Growth models in advanced countries before and after the 2008 crisis: competitiveness, financial cycles and austerity

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Abstract

The paper updates the pre-crisis growth models debate through a cross-country analysis of macroeconomic growth drivers after the 2008 crisis. It examines the role of competitiveness, finance, and fiscal policy as sources of foreign, private and public demand. While all countries experienced a slowdown in economic growth and a stronger export-orientation, macroeconomic performance has been highly uneven. Growth drivers have partly changed, calling for reconsideration of some key topics in the growth models debate. We argue that (i) non-price competitiveness has gained importance compared to price competitiveness, (ii) debt-driven growth models are cyclical and financial booms come with busts and debt overhang, (iii) post-crisis growth models are strongly shaped by fiscal policy. Northern Europe reinforced its export-orientation despite some wage and property price inflation, which has not (yet) come with a surge in household debt. Formerly debt-driven southern Europe underwent an asset-price driven depression, exacerbated by contractionary austerity policies. While also affected by the downturn of a financial cycle, the English-speaking countries sustained demand through slower fiscal consolidation. Eastern Europe avoided the damaging effects of housing busts and austerity and benefitted from an improvement in export sophistication prior to the crisis.

Key words: growth models, comparative political economy, post-Keynesian macroeconomics

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1 Introduction

Since the global financial and Eurozone crisis, there has been a shift within comparative political economy (CPE) from a focus on static institutional equilibria (in particular in the Varieties of Capitalism (VoC) approach) towards demand-oriented analyses of growth models (Baccaro and Pontusson, 2016; Hope and Soskice, 2016; Johnston and Regan, 2018; Hall, 2018; Schwartz and Tranøy, 2019). This growth model turn was influenced by the CPE debate on the Eurozone crisis and its macroeconomic origins (see Nölke 2016 for a survey). The crisis is now widely regarded as the outcome of two divergent growth models, a highly competitive export-led regime and a domestic-demand led regime, whose joint monetary integration led to severe macroeconomic imbalances (Johnston and Regan, 2016; Iversen et al., 2016; Hall, 2018). Several authors pointed to the role of asset price inflation and private debt in the Anglo-liberal growth model (Crouch, 2009; Hay, 2009; Hay and Smith, 2013), and post-Keynesian macroeconomists highlighted the instability of export-driven and debt-driven growth in the form of rising export-dependence and financial fragility in the Eurozone (Lavoie and Stockhammer, 2013; Stockhammer, 2016). Given the inherent instability of these growth models which culminated in the Eurozone crisis, the question arises whether subsequent adjustments have led to a breakdown and restructuring of growth models, requiring a reconsideration of the export-driven/debt-driven growth model distinction.

This paper embraces the focus on aggregate demand endorsed by the growth models approach. Analyses of the pre-crisis period have mostly considered drivers of export and consumption demand, such as price competitiveness and real wage growth (Hall, 2014; Baccaro and Pontusson, 2016; Johnston and Regan, 2016). However, total aggregate demand consists of foreign demand (net exports), private demand (consumption and investment), and public demand (government spending and taxation). We argue that an analysis of the post-crisis period requires a consideration of all three components of aggregate demand.

Firstly, to assess potential drivers of export demand in the post-crisis period, we draw on debates in CPE and heterodox macroeconomics, where some authors emphasise the role of price competitiveness and wage inflation (Flassbeck and Lapavitsas, 2013; Johnston et al., 2014; Hall, 2014), while others regard non-price competitiveness as more important (Simonazzi et al., 2013; Storm and Naastepad, 2016). In the post-crisis period, many countries aimed to improve their export performance through wage deflation. This raises the question of how successful this strategy has been compared to efforts to improve competitiveness through quality upgrading. Secondly, private demand prior to the crisis was strongly affected by asset price inflation in several countries (Crouch, 2009; Hay, 2009; Hay and Smith, 2013). More generally, the financialisation literature regards the increasing role of finance as a secular process in which many countries became more debt dependent (van der Zwan, 2014). However, the post-crisis period is characterised by a bust of asset prices and deleveraging. Accordingly, financialisation is not just a unidirectional process, but will involve volatile swings in leverage. To understand this phenomenon, we integrate the Minskyan notion of financial cycles (Palley, 2011; Guttmann, 2016) into the growth models analysis. Finance-dominated accumulation regimes will not only have periods of debt-driven growth, but also phases of debt-driven depression, where debt overhang and house price busts discourage private spending. Thirdly,

public demand management through fiscal policy has largely been absent from the pre-crisis growth model debate; arguably because there was relatively little variation across countries. However, in the post-crisis period, countries strongly differ in their fiscal strategy which potentially becomes a strong growth driver because fiscal multipliers rise during recessions (Gechert and Rannenberg, 2018). While large parts of the political elite have advocated austerity even during a recession (backed by the idea of expansionary austerity, see Alesina and Perotti, 1997), Keynesians and political economists argue that austerity worsens recessions (Fontana and Sawyer, 2011; Blyth, 2013; Truger, 2013; Stockhammer et al., 2019). For the analysis of growth models, this means that fiscal policy has to be considered in its impact on growth.

The contribution of the present paper is a cross-country analysis of macroeconomic growth drivers in the period after the GFC. We consider four country groups whose pre-crisis developments have received strong attention (export-driven continental northern Europe, debt-driven southern Europe, the catching-up Visegrád countries of eastern Europe, and the English-speaking financial centres UK and USA) and analyse how they have fared after the crisis. By examining the role of competitiveness for export demand and of finance or private demand, the paper updates pre-crisis growth model analyses. By examining public demand, the paper considers fiscal policy as further potential growth driver which has largely been absent in the growth models debate so far.

