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Austerity Effects on National Output and Income Inequality: A Systematic Literature Review

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Abstract: Fiscal sustainability issues over rising national debt concerns and the consequent expansionary fiscal retrenchment hypothesis has fuelled the contentious austerity vis-à-vis stimulus debate which has spawned a large empirical literature of conflicting findings on the economic effects of austerity – with particular emphasis revolving around equity and distributional issues. In this paper we attempt to summarise the growing literature on the recent developments regarding the theoretical as well as empirical approaches on national output and distributional aspects of austerity. By exploring the existing evidence in the literature on the effect of consolidation programs, we offer a more holistic overview of the subject matter through a synthesis of the extant literature and, by so doing, propose directions for future research pertinent to both academic researchers and policymakers.

Keywords: fiscal austerity, inequality, income distribution, systematic literature review

1 Introduction

Austerity as a concept has evolved from the 18–19th century Classical view in which public debt was regarded as problematic and therefore the focus was on the best way to fund deficits; to the Keynesian view where austerity was prescribed as an appropriate policy action for the top of the business cycle; to neo-liberal views in modern times where austerity is a policy reserved for the bottom of the business cycle (Blyth 2013; Konzelmann 2012). Since the 2007/8 global financial crisis, the

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debate has revolved around the output costs associated with the implementation of an austerity policy – both expansionary or contractionary in nature.

Over the last three decades, income inequality has increased in almost all the regions of the world at different speeds. Income inequality, although caused by a wide range of global and domestic factors, can also be influenced by institutions and policies which play a part towards shaping its trajectory. Nevertheless, if left unchecked, rising income inequality can lead to all manners of political, social and economic malaise (IMF 2017). Since the 2007/8 financial crisis, there have been emerging views on the role of rising income inequality in precipitating a global crisis (Calcagno 2012; van Treeck and Sturn 2012). Tax and spending policies can alter the distribution of income in the short and medium term since fiscal policy is the primary tool which governments use to affect income distribution and address macroeconomic stability (IMF 2017).

Fiscal sustainability issues over rising national debt concerns and the consequent expansionary fiscal retrenchment hypothesis has fuelled the contentious austerity vis-à-vis stimulus debate and produced a large empirical literature of conflicting findings on the economic effects of austerity – with particular concerns revolving around equity and distributional issues. Contractionary austerity effects which imply negative contractions on growth have therefore raised concerns as expressed in one strand of the literature which associate austerity with a short-run decline in output and employment with attendant consequences for labour income share. Austerity considerations are therefore usually associated with wars of attrition between conflicting sides for distributional reasons (Alesina and Drazen 1991) since lower income deciles (whose propensity to consume is higher) are impacted more negatively if adjustment implementation leads to a rise in income inequality levels (IMF 2017).

In view of the existing conflicting evidence found throughout the empirical literature on the effect of consolidation programmes on national output and income inequality, this survey aims to effectively summarise the key theoretical issues in the area by presenting a more holistic overview of the subject matter through a synthesis of the extant literature and by so doing, to set forth an agenda for future research and to help policymakers arrive at a reasonable deduction of the distributional consequences of fiscal austerity to support appropriate decision-making.

On the basis of the results of the systematic research, we assess 77 articles that purport to address the review question. Consistent with the purpose of this review and the adoption of a realist synthesis approach which seeks to understand what works, how it works and why it works (Pawson et al. 2005), based on the findings three thematic areas have emerged: i) the theoretical premises of the austerity debate (ii) the impact of austerity on output and (iii) re-distributional implications

of austerity. Details of the systematic literature review methodology can be found in Appendix A.

This review makes three specific contributions. First, to the best of our knowledge, this is the first study that utilises a systematic literature review methodology in this area; secondly, it provides a comprehensive analysis of the impact of austerity by identifying pertinent aspects of the distributional channels and implications of austerity for the economy and thirdly, it proposes directions for future research pertinent to both academic researchers and policymakers.

The rest of this paper is structured as follows: Section 2 presents the dominant theoretical and empirical studies in the area, whilst Section 3 provides and analysis and synthesis of the key findings in the literature. Section 4 proposes areas for future research and Section 5 provides some concluding remarks.

2 Theoretical Consideration of Austerity

2.1 Dominant Theories

The Classical debate about austerity can be traced in the writing of Isaac de Pinto (1774), David Hume (1742), David Ricardo (1815), Thomas Malthus (1803) and John Stuart Mill (1848) who were amongst the first to engage in a public debate on the controversial aspects pertaining to government budget deficits and public debt. According to Alexiou and Nellis (2016) "the real revolution in macroeconomics, was sparked by Keynes in 1936, when he introduced the controversial notion of deficit spending as a means of boosting income and employment (a notion that, presently, is even more topical than ever)"… Keynes (1936) recommended that "when an economy is in recession, an unbalanced rather than a balanced public budget is needed in order to spend the way out of recession" (p. 3).

More broadly, the theoretical debate on austerity draws its sustenance from the three dominant theoretical approaches, namely the Keynesian, Neo-Ricardian, Neo-classical and more recently the Heterodox view. The Keynesian and Heterodox views are regarded as demand-side theories whilst the other two fall within the supply-side perspective. The Keynesian view as spearheaded by John Maynard Keynes (1883–1946) was developed during the Great Depression as a solution to the prevailing underemployment and persistent unemployment which was characterised by low output with free markets unable to restore full employment equilibrium. Keynes (1936) suggested that aggregate demand could be influenced during economic downturns so as to restore the economy to full employment and as such advocated active government intervention predominantly via fiscal policy. In this direction, countercyclical fiscal policies should be implemented during

economic downturns and upturns. In the case of a recession, the increased government budget deficits arising would yield expansionary effects by boosting private consumption in the economy. Austerity on the other hand should be reserved for periods of economic booms so as to prevent the economy from overheating due to excess demand.

One of the measures used to gauge the responsiveness of government spending on aggregate demand is the fiscal multiplier which is considered to be a key element in the implementation of Keynesian countercyclical policies. This is because an increase in government spending is expected to positively affect economic activity, and hence, national income. The implementation of austerity policies on the other hand would generate immediate and significant contractionary effects through a negative multiplier impact on aggregate demand. The fact that the Keynesian framework of analysis does not take into account the microeconomics dynamics of the economy has been severely criticised. In particular, the treatment of economic agents as myopic or liquidity constrained with a high propensity to consume suggests that the role of future income expectations is ignored. Keynes' views on managing the economy through direct government intervention also placed him in direct conflict with supply-side theorists who advocate minimal state intervention and policies to promote free and uninhibited markets.

For Neo-classical economists a reduction of government spending (deficits) is envisaged in order to make room for a more efficient allocation of resources through market forces which in turn promote private investment and consumption. In this context, the relevance of Ricardian future expectations seeks to provide a better picture of the workings of austerity with the assumption that since economic agents are rational beings who plan their consumption over their lifetime, government intervention by way of increased spending (deficits) might have two effects: a) to cause economic agents to increase current consumption by shifting (deferring) taxation to future generations; thus increased consumption in this case lowers savings thereby triggering interest rates to rise to bring the economy to equilibrium; and b) when the economy is at full capacity then increased deficits will drive interest rates up which in turn will crowd out private investment thereby leading to detrimental effects on the economy. Consequently, a reduction in government budget deficits by means of austerity policies is thought to promote efficient private spending with potential expansionary effects in the short term.

In the same vein, those who invoke the Ricardian equivalence approach sustain that government borrowing is nothing less than deferred taxation. As such, when governments engage in deficit financing, economic agents tend to save in order to meet (pay) expected future tax increases. Consequently, the net effect is zero as any income created as a result of the stimulus is assumed to be saved. In so far as rational economic agents base their consumption decisions on their expected lifetime income, deficit financing has no long-term effect on consumption. However, when governments adopt policies to reduce budget deficits, economic agents may perceive these discretionary policies as permanent, hence positively affecting their lifetime income. The anticipated increase in their current consumption in the short-term as implied by fiscal austerity, is bound to lead to expansionary effects on output.

Austerity considerations post the 2007/8 financial crisis gave rise to a more heterodox approach advocated by scholars such as Joseph Stiglitz, Paul Krugman, Mark Blyth and others. The heterodox view on austerity is premised on the Keynesian approach and it advocates the pursuit of growth strategies via expansionary fiscal policies during recessionary periods. It acknowledges that although these increase government deficit and debt levels, they are necessary prerequisites for growth by boosting aggregate demand. Furthermore, it posits that contrary to the Neo-classical views, austerity leads to output loss and increases persistent unemployment, thereby triggering a hysteresis effect in the economy (Alexiou and Nellis 2016). The three pillars upon which the heterodox approach is premised relate to: output growth, confidence levels and rational expectations and advance the following views: (i) austerity policies do not improve business confidence but rather adversely affect aggregate demand thereby leading to persistent unemployment and a decline in business confidence; (ii) monetary policy intervention via lowering of interest rates is insufficient and ineffective in combating deficits and boosting economic recovery and (iii) rejection of the role of rational expectations with emphasis laid on the fact that during periods of recession, economic agents are constrained, plan in the short term and not in the long term and so do not base their current expenditure decisions on projections of future changes to their lifetime income based on current discretionary tax policies. Austerity, therefore, rather than promoting growth, is self-defeating as cuts in government spending lead to a fall in aggregate demand which causes greater output loss with a resultant fall in tax revenues; hence, the possibility of a reduction in public deficits fades away.

A summary of the evolution of the theoretical arguments on austerity in historical perspective is provided in Table B1 in Appendix B.

2.2 Empirical Evidence of Fiscal Austerity on National Output

There is a rich stream of evidence (e.g. Agnello et al. 2012; Alesina and Ardagna 1998, 2013; Alesina and Perotti 1995; Alesina et al. 2015, 2018, 2019; Bertola and Drazen 1993; Blanchard and Leigh 2013; Born et al. 2020; Calcagno 2012; Giavazzi and Pagano 1990; Guajardo et al. 2011; IMF 2013; Juyadev and Konczal 2010; Mulas-Granados 2005; Perotti 2011) pertaining to the output effects of fiscal austerity. Several approaches have been used to gauge these effects in the extant empirical literature. The approaches vary from the use of macroeconomic and simulation models to identifying episodes of fiscal adjustments from country samples (this being the more popular approach and preferred over the fiscal multiplier).

