[9] In the Marglin-Bhaduri's model, investment is a positive function of capacity utilisation and of the profit share. As Pariboni (2016b, p. 24) clarifies, "an increase in the accumulation rate, stimulated by a rise in the profit share and not justified by an expected increase in aggregate demand, leads to over-accumulation". See also Pariboni (2016a) for a detailed critique of this investment function.

[10] Studies of whether countries follow profit-led or wage-led regimes amounted to dozens of econometric papers. Blecker (2016) and Lavoie (2017) present balanced views of the wage-led and profit-led debate. See also Rolim (2021) for a recent assessment of the relevant empirical literature.

[11] See Marglin and Schor (1990).

[12] Export-led regimes are usually associated with a profit-led economy since, in this case, wage increases reduce external competitiveness harming the economic performance (Hein and Vogel 2008). In the context of weakened unions and increasing inequality, consumption-led models are based on debt rather than on wage increases.

The latter has been, in the last decades, perhaps the most influential analytical interpretative tool among Post-Keynesians. However, criticisms to this approach have also grown louder, questioning its capacity to provide an adequate benchmark model to interpret contemporary capitalism. Running the risk of over-simplifying the issue, it seems possible to claim that the most controversial and critical aspect of Kaleckian macro models, among which one can include the Marglin-Bhaduri's one, is their failure to reconcile the actual and the normal, desired rates of capacity utilization in equilibrium (Skott, 2012; Cesaratto, 2015). As recognized also by its proponents (e.g., Hein et al., 2012), within this model any attempt by firms to restore their desired rate of capacity utilization via changes in accumulation (as a standard accelerator model of investment would imply) would generate instability in the Harrodian sense. To overcome this problem, Kaleckian authors have proposed several alternative mechanisms, which however have not been sufficient to settle the issue and assuage the skeptics.[13]

Recently, another (broadly speaking) Keynesian model has asserted itself as an alternative to the Marglin-Bhaduri's one. The so-called Sraffian supermultiplier growth was proposed by Franklin Serrano (1995) and has caught the attention of other Post-Keynesian macroeconomists (e.g., Allain, 2015; Lavoie, 2016; Palley, 2019; Fazzari et al., 2020).

The autonomous components of demand[14] substitute the dichotomy of wage-led and profit-led growth regimes as the main determinants of growth. In this framework, wage increases still affect short-run growth (Freitas and Serrano, 2015). An increase in the wage share, for example, increases the (super)multiplier, as in the case of the traditional Keynesian multiplier. However, the long-run rate of growth, which tends to converge to the autonomous demand rate of growth, is not affected and wage increases affect only the level of the output but not its growth rate.

It is noteworthy that the role of autonomous components has been often neglected in the Kaleckian tradition,[15] standing out from the frequent absence of the role of public

[13] A thorough investigation of this topic goes well beyond the scope of this article. The reader interested in recent rounds of the so-called 'utilisation controversy' can refer to Nikiforos (2016) and Girardi and Pariboni (2019).

[14] Autonomous demand is defined as to comprise those demand components that are "neither financed by the contractual (wage and salary) income generated by production decisions, nor are capable of affecting the productive capacity of the capitalist sector of the economy" (Serrano, 1995, p. 71).

[15] It is worth noting, however, that recent contributions such as the already mentioned Allain (2015) and Lavoie (2016) among several others, include explicitly autonomous demand in an otherwise standard Neo-

expenditure in affecting growth. As explained for example by Allain, in the Kaleckian literature government expenditure or public deficits are assumed to be proportional to capital stock[16] and then to grow at the same rate (Allain, 2015), relegating in this way fiscal policy and government spending to a passive and ancillary role.

Comparative Political Economy through the lenses of the Sraffian Supermultiplier

The autonomous components of demand are the ultimate cause of economic growth in the supermultiplier model. However, the model itself does not explain what determines the growth of autonomous demand. For this reason, the supermultiplier has been labeled as an "*exogenous theory of growth*". This point has been raised, for example, by Blecker and Setterfield (2019, p. 366), who claim that "*Sraffian-inspired developments in supermultiplier analysis have prompted a sudden, late, and undesirable turn towards exogenous growth theory in heterodox macrodynamics*".

That of 'exogeneity', for the critics of this approach, is supposed to be an indictment. Nevertheless, we believe it can be considered a strength and that, for being an exogenous theory of growth, the Supermultiplier is particularly suited to CPE studies. The ultimate causes of growth in the supermultiplier are not found in the intricacies of the economic modeling but in the political and social determinants of the autonomous demand components. For example, in an export-led case, the growth rate of exports determines the growth rate of output in the long run. In this sense, the proximate cause of the aggregate growth is export growth. However, the ultimate cause – or what leads to a high export growth rate - is found in national and international dynamics of competitiveness and power. Supermultiplier authors also emphasize international hierarchies, international monetary arrangements, and national development policies as the main determinants of growth (Serrano and Medeiros, 2004). Such matters open room for a relationship among growth models and International Political Economy (Blyth and Matthijs, 2017).

Kaleckian model, providing an interpretation of the growth determinants akin to the one advanced by the Supermultiplier.

[16] This is done for example in Blecker (2002, p. 140).

The concept of autonomous demand is therefore readily suitable for the growth model perspective. Baccaro and Pontusson's (2016) analysis is based on the idea that some components of demand - especially exports and debt-financed consumption - are the main sources of growth in developed countries. The supermultiplier model provides a coherent framework where those autonomous components of demand are the proximate cause of growth. Moreover, the supermultiplier explicitly deals with government expenditure as a component of autonomous demand - an issue overlooked in New-Kaleckian approaches. That brings an expenditure directly related to political decisions to the center of the growth models analysis. We argue, thus, that the Sraffian supermultiplier is compatible with the objectives of the Growth Model Perspective, investigating the ultimate causes of growth both in the domestic growth coalitions and the international determinants.