The studies closest to ours are Hein (2019) and Hein et al. (2019), which assess post-crisis sectoral balances and classify countries as debt-led, export-led or domestic demand-led based on a decomposition of GDP growth rates. This allows for a descriptive categorisation of growth regimes based on within-country changes. We go beyond that by assessing potential growth drivers, such as export sophistication, property prices and fiscal balances. We compare bivariate cross-country correlations of these potential growth drivers with national growth rates in the pre- and post-crisis period. Thereby, we empirically assess the relative empirical support for different growth drivers. To be clear, these correlations do not establish causality, but they provide useful insights into the relevance of different factors that are highlighted in the theoretical literature; and a substantive correlation is a necessary, if not sufficient, condition for them.

We find that while all countries experienced a slowdown in economic growth in the post-crisis period, macroeconomic performances have been highly uneven. The post-crisis period involved a stronger export-orientation of all countries we consider, except the English-speaking ones. However, this is associated with a comparatively weak growth performance. Growth performances are strongly associated with non-price competitiveness, (contractionary) fiscal policy, and the downturn phase of a financial cycle. Price competitiveness in the form of wage restraint, while often identified as a key factor in the Eurozone crisis, appears to be less important for post-crisis growth dynamics.

Continental northern Europe has reinforced its export-orientation, supported by high levels of export sophistication, albeit with lower growth. While property prices are on the rise, this has not yet come with an increase in household debt that would undermine financial stability. The previously debt-driven growth models of southern Europe underwent an asset-price and

austerity-driven depression, as the financial cycle assumed a downward trajectory in the form of bursting housing bubbles and deleveraging. Contractionary fiscal austerity worsened the recession, and wage deflation enforced by structural reforms has not transformed southern Europe into an export-driven growth model. While also affected by the downturn of the financial cycle in the form of strong household deleveraging, the experience of the English-speaking financial centres may be described as fiscally mitigated asset price-driven stagnation, as they sustained domestic demand through counter-cyclical fiscal policy. Unlike southern Europe, the English-speaking countries thereby managed to partially replace asset-price driven private demand through public demand management. Lastly, the growth performance of eastern Europe's Visegrád countries stands out as they largely avoided housing busts and recessionary austerity policies. They have improved their export sophistication through FDI and export-based catching up and now appear to pursue an export-oriented growth model.

Overall, our findings call for a greater consideration of (i) non-price competitiveness as a source of foreign demand, (ii) financial cycles in property prices and debt whose contraction depress private demand; and (iii) the role fiscal policy in public demand, particularly in times of stagnation with debt-overhang.

The remaining part of the paper is structured as follows. Section 2 discusses the role of competitiveness, finance and fiscal policy as drivers of growth in CPE and heterodox macroeconomics. Section 3 examines their empirical relevance of these drivers in the pre- and post-crisis period. Section 4 theorises post-crisis growth models that emerge from our empirical analysis and discusses implications for the growth model debate. The final section concludes.

2 Competitiveness, finance, and fiscal policy as growth drivers

In an influential contribution, Baccaro and Pontusson (2016) introduced the growth model perspective into CPE, which emphasises the role of aggregate demand for economic growth. They offered an analysis of cross-country differences in demand formation as an alternative to the more supply-side focused VoC approach to CPE. Applying this perspective to Germany, Italy, Sweden and the United Kingdom, they argued that pre-crisis growth in Germany was driven by wage suppression in favour of export growth, while the United Kingdom boosted consumption through real wage growth and debt. Sweden enjoyed more balanced growth, while Italy failed to stimulate growth. This growth model approach to CPE was critically discussed and refined in several contributions (Hope and Soskice, 2016; Johnston and Regan, 2018; Hall, 2018; Schwartz and Tranøy, 2019). However, growth model analyses of the pre-crisis period mainly focused on consumption and export demand, identifying income distribution and export competitiveness through wage restraint as key factors.

Our analysis of post-crisis growth models broadens this perspective by considering potential drivers of all components of aggregate demand: foreign, private, and public. We map these three components to (i) competitiveness as a source of export demand, to (ii) finance as a source of private demand, and to (iii) fiscal policy as a source of public demand. To understand the relevance of these factors for post-crisis growth, we draw on theoretical debates in CPE and heterodox macroeconomics.

Competitiveness

Consider first competitiveness as a key driver of export demand. Competitiveness is at the analytical core of the VoC approach that analyses the institutional conditions that render domestic firms internationally competitive. One can distinguish between price competitiveness, as captured by the real exchange rate, and non-price competitiveness, which can be proxied by the quality and uniqueness of exported goods. Differences in price competitiveness have been highlighted both by VoC scholars (Johnston et al., 2014; Hall, 2014; Iversen et al., 2016; Johnston and Regan, 2016) and some heterodox macroeconomists (Flassbeck and Lapavitsas, 2013; Bibow, 2013) as a determinant of trade imbalances. It has been argued that while coordinated market economies (CMEs) (e.g. the Netherlands and Germany) and liberal market economies (LMEs) (e.g. the United Kingdom and United States) managed to keep wage inflation low, mixed market economies (MMEs) (e.g. Italy, Spain, Portugal and Greece) underwent a loss in international price competitiveness due to comparatively high wage growth, which translated into higher inflation rates in the pre-crisis period. CMEs are characterised by highly coordinated wage-setting institutions which keep nominal unit labour costs (NULC) growth in check and thereby support export sectors. LMEs, by contrast, exhibit weak trade unions and specialise on financial services with low NULC growth (Hall, 2014). In contrast, MMEs with a low degree of wage bargaining coordination undergo strong inflationary pressures (Johnston and Regan, 2016).