According to some studies in the area, austerity policies generate large economic contractions with negative multiplier effects on output (Alesina and Ardagna 2013; Anderson and Minneman 2014; Bilicka and Fuest 2012; Jorda and Taylor 2015) whilst only a small effect on the debt/GDP ratio can be established (Blanchard and Leigh 2013). The critical issue, however, in these studies is the difficulty in determining the value of the fiscal multiplier as it involves identifying a) the effects of exogenous changes of policy on GDP and b) the biased estimates if triggered by endogenous changes in policy (Bilicka and Fuest 2012). As a result, the uncertainty about the fiscal multipliers makes it difficult for policymakers to decide whether to implement adjustments on revenue or spending (Alesina and Ardagna 2010).

An alternative approach that is discussed in the literature concerning the output effects of austerity is to identify episodes of a discretionary fiscal policy stance and thereafter ascertaining its resultant effect (expansionary or contractionary) on the economy. In what is viewed as the seminal contribution in this field, Giavazzi and Pagano (1990), in analysing fiscal adjustment episodes for Denmark (over the period 1983–1986) and Ireland (over the period 1987–1989) find that despite draconian tax hikes and spending cuts, these episodes resulted in expansionary fiscal adjustments (also referred to as the *Expansionary Fiscal Contractions Hypothesis* in the literature). This is when a fiscal retrenchment exercise stimulates growth in the short term.

This finding challenged the Keynesian views on austerity and paved the way for subsequent contributions and contentious debates to unravel. On one of the most contentious aspects regarding how to identify episodes of discretionary policy change, Alesina and Perotti (1995) analysed large consolidation data episodes for a panel of countries by scrutinising and classifying changes in the government budget to detect if a consolidation was implemented, and thus making a

case for expansionary adjustments based on spending cuts. Large consolidation episodes as defined by Alesina and Perotti (2010) are years in which the cyclical adjusted balance falls by more than 1.5% of GDP.

The methodological framework employed by Alesina and Perroti (1995), referred to as the *Cyclical Adjusted Primary Balance (CAPB)*, has been used extensively to measure discretionary changes in fiscal policy (see Alesina and Ardagna 1998, 2010, 2013). The rationale behind this is that tax revenue and government spending move automatically with the business cycle. Therefore, once these are cyclically adjusted, any inherent changes in the fiscal variables reflect policymakers' decisions to adjust taxes and government spending. A rise in the CAPB would therefore reflect a deliberate policy of fiscal adjustment. The primary balance is calculated as the non-interest component of government revenue less the non-interest component of government expenditure. The CAPB is therefore the primary balance less the estimated effect of business cycle fluctuations on the fiscal accounts. Based on the CAPB methodology, Alesina and Ardagna (1998, 2010, 2013). Mulas-Granados (2005) and Mirdala (2016) also found evidence that supports expansionary austerity especially when adjustments are undertaken on the expenditure side.

In explaining the expansionary austerity findings, Alesina and Ardagna (2010, 2013) further show that adjustments can be expansionary via demand- and supply-side policies. They sustain that *fiscal adjustments are expansionary via the demand channel* if economic agents believe that the current adjustment eliminates the need for a more disruptive one in the future thereby producing wealth and credibility effects. *Wealth effects* are manifested through future expectations when households increase their current consumption because they perceive spending cuts are permanent and therefore anticipate a higher lifetime disposable income due to a lower tax burden while *credibility effects* are manifested when economic agents perceive adjustment efforts are credible which leads to a reduction in the risk premia that correspondingly drive interest rates down, hence restoring investors' confidence, spurring investment and aggregate demand.

Furthermore, *fiscal adjustments are expansionary via the supply-side channel* through public spending cuts and labour liberalisation policies. *A cut in public spending and employment* could result in public sector wage and job losses thereby putting downward pressure on private sector wages through higher labour supply with effects on higher profits for firms which consequently lead to increased investment. On the other hand, *an increase in tax, especially income tax*, could lead to an increase in the unit cost of labour especially where labour is strongly unionised thereby dampening profits and investments; but where labour union and wage moderation exist, the unit cost of labour remains stable, and the resultant effect is a spur in investment and profits.

The findings for expansionary austerity and the CAPB methodology have been challenged by a host of authors such as Jayadev and Konczal (2010), Alexiou and Nellis 2016; Brinca et al. 2020; Calcagno 2012; Castro 2018; Ciminelli et al. 2019; Guajardo et al. 2011; Holden and Midthjell 2013; International Monetary Fund 2014. In particular, they find that austerity is contractionary on output rather than expansionary. They challenge the CAPB and offer evidence to show that it suffers from reverse causality.

According to the International Monetary Fund 2014, the CAPB tends to bias analysis towards finding evidence in favour of the expansionary austerity hypothesis in the following ways: (a) including non-policy factors such as asset price or commodity price movements that could affect economic activity – an example of this is where a stock market boom improves the CAPB by increasing capital gains and cyclically adjusted tax revenues, (b) including changes in the CAPB which may reflect deliberate policy responses to other developments affecting the economic outlook, i.e. government may embark on spending cuts and tax increases as a response to a rapid increase in domestic demand in order to protect the economy from overheating and (c) omitting years in which fiscal stimulus was employed to offset adverse shock effects caused by fiscal adjustments.

As an alternative, the International Monetary Fund 2014 employs an action-based methodology based on Romer and Romer (2010) narrative approach to identify specific instances in which policy actions intended to reduce budget deficits have been announced and show proof that in the short run, unemployment rises and domestic demand contracts for both types of adjustment instruments but by more in relation to tax-based instruments. Guajardo et al. (2011) weigh in on the debate by employing both the narrative and CAPB approach in their analysis and find that for the same data set, while the one indicates contractionary output findings, the other indicates expansionary austerity. Perotti (2011) in revisiting the evidence for an expansionary hypothesis agrees with the IMF (2013) that there is merit in the critique of the CAPB as used by Alesina and Perotti (1995) and Alesina and Ardagna (2010) and goes further to clarify that large consolidations are usually multi-year in duration and so the CAPB as used by the above parties is not an appropriate approach. Perotti (2011) also further indicates that the narrative approach (action-based methodology) as used by IMF (2013) also suffers from inherent problems (reverse causality errors) such as: (a) the potential for fiscal authorities to reverse spending cuts announced in the budget in subsequent supplementary budgets, (b) the inclusion only of actions geared towards debt reduction while omitting actions geared towards stabilisation and (c) endogeneity problems could arise if policies announced towards debt reduction are not implemented if the economy is heading towards a recession. Perotti (2011) further raises an important issue by highlighting that in analysing the output effects of

austerity, it would be better if countries with similar situations could be categorised together rather than grouping countries with inherently different characteristics. In his analysis, he studies the impact of consolidations on four distinct countries (pairing them by similarities) by employing the narrative approach as used by International Monetary Fund 2014. In addition, he takes into consideration fiscal actions outside the original budget as well as timelines of the consolidations and other channels (such as macroeconomic policies) that can affect the consolidations. He finds evidence in support for expansionary austerity but suggests that the conditions (interplay of macroeconomic policies and economic conditions) under which they occurred are not practicable and available for all countries – which then raises a potential issue: should adjustments be designed taking into cognisance each country's peculiar situation?

Holden and Midthjell (2013) and Breuer (2019) also argue against the CAPB methodology on the grounds that its measure of changes in fiscal policy is imprecise due to incomplete cyclical adjustments and so suffers from reverse causality and instead employ a fiscal indicator. They show that the fiscal indicator measures discrete changes in fiscal policy more precisely by linking adjustments directly to changes in the main tax bases. While the Holden and Midthjell (2013) findings indicate no clear expansionary indication between the two instruments of consolidation, Breuer (2019) on the other hand shows findings for contractionary austerity.

Due to the issues raised concerning the CAPB, Alesina and Ardagna (2013) revisit the case for the expansionary austerity hypothesis by employing both the CAPB and narrative approach and find evidence for the *CAPB methodology* – in other words, expansionary austerity for expenditure-based adjustments when accompanied by pro-growth policies (labour and product market liberalisation policies) and contractionary results for tax-based measures for the CAPB methodology. However, when the narrative approach is employed, the results are contractionary for tax-based adjustments but not significant for expenditure-based ones. When the latter are accompanied with reductions in short-term interest rates, expansionary effects do occur.

In view of the above, it would appear that there might indeed be merit in the argument that the choice of instrument might influence the outcomes. In what appears to lend credence to this line of reasoning, Alesina et al. (2015, 2018, 2019) consequently revisit the case for the expansionary austerity hypothesis by employing only the narrative approach in their analysis and find that tax-based plans are deeply contractionary while expenditure-based plans are mildly recessionary in output. However, if implemented in a non-recessionary period, they are accompanied by zero output loss and sometimes instances of growth (expansionary).

2.2.1 Determinants of Output Expansion/Contraction

Other issues considered in the extant literature (see for instance, Alesina and Ardagna 1998, 2010, 2013; Alesina and Perotti 1995; Alesina et al. 2015, 2018, 2019; Bertola and Drazen 1993; Blanchard and Leigh 2013; Born et al. 2020; Breuer 2019; Castro 2018; International Monetary Fund 2014; Mulas-Granados 2005; Guajardo et al. 2011; Jayadev and Konczal 2010; Jorda and Taylor 2015; Paulus et al. 2017; Perotti 2011) concern factors that potentially determine whether the impact on output is expansionary or contractionary. These include: (a) the composition of the adjustment, (b) the magnitude of the adjustment, (c) the economic conditions, (d) the accompanying policies, (e) the duration of the adjustment and (f) the design of the adjustment.

Before exploring these factors, it is crucial to understand the criteria for categorising an adjustment as expansionary. Alesina and Ardagna (2013) provide two definitions: (a) when the growth rate of real GDP during the adjustment period is higher than average growth rate in the two years prior to the adjustment and (b) when the average growth rate of GDP in the year of the adjustment implementation and the two years prior to the adjustment is greater than the G7 average for the same periods. These two definitions present juxtaposing criteria and appear inherently conflicting in that while one compares only internal factors, the other is weighed against an external criterion. Also, there is the consideration about the conditions prior to the adjustment – assuming the adjustment period preceded a crisis and the economy had started to record some form of growth prior to the adjustment, the change in the growth rate would capture changes that might not be attributable to the adjustment. Nevertheless, for the purposes of the literature, the second of these definitions will be used since it provides a broader yardstick for growth measurement.