The Sraffian supermultiplier is a demand-led growth model originally proposed by Serrano (1995) and later extended in Freitas and Serrano (2015). This approach emphasizes the role of components of aggregate demand that do not generate productive capacity and it is characterized by a) the extension to the long-run of what Garegnani calls the Keynesian Hypothesis, according to which "*in the long period, in which productive capacity changes ... it is an independently determined level of investment that generates the corresponding amount of savings*" (Garegnani, 1992, p. 47); b) the introduction of an investment function that follows the capacity adjustment principle without generating Harrodian Instability (Lavoie 2016, pp. 174-176; Girardi and Pariboni, 2016, pp. 525-527).

In a supermultiplier model, when companies increase the use of installed capacity, they increase investment. Previous models including this simple principle generated explosive dynamics, where investment increases (or falls) rapidly and unsustainably, and growth explodes (or collapses) - the Harrodian Instability. For this reason, these models do not provide a realistic description of growth. The supermultiplier corrects this issue by introducing the concept of non-capacity, creating autonomous components of demand, and assuming a slow adjustment of investment. In the long run, the growth rates of GDP, productive capacity, and demand are determined by the growth rate of non-capacity generating autonomous expenditures (Serrano, 1995).

Autonomous components of demand are those not financed by the contractual (wage and salary) incomes generated by production decisions nor capable of affecting the

productive capacity. Public expenditure, exports, public investment, household residential investment, and consumption financed out of debt are considered in the relative literature autonomous components of aggregate demand.[17] These components have two characteristics: they do not increase the (private) productive capacity of the economy, and they are not caused nor funded by domestic income.

The literature on the supermultiplier explored different sources of autonomous demand. The original framework departs from autonomous consumption as the main driver of growth (Serrano, 1995). Recent studies investigate the sustainability of debt (or the wealth stock) financing autonomous consumption and explore how consumer debt can have long term impact on output, generating cycles and crisis (Pariboni, 2016b; Fiebiger and Lavoie, 2019; Mandarino et al., 2020). Allain (2015) and Hein (2018) show that growth can be led by public expenditures, while preserving the long-term sustainability of public finances. Dejuán (2017) and Nah and Lavoie (2017) deal with the stability conditions for export-led growth, while Freitas and Christianes (2020), and Hein and Woodgate (2020) study the interaction between autonomous consumption, government expenditures, and income distribution.

On the other hand, induced expenditures are influenced by the level of income and production. A part of household consumption[18] is, then, considered an induced expenditure because it is funded out of wages or profits, and the same goes for imports. The argument is slightly different for private investment, which is not necessarily funded by (current or past) income but still depends on the evolution of demand. Capitalist invest to make production meet expected demand. Investment thus follows the capital stock adjustment principle, so that permanent increases in demand induce the expansion of productive capacity.

The induced components of demand contribute to determine the magnitude of the supermultiplier, which gives the name to the model. Analogously to the Keynesian multiplier, the supermultiplier is a factor multiplying autonomous expenditures to

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An interesting discussion has explored to which extent those components are really autonomous from current income. Nikiforos (2018) and Skott (2019) argue that no component of demand can be considered really autonomous. Theorists of the Balance of Payments growth theory argue that only exports are really an autonomous component (Thirlwall, 2019). Fiebiger and Lavoie (2019) use the prefix 'semi' to emphasise that what portion of effective demand is more stable is country and time specific (Fiebiger 2021). For our purposes, we argue that exports, debt-financed consumption and government-led are useful categories in the supermultiplier model and the CPE literature.

[18] The other part of consumption is, obviously, financed out of debt or wealth.

determine output according to aggregate demand. The traditional Keynesian multiplier, however, includes only the propensity to consume and to import. The supermultiplier includes a further term that can be labeled as the propensity to invest[19] and that captures the functioning of the accelerator mechanism, making investment an induced expenditure. The supermultiplier, thus, accounts for the indirect effects of autonomous expenditures on output through consumption and investment (and imports, but with a negative sign). Autonomous demand has a direct effect on output, as an increase in expenditures increases output. This effect must be multiplied by the supermultiplier, accounting also for the indirect effect.[20]

Through the propensity to consume, the supermultiplier defines also a relationship between growth and distribution. An increase in the wage share, for example, implies an increase in the aggregate marginal propensity to consume, and thus in the supermultiplier. This leads to a permanent positive 'level' effect on production and income, but only a temporary one on the economy's growth rate, which tends to converge to the growth rate of autonomous expenditures.[21] [22]

While changes in distribution affect growth only temporarily, growth can lead to persistent changes in income distribution. Classical political economy understood that, during periods of fast capital accumulation, the "scarcity of hands" would improve workers' bargaining position, allowing for an increase in the wage rate (Stirati, 1994).[23] Usually, a prolonged period of low unemployment diminishes the competition among workers for vacancies, reduces the risk of losing the job – once it would be much easier

[19] It is important to recall that, in the supermultiplier literature, the propensity to invest is not a parameter or a datum, but rather an endogenous variable that adjusts to discrepancies between realized and desired utilisation of the installed capacity, or analogously to discrepancies between the actual and the expected rate of growth, depending on the specific investment function adopted. See Freitas and Serrano (2015) and Cesaratto et al. (2003) for the analytical details.

[20] For instance: an increase in exports increases households' income, stimulating consumption. It also implies a greater use of factory machinery, which triggers investment. The impact of this propagation process is measured by the supermultiplier

[21] See Freitas and Serrano (2015) for an extended discussion of level vs growth effects in the supermultiplier and other demand-led growth models.

[22] The lack of a permanent effect of distribution on growth contrasts with the Neo-Kaleckian model, in which changes in income distribution exert a permanent impact on economic growth. In this approach, investment depends explicitly on the profit rate.Despite the Neo-Kaleckian claim that distribution permanently affects growth rates, Lavoie (2016, p. 196) notes that "(nearly all) empirical works about wage-led and profit-led regimes that derive from the post-Kaleckian growth model are in fact based on calculations of level effects".