The other dimension of competitiveness is the quality and uniqueness of exports, which may stimulate export demand independently of prices. From a VoC perspective, the institutional configuration of CMEs fosters incremental innovation through close links between technical universities and research systems, vocational training, and co-operative employer-employee relations that are conducive to investment in skills and high-value added production (Iversen et al., 2016; Hall, 2018). Vermeiren (2017) argues that especially for CMEs, such non-price competitiveness in the production of quality-differentiated goods is important as these goods tend to be price-inelastic. The importance of non-price competitiveness has also been emphasised by heterodox macroeconomists (Simonazzi et al., 2013; Storm and Naastepad 2016, Gräbner et al., 2017). However, unlike VoC, Storm and Naastepad (2016) do not view both dimensions of competitiveness as equally important. They summarise evidence showing that the price elasticities of major Eurozone countries are close to zero and that net exports are mostly driven by domestic and foreign demand. In times where emerging markets increasingly dominate low-technology export markets, countries that are specialised in complex goods are more successful in securing their export market shares. Prior to the crisis, southern European countries were specialised in sectors with low productivity-enhancing or innovation potential. These sectors produce goods with a low-income elasticity of export demand, whose export markets have therefore grown less rapidly than the markets for high-technology goods. Northern European countries, by contrast, managed to develop innovative sectors and thereby conquered the highest value-added segments of the export market.

Finance

The private component of aggregate demand (consumption and investment) is strongly affected by finance. CPE analyses of ‘privatised Keynesianism’ (Crouch, 2009) and the ‘Anglo-liberal

growth model' (Hay, 2009; Hay and Smith, 2013) identified property price bubbles as key drivers of consumption demand that came with rising household debt. Similarly, post-Keynesian macroeconomists argued that financialisation in the form of property price bubbles and rising household debt turned southern European countries into unstable debt-driven growth models (Hein, 2013; Stockhammer et al., 2016). With respect to the pre-crisis period, Stockhammer et al. (2016) identify southern Europe as debt-driven growth models that witnessed strong growth of property prices and household debt. By contrast, export-driven continental northern Europe (in particular Austria and Germany) exhibits a much lower degree of household financialisation and thus lacked strong drivers of private demand. Key to this view is that financialisation comes with asset price inflation, which has expansionary effects on residential investment and consumption through wealth effects (Stockhammer and Wildauer, 2016). If households finance their spending through credit, using real estate as collateral, real estate price bubbles are accompanied by rising household debt.

We share the focus on financialisation as an important driver of private demand. However, we argue that an understanding of the post-crisis period requires a re-orientation from conceiving financialisation only as a secular phenomenon towards one with a cyclical component as well. Recent macroeconomic research examines financial cycles, which are periodic ups and downs in private credit and property prices. These cycles span on average over 16 years and are much more volatile than fluctuations in output (Borio, 2014). The existence of such financial cycles accords well with the Minskyan branch of post-Keynesian economics, which argues that financial crises are a cyclical phenomenon. During economic booms, economic agents successively adopt riskier financial positions to finance expenditures, so that financial fragility in the macroeconomy increases. Eventually, rising fragility drags down spending and thus aggregate demand; cash flows decline, and a contractionary deleveraging process sets in. While Minsky's (2016) original analyses focussed on corporate debt and stock prices, recent formal models extend his framework to household debt and property price cycles (Dieci and Westerhoff, 2012; Ryoo, 2016). There is also a more institutionalist Minskyan literature that argues that these cycles can assume the form of long waves, as financial innovation and deregulation may allow for extended upswings (Palley, 2011; Guttmann, 2016, chap. 2). This has important implications for growth models, as it suggests that household financialisation is to some extent a cyclical phenomenon, despite a more general tendency towards increased mortgage lending in the last four decades. Accordingly, property price-driven growth episodes must be expected to be short-lived and followed by downturns of the financial cycle that drag down private demand (see also Hay and Smith, 2013).

Fiscal policy

Lastly, we consider fiscal policy as a source of public demand. While there is a rich CPE literature on sectoral interests and distributional struggles across different fiscal and tax regimes (Haffert, 2019; Haffert and Mertens, 2019; Martin and Gabay, 2013; Martin, 2015), fiscal policy has received relatively little attention as a potential growth driver.[1] However, its importance came to the fore in the post-crisis period, which was characterised by fierce debates

[1] Hope and Soskice (2016) criticise the omission of fiscal policy in Baccaro and Pontusson (2016).

around the effects of fiscal austerity. A prominent argument within mainstream economics claims negative effects of high public debt ratios on economic growth (Reinhart and Rogoff, 2010) and expansionary effects of fiscal consolidation, as households expect lower future tax burdens and because cuts to public salaries reduce labour cost (Alesina and Perotti, 1997). These ideas were highly influential in the US-American and European policy debate after the crisis and provided intellectual support for fiscal consolidation after the Great Recession.

Political economists as well as some New Keynesian mainstream economists have been highly critical of austerity. Blyth (2013) traces the historical and intellectual origins of austerity and presents several historical cases where austerity amplified downturns. From a Keynesian perspective, fiscal spending is a key component of aggregate demand and is expansionary through multiplier effects on private spending. In this view, austerity in the post-crisis period worsened the recession (Fontana and Sawyer, 2011; Truger, 2013; Stockhammer et al., 2019). This argument is supported by recent econometric findings that fiscal multipliers are substantially larger during recessions compared to normal times (Gechert and Rannenberg, 2018). Post-Keynesians proposed a socio-economic explanation for this phenomenon, based on the idea that the propensity to consume of higher social classes varies over the business cycle (Charles et al., 2015). When income declines during recessions, high-income classes reduce their saving propensity to maintain conspicuous consumption expenditures, hence increasing the multiplier effect of government spending on consumption. Austerity policies in the aftermath of the crisis are therefore predicted to be especially contractionary. This view is now also shared by parts of the economic mainstream (e.g. Blanchard and Leigh, 2014; Fatás and Summers, 2018), who emphasise that multiplier effects will be larger in a crisis when interest rates are low. They also highlight that in the presence of hysteresis effects fiscal policy will have long-lasting effects. For the growth model debate this means fiscal policy deserve greater consideration in the analysis of growth drivers.