2.2.2 Composition and Magnitude of the Adjustment

As far as the composition and magnitude of the adjustment is concerned, there are several studies (see, Alesina and Ardagna 1998, 2013; Alesina and Perotti 1995; Alesina et al. 2015, 2018, 2019; Bertola and Drazen 1993; Mulas-Granados 2005; Guajardo et al. 2011; IMF 2013; Paulus et al. 2017) suggesting that the composition matters and favours spending-based adjustments. According to IMF (2010) and Guajardo et al. (2011) spending cuts are contractionary but less so than tax-based adjustments. They show that this might be because expenditure-based adjustments are usually accompanied by monetary policy intervention – i.e. lower interest rates and currency devaluation. Holden and Midthjell (2013)

however suggest that the composition does not matter whilst Alesina and Ardagna (1998, 2013) found that the size of the adjustment has an insignificant effect on output.

Further evidence on the composition of the adjustment suggests that spending-based adjustments – especially spending cuts targeted at transfers, welfare programs, the public sector wage bill and employment – are more successful in reducing government deficit and debt levels than tax-based adjustments (see, Agnello et al. 2012; Alesina and Ardagna 1998, 2010, 2013; Alesina and Perotti 1995; Alesina et al. 2018; Mulas-Granados 2005; Mirdala 2016). A successful adjustment as defined by Alesina and Ardagna (1998) is one in which the debt/GDP ratio reduces by 5% of GDP three years after the adjustment implementation. However, Holden and Midthjell (2013) define a successful adjustment as one in which the budget deficit is removed and therefore find that the composition of the adjustment is insignificant.

Blanchard and Leigh (2013) offer evidence according to which the composition only has a small initial effect on debt/GDP ratios. Anderson and Minneman (2014) also contribute to the discussion by pointing out that the impact levels of tax increases and spending cuts depend on whether spending cuts are implemented in countries with hitherto low government spending levels. In such an event, they are likely to have lower impact than in economies with high spending levels while tax increases in countries with low levels of tax are likely to have a greater impact than in economies with relatively high taxes. While Alesina and Perotti (1995) and Alesina and Ardagna (1998) find that size of the adjustment is not a key determinant, Holden and Midthjell (2013) show that the adjustment size is important for reducing debt levels and ensuring a balanced budget.

2.2.3 Impact of the Economic Conditions

The existing evidence in relation to the impact of the economic conditions is varied and contradictory. Alesina and Ardagna (1998, 2013) find insignificant evidence for expansionary adjustment episodes occurring during incidences of high and growing national debt levels while Mulas-Granados (2005) finds that spending-based adjustments – if undertaken during times of fiscal stress, low growth, high initial deficit and debt levels – are expansionary by reducing unemployment, inflation and increasing growth. Jayadev and Konczal (2010), on the other hand, show contradictory evidence that adjustments implemented during a slump result in lower growth and higher debt-to-GDP ratios. Guajardo et al. (2011) weigh in on the debate from the sovereign risk view and find in their studies that adjustments implemented in economies with higher perceived sovereign default risk have less

contractionary effects. Furthermore, Alesina et al. (2018, 2019) find that the business cycle position during adjustment implementation is insignificant for either type of adjustment but that instances of expansionary adjustment occur during non-crisis periods. They additionally find that when the initial debt level is low, if spend and tax-based adjustments are implemented jointly, they work faster at reducing debt levels. Jorda and Taylor (2015) in a replication study, using a new propensity-score based methods for time series data found that austerity negatively affects growth (especially depressed economies): a 1% of GDP fiscal consolidation translates into a loss of 3.5% of real GDP over five years when a country is in recessions, as opposed to 1.8% when in a boom. Finally, Born et al. (2020) offer evidence suggesting that the default risk premia rise when adjustments are implemented during times of severe fiscal stress.

2.2.4 Accompanying Policies

As far as the accompanying policies are concerned, Giavazzi and Pagano (1990) in their seminal contribution show that the expansionary austerity result was anchored on accompanying monetary policies of disinflation, currency devaluation and capital flow liberalisation which fostered wealth and credibility effects. Although Alesina and Ardagna (1998) note that monetary policy is not a critical differentiator between the two types of adjustment outcomes, they support Alesina (2012) in suggesting that in the context of a suitable policy mix comprising of income policies (wage moderation), labour union liberalisation can curtail the contractionary impacts of adjustments that occur through the supply channels and yield resultant positive effects on private investment. Jayadev and Konczal (2010), IMF (2013) and Guajardo et al. (2011) note that monetary policy intervention by way of interest-rate reduction and currency devaluation help to offset the contractionary effects of adjustment policies. They further sustain that this intervention occurs mostly for spending-based consolidations and corresponds with the notion that Central Banks are more favourably disposed towards spending-based adjustments which they take as a signal towards firmer fiscal discipline and therefore are willing to provide monetary interventions (stimuli) particularly when interest rates are not within the zero-limit threshold.

Tax-based adjustments, on the other hand, especially in the form of indirect taxes such as VAT, tend to raise inflation and therefore reduce the chance of any form of monetary intervention by an inflation-averse Central bank. Perotti (2011) notes that the aforementioned policies – though they aid an expansionary output effect through increased competitiveness and net exports – are not practicable since they are not applicable for the generality of countries (especially for countries within the euro zone with a common monetary policy for all members).

A large strand of the literature (see, Agnello et al. 2012; Alesina and Ardagna 1998, 2013; Alesina and Perotti 1995; Blanchard and Leigh 2013; Jayadev and Konczal 2010; Reinhart and Rogoff 2010) subsequently covers the determinants of a successful adjustment – i.e. an adjustment that reduces the government deficit and public debt levels. The same factors used in analysing the output effect are used here, namely: (a) the composition of the adjustment – expenditure-based or tax-based – i.e. spend cuts versus tax increases; (b) the magnitude of the adjustment in relation to the GDP; (c) the economic conditions – i.e. the business cycle position of the economy; (d) the duration of the adjustments and (e) the design – how it is spread out over time. There is an interconnect between a successful and expansionary adjustment. An expansionary adjustment requires a growth in GDP while successful adjustment requires a reduction in debt and deficit levels – real GDP growth drives down debt and deficit levels.

2.2.5 Design and Duration of the Adjustment

Alesina and Perotti (1995) show that, if rightly implemented, tight adjustments have lasting positive effects on growth and investment as well as an increase in competitiveness. Cournède et al. (2013), Alesina et al. (2015) and Mirdala (2016) also suggest that well-designed measures can reduce the adverse effect on growth. Mirdala (2016) additionally finds that spending-based adjustments are better suited as multi-year plans since the effects are less distortionary on output in subsequent years while tax-based plans are best as single-year plans since the output effects are only less distortionary in the first year.

Furthermore, Agnello et al. (2012) in analysing the durations of consolidations, find that adjustment size does not impact on the duration but that economic conditions tend to affect the duration and effectiveness of consolidation efforts. In explaining further, they find that adjustments implemented during high deficit and debt levels require a longer consolidation period – those undertaken at high and increasing debt levels tend to undermine the consolidation efforts by boosting the likelihood of a shortened duration; economic, fiscal or financial crises end consolidation efforts earlier than expected while good economic conditions contribute to faster consolidations. They also find that spending-based consolidations are generally shorter in duration than those that act on the revenue side while fast durations are aided by (a) lower interest rates, (b) higher inflation rates and (c) trade openness. A summary of the key studies of the impact of fiscal austerity on output is provided in Table B2 in Appendix B.

2.3 Austerity and Income Inequality

Fiscal adjustments can have regressive distributional consequences as seen in the extant literature (see, Agnello and Sousa 2011, 2012; Ball et al. 2013; Ciminelli et al. 2019; Cournède et al. 2013; Elson 2013; IMF 2013; Loungani 2013; Woo et al. 2013). Improving the fiscal stance involves either acting on the expenditure or revenue side or a combination of both. On the expenditure front, the question concerns which spending cuts should be undertaken whilst revenue considerations concern the nature of tax, i.e. direct or indirect.

The respective literature explores the impact of both expenditure- as well as revenue-based policies on the distributional aspects of the economy. In this section, in order to provide a clearer picture of the distributional implications of fiscal austerity, we will be focussing on (a) composition of the adjustment, (b) the magnitude of the adjustment, (c) the timing of the adjustment, (d) the duration of the adjustment and (e) economic conditions.

Evidence in support of the more detrimental effects of spending-based instruments can be found in abundance in the literature (see, Agnello and Sousa 2011, 2012; Alexiou and Nellis 2016; Ball et al. 2013; Bova et al. 2018; Brinca et al. 2020; Clements et al. 2015; Cournède et al. 2013; Heimberger 2020; International Monetary Fund 2014; Paulus et al. 2017; Furceri and Loungani 2013; Woo et al. 2013). These studies suggest that the composition of the adjustment matters and that expenditure-based adjustments (especially cuts targeted at social benefits and transfers) tend to have a more detrimental impact on income inequality than tax-based adjustments.

Ball et al. (2013), Woo et al. (2013) and Bova et al. (2018) additionally show that spending-based adjustments significantly increase income inequality both in the short and medium terms particularly via the unemployment channel by causing persistent long-term unemployment, and with a significant and long-lasting negative effect on labour's share of national income. The International Monetary Fund 2014 further adds that the decline is harsher for unskilled labour than skilled labour (since employers show a preference for skilled labour over unskilled) whilst Ball et al. (2013) point out that the effect on labour's share of income is more pronounced than on profit and rent incomes. In underlying the importance of the labour income share, Woo et al. (2013) and Bova et al. (2018) note that approximately 15–20% of increases in income inequality particularly arise through the unemployment channel.

Furthermore, Bova et al. (2018) argue that, although tax-based adjustments are better than expenditure-based adjustments, tax-based instruments tend to have *mixed net effects* on inequality – direct taxes tend to be progressive whilst

indirect taxes have the tendency to be regressive. They note that direct taxes in the form of income tax can lower inequality depending on their progressivity; however indirect recessionary effects could arise via an increase in unemployment which lead to an increase in inequality.

The evidence on tax-adjustment effects therefore presents as a paradox. This is further emphasised in Ciminelli et al. 2019 who in continuation of the tax discourse, assess the effects of direct and indirect tax on inequality and submit that the effect is dependent on the labour supply channel. They indicate that direct tax increases could cause either an income or substitution effect. An income effect dominates when economic agents increase their supply of labour in order to maintain their consumption levels while a substitution effect dominates when they substitute labour for leisure. The effect of the one causes a reduction in inequality while the other causes an increase in inequality; so, depending on which effect dominates, the same kind of tax could have different effects.

On the other hand, they report that indirect taxes reduce inequality more than direct taxes. They find that this occurs through the impact on the labour supply channel. They also sustain that when tax increases are in the form of indirect taxes (such as consumption tax), they cause a reduction in disposable income and therefore induce a positive impact on labour force participation by creating incentives for the voluntarily unemployed to seek employment. Higher labour force participation rates therefore lead to an increase in the probability of being employed which ultimately leads to a reduction in income inequality.