[23] This position is shared by Post-Keynesian economists in general. Setterfield (2006) adopts this framework for analyzing contemporary North-American macroeconomy. This framework is also implicitly present in Marglin and Schor account of the golden age, and more explicitly presented in conflicting-claims inflation models (such as Lavoie 2014, p. 541-573).

to find another job – and improves workers' perception of their own power in wage bargaining. Thus, during periods of persistently low unemployment, real wages tend to rise faster. If real wages rise persistently above the rate of productivity growth, we will also observe an increase in the wage share. On the other hand, persistently high unemployment creates a less favorable environment for the working class, diminishing its bargaining power in wage negotiations.[24] Expansion of social policy also improves workers' bargaining power, since it reduces their immediate dependency on employers (Esping-Andersen, 1990).[25]

Since autonomous expenditures determine the pace of growth, they acquire a significant political meaning due to their impact on wages and income distribution. A relationship between the growth rate, unemployment rate, and wage inflation can define a conflict-augmented Phillips curve (Serrano, 2019).[26] An acceleration of growth of aggregate demand leads to lower unemployment rates, enhancing workers' bargaining power and increasing the average rate of growth of money wages (which, by its turn, will be associated with a higher rate of inflation). In this view, "*there is a long-run trade-off between cost-push inflation and the rate of unemployment and also the rate of growth of output and of the capital stock and productive capacity*" (Serrano, 2018, p. 31).[27] This perspective is compatible with the notion that political and institutional factors shape income distribution.

The Political Economy of Autonomous Demand

The distinct role of autonomous expenditures brings the necessity of discussing the political economy of government expenditures, exports, and debt-financed consumption.

[24] Bargaining power should be understood as the ability of workers to influence the outcome of wage negotiations according to its own interest. Thus, we need to emphasize that "workers may feel that the real wage is much too low compared to what they consider to be the just rate, but they may have few means to implement their beliefs" (Lavoie 2014, p. 550).

[25] "[T]he balance of class power is fundamentally altered when workers enjoy social rights, for the social wage lessens the worker's dependence on the market and employers, and thus turns into a potential power resource" (Esping-Andersen, 1990, p. 11).

[26] See also Palley (2019), Fazzari et al. (2020) and Summa and Braga (2020).

[27] Recent empirical findings support these conclusions (Summa and Braga, 2020; Stirati and Paternesi Meloni, 2018).

Government can influence the pace of growth through direct public expenditure or through public companies. The fact that Governments can actively contribute to demand management and, for example, to fight unemployment, however, does not automatically mean that Governments will actually do that. As a very well-known, classical work of Kalecki pointed out almost seventy years ago, ruling classes in capitalist economies tend to oppose the adoption of fiscal policy devoted to the pursuit of full employment. Kalecki identifies three reasons for this opposition. First, government intervention reduces the power of capitalists as a class in determining the level of employment in the economy. In this case, capitalists would no longer be able to claim that other policies against their interest would damage employment by harming the 'degree of confidence'. Once the government is perceived to be able to lead the economy towards full employment, capitalists lose (at least in a large degree) the possibility to use employment creation as a political resource when defending their own class interests (e.g., to reduce capital taxation). The rhetorical artifice through which capitalists use the opening of job vacancies by the private enterprise as a proof of the coincidence of their own interests with the interests of the working class and of the society in general would be unveiled and neutralized.

The second reason highlighted by Kalecki is that capitalists usually dislike the direction of public spending because it tends to concentrate on public investments or consumption subsidies. The first kind of expenditure might imply a competition for public companies in markets previously restricted to the private sector. In turn, consumption subsidies would contradict the 'moral of capitalism', according to which "*you shall earn your bread in sweat - unless you happen to have private means*" (Kalecki, 1943, p. 326). In this regard, it is interesting to consider that social policy reduces workers' dependency on employers, strengthening its bargaining power in wage negotiations. Finally, capitalists dislike the social and political changes resulting from prolonged maintenance of full employment, particularly the weakening of labor discipline, the increase in the frequency of strikes, and the tension on labor relations due to the general enhancement of the power of labor (Kalecki, 1943).

When discussing the end of the Golden Age, Steindl (1979) extends Kalecki's conclusions regarding the 'political business cycle' to the discussion of the long-run trend of the economy, an interpretation reclaimed also by Hein (2016) to query the political determinants of the Secular Stagnation.

> In fact, the business opposition to full employment policies, which Kalecki had so vividly described in his analysis of the 'political business cycle' (1972), gathered more and more strength towards the end of the growth period. It seems to have now, however, a more persistent and lasting character than in Kalecki's political cycle, so that we might rather speak of a 'political trend'. This policy of stagnation is likely to continue, since governments are preoccupied with inflation and the public debt. Budget deficits can only disappear if private investment soars again. This is unlikely in view of excess capacity, which would only disappear if there were fiscal expansion. (Steindl, 1979, p. 119)

The focus on controlling budget deficits and inflation would, then, constitute a 'stagnation policy' that reduces the pace of economic growth, implemented for meta-economic and political reasons, making clear that the pattern, the direction and the magnitude of public expenditure constitute one the most important grounds on which conflict among class interests is exerted.

Moving to exports, they can be analyzed considering international monetary arrangements and trade coalitions (Serrano and Medeiros, 2004). Historically, privileged access to international markets (conceived according to geopolitical interests) influences the ability of countries to export. That was the case, for example, of some Asian countries who obtained a political priority in the U.S. international relations, adopting the so-called 'development by invitation' (Wallerstein, 1974, Medeiros, 2013). During the Golden Age, the U.S. pulled aggregate demand internationally, contributing to the fast growth of trade between advanced capitalist countries, which certainly contributed to the prosperity of advanced economies in the period (Marglin, 1990; Glyn et al., 1990).

International financial relations cannot be neglected either. As ruler of the international payments system, in which stood out the role of the dollar as an international currency, U.S. capital flows (as Marshall Plan and direct investment of multinationals) contributed to the stability of the Balance of Payments of advanced capitalist countries. This allowed robust growth performances for those countries for a long period, which might have been a central issue in the American strategy to win the Cold War (Serrano, 2004; Korpi, 2006). More recently, the Federal Reserve ensured international liquidity in dollars during the Great Recession (Matthijs, 2020) and the pandemic crisis (Bortz et al. 2020), contributing to financial stability on a global basis. While those interventions avoided a reversion in international trade and debt defaults from peripheral economies, they consolidated the dollar hegemony in the international system (Vernengo, 2021).