Table 1: Overview of key growth drivers

	Competitiveness		Finance		Fiscal policy	
Dimensions	Price competitiveness	Non-price competitiveness	Financialisation and debt-driven growth	Financial cycles	Contractionary austerity	Expansionary austerity
Aggregate demand-component	Foreign (exports)		Private (consumption, residential investment)		Public (government spending and taxation)	
Key variables	Nominal unit labour costs	Measure of export sophistication	Property prices, household debt		Fiscal balance	
Important contributions	Johnston et al., 2014; Hall, 2014; Flassbeck and Lapavitsas, 2013; Bibow, 2013	Simonazzi et al., 2013; Storm and Naastepad 2016; Iversen et al., 2016; Hall, 2018; Gräbner et al. 2017	Crouch, 2009; Hay, 2009; Hein, 2013; Hay and Smith, 2013; Fuller, 2015; Stockhammer et al., 2016	Ryoo 2016; Dieci and Westerhoff 2012; Palley, 2011; Guttmann, 2016, Borio, 2014	Fontana and Sawyer, 2011; Blyth, 2013; Truger, 2013; Blanchard and Leigh, 2014; Fatás and Summers, 2018; Stockhammer et al., 2019	Alesina and Perotti, 1997

Table 1 summarises the three key debates on growth drivers that will inform our analysis of growth models in the post-crisis period. The first row identifies two dimensions for each key concept, whose relationship however differ. While price and non-price competitiveness do not logically exclude each other, they are often treated as opposites (e.g. Storm and Naastepad 2016). Debt-driven growth and financial cycles may go in hand, and authors analysing debt-driven growth have been eager to highlight the instability inherent in these growth models. By contrast, contractionary and expansionary austerity are theoretical opposites.

Issues of competitiveness and debt-driven growth featured prominently in CPE analyses of the pre-crisis period. By contrast, the role of the financial cycle and of fiscal policy for growth models has received less attention but is, as we will show, important for an understanding of the post-crisis period.

3 Growth drivers before and after the crisis

To examine the role of competitiveness, finance, and fiscal policy for growth, we examine the association of these growth drivers with economic growth in the pre-and post-crisis period. Our choice of countries aims to strike a balance between diversity and parsimony. The aim is not to develop a novel and comprehensive classification of advanced countries into post-crisis growth models. Instead, we are interested in how a representative number of countries that were at the centre of pre-crisis growth model debates have fared since the crisis. To this end, we follow existing pre-crisis classifications and group economies into continental northern Europe (Austria, Germany, the Netherlands),[2] southern Europe represented by the GIIPS (Greece, Ireland, Italy, Portugal, Spain),[3] the Visegrád eastern European countries (Czech Republic, Hungary, Poland, Slovakia) plus Slovenia,[4] and the English-speaking financial centres (United Kingdom, USA).[5] France is difficult to classify as it exhibits some features of a southern country, such as a deteriorating current account position after the introduction of the euro, but was not significantly affected by the sovereign debt crisis. We add it as a separate country. Alternative groupings are conceivable. Our grouping serves the purpose of summarising broader post-crisis tendencies in a stylized manner, but our examination of growth drivers does not hinge on the grouping.[6]

Table 2 reports two macroeconomic performance indicators for the pre-crisis period (2000-2007): the average real gross national income (GNI) growth rate[7] and the average current account to GNI ratio. Overall, the pre-crisis period was a phase of fast but uneven income growth (3.3% on average). Continental northern Europe is known for its strong export performance prior to the crisis (with average current account surpluses of around 3.5% of GNI) and moderate growth prior to the crisis (2.2% on average). Southern Europe had a strong growth performance (3% on average) but was then hit hard by the crisis. In contrast to northern Europe, the southern countries incurred large current account deficits prior to the crisis (-5.9%

[2] The classification of these countries as a northern group follows Stockhammer et al. (2016), Johnston and Regan (2016) and Iversen et al. (2016). One could further consider including Belgium and Finland in this group, as well as the addition of a separate group of Scandinavian countries. We refrained from it for the sake of brevity.

[3] This grouping of the 'South' follows Stockhammer et al. (2016), Johnston and Regan (2016) and Iversen et al. (2016). Although geographically not part of southern Europe, Ireland is often included in the southern group as it was at the heart of the Eurozone crisis. Italy is a borderline case, as it did not undergo the strong boom-bust cycle of the other countries in the group but is often considered as a southern country.

[4] Bohle (2018) considers the Visegrád economies and the Baltic states (Estonia, Latvia, Lithuania). She shows that in contrast to the Visegrád economies, the Baltic states rather fit into the category of debt-driven growth. We exclude the latter for parsimony. Instead we add the Eurozone member Slovenia which is also considered in Stockhammer et al. (2016).

[5] While Hay and Smith (2013) propose an Anglo-liberal growth model consisting of the United Kingdom and Ireland, we prefer to group together the United Kingdom and the USA due to their role of financial centres with sovereign currencies.

[6] We further checked the robustness of our main findings to the inclusion of Australia, Canada, and New Zealand, as well as Denmark, Finland, Norway and Sweden. Except for the link between non-price competitiveness and growth in the post-crisis period (see footnote 8 below), all findings were robust (or became stronger). For this reason, we prefer the narrower sample.