On the magnitude and duration of the adjustment, several studies such as Agnello and Sousa (2011, 2012), Woo et al. (2013), Bova et al. 2018; Heimberger 2020; International Monetary Fund 2014 find that the size of the adjustment matters. The International Monetary Fund 2014 report also shows that the duration and magnitudinal impact of the adjustment depend on the size of automatic stabilisers. Bova et al. (2018) further suggest that most large-sized adjustments (greater than 1.5% of GDP) are expenditure based, tend to worsen income inequality (a consolidation size of 1% of GDP is associated with a rise in Gini coefficient of about 0.6–0.7% of disposable income) – and are long-lasting.

In other words, most expenditure-based adjustments tend to be larger in size, worsen inequality and are longer in duration. They find that the cumulative impact of the adjustment from the size peaks between years five and six and starts fading by year 10 – which could account for why the effects on inequality are more pronounced compared to tax-based instruments. Correspondingly, Heimberger (2020) also notes that inequality is increased when the adjustment period is long rather than short.

As for the design of adjustment, equity considerations are quite important during fiscal adjustment deliberations and implementation since they can influence the sustainability of such programmes. Bova et al. (2018) argue that if progressive tax instruments together with targeted social benefits and transfers are introduced during expenditure-based adjustments, they could help to alleviate the distortionary distributional impacts. International Monetary Fund 2014 adopts a similar perspective but adds that despite these measures, the bottom income deciles would remain deeply affected by consolidation shocks.

In this context, the timing of the adjustment is also crucial as according to Agnello and Sousa (2011, 2012), Woo et al. (2013), Bova et al. (2018) and Heimberger (2020) the business cycle position of the economy matters. In particular, Agnello and Sousa (2012) investigate the effects that could arise from a financial crisis (banking in particular) and find that adjustments that are implemented during crisis periods have a negligible effect on income inequality while implementation during non-crisis and post-crisis leads to a rise in inequality – albeit very significantly for the post-crisis period. In support of this, Heimberger (2020) also finds that the distributional impact is more harmful post-crisis than in non-crisis and in periods of low growth than high growth periods. In contrast, Woo et al. (2013) provide evidence according to which adjustments implemented during recessionary periods have a negative impact on inequality whilst International Monetary Fund 2014 argues that front-loaded adjustments are detrimental on social welfare particularly when unemployment is high.

Finally, the extant literature provides evidence that the disposable income of lower income groups is usually disproportionately affected during fiscal adjustments. This is further worsened if adjustments are implemented during inflationary periods (Agnello and Sousa 2012). Furthermore, on the effect of debt levels, a strand of the empirical literature (Klein and Winkler 2019; IMF 2010; van Treeck and Sturn 2012) provides evidence suggesting that inequality is not only impacted by public debt levels but also by private sector indebtedness. They further indicate that the 2007/8 global financial crisis was the result of private debt overhang.

Klein and Winkler (2019) analyse the effect on inequality through the lens of private indebtedness and offer evidence to show that austerity raises inequality levels when private debt is high regardless of the economy's position in the business cycle while the opposite is the case if the debt overhang is low. Three channels are identified through which this could occur – earnings, incomes and savings. The earnings channel magnifies inequality through employment losses while labour's share of national income declines through the incomes channel. High interest rates existing at the point of adjustment implementation also hurt borrowers who are at the lower end of the distribution. Table B3 in Appendix B provides a summary of the pertinent studies in the literature.

3 Key Findings and Discussion

3.1 Findings

A large strand of the empirical literature focuses on the effect that fiscal adjustments have on national output and the rest of the economy. Based on a review of the available literature, a number of key findings emerge which can be summarised as follows: fiscal austerity packages can either be implemented on the expenditure or revenue side or a combination of both. These fiscal instruments have implications for both output as well as income distribution. On the output front, the key effects appear to revolve around: (i) estimating the value of the fiscal multiplier on the effect of changes in the fiscal stance, or (ii) identifying instances of changes to the fiscal stance. The second approach is more popular in the empirical literature and focuses on whether the outcomes of fiscal adjustments are expansionary or contractionary on economic growth.

Disagreement also exists between scholars as to the appropriate methodology for identifying episodes of fiscal adjustments as the two popular methods – the cyclical-adjusted primary balance and the narrative approach – seem to result in contradictory outcomes. Other outcome considerations presented in the literature include the effect of adjustments on government debt and deficit levels whereby a positive downward effect is classified as a successful adjustment and vice-versa for the opposite. The literature (see, Agnello et al. 2012; Alesina and Ardagna 1998, 2010, 2013; Alesina and Perotti 1995; Alesina et al. 2018; Mirdala 2016) suggests that actions on the expenditure side, especially those geared towards social benefits and public wage cuts, are more effective with respect to deficit reduction.

The literature (see, Agnello and Sousa 2011, 2012; Ball et al. 2013; Brinca et al. 2020; Clements et al. 2015; International Monetary Fund 2014; Jalles 2017; Paulus et al. 2017; Furceri and Loungani 2013; Woo et al. 2013) also suggests that these adjustment decisions tend to have distributional consequences and are viewed from the perspectives of rising or falling levels of income inequality. Different channels of inequality transmission are put forward in the literature with labour's income share identified as a major driver of income inequality. The effects of fiscal adjustments on income inequality can be determined by the following factors: (i) the composition of the adjustment, (ii) the magnitude of the adjustment, (iii) the timing of the adjustment, (iv) the duration of the adjustment and (v) economic conditions. By considering the impact(s) of these factors on growth, debt and deficit levels as well as income inequality, it is possible to obtain a more lucid picture of the economic effects of fiscal austerity.

3.2 Discussion and Synthesis

A review of the existing literature suggests that discussions on austerity are premised on the theoretical constructs regarding the short-term economic consequences of fiscal adjustments. While the Keynesian view recommends countercyclical fiscal measures, the supply-side theorists recommend procyclical policies. These contrasting views are presented in the literature in two ways: (i) austerity or stimulus, (ii) expansionary or contractionary. Closely associated with the expansionary versus contractionary issue is the method for identifying fiscal adjustment episodes. The third issue – consonant with the purpose of this review – is that of distributional concerns which arise when adjustments are implemented. These issues have largely framed the trajectory of the academic discourse and thus the discussion below will follow along these lines and will with highlight limitations.

Austerity or Stimulus: post the 2007/8 global financial crisis, the need for governments to strive towards sustainable finances has been the focal emphasis of fiscal authorities. Options for decreasing debt ratios could either be by: (i) targeting the GDP component and growing nominal GDP at a rate higher than interest rates – while this has the advantage of reducing the debt level, debt stock might remain unchanged; or (ii) targeting the debt levels via implementation of fiscal adjustment programmes – while this option might be contractionary in the short-term as seen from the broad literature, proponents consider it a better alternative to the costs associated with high and increasing debt levels. Additionally, increasing debt levels raise concerns regarding the burden of payment – who pays: current or future generations?

Expansionary or contractionary: while the literature in general seems to offer evidence of contractionary effects of austerity, there is a strand that suggests a contrasting view of expansionary effects as well as economic conditions under which this could occur. However, such considerations as interest rate and exchange rate policies are not readily available to all countries – the euro zone for example pursues a singular monetary policy and so this option is not open to member states there. Other considerations involve economic rebalancing – transitioning to export dependency also has implications for the surplus countries who rely on the imports of deficit countries; in addition, all deficit countries cannot enhance their competitiveness in the same period. Another strand of the literature presents evidence of timing and the country's position in the business cycle as relevant to an expansionary outcome. Paradoxically, these ties in with the Keynesian view that austerity is best preserved for the boom and not the slump.

Distributional Impacts: equity concerns cannot be separated from austerity considerations. The empirical literature offers evidence to show that expenditure-

based adjustments especially those targeted at social welfare benefits and public wage costs are best suited for successful reduction of deficit levels as well as expansionary growth. However, this poses as a conflict for the inequality literature which provides evidence for expenditure-based adjustments – especially when occurring through the transmission channels of labour's national income share and employment – as drivers for increasing income inequality. A problem therefore arises as to how to reconcile the two paradigms to ensure an equity-efficiency trade-off.

While the literature emphasises the impact of some rigid items on government current expenditure, it is silent on other components of the current expenditure as well as capital expenditure and the distributional and output effects. This review seeks to contribute by attempting to reassemble and also integrate the various fragments in the extensive empirical body of literature relating to fiscal adjustments in order to provide a succinct overview of the effects on income inequality so that policymakers are better informed as to the impacts of their decisions.

4 Concluding Remarks

This study primarily investigates the economic/distributional implications associated with the implementation of fiscal retrenchment programs by systematically reviewing the extant empirical literature. By applying the standards of rigorous methodology associated with a systematic literature review, it generates evidence suggesting that a) while the broader literature seems to offer evidence of contractionary effects of austerity, there is a strand that suggests a contrasting view of expansionary effects as well as economic conditions under which this could occur and b) fiscal adjustment programmes are associated with an increase in income inequality.

In particular, expenditure and revenue policies can alter the distribution of income in the short and medium terms whilst expenditure-based instruments (which are more detrimental on inequality) are more successful in achieving fiscal consolidations than tax-based instruments. Tax-based instruments on the other hand moderate the effects on inequality if they are progressive in nature. Consequently, there is a need for policymakers to balance equity and efficiency trade-offs during austerity considerations since fiscal adjustments have regressive distributional consequences especially for lower income groups by affecting their disposable income. Well-designed adjustment instruments can lead to a decrease in inequality which could impact positively on economic growth since lower income groups have a higher marginal propensity to consume.

The topicality of income inequality seems to suggest that we are in an era of expanding and challenging research in this area. From the systematic review of the extant literature several likely areas in which future research could be beneficial can be identified. Expanding these areas would therefore work importantly towards optimising knowledge and decision-making in combatting trends of increasing inequality. First, there seems to be no consensus as to the distributional consequences of tax-based consolidation; although a large strand of the empirical literature offers evidence that adjustments on the revenue side tend to provide equalising effects to the detrimental impact of fiscal adjustments especially when the tax instrument is progressive such as income tax, other contradictory results are put forward indicating that the instruments (direct tax and indirect tax) could yield mixed impacts through the labour supply channel by producing income or substitution effects. Secondly, there appears to be contradictory evidence on the impact of the timing of an adjustment programme on income inequality. While some studies have shown evidence that austerity policies implemented during recessionary periods have no significant impact on inequality, others have put forward evidence indicating that front-loaded adjustments affect inequality negatively. Thirdly, it would be beneficial if further research is provided showing the durational consequences of long-term adjustments on inequality. A single strand of research from the literature under review addresses this area and seems to suggest that the impact could only recede by the 10th year of adjustment implementation; a validation or otherwise of this evidence would surely have wider implications both for equity and efficiency. The subject of indebtedness also merits further research – by analysing the impacts of high (low) public debt overhang vis-a-vis high (low) private debt overhang on inequality.