Exports gained central importance in the establishment of growth models for advanced economies. Baccaro and Pontusson (2016, p. 180) assign "*a key role to exports of services and manufactured goods and to the entrenchment of export-led growth at the expense of consumption-led growth*". Price and non-price competitiveness would explain diverging paths of advanced economies. However, exports growth for one economy depends crucially on the growth of aggregate demand in the rest of the world, not only on export competitiveness. Demand from leading economies drive global trade, boosting exports growth (Matthijs, 2020). Lack of dynamism of foreign demand thus can explain the weak results of export-oriented growth strategies (Kohler and Stockhammer, 2021).

The fundamental distinction between core and peripheral economies, as developed by Latin American Structuralist tradition, can also be employed for understanding the political underpinnings of export growth (Prebisch, 1949; Rodríguez, 2006). Historically, the economic system in the periphery was shaped by the connection with core economies. Thus, the source of the economic dynamism of peripheral economies was usually concentrated in (and often restraint to) the commodity-exporting sector (Furtado, 1976). Although foreign trade is still extremely relevant for those economies, nowadays, the dependency on core economies is mainly financial and technological (Tavares, 1972; Vernengo 2006).

From a demand-led growth viewpoint, the balance of payments constraint can be a central obstacle to growth in emerging economies, consisting of a financial constraint associated with the availability of international currency (mostly dollars) (Thirlwall, 2019). Foreign trade supplies inputs for domestic production, capital goods employed in the investment projects, and consumption goods. Smaller economies rely on foreign markets to maintain their regular economic activities. Peripheral countries are usually subject to vulnerabilities coming from the volatility of capital flows and from sudden changes in terms of trade (especially because of the high share of primary commodities in the total exports). Naturally, a country can sustain a lasting trade deficit if it obtains a sufficient amount of international currency by means of capital flows and direct foreign investment. A lasting surplus in the balance of payments allows for the accumulation of foreign reserves and is not expected to be corrected by any automatic mechanism. On the other hand, a deficit position cannot be sustained permanently (unless the country issues the internationally accepted currency as the U.S.), leading to unsustainable loss of foreign reserves or pressure over the exchange rate. Sooner or later, authorities will slowdown

growth by reducing aggregate demand to cope with the instability coming from the balance of payments deficit (Freitas and Dweck, 2013).

Finally, in recent decades and in several countries, debt-financed household consumption has been one of the main engines of growth,[28] giving rise to a further peculiar growth model. As argued especially but not exclusively by Post-Keynesian authors, in the face of the depressive effects of fiscal austerity and of the observed trends in income distribution in most of the advanced economies, private debt-expenditures have acted as a counterbalancing, albeit deeply unstable, force. In a similar vein, also residential investment, stimulated by the increase in real estate prices, has constituted an important source of dynamism for aggregate demand (Kohler and Stockhammer, 2021; Pérez-Montiel and Pariboni, 2021), in the context of what has been defined a 'privatized Keynesianism' model (Crouch, 2009), characterized by the role of property price bubbles and mortgage debt in inducing (autonomous) consumption. Obviously, these phenomena do not happen in a vacuum and respond to a complex intersection of institutional, cultural, and social norms-related factors. They are also the outcome of the political process, since "*government policies are clearly of critical importance for the political economy of housing and household debt and that the analytical categories of the mainstream CPE tradition shed remarkably little light on this important topic*" (Baccaro and Pontusson, 2019, p. 8).

In sum, the supermultiplier model reads the political economy of growth through two kinds of impacts. First, permanent changes in the growth of autonomous expenditures (exports, government, debt-led consumption) affect the long-run rate of growth of GDP. Second, changes in functional income distribution have short-run effects on GDP growth but persistent ones on its level. What is still missing, however, is the analysis of the ultimate causes of growth and this is where CPE steps forward, to investigate the political and social determinants of autonomous demand components and income distribution.

[28] See e.g., among many others, Barba and Pivetti, 2009; Kumhof and Rancière, 2010; Rajan, 2010 and Stockhammer, 2015.

Growth Models before and after the Great Recession

Methodology

The growth accounting methodology we employ distinguishes between induced and autonomous components of demand. That is the main novelty with respect to the literature on demand-led growth models. The final impact of an increase in autonomous expenditures on income accounts for the supermultiplier effect, which is determined by the induced components. The equation below shows the supermultiplier (α) determined by the propensity to consume (c), the propensity to invest (h) and the complement of the import's share on aggregate demand, which gives the domestic content of aggregate demand (μ).

Equation 1: The supermultipler model

$$Y = \left(\frac{\mu}{1-\mu(c+h)}\right) Z = \alpha Z$$

Consider, for instance, that government expenditure increases, affecting autonomous demand Z. That generates a flow of income of the same amount, which increases consumption, private investment and imports, further affecting aggregate income. This additional effect is captured by the supermultiplier. The repercussion through the economy reveals the final contribution of government expenditure to economic growth. Besides, also changes in the supermultiplier (caused by changes in the propensities to consume, to invest or to import) have a separately measured impact on economic activity.

In the next section, we present an analytical exercise of growth accountancy for four advanced economies: United States, Germany, Sweden, and Japan, for the period 2000-2018.[29] This comparative exercise illustrates how the supermultiplier decomposition can be employed in comparative political analysis, benefitting from the concept of autonomous and induced demand.

[29] Data come from OECDStat, being originally generated in each country's System of National Accounts. Data on GDP and the components of aggregate demand come from the Annual National Accounts. Public and residential (households') investment come from the Financial Balance Sheets by institutional sectors. Private induced investment, whose share in GDP constitutes the propensity to invest (h), is calculated by subtracting from Gross Fixed Capital Formation (that is to say, total investment) public and residential investment.