[7] GNI is defined as the gross domestic product (GDP) plus net income received from abroad. We prefer GNI over GDP because it measures the final income that accrues to an economy's residents. For countries such as Ireland that hosts many large multinational corporations that distribute profits to foreign owners, there is a large gap between GDP and GNI. For most other countries, there is little difference between GNI and GDP.

of GNI on average). The eastern European group of post-communist economies have undergone a foreign direct investment (FDI)-based catching-up process after opening up to the West in the 1990s (Bohle, 2018), with high growth rates (4.5% on average) and current account deficits (around -4.7% on average) in the run-up to the crisis. Lastly, the English-speaking financial hubs underwent moderate growth (around 2.8%) prior to the crisis with a negative external balance of -3.6% of GNI.

Table 2: Macroeconomic performance, pre-crisis and post-crisis period

	Real GNI growth (%), average		Current account (%GNI), average	
	2000-2007	2008-2017	2000-2007	2008-2017
Austria	2.62	0.95	3.01	2.35
Germany	1.9	1.31	2.85	6.78
Netherlands	2.1	0.92	4.74	7.98
Northern Countries (Mean)	2.21	1.06	3.54	5.7
France	2.15	0.83	0.6	-0.85
Greece	3.6	-2.55	-8.17	-5.68
Ireland*	5.32	1.09	-4.69	-1.61
Italy	1.52	-0.45	-0.55	-0.21
Portugal	1.18	0.05	-9.66	-3.91
Spain	3.53	0.54	-6.11	-1.35
Southern Countries (Mean) w/o France	3.03	-0.26	-5.85	-2.55
Czech Republic	5.7	1.58	-4.34	-0.92
Hungary	3.63	1.38	-7.68	1.22
Poland	3.79	3.29	-4.19	-3.04
Slovakia	5.41	2.54	-5.52	-2.18
Slovenia	4.05	0.73	-1.6	2.42
Eastern Countries (Mean)	4.52	1.9	-4.67	-0.5
United Kingdom	2.83	1	-2.46	-4.11
United States	2.78	1.52	-4.69	-2.62
English-speaking Countries (Mean)	2.83	1.18	-3.57	-3.37
Total Mean	3.26	0.92	-3.03	-0.36
Cross-country standard deviation	1.38	1.27	4.24	3.76

Sources: World Bank, CSO Ireland.
Notes: GNI: gross national income. *Modified GNI (total period) and modified current account (2008-2017) (see Table A1).

The post-crisis period (2008-2017) is overall characterised by sluggish growth rates of around 0.9% (compared to 3.3% in 2000-2007). Current account positions significantly improved from a pre-crisis mean of -3% of GNI to -0.4% in the post-crisis period.[8] However, there are notable differences across countries. The northern countries maintained positive but low growth rates of around 1% and managed to deepen their strong export-orientation with an average current account balance of 5.7% of GDP (compared to 3.5% prior to the crisis). Southern Europe, in contrast, experienced a depression (-0.3% income growth on average) – however, with strong intra-group heterogeneity. Greece clearly suffered the most with an average decline in output of -2.6% per year, while Italy, Portugal and Spain had average growth rates close to zero. Ireland is the only crisis country that achieved a growth rate of more than 1%, thereby strongly outperforming the rest of group. Notably, the South as a group significantly reduced its current account deficit from an average of around -5.9% in the pre-crisis period to about -2.6% in the post-crisis era.

The East also slowed down its average growth rate (by about 2.6%-pts) but maintained overall solid income growth of around 1.9%. It is the country-group with the strongest growth performance after the crisis, led by Poland and Slovakia. Like southern Europe, the eastern countries significantly reduced their current account deficits. The English-speaking countries experienced a slowdown in growth (average: 1.2%). It is remarkable that in contrast to the South and East, the English-speaking countries reduced their current account deficits only moderately (USA) or even increased them (UK).

Besides a general convergence towards slower growth, there were thus several noteworthy changes in macroeconomic performance after the crisis. First, the pre-crisis boom in southern Europe was followed by a spectacular bust with a subsequent depression. Southern Europe undoubtedly suffered most from the repercussions of the crisis. Second, northern Europe reinforced its export-orientation, but with lower growth. While the southern European countries substantially reduced their trade deficits, the external deficit of the English-speaking countries did not shrink substantially. Third, eastern Europe appears to have suffered the least from the crisis and outperforms the remaining countries in terms of output growth.

3.1 Competitiveness: unit labour costs and export sophistication

We first consider drivers of foreign demand. The first column of Table 3 displays the growth in NULC in the manufacturing sector, our measure for price competitiveness, between 2000 and 2008. The pre-crisis evolution of NULC reveals remarkable divergences across Europe. On average, northern countries experienced a drop in their NULC of around -9.2%. The eastern and English-speaking countries are heterogenous in this regard, with Hungary, Slovenia, and the United Kingdom experiencing substantial growth in NULC by more than 5%, whereas Czech Republic, Poland, Slovakia, and the United States managed to improve their price

[8] France and the UK are the only countries that have worsened their current account positions in the post-crisis period.

competitiveness through declining NULC. In the South, NULC increased across the board with an average growth rate of 12.2%, led by Greece and Spain (23.7% and 16.3%, respectively).

Table 3: Empirical indicators for price competitiveness and non-price competitiveness, pre-crisis and post-crisis period