In conducting this systematic review of the literature, a number of limitations that have been encountered are worth mentioning. More specifically, there were limitations associated with the database search – despite the application of Boolean logic to the keyword word search string, the relevant papers were limited, which might be due to the nascency of the field and the time lags associated with publishing relevant materials. Searching by phrase on Google search engine and specialist sites aided by the snowballing technique were therefore particularly rewarding and enriched the more orthodox search methodology. Also, case studies were limited to OECD countries and European Union countries; the outcome might have been different if a wider range of countries had been used in the empirical studies. Nevertheless, this review has value for researchers and policymakers as it encapsulates the heuristic developments in the field.

Appendix A

Methodological strategy

In reviewing the literature pertinent to this study, research was carried along the following principles (Hart 1998): (i) the origins and definitions guiding the topic (ii) the major issues and debates (iii) key sources (iv) key theories, concepts and ideas (v) epistemology and oncological grounds and (vi) main problems addressed till date. Considering therefore, the intensity and complexity of the austerity debate which has spawn a large empirical literature with conflicting findings, the realist review lens is adopted in critically evaluating the literature. The realist strategy is mainly adopted for research which is explanatory focused – "it seeks to unpack the mechanism of how complex programmes work (or why they fail) in particular contexts and settings" (Pawson et al. 2005, p. 21). This method of review therefore has value in extracting and critically appraising the relevant literature (Petticrew 2001) for an in-depth analysis in order to present policymakers, politicians, think tanks, scholars, etc. with a clear set of results on the distributional consequences of fiscal adjustment programs; as well as identify research needs and outline useful research possibilities.

Review strategy

SLRs filter a large body of evidence using clearly defined (well-established) protocols. These protocols are painstakingly rigorous and should be transparent, replicable, methodical and unbiased (Siddaway et al. 2019; Tranfield et al. 2003). Accordingly, a review protocol was mapped outlining the process for scoping, searching, screening, selection, evaluation, analysis and synthesis of the literature; a review protocol serves the purpose of defining the scope and boundaries of the review process. The process flow can be seen in Figure 1.

Search strategy

The first stage in the search strategy was to identify the keywords, group these into relevant search strings and then apply the usual search conventions (Denyer and Tranfield 2009). The first keywords – "fiscal austerity" and "income inequality" – were derived from the review question. In order to make for a thorough and exhaustive search, other keywords ("fiscal consolidation," "fiscal adjustment,"

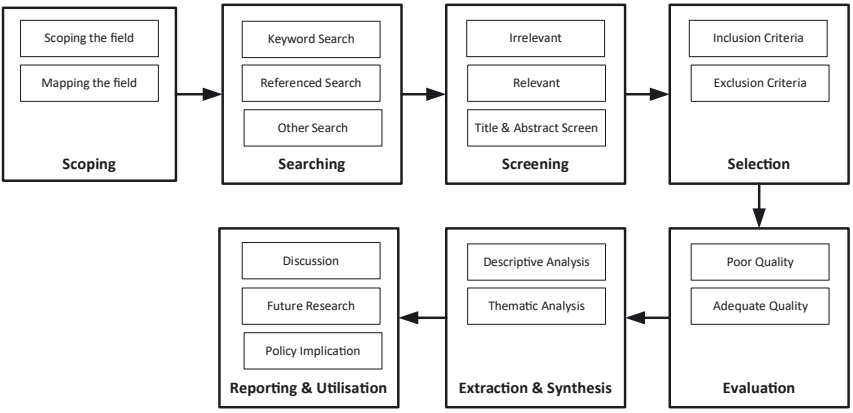

Figure 1: Review protocol.
Source: Adapted from Denyer and Tranfield (2009).

"fiscal retrenchment," "disparity," "gap," "distribution," "redistribution") were informed from existing literature and word synonyms. This can be seen in Table A1. The search strings were thereafter coined and Boolean operators (OR, AND) employed for database interrogation. The search strategy can also be visualised in Figure 5.

Table A1: Key word search.

Keywords	Word strings
Fiscal austerity	Fiscal Adjustment OR Fiscal Consolidation OR Fiscal Retrenchment OR Austerity
Income inequality	Income Disparity OR Income Gap OR Income Distribution OR Redistribution

Database search

The second stage in the search strategy was identifying the appropriate databases. Seven economics publisher databases – Sage Journals, Taylor & Francis, Springer Link, Wiley Online, Science Direct, Emerald Insight – were initially identified for interrogation. However, having discovered that they were indexed to the following databases – EBSCO Host, ABI Inform, SCOPUS and Web of Science – with Science Direct and Emerald Insight being specifically indexed to Scopus and ABI Inform

respectively, it would have proved redundant to continue; database search was thereafter restricted to these four platforms. Although, there is some overlap between these four, it was necessary to interrogate all to ensure all-inclusiveness of purpose. ABI/Inform Global covers a broad range of literature with over 2500 publications in business and economics while EBSCO is the leading repository of research database covering over 1000 peer reviewed journals with comprehensive full text reportage for a wide period. Database interrogation was carried out at four different time intervals (several months apart) with the last search in February – and recorded a sizable search result. Each search produced different number hits, however, the relevant studies remained approximately the same in number; the numbers reported in Table A2 represent the last search; thereafter further streamlining was implemented based on screening criteria. The selected studies were subsequently exported to Mendeley – a reference manager application – for duplicates removal.

Table A2: Electronic database search.

	EBSCO	ABI	Web of Science	SCOPUS
Search result	179	588	265	5866

Screening and selection

Initial screening performed after the search results was titular screening. Titles not relevant to the key concepts (themes) were excluded, thereafter abstracts and introductions were scrutinised for relevance followed by full context. For conciseness, studies were restricted to those pertaining to the OECD countries. Publication dates were not considered as a hinderance because of the large historical context of the review background. Searches were also limited to the English language for comprehension reasons. Not accounting for duplicates, the initial hit produced a total of 6898 results, duplicates removed after full text evaluation totalled 42 across the electronic databases and grey literature. Screening was based on the inclusion and exclusion criteria as detailed in Table A3. Although, peer review related factors were not used as an exclusion criterion, these were applied solely to hits emanating from SCOPUS as the total number of initial hits proved unwieldy. Selected studies were thereafter evaluated according to the quality appraisal checklist detailed in the evaluation section.

Table A3: Inclusion & exclusion criteria.

Criteria	Rationale
Inclusion	
Relevance (studies pertaining to the identified literature domains)	Included studies must relate to any two or three of the literature domains of austerity, fiscal policy and income inequality
Academic & grey literature	This is a nascent field; therefore, grey literature particularly from specialist sites provide most current and up to date information
Timeframe	This was not considered as a barrier because of the historical and theoretical framework
Title	Included studies must have titles related to any two of the literature domains of austerity, fiscal policy and income inequality
Exclusion	
Publication language	Non-English journals were excluded for comprehension reasons
Non-OECD settings	Case Studies were restricted to OECD countries and broader Europe for conciseness reasons
Scientific field (studies located in natural sciences, health sciences, etc.)	Subject of interest is economics, so only studies located in the related subject area such as development studies, political economy, etc. were considered

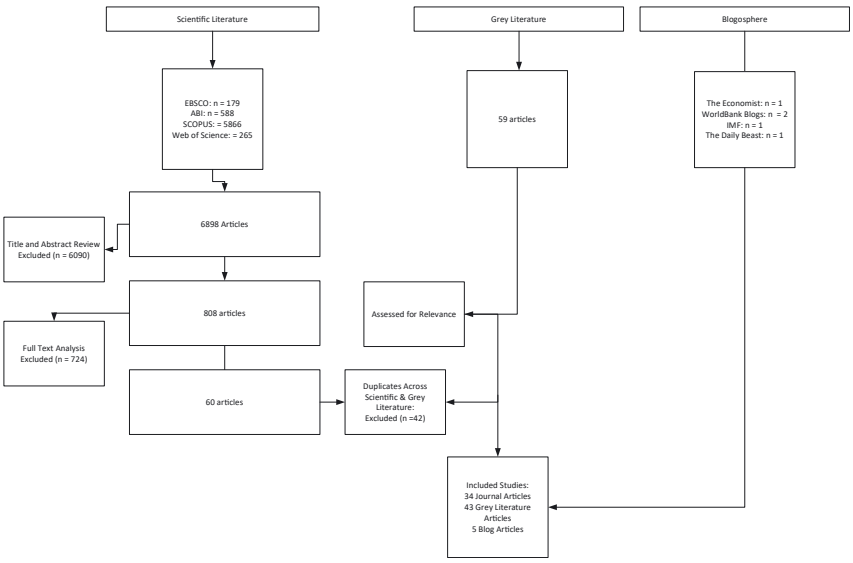

Figure 2: Selection diagram process flow.

Table A4: Database + Google search.

Thematic areas	Journals	Working papers
Austerity effect on output	15	18
Distributional consequences of austerity	19	19
Theoretical concept of austerity	4	2
	38	**39**

Table A5: Database + Google search.

Journal	Article qty	Journal	Article qty
Applied Economics Letters	1	Journal of Australian Political Economy	1
Cambridge Journal of Economics	1	Journal of International Economics	1
Comparative Economic Studies	2	Journal of Post Keynesian Economics	1
Comparative European Politics	1	JSTOR	1
Development	1	Macroeconomics Dynamics	1
Economic Journal	1	OECD Journal	3
Economic Modelling	1		
Economics and Politics	1	Review of Economics & Statistics	1
Empirica	1	Review of Income and Wealth	1
European Economic Review	1	Review of Keynesian Economics	1
European Journal of Economics and Economics Policies	1	Scandinavian Journal of Economics	1
European Journal of Political Economy	2	Society and Economy	1
IEA	1	Tax Policy and the Economy	1
International Economic Review	1	The American Economic Review	2
International Journal of Emerging Markets	1	The Journal of Economic Perspectives	2
Journal of Advanced Research in Law & Economics	1	University of Chicago Journals	1
Journal of Applied Economics	1	University of Massachusetts Boston Scholar Works	1

Table A6: Database + Google search (sorted a–z).