The methodology follows the work of Freitas and Dweck (2013),[30] who analyzed the drivers of growth for Brazil. We adapted the methodology according to the availability of data and we aimed at obtaining a homogeneous methodology that allowed for the comparability of the four countries.

The decomposition of GDP growth into the contribution of each component of demand follows the equation below.

Equation 2: Supermultiplier decomposition

$$g = \alpha_1 c_0 \, g_c + \alpha_1 h_0 g_h + \frac{\alpha_1}{\mu_1} g_\mu + \alpha_1 \left[\frac{G_0}{Y_0}\right] g_G + \alpha_1 \left[\frac{HI_0}{Y_0}\right] g_{HI} + \alpha_1 \left[\frac{X_0}{Y_0}\right] g_X + \alpha_1 \left[\frac{E_0}{Y_0}\right] g_E$$

The supermultiplier (α) is determined according to equation 1. Imports' share in demand is the ratio between imports and aggregate demand, and its complement is the share of domestic content in aggregate demand (μ); *c* stands for the propensity to consume and *h* for the propensity to invest. Altogether, *c*, *h*, and μ determine the supermultiplier. *g* stands for the growth rate of GDP. When followed by a subscript, *g* stands for the growth rate of the indexed variable. Autonomous demand is composed of government expenditure (*G*), household investment (*HI*) and exports (*X*). Change in inventories (*E*) is a residual term often related to mismatches between supply and demand, usually presenting a small or negligible impact on output. Subscript *1* denotes the current period (for which the growth rate is observed), subscript *0* denotes the previous period (to which the growth rate refers).

In sum, from equation 2, we obtain two sets of variables that affect GDP growth: autonomous demand components and supermultiplier components. Autonomous demand is composed, in our decomposition, by exports, government expenditures, and household residential investment. The supermultiplier components are the propensity to consume (c), the propensity to invest (h), and the complement of imports' share (μ).

As already mentioned, we account for exports as a source of (autonomous) demand. This represents a difference with respect to Baccaro and Pontusson (2016), where the focus is on net exports, that is to say exports minus imports. However, this option "*is not well suited to providing an economic representation of how income and activity are generated*" (ECB, 2005, p. 54) and "*may understate the extent to which*

[30] A detailed discussion on the methodology can be found in Freitas and Dweck (2013, pp. 168-174).

external developments generate activity in the economy, through the creation of additional income" (ibid., p. 53)

Following the supermultiplier approach, we consider separately exports, which contributes to driving growth, and imports, which are induced by – and therefore follow – demand. A large imports' share (a smaller μ) implies a smaller supermultiplier, *i.e.*, a smaller indirect impact of autonomous demand on output due to the greater leakage of domestic demand to the rest of the world. In turn, exports growth affects output growth directly and indirectly (through the supermultiplier effect). Its impact on growth is therefore larger than it would be if the growth decomposition did not distinguish autonomous and induced demand.[31] Also for this reason, we account for exports and imports separately. The net effect of foreign trade still can be obtained, by the sum of the two different effects.[32]

Government expenditure (*G*) is the sum of Government Final Consumption expenditure and Public investment. Public investment is thus considered part of autonomous demand since this investment does not follow the capacity adjustment principle as in private firms, but responds to political decisions and long term plans.

We carried out the growth decomposition for the period 2000-2018. We segment the analysis in two periods: 2000-2008 and 2010-2018. Hence, we can compare the growth models of the sampled countries before and after the Great Recession. The year of 2009 presents atypical results related to the Great Recession. Hence, we analyzed it separately, omitting it from the graphs of the results. In the case of Japan, we disregarded the period 2009-2011 since the Fukushima nuclear disaster of 2011 also implies very atypical results.[33]

Illustrative cases

Our empirical study focuses on four advanced economies: Japan, USA, Germany and Sweden. Analyzing the dynamics of the autonomous components of demand for this heterogeneous sample is meant to show the usefulness of a supermultiplier approach in a comparative analysis of growth models. This adds to the relevant comparisons among

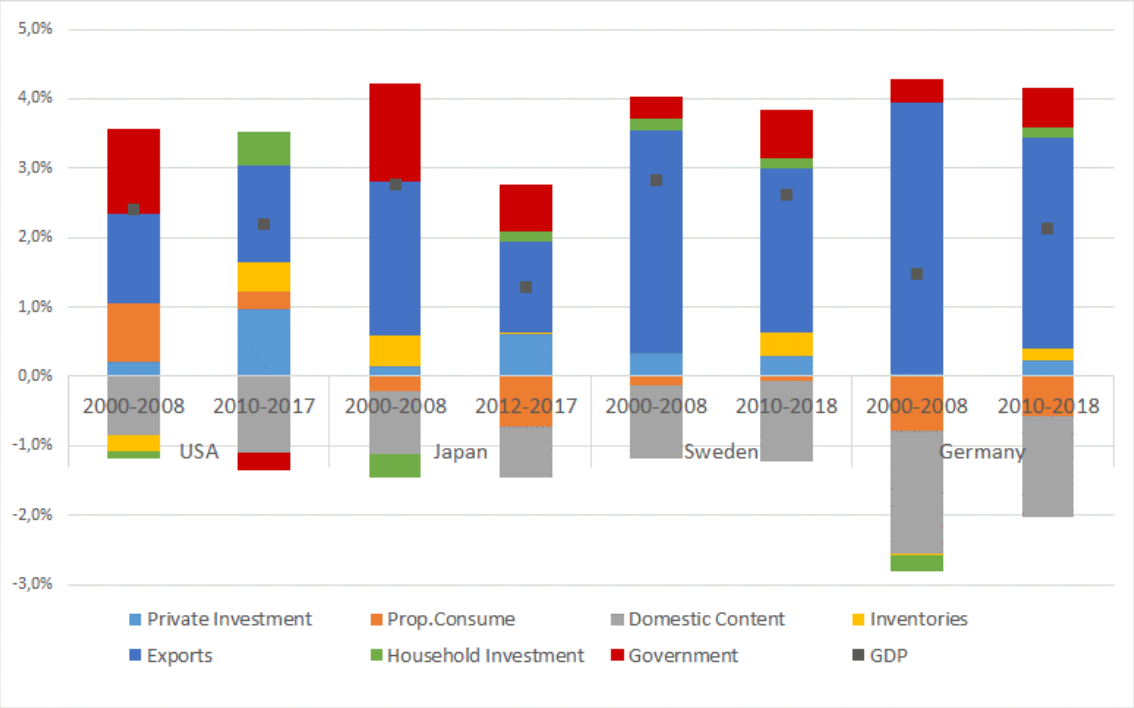
[31] The appendix provides a comparison between these two methodologies.