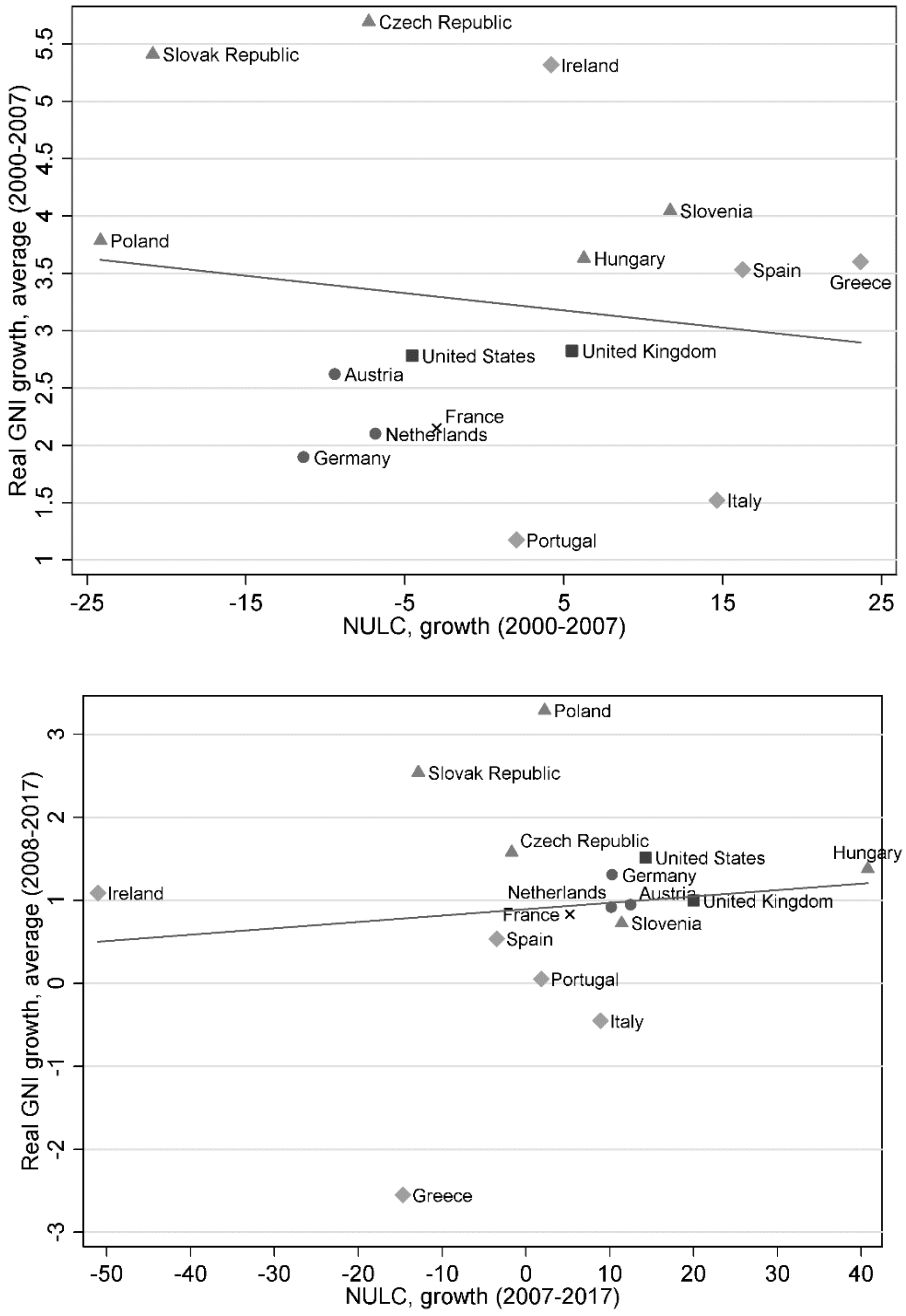
	Price competitiveness		Non-price competitiveness	
	NULC in manufacturing, growth		ECI, average	
	2000-2007	2007-2017	2000-2007	2008-2017
Austria	-9.41	12.49	1.75	1.69
Germany	-11.38	10.29	2.18	1.95
Netherlands	-6.86	10.2	1.18	1.06
Northern Countries (Mean)	-9.22	10.99	1.71	1.57
France	-3.01	5.22	1.56	1.38
Greece	23.66	-14.7	0.2	0.07
Ireland	4.19	-51.08	1.45	1.32
Italy	14.64	8.87	1.41	1.25
Portugal	2.01	1.82	0.57	0.5
Spain	16.25	-3.5	1.07	0.87
Southern Countries (Mean) w/o France	12.15	-11.72	0.94	0.8
Czech Republic	-7.27	-1.69	1.54	1.61
Hungary	6.26	40.8	1.11	1.41
Poland	-24.16	2.2	0.94	1.01
Slovakia	-20.88	-12.83	1.24	1.3
Slovenia	11.69	11.41	1.47	1.42
Eastern Countries (Mean)	-6.87	7.98	1.26	1.35
United Kingdom	5.51	20	1.87	1.55
United States	-4.58	14.93	1.78	1.57
English-speaking Countries (Mean)	0.46	17.46	1.83	1.56
Total Mean	-0.21	3.4	1.33	1.25
Cross-country standard deviation	13.25	19.52	0.50	0.47

Sources: FRED, OECD, OEC. See Table A1 in the appendix.
Notes: Δ denotes change over time. NULC: nominal unit labour cost. ECI: economic complexity index.

For many countries, the post-crisis period came with a reversal of NULC dynamics. Northern Europe notably increased its NULC by around 11%. The South, in contrast, underwent a massive decline in NULC by about -11.7%, led by Ireland (-51.1%) and Greece (-14.7%), undoubtedly related to heavy structural reforms. Italy and France, which were not compelled to enforce a structural adjustment programme, did not reduce their wage cost and experienced moderate wage growth. Nominal wages in eastern Europe increased on average, but with strong heterogeneity (40.8% in Hungary versus -12.8% in Slovakia). The English-speaking countries experienced strong wage growth (around 17.5% on average).

How strong is the link between NULC growth and income growth? Figure 2 plots the growth in NULC against the average GNI growth for the pre- and post-crisis period.

Figure 1: Nominal unit labour cost growth and average GNI growth rate, pre- and post-crisis period



Note: The regression line for the upper chart is given by $\Delta GNI = 3.254 - 0.015\Delta NULC$ with $R^2 = 0.02$. The slope coefficient is not statistically significant (p-value: 0.593). The regression line for the lower chart is given by $\Delta GNI = 0.895 - 0.008\,\Delta NULC$ with $R^2 = 0.01$. The slope coefficient is not statistically significant (p-value: 0.665).