Working papers	Article qty
American Enterprise Institute for Public Policy Research	1
Center for Geoeconomic Studies and International Institutions and Global Governance Program	1
Centre for Business Research, University of Cambridge	1
CESIFO	1
G-24 Policy Brief	1
Ideas Working Papers Series	10
IMF	7
IMF Economic Review	1
Institute for New Economic Thinking	1
Manchester School	1
NBER	5
OECD	3
Ovidius University Annals	1
Oxford Scholarship Online	1
Research Gate	1
VOX CEPR	4
WIIW	2

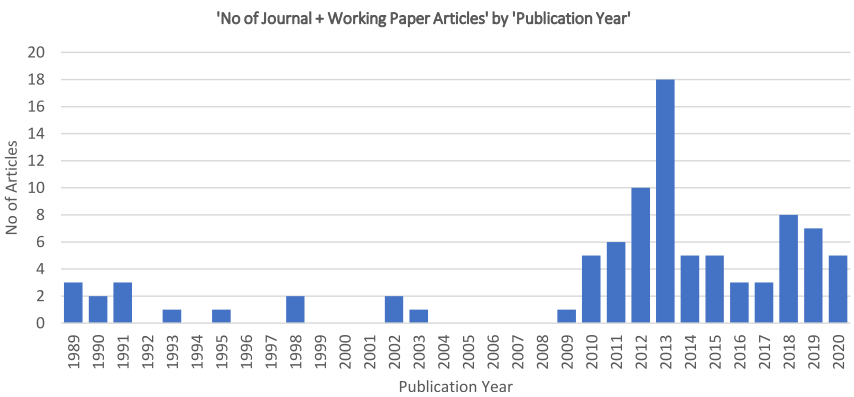

Figure 3: Number of journal and working paper articles.
Source: Authors' Elaboration

Appendix B

Table B1: Austerity – historical origins and evolving theories.

Schools	Contributors	Position summary
The 18th & 19th century classical economists		a. Fiscal Policy was about maintaining a balanced budget. b. Government should either be balanced or in surplus. c. Government borrowing encroaches on wealth accumulation (i.e. capacity for savings to grow) Deficits should only be tolerated in situations such as war, natural disasters, etc. d. Anything contrary to such extenuating circumstances was considered fiscal folly.
The classical debate about austerity	Isaac de Pinto (1774)	On national debt & stock market speculation: a. These helped in fostering credit, b. Increased money circulation, and c. Promoted economic well-being.
	David Hume (1742) and Adam Smith (1776)	On national debt: a. Debt financing was the result of government profligacy and this imposed undue fiscal burdens on the next generation which would have to pay for it. b. Deficits should only be run during times of emergency such as war times, natural disasters, etc. c. At such instances, expenditures should be financed via taxation rather than borrowings. d. Governments should not run budget deficits since these lead to debt accumulation. e. Public debt reduction entails increased taxation: (i) which leads to negative investment and (ii) capital flight implications.
	David Ricardo (1815)	On national debt: a. Referred to it as “one of the most terrible scourges ever invented to afflict a nation.” b. Maintained that there was no economic difference between the options (current taxes or bonds issuance) available for funding public debt. c. If economic agents had rational expectations, they would be indifferent to the two options.

Table B1: (continued)

Schools	Contributors	Position summary
		d. During peace times, efforts be geared towards debt repayment and eradication of debts acquired during war times.
	Thomas Malthus (1803)	On national debt: a. Cautioned against abrupt national debt reduction because of the powerful interests of the investors of national debt who were also drivers of the production process and so responsible for ensuring effective consumption through the process of production & demand. b. National debt eradication & tax removal would not necessarily result in the increase of national wealth and ensure full employment (particularly for the working class)
	John Stuart Mill (1848)	On national debt: a. Public debt is necessary during times of under-consumption. b. On the other hand, public debt could prove a nemesis if it utilised capital that would otherwise be gainfully employed for production and employment. c. Government's competing for capital (through borrowing) that could be used for production process could end up driving up interest rates. d. Public debt could be beneficial if: (i) it is financed from excess foreign savings (ii) generates savings that would not have occurred without government's borrowing (iii) it absorbs domestic savings that would have been used in unproductive capacities or invested in foreign countries

Schools	Contributors	Position summary
From warfare to welfare – the politicisation of austerity	John Ruskin (1862–63)	Idealised on: a. Government being committed to full employment and provision of benefits to the old, destitute and those in need.
	Williams H. Beveridge (1909), John A. Hobson (1909), Clarence E. Ayres (1918)	a. Idealised on: welfare provision by government as a benefit to society and not a cost.

Table B1: (continued)

Schools	Contributors	Position summary
The British "treasury view", the "Keynesian" challenge and the politics of austerity	The British Treasury View (1920s)	Prevailing Backdrop: WW1 end; economic depression; persistent unemployment despite increased public works spend. Treasury view (premised on pre-Keynesian notions): Savings boost investment growth (ii) Increased government borrowings depress private trade & investment which lead to prolonged & persistent unemployment (iii) monetary policy used as intervention policy for economic fluctuations. As a result, the following were implemented:
	Pre-Keynesian View	a. Implementation of wage cuts. b. Restoration of Gold Standard to 1914 parity. a. Monetary policy intervention for economic fluctuations. b. Increased private savings lead to increased investment.
	The Keynesian View	a. Stimulate domestic demand through monetary policy intervention + increased government spending. b. Increased public spending should be funded by borrowings. c. The cure for unemployment during a slump is stimulus. d. Fine-tuning of the economy during recovery by locating new productive capacities in underemployed regions. e. Austerity to be applied during a boom to prevent overheating of the economy. f. The right time for austerity is (i) during a boom (ii) to avert inflation (iii) to avert financial collapse.

Schools	Position summary
Neo-liberalism, deficit growth and exposure to financial markets	a. 1950s: Re-ignition of the public debt debate (a) long-term implications of the national debt (b) substitution of government borrowing for tax-financing. b. 1960s: The rise of neo-liberalism – shift of focus to consumption-based supply side economics.

Table B1: (continued)

Schools	Position summary
	c. 1970s: Financial & Trade markets liberalisation – the reliance on market forces to bring about economic equilibria. d. 1980s: Reaganomics & Thatcherism – the dominance of supply side economics; the emergence of expansionary fiscal contractions hypothesis.
The economics of austerity in the wake of the 2007/8 financial crisis	a. The re-birth of the "1920s Treasury View" sentiments (high levels of public debt are economically damaging). b. The re-emergence of the austerity controversy (debate). c. Primary focus of the debate: (a) economic effects of austerity versus stimulus. d. Push for austerity agenda by sovereign debt holders i.e. global financial markets. e. Keynesian versus Neo-liberalism austerity sentiments.

Table B2: Fiscal austerity and output.

Study	Research question	Country sample	Period	Empirical findings
Giavazzi and Pagano (1990)	Can Severe Fiscal Contractions Be Expansionary? Tales of Two Small European Countries	2 (Denmark & Ireland)	Den = 1983–1986; Ire = *1982–1984* & 1987–1989	(1) Growth in Consumption despite Spend Cuts & Tax Hikes; (2) Expansionary Output effect anchored on: (a) monetary disinflation (b) capital flow liberalisation (c) fall in nominal & real interest rates (d) currency devaluation.
Bertola and Drazen (1993)	Trigger Points and Budget Cuts: Explaining the Effects of Fiscal Austerity	2 (Denmark & Ireland)	Den = 1982–1986; Ire = *1982–1984* & 1987–1989	Spend-based adjustments are expansionary because of the role of future expectations in driving up private consumption (2) Tax-based adjustments not accompanied by spend cuts result in decreased consumption or no effect.
Alesina and Perotti (1995)	Fiscal Expansions and Fiscal Adjustments in OECD Countries	20 OECD Countries	1960–1992	(1) The composition of the adjustments determine their success (2) Successful adjustments are mostly spend-based in composition; cuts are usually undertaken on (a) transfers i.e. welfare programs (b) government wages and employment (3) Spend-based adjustments are expansionary (a) have a crowding in effect on investments (b) improve competitiveness (4) Unsuccessful adjustments are majorly tax-based in composition.
Alesina and Ardagna (1998)	Tales of Fiscal Adjustment	20 OECD Countries	1960–1992	(1) Successful adjustments occur in periods of worse fiscal stance than unsuccessful ones (a) Debt/GDP ratio is high and fast growing (b) Successful adjustments are usually exclusively EB while unsuccessful ones are TB (2) Growth rates & investment increase during and after successful adjustment episodes (3) Monetary policy

Table B2: (continued)

Study	Research question	Country sample	Period	Empirical findings
				not a critical differentiator in both successful and unsuccessful adjustments (4) Successful & expansionary adjustments are more likely influenced by composition and not size (5) Expansionary episodes are higher when spend cuts are in the form of transfers and government wage bill (6) Evidence for expansionary adjustment episodes occurring during incidences of high & growing debt levels is insignificant.
Mulas-Granados (2005)	Fiscal Adjustments and the Short-term Trade-off between Economic Growth and Equality	15 EU Member Countries	1960–2000	(1) The composition of the adjustments is crucial in determining the economic outcomes in the short run (2) Successful adjustments are mostly spend-based in composition; cuts are usually in the form of (a) in-transfers (b) public wage cuts and employment (3) Spend-based adjustments undertaken during times of (a) fiscal stress (b) low growth (c) high deficit & debt levels are expansionary by reducing (a) unemployment (b) inflation and (c) increasing growth (4) Expansionary adjustments occur via demand and supply sides.