[32] In the terms of equation 2, the net effect of foreign trade is given by: $\frac{\alpha_1}{\mu_1} g_\mu + \alpha_1 \left[\frac{X_0}{Y_0}\right] g_X$.

[33] The Fukushima disaster generated a huge destruction of inventories, which would distort our average for the period after the 2008 crisis.

those countries performed by welfare state and institutionalist scholars (Esping-Andersen, 1992; Steinmo, 2010).[34] We argue, in particular, that the proposed framework provides an additional map for contrasting such diverse engagements to the global economy.

Figure 1) Supermultiplier decomposition for selected countries 2000-2018



Source: Authors elaboration using OECD data.

Germany's growth model is the typical example of an economy which migrated from a "*growth pulled by net exports and consumption simultaneously to almost exclusively export-led growth*" (Baccaro and Benassi, 2017).[35] Our decomposition reaffirms the export-led growth model of Germany, but also emphasizes a recent reduction of the contribution of exports to growth. A slightly higher growth in Germany in the period of 2010 to 2018 is accompanied by a diversification of the demand drivers.

[34] In his comparison of Japan, Sweden and United states, Sven Steinmo (2010, p. 22) reminds us that "these very different nations share a large number of features: they are all democracies with regular elections, freedom of the press, the rule of law, and a wide range of individual liberties. They have market-based economies, with relatively free capital markets, stock exchanges, and strong commitments to private property. In each case their governments intervene and regulate private affairs, tax companies, and citizens through the same set of tax instruments and provide a remarkably consistent set of public programs and social services for its citizens – from old age care and pensions, to unemployment insurance, to support for the needy and systems of higher education."

[35] The export-led growth is based on a contraction of wages, reduction of social security and low company taxes (Baccaro and Benassi, 2017; Nolke, 2021, p. 66).

In a context of lower European demand, the German growth model adapted by increasing government expenditures, household investment and a lower increase of imports. Following this trend, in 2019, the impact of government expenditures on growth was larger than that of exports for the first time in 20 years.

The increase in inequality in Germany may be responsible for the negative effects of changes in the propensity to consume on growth. Wealth inequality in Germany has increased by 20% between 2010 and 2018, as measured by the Gini coefficient (Nolke, 2021, p. 66), and it is plausible this is one of the factors that led to a reduction in the propensity to consume, from 0.6 to 0.52, between 1999 and 2018, resulting in a lower (super)multiplier effect.

The United States has long been "*the world's indispensable spender*" (Klein and Pettis, 2019, p. 182), a position guaranteed by the position of the dollar in the international financial system (Klein and Pettis, 2019; Vernengo 2021). Before the crisis, exports and government expenditures had the largest contribution to GDP growth in the US, with an average contributions of 1.3p.p and 1.2p.p. The US government greatly contributed to the status of the world's indispensable spender. This changed during the period from 2011 to 2014, when the government had a negative impact on growth. However, after 2015, the US government had again an average annual positive impact of 1 percent on growth. Overall, however, after 2010 it is possible to observe a decline in the aggregate growth rate, whose causes have to be searched (also) in the political decisions on the government budget.

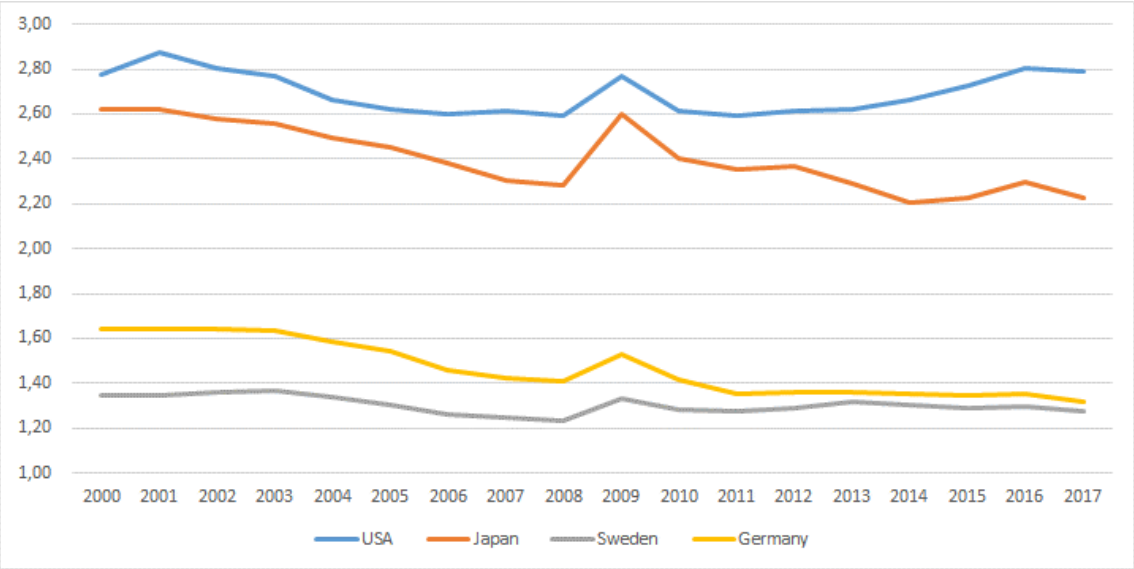
In contrast with the German case, in the US the propensity to consume had a positive effect on GDP growth during the whole period. This cannot be explained by a decrease in inequality, since the country saw inequality increase. We attribute this effect to debt-financed consumption (Setterfield and Kim, 2020), which is commonly seen as the pre-crisis engine of growth in the US. In fact, departing from a multiplier framework, Cynammon and Fazzari (2015, p.180) conclude that the effect of inequality on demand generation in the US was postponed by massive consumer borrowing for an extended period prior to the Great Recession.