In the pre-crisis period, the fitted line has a negative slope supporting the argument that higher NULC growth is associated with slower growth. In the post-crisis period, this link becomes positive. A key reason for this phenomenon is that southern Europe improved its relative price competitiveness, but this has not translated into growth. Overall, the fit of the regression line is poor in both periods, suggesting that the link between NULC and growth performance is weak. This casts doubt on the importance of price-competitiveness as a key driver of growth.

We get similar findings when we plot NULC against the current account balance rather than growth, with insignificant coefficients for both the pre and post-crisis periods (Figure A1 in the Appendix).

As a measure of non-price competitiveness we use the average economic complexity index (ECI) (Table 3).[9] The ECI is based on disaggregated trade data and captures two dimensions: the diversity of a country's exports (the number of distinct products it exports)[10] and their ubiquity (the total number of countries that export these products) (Hidalgo and Hausmann, 2009). A country that has a diversified export basket and exports products that few other countries can produce will get a high ECI score. The ECI is regarded as a measure of the economic complexity: the more complex a countries' productive structures, the more capable it is to export sophisticated products that economies with less complex productive structure cannot produce. It is thus quality, not price that generates higher ECI scores. Hausmann et al. (2007) show that the complexity of exports is a good predictor of subsequent growth.

The average values of the ECI prior to the crisis broadly reflect conventional wisdom about productive structures in Europe. The English-speaking countries are at the top with an average value of 1.83. This illustrates that a country can externally be highly competitive (e.g. through the export of cars and aircrafts), but still exhibit current account deficits (e.g. due to strong demand for imports). The English-speaking countries are closely followed by northern Europe (1.71). Here, Germany stands out with the highest value in the entire sample (2.18), capturing Germany's well-known specialisation in medium-high technology exports (Storm and Naastepad, 2016; Gräbner et al., 2017). Eastern Europe holds a middle ground with an average ECI of 1.26. The South is the bottom of the league with an average ECI of 0.94.

The post-crisis period is characterised by an overall reduction in export sophistication, indicated by a fall in the average ECI from 1.33 to 1.25. The only country group that defies this pattern is eastern Europe, where the average ECI increases from 1.26 to 1.35. Eastern Europe thereby switches from a below-average to an above-average degree of export sophistication in the post-crisis period. This stands in sharp contrast to southern Europe, which further reduced its already low level of non-price competitiveness and thus strongly falls behind the remaining countries. If structural reforms were ever intended to increase non-price competitiveness, they failed spectacularly.

Figure 2 plots the ECI against growth performance for the pre- and post-crisis period. While the average level of export sophistication prior to the crisis is largely unrelated to pre-crisis growth performance, the ECI becomes strongly positively associated with growth in the post-

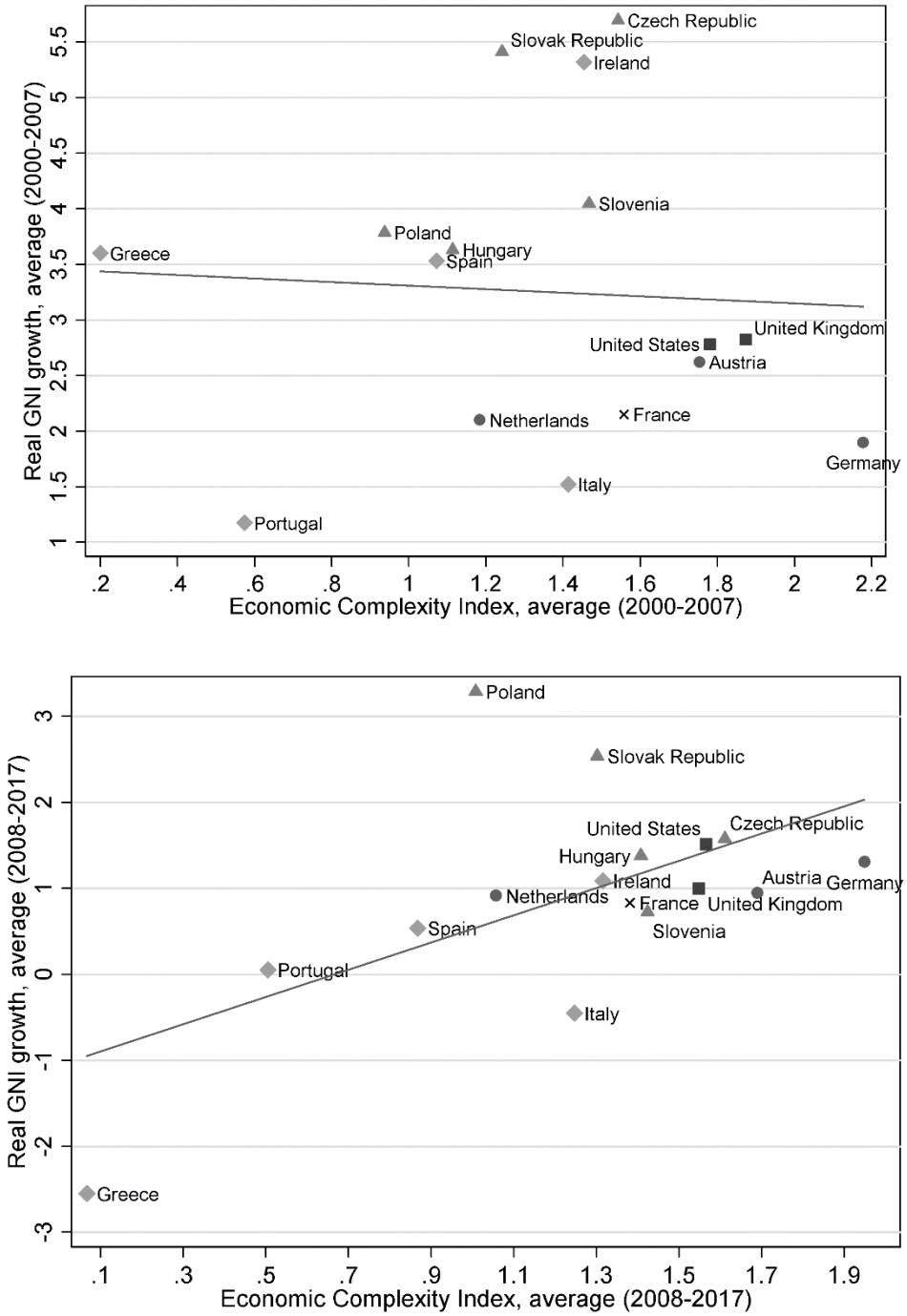
[9] The ECI was also used in other CPE studies as a measure of technological capabilities (Gräbner et al., 2017). Compared to estimates of the price-elasticity of exports as measures for the importance of non-price competitiveness (Baccaro and Pontusson, 2016; Baccaro and Benassi, 2017), the ECI has the advantage of being a descriptive metric that condenses information embodied in the bipartite network of product-level trade data. Unlike an estimated price-elasticity, the ECI is not a statistically inferred estimate that relies on the correct specification of an underlying data-generating process.