Study	Research topic	Country sample	Period	Empirical findings
Alesina and Ardagna (2010)	Large Changes in Fiscal Policy: Taxes Versus Spending	21 OECD Countries	1970–2007	(1) Fiscal adjustments are expansionary on the demand side through the expectations of economic agents (i.e. current adjustments eliminate the need for future more disruptive adjustments)

Table B2: (continued)

Study	Research topic	Country sample	Period	Empirical findings
				(2) Fiscal adjustments are expansionary on the supply side via the labour market (public spend cuts lead to public sector job losses, increased labour supply in the economy which exerts downward pressure on private sector wages which inadvertently leads to increased profits and therefore increased investments) (3) Spend cuts + zero Tax hikes are more likely to reduce deficits and debt-to-GDP ratios (4) Spend-based adjustments are therefore expansionary.
Jayadev and Konczal (2010)	The Boom Not the Slump: The Right Time for Austerity	21 OECD Countries	1970–2007	Examine the same dataset for the same period as Alesina and Ardagna (2010) and find: (1) No evidence for expansionary austerity: (a) of the 26 successful adjustments found by Alesina and Ardagna – growth occurred for three years preceding 20 of such adjustments (b) Norway & Ireland were the exceptions that recorded growth during a recession (c) this exception could be linked to low interest rates & currency devaluation. (2) Therefore, adjustments during a slump result in lower growth & higher debt-to-GDP ratios.
IMF (2010)	Will It Hurt? Macroeconomic Effects of Fiscal Consolidation	15 OECD Countries	1980–2009	(1) Fiscal adjustments have a contractionary effect on output in the short term (2) Impact GDP negatively & unemployment rises in the short run (3) Spend-based adjustments have smaller contractionary effects than tax-based adjustments because of monetary policy intervention

Table B2: (continued)

Study	Research topic	Country sample	Period	Empirical findings
				(interest rate reduction & currency devaluation) (4) Adjustments in countries with higher perceived sovereign default risk tends to be less contractionary.
Guajardo et al. (2011)	Expansionary Austerity: New International Evidence	17 OECD Countries	1978–2009	(1) Fiscal adjustments have a contractionary effect on output in the short term (2) Tax-based adjustments are more contractionary than spend-based (3) Monetary policy (interest rate reduction & currency devaluation) intervention offset the contractionary effects of fiscal adjustments (4) Adjustments are less contractionary in economies with perceived high default sovereign risks.
Perotti (2011)	The "Austerity Myth:" Gain Without Pain?	Four OECD Countries (Denmark, Ireland, Finland & Sweden)	Den = 1982–1986; Ire = 1987–1990; Fin = 1992–1998; Swe = 1993–1998	(1) Evidence for expansionary austerity hypothesis is doubtful (2) The twin aspects of timing & exports growth casts doubt on the role of expectations& confidence in fiscal adjustments (3) The channels – (a) depreciation (b) export growth (c) interest rate reduction (d) income policies – through which growth was achieved is not applicable to many countries.
Study	**Research topic**	**Country sample**	**Period**	**Empirical findings**
Calcagno (2012)	Can Austerity Work?	17 Emerging Countries	Eight Countries = 1998–2001; nine Countries = 2009–2010	(1) Procyclical fiscal policies: lead to contraction of output & employment in the short run (2) Fail to recover (or grow) the confidence of financial agents rather undermine the confidence of households & entrepreneurs.

Table B2: (continued)

Study	Research topic	Country sample	Period	Empirical findings
Alesina (2012)	Cut Deficits by Cutting Spending	–	–	Private investment rises during episodes of spend-based adjustments as a result of: (a) rise in business confidence (b) pro-growth measures such as deregulation, labour market liberalisation and tax reforms.
Bilicka and Fuest (2012)	The Effects of Fiscal Consolidation on Short-Term Growth: A Review and Implications for the UK	24 OECD Countries	1994–2012	Factors that determine if fiscal adjustments are expansionary or contractionary include: (1) The size and composition of the adjustments (2) Initial debt levels (3) Monetary policy – interest rates and exchange rates – intervention.
Agnello, et al. (2012)	What determines the duration of a fiscal consolidation program?	17 Industrialised Countries	1978–2009	(1) Spend Cuts are more effective at delivering fiscal consolidations than Tax Hikes (2) High deficits require longer consolidation periods (3) High & Increasing debt levels undermine consolidation efforts by boosting the likelihood of a shortened duration (4) Economic, fiscal or financial crisis also act in ending the consolidation efforts earlier than ear-marked (5) Good economic conditions contribute to faster consolidations (6) Spend based consolidations are shorter in duration than Tax based consolidations (7) The size of the adjustment does not affect its duration (8)Faster consolidation duration is aided by (a) lower interest rates (b) higher inflation rates and (c) trade openness.

Table B2: (continued)

Study	Research topic	Country sample	Period	Empirical findings
Alesina and Ardagna (2013)	The Design of Fiscal Adjustments	21 OECD Countries	1970–2010	(1) Expenditure-based (EB) adjustments are more successful and lead to long-lasting reductions of Debt/GDP ratios (2) EB adjustments are associated with smaller recessions – either zero or mildly recessionary – than tax-based adjustments (3) Current spend cuts have small or zero effect on output than public investment cuts (4) EB adjustments can be expansionary when implemented with labour and product market liberalisation policies (5) EB or TB effect on output is not differentiated by the role of monetary policy.
Makin (2013)	Austerity Undone	–	–	Severe bouts of austerity can result in slow growth or recession.
Blanchard and Leigh (2013)	Fiscal consolidation: At what speed?	–	–	Spend cuts & Tax hikes have large adverse effect on output in the short term and only a small initial effect on debt to GDP ratio when fiscal multipliers are large.
Cournède et al. (2013)	Reconciling fiscal consolidation with growth and equity	–	–	Well-designed adjustment measure can curtail negative effects on growth, equity and current account imbalances.
Holden and Midthjell (2013)	Successful Fiscal Adjustments: Does Choice of Fiscal Instrument Matter?	24 OECD Countries	1970–2011	Argue against the CAPB methodology employed by Alesina and Perotti (1995) and Alesina and Ardagna (2010) and finds it suffers from reverse causality. They find as follows: (a) fiscal instrument implemented is not a determinant for

Table B2: (continued)

Study	Research topic	Country sample	Period	Empirical findings
				successful and expansionary adjustment (b) adjustment size is important for reducing debt levels and ensuring a balanced budget.
Study	**Research topic**	**Country sample**	**Period**	**Empirical findings**
Elson (2013)	Austerity Policies Increase Unemployment and Inequality – But Don't Reduce Budget Deficits and Government Borrowing	–	–	Budget deficits are reduced through output and employment stimulation rather than austerity.
International Monetary Fund 2014	Fiscal Policy and Income Inequality	27 Advanced Countries + Emerging Europe	2007–2012	Austerity leads to short-term reduction in output & employment because of wage decline.
Jorda and Taylor (2015)	The Time for Austerity: Estimating the Average Treatment Effect of Fiscal Policy	–	–	Austerity negatively affects growth (especially depressed Economies): a 1% of GDP fiscal consolidation translates into a loss of 3.5% of real GDP over five years when a country is in recessions, as opposed to 1.8% when in a boom.
Alesina, Favero and Giavazzi (2015)	The Output Effect of Fiscal Consolidation Plans	17 OECD Countries	1978–2009	Employs the narrative approach methodology of Romer and Romer (2010). Consolidations are usually multi-year by design. (1) Output effects of consolidations depend on (a) the design and composition of the adjustment (b) consistency of

Table B2: (continued)

Study	Research topic	Country sample	Period	Empirical findings
				the adjustment i.e. transitory or permanent (2) Spend-based adjustments are non/mildly recessionary & short-lived; (3) Tax-based adjustments are deeply recessionary and prolonged (4) Differences in the output effect of the 2 types of adjustment can be credited to the response of private investment rather than consumption growth (5) Fiscal adjustments which are lasting and not intermittent can be linked with very low output costs.
Paulus et al. (2017)	The design of fiscal consolidation measures in the European Union: distributional effects and implications for macro-economic recovery	Eight European Countries	2009–2012	Spend-based cuts in the form of public wage & transfer cuts impact negatively on aggregate demand.
Mirdala (2016)	Effects of Fiscal Policy Shocks in the Euro Area (Lessons Learned from Fiscal Consolidation)	19 EU Countries	1995–2015	(1) Successful adjustments are mostly implemented during pre-crisis periods (a) are single-year episodes (b) mostly EB while some are EB + TB (c) mostly resulted in positive growth output (2) Unsuccessful adjustments are usually implemented during crisis periods (a) are single-year episodes (b) mostly TB while some were

Table B2: (continued)

Study	Research topic	Country sample	Period	Empirical findings
				TB + EB (c) mostly resulted in negative output growth (3) Exchange rate policies + improved price competitiveness not significant determinants of successful adjustments (4) EB adjustments are more suitable for multi-year consolidations due to less distortionary output effects in subsequent years (5) TB adjustments are better suited for single-year plans due to less distortionary output effects in the first (current) year than subsequent years.
Brinca et al. 2020	Fiscal Consolidation Programs and Income Inequality	13 European Countries	2007–2013	(1) Austerity (spend or tax-based) leads to a decrease in output (2) Output contraction is caused by decrease in labour supply.
Castro (2018)	Functional Components of Public Expenditure, Fiscal Consolidations and Economic Activity	15 EU Countries	1990–2012	(1) Spending-based adjustments (especially in the form of education, public order & recreation) undermine economic growth (2) Unemployment rises.

Study	Research topic	Country sample	Period	Empirical findings
Alesina et al. (2018)	What Do We Know About the Effects of Austerity?	16 OECD Countries	1978–2014	Employs the narrative approach methodology of Romer and Romer (2010): (1) EB adjustments are mildly recessionary (2) Instances of occurring EB output loss as a result of very tight measures (3) Instances of output loss are short-lived when cuts

Table B2: (continued)

Study	Research topic	Country sample	Period	Empirical findings
				are in the form of transfers and entitlement programs (4) Instances of expansionary adjustments occur during non-crisis periods (5) TB adjustments are deeply recessionary (6) Private demand and investment growth respond positively to EB measures and negatively to TB measures (7) Consumption and net export not affected by adjustment instrument (8) Timing for adjustment implementation not significant for either type of adjustment (9) Multipliers are lower for EB measures than TB (10) Multipliers during recessionary periods are lower for both types (11) Business confidence more associated with EB measures than TB (12) Implemented adjustments are usually multi-year in duration.
Alesina et al. (2018)	Climbing Out of Debt	16 OECD Countries	1981–2014	(1) EB adjustments are mildly recessionary and less harmful to growth than TB (2) EB adjustments are expansionary when implemented during periods of economic growth (3) TB adjustments are associated with large and long-lasting recessions (4) Private investment responds positively to EB measures and negatively to TB measures (5) EB adjustments are more effective in reducing deficit levels with minimal effects on output.
Breuer (2019)	Expansionary Austerity and Reverse Causality: A Critique of	21 OECD Countries	1970–2007	(1) Examine the same dataset for the same period as Alesina & Ardagna (2010) and find no basis for expansionary austerity (2) Spend-based adjustments decrease output in the short run.