In Japan, growth reduces after the crisis due to a fall in government expenditures, exports and on the propensity to consume. Contrary to what New Keynesian theory implies, the fall in autonomous demand components was not compensated by other components, which should bring the economy back on the potential output growth path. Instead, the fall in exports and government ends up causing a persisting decline in total GDP growth.

In Sweden, the propensity to consume had a small decrease across the years, and for this reason induced consumption affected growth negatively. Notably, consumption did not have the strong effect captured by Baccaro and Pontusson (2016; 2019), who describe Sweden as a mix between consumption and export-led. In our analysis, Swedish growth is largely led by exports, with a recent increase in the relevance of government expenditures. Government did not have an important contribution before the 2008 crisis, but the increase in government expenditures after the crisis helped to maintain the aggregate growth rate.

Finally, in Figure 2, we can see the evolution of the supermultiplier across countries. The different levels of the supermultiplier are mainly determined by the share of imports to GDP (see figure 2 in the Appendix 2). USA and Japan have a lower share of imports in GDP, so they have a higher supermultiplier. Autonomous demand shocks have higher effects in countries with higher supermultiplier, so fiscal policy is more effective. An increase in the import share in Germany also led to a decrease in the supermultiplier.

Figure 2) The evolution of the supermultiplier



Source: Authors elaboration using OECD data.

Conclusions

The supermultiplier provides a powerful theoretical lenses to understand and compare growth models. In this model, the proximate causes of growth are to be found on the evolution of the autonomous demand components. The ultimate causes of growth, however, have to be searched in the social and political underpinnings of each autonomous demand component.

Government expenditures, exports and debt-led consumption are the main components of autonomous demand in advanced capitalist economies. We argue these demand components should catch the attention of contemporary political economy scholars. Particular attention should be paid to government expenditures, which are often overlooked in growth-models analysis. As shown in our estimates, even countries with an export-oriented profile display a significant role of government in pushing growth. In periods of decreasing trade, the role of government can define the viability of growth in advanced economies.

The relations of growth with distribution can be studied through the analysis of the propensities to consume. Changes in income distribution, however, only have

temporary effects on growth. Higher wages do not imply permanently higher growth rates, but relevant temporary impacts, as illustrated by the German case, where the constant decrease in the propensity to consume has affected growth over the last 20 years. In contrast, faster growth may boost wage growth. That explains the possible distributive impact of autonomous demand growth and may shed light on stagnationist policies.

Growth model classifications have overlooked public expenditure as a driver of domestic growth, emphasizing domestic demand as a whole. Nevertheless, in some cases, such as the US before the crisis, government expenditures were at least as important as exports. In Sweden and Germany an increase in public expenditures helped to sustain growth after the Great Recession.

In all four countries, exports show a remarkable importance, which is notable in Japan, Sweden and Germany. But in all three countries, the export contribution to growth has reduced after the 2008 crisis. Sweden and Germany increased public expenditure and were able to maintain previous growth rates. Japan's fall in exports was not compensated by any other demand source, leading to a decrease in aggregate growth. United States, in turn, has a distinctively diversified growth model, especially after the crisis. The supermultiplier provides a useful deccomposition to understand the proximate causes of these changes, but only refined political and social analysis can explore the ultimate causes of growth in advanced economies.

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Appendix 1) The decomposition in Baccaro and Pontusson (2016)

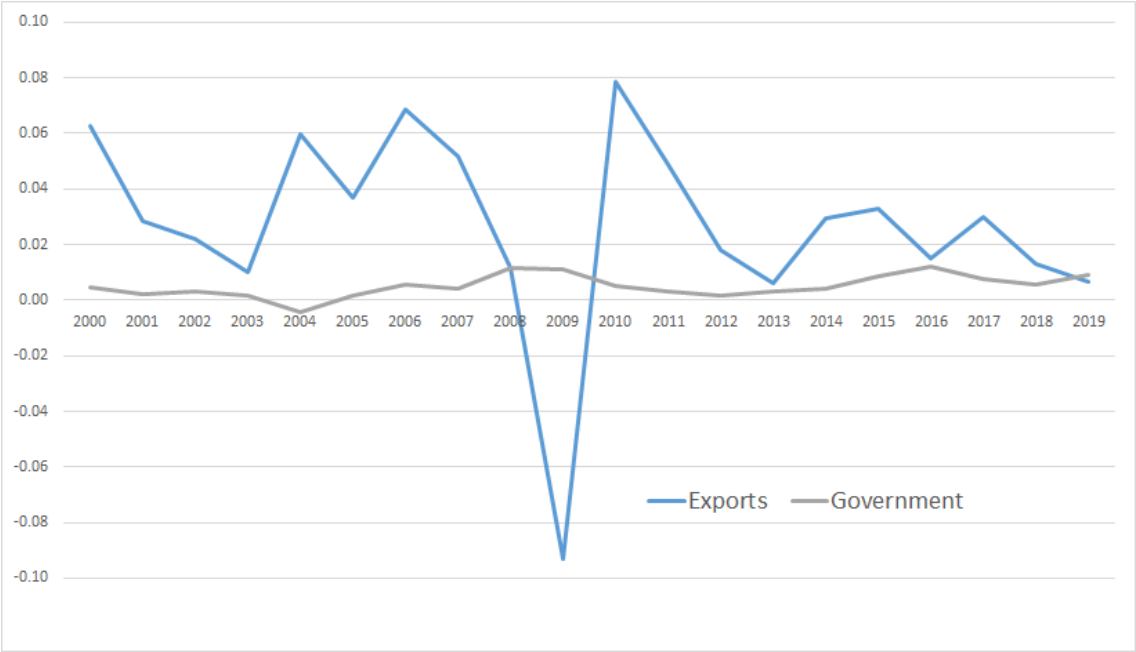
Traditional decomposition exercises follow the equation:

$$g = \left[\frac{C_0}{Y_0}\right] g_C + \left[\frac{I_0}{Y_0}\right] g_I + \left[\frac{G_0}{Y_0}\right] g_G + \left[\frac{X_0}{Y_0}\right] g_X - \left[\frac{M_0}{Y_0}\right] g_M + \left[\frac{E_0}{Y_0}\right] g_E$$