Table B2: (continued)

Study	Research topic	Country sample	Period	Empirical findings
	the Conventional Approach			
Ciminelli et al. 2019	The Composition Effects of Tax-based Consolidation on Income Inequality	16 OECD Countries	1978–2012	Tax-based adjustments lead to contraction in economic activity.
Alesina et al. (2019)	Austerity: When It Works and When It Doesn't	16 OECD Countries	1981–2014	(1) Spending-based adjustments are less harmful to growth than tax-based adjustments (2) Spend-based adjustments are mildly recessionary in short term while economy grows in the medium term (3) Spend-based adjustments implemented during periods of economic growth have zero output cost on average (4) Austerity can be expansionary if spend cuts are accompanied by increases in private consumption & investment as well as net exports (5) Spend cuts on entitlement programs & government transfers are less harmful than tax increases (6) Tax-based adjustments are deeply recessionary in short & medium term (7) Spend-based + tax-based adjustments work better and faster at reducing debt levels when initial debt level is low.
Born etal. (2020)	Does Austerity Pay Off?	26 Developed and Emerging Countries	1990–2013	EB adjustments during times of severe fiscal stress induces the default premium to rise.

Table B3: Fiscal austerity and income inequality.

Study	Research topic	Country sample	Period	Empirical findings
Mulas-Granados (2005)	Fiscal Adjustments and the Short-term Trade-off between Economic Growth and Equality	15 EU Countries	1960–2000	(1) Spend-based adjustments significantly increase income inequality more than tax-based instruments (2) Tax-based adjustments reduce incidences of rising income inequality.
Agnello and Sousa (2011)	Fiscal Consolidation and Income Inequality	18 Industrialised Countries	1980–2010	Austerity leads to: (1) significant increase in inequality during and post adjustment implementation (b) Top 1% income share rises during and significantly increases post adjustment periods (2) Composition of the adjustment matters: (a) spend-based adjustments are more detrimental than tax-based adjustments (3) Timing of the adjustments matter: (a) adjustments during non-crisis lead to an increase in inequality; (b) impact during crisis is negligible (c) adjustments post crisis lead to a significant rise in inequality (d) adjustments implemented during inflation boosts income inequality (4) Kuznet's relationship is confirmed: (a) inequality increases during economic development but flattens out with increases in per capita GDP (5) Trade openness matters: as openness increases, income inequality increases.
Agnello and Sousa (2012)	How Does Fiscal Consolidation Impact on Income Inequality?	18 Industrialised Countries	1980–2010	Austerity leads to: (1) Significant increase in inequality (2) Composition of the adjustment matters: (a) spend-based adjustments are detrimental i.e. regressive (b) Tax hikes (particularly at top levels) lead to decreasing inequality (4) Timing of the adjustments matter: (a) adjustments during non-crisis lead to an increase in inequality; (b) during crisis is negligible (c) adjustments post crisis lead to a substantial rise in inequality

Table B3: (continued)

Study	Research topic	Country sample	Period	Empirical findings
				(d) adjustments implemented during inflation boosts income inequality (5) Size of the adjustment matters: (a) spend cuts larger than 0.77% of GDP are detrimental on income gaps (b) tax increases (particularly at the top) greater than 0.57% of GDP lead to decrease in inequality
Loungani (2013)	"Austerity" and Inequality: Is there a Link?	17 OECD Countries	1978–2009	Austerity leads to: (1) Significant increase in inequality (2) Decline in labour's share of income (3) Increases in long-term unemployment.
Ball et al. (2013)	The Distributional Effects of Fiscal Consolidation	17 OECD Countries	1978–2009	Austerity leads to: (1) Significant increase in inequality levels in short & medium term (2) Significant & long-lasting negative effect on labour's share of income (3) Larger negative effects on labour share of income than profit & rent incomes (4) Labour income levels fall more with spend-based adjustments (5) Significant & persistent increase in long-term unemployment over the medium term. (6) Spend-based adjustments have larger distributional effects (are more detrimental to inequality) than tax-based adjustments.
Elson (2013)	Austerity Policies Increase Unemployment and Inequality	–	–	Austerity increases income inequality and unemployment.
Cournède et al. (2013)	Reconciling Fiscal Consolidation with Growth and Equity	–	–	Spend cuts (especially benefits) aggravate income inequality.
Woo et al. (2013)	Distributional Consequences of Fiscal	17 OECD Countries & 48 Advanced &	17 Countries = 1978–2009; 48	(1) Austerity increases income inequality (2) The cumulative effect of austerity on inequality peaks between 5 and 6 years and gradually starts fading

Table B3: (continued)

Study	Research topic	Country sample	Period	Empirical findings
	Consolidation and the Role of Fiscal Policy: What Do the Data Say?	Emerging Countries	Coun-tries = 1980–2010	by the 10th year (3) Spend-based cuts worsen inequality while the outcome for tax-based plans are mixed: direct taxes (through progressivity) tend to lower inequality while indirect taxes tend to be regressive (4) Spend-based cuts in the form of social benefits worsen inequality more than other spend cuts such as public wage cuts (5) Adjustments implemented during recessions have greater negative impact (6) Large sized adjustments worsen inequality (7) Adjustments increase inequality especially through the unemployment channel.
Furceri and Loungani (2013)	Who Let the Gini Out?: Capital account liberalization and fiscal consolidation confer benefits but also lead to increased inequality	17 Advanced Economies	1978–2009	Fiscal Austerity leads to an increase in income inequality through the channels of: (a) social benefit cuts (b) public sector wage cut © public employment cuts (d) increase in long-term unemployment.
International Monetary Fund 2014	Fiscal Policy and Income Inequality	27 Countries (Advanced Economies & Emerging Europe)	2007–2012	Fiscal Consolidations lead to an increase in income inequality. For Developed Countries: Austerity: (1) Leads to increase in inequality through impacts on market & disposable income (2) The duration & magnitude of effects depend on the size of automatic stabilisers (3) The composition

Table B3: (continued)

Study	Research topic	Country sample	Period	Empirical findings
				& pace of adjustments influence the impact on inequality. (4) A progressive mix of austerity measures help to alleviate its adverse effects on inequality even though it still leads to reduced incomes for the poor in the short run. For Developing Countries: (1) Austerity has adverse effects on inequality in the short-term but in the long-term, effects are positive (2) Positive long run effects could be because government spending in these economies are not progressive, so when spend cuts are embarked on, the effects are not usually damaging to inequality.
Clements et al. (2014)	Taxing, Spending, and Inequality – What Is to be Done?	27 Advanced Economies & Emerging Europe	2007–2012	(1) Austerity increases market income inequality (2) Progressive spend-cuts (deeper public sector wage cuts at the top than the bottom; steeper benefits reduction for high pensions) + progressive income taxes tend to reduce income inequality.
Clements et al. (2015)	Inequality and Fiscal Policy	49 Advanced & Developing Economies	1945–2012	(1) Austerity affects income inequality (2) The composition & pace of adjustments matter (3) Spend-based adjustments worsen inequality than tax-based ones (4) Income inequality increases if spend-based and tax-based adjustments are regressive.
Jalles (2017)	How Do Fiscal Adjustments Change the	27 Emerging Countries	1980–2014	(1) Fiscal Austerity leads to an increase in income inequality and reduces the redistributive role of fiscal policy (2) Spend-based adjustments are

Table B3: (continued)

Study	Research topic	Country sample	Period	Empirical findings
	Income Distribution in Emerging Market Economies?			more detrimental to income inequality than tax-based plans (3) Adjustments during bad times raise income inequality.
Brinca et al. 2020	Fiscal Consolidation Programs and Income Inequality	13 European Countries	2007–2013	(1) Austerity has more recessive impact on economies with high income inequality (2) Spend-based cuts amplify income inequality.

Study	Research topic	Country sample	Period	Empirical findings
Klein and Winkler (2019)	Austerity, Inequality, and Private Debt Overhang	–	–	(1) Austerity raises inequality when private debt is high (2) This occurs through three channels – earnings, income & savings (3) Inequality significantly increases during periods of high private debt overhang regardless of the economy's position in the business cycle (4) Austerity has no apparent effect on inequality when private debt is low irrespective of the economy's position in the business cycle.
Paulus et al. (2017)	The Design of Fiscal Consolidation Measures in the European Union:	Eight European Countries	2009–2012	Spend cuts (public wage cuts & in-transfers) affect more liquidity constrained households than Tax hikes.

Table B3: (continued)

Study	Research topic	Country sample	Period	Empirical findings
	Distributional Effects and Implications for Macro-Economic Recovery			
Bova et al. (2018)	Austerity and Inequality: The size and Composition of Fiscal Adjustment Matter	17 OECD Countries	1978–2009	(1) Austerity increases income inequality particularly through their effects on unemployment (2) Spend-based adjustments significantly worsen inequality relative to tax-based measures (3) The timing & size of the adjustment matters (4) The country's position in the business cycle matters (5) Labour market condition matters (6) Tax-based adjustments have mixed net effects on inequality: direct taxes are progressive whilst indirect taxes are regressive (7) Cuts targeted at social benefits tend to worsen inequality relative to other cuts (8) Progressive taxation + targeted social benefits & subsidies when introduced during spend-based adjustments help to alleviate some of the negative distributional effects of adjustments.
Castro (2018)	Functional Components of Public Expenditure, Fiscal Consolidations and Economic Activity	15 EU Countries	1990–2012	Income inequality increases when spend cuts in the form of social protection expenses are implemented.

Table B3: (continued)

Study	Research topic	Country sample	Period	Empirical findings
Heimberger (2020)	The Dynamic Effects of Fiscal Consolidation Episodes on Income Inequality: Evidence for 17 OECD Countries over 1978–2013	17 OECD Countries	1978–2013	(1) Austerity increases income inequality (2) The composition of the adjustment matters (3) Spend-based adjustments are more detrimental than tax-based measures (4) The timing (aftermath of a crisis rather than a non-crisis period; low growth rather than high growth) & size of the adjustment matters – large rather than small (5) The duration is long rather than short. Fiscal Austerity has long lasting effects on income inequality: (a) it decreases demand, lowers growth and pushes up unemployment thereby leading to a more unequal distribution of market incomes (b) Spend cuts on public programs beneficial to the poor increases disposable income inequality.
Ciminelli et al. 2019	The Composition Effects of Tax-based Consolidation on Income Inequality	16 OECD Countries	1978–2012	(1) Tax-based adjustments lead to a reduction in income inequality (2) Income inequality effects through the labour supply channel could differ. Higher direct taxes decrease net wage thereby causing: (a) income effects or (b) substitution effects (3) Indirect taxes reduce income inequality more than direct taxes through its impact on the labour supply channel (4) Personal Income Taxes increase equity and reduce equity-efficiency trade-off.

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