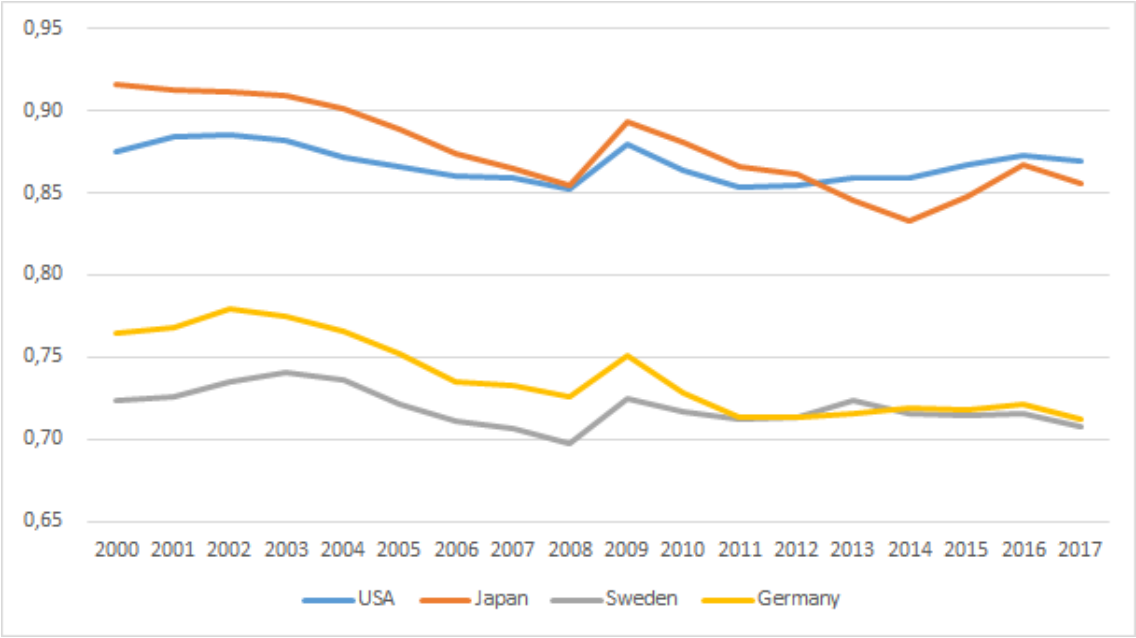
It obtains the aggregate rate of growth (g) by multiplying the share of each component of demand by its growth rate. This traditional decomposition is agnostic on the specific role of each demand component for the aggregate growth. The supermultiplier can be considered a theoretically informed decomposition by attributing an induced or autonomous role for demand components.

Appendix 2) Graphs

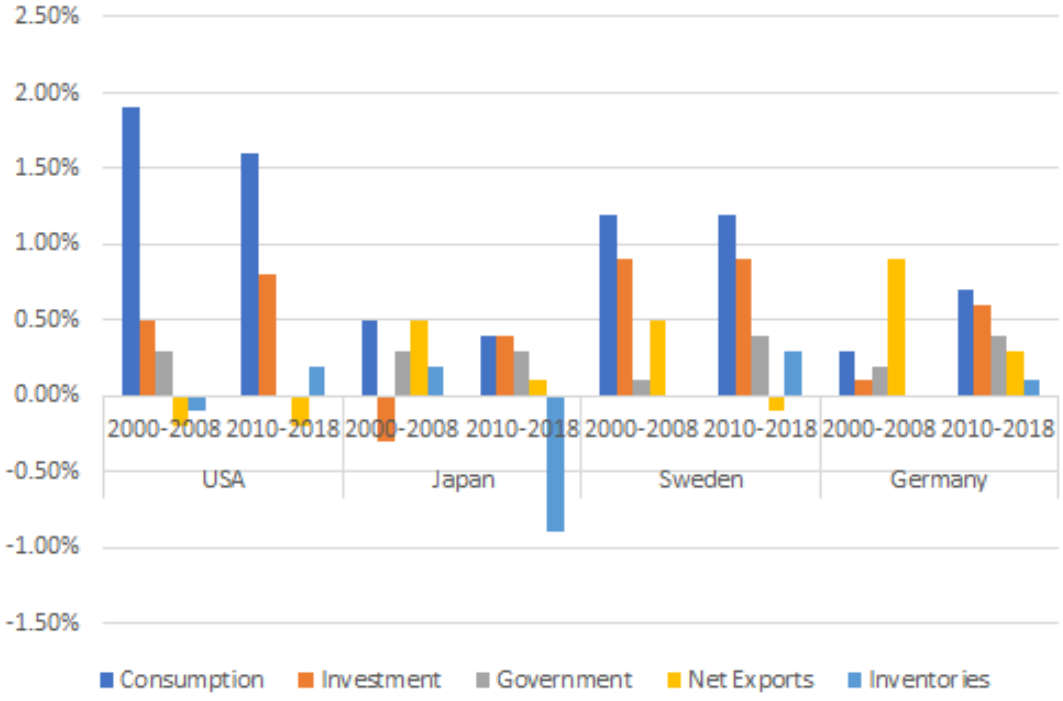
Graph 1) Exports and Government expenditures contributions to growth in Germany 2000-2019



Graph 2) Domestic component of demand (μ)



Graph 3) Tradition growth decomposition


2.50%
2.00%
1.50%
1.00%
0.50%
0.00%
-0.50%
-1.00%
-1.50%
2000-2008
2010-2018
USA
Japan
Sweden
Germany
Consumption
Investment
Government
Net Exports
Inventories