[10] The number of distinct exported products is based on the concept of revealed comparative advantage. Whenever the share of an exported good in a countries' total exports exceeds its share in world exports, the country is said to have a revealed comparative advantage in this good and will be classified as an exporter of this good.

crisis period.[11] When we plot the ECI against the current account balance, the results are even stronger in that a higher ECI is associated with a higher current account balance in both periods (Figure A1 in the appendix).

[11] This result is sample-sensitive. When adding Australia, Canada, Denmark, Finland, New Zealand, and Sweden to the sample, the strong positive link between ECI and growth in the post-crisis period disappears. This is due to the relatively strong growth performance of Australia and New Zealand despite low degrees of export sophistication, and the poor growth performance of Finland despite high export complexity. Thus, the finding that export sophistication became more important for growth after the crisis only holds for the core sample analysed in this paper.

Figure 2: Export sophistication and GNI growth, before and after the crisis



Note: The regression line for the upper chart is given by $\Delta GNI = 3.468 - 0.158ECI$ with $R^2 = 0.00$. The slope coefficient is not statistically significant (p-value: 0.835). The regression line for the lower chart is given by $\Delta GNI = -1.052 + 1.582\text{ECI}$ with $R^2 = 0.34$. The slope coefficient is statistically significant (p-value: 0.018).

Overall, this suggests that non-price competitiveness has come to play a stronger role compared to price competitiveness, as southern European countries were no longer able to make up for low export sophistication through finance-driven private demand. Despite structural reforms,

southern Europe did not manage to improve its non-price competitiveness.[12] In stark contrast, eastern Europe further increased its competitive advantage vis-à-vis the South, resulting in a significantly better growth performance. Northern Europe's and the English-speaking countries' moderate growth performance after the crisis is mirrored in small losses in non-price competitiveness; however, these countries still exhibit a high level of export sophistication.

3.2 Debt-driven growth and financial cycles

We use the growth rate of house prices and the change in household debt-to-net disposable income as measures for finance-driven private demand (Table 4). In the pre-crisis period, northern countries witnessed a moderate increase in their house prices (3.2% on average) and some increase in household debt (19.5%). The Netherlands stand out within this group, undergoing a substantial rise in house prices (22.7%) and a large increase in household debt (59.5%). In contrast to northern Europe, Southern countries experienced a surge in house prices and household debt (51.7% and 62%, respectively). Similar dynamics can be observed in the English-speaking countries, where especially the United Kingdom had strong house price growth of around 85.7%; but the average increase in debt (49.8%) was not as pronounced as in the South. Finally, the Eastern countries held a middle ground with a moderate degree of household financialisation (except for Hungary which had a substantial increase in household debt).

[12] In fact, structural reforms may have further worsened its non-price competitiveness. Storm and Naastepad (2016, p. 63) argue that labour market flexibility can be harmful for productivity and innovation, as they disincentivise firms to invest in worker's firm-specific human capital and labour-saving technical change. Similarly, Hall (2018, p. 17) points out that structural reforms that only reduce labour cost 'may simply encourage firms to cultivate low-wage forms of production that inhibit innovation or increases in productivity'.

Table 4: Empirical indicators for finance-driven private demand; pre-crisis and post-crisis period

	Real house prices, growth		Δ Household debt (%NDI)	
	2000-2007	2007-2017	2000-2007	2007-2017
Austria	-0.33	42.24	12.95	3.81
Germany	-12.84	21.58	-13.87	-9.4
Netherlands	22.71	-12.63	59.48	-15.21
Northern Countries (Mean)	3.18	17.06	19.52	-6.93
France	83.22	-5.78	24.57	18.66
Greece	52.43	-44.74	52.57	22.39
Ireland	64.89	-27.32	122.7*	-80.17
Italy	45.09	-27.85	25.99	7.86
Portugal	-10.51	-7.02	38.94	-11.45
Spain	106.57	-33.71	69.93	-38.6
Southern Countries (Mean) w/o France	51.7	-28.12	62.03	-20
Czech Republic		7.83°	31.44	12.52
Hungary		-7.9	44.13	-19.95
Poland		-8.35^	27.62	22.61
Slovakia		-0.52	20.65	39.53
Slovenia		-19.62	18.97	4.37
Eastern Countries (Mean)		-5.71	28.56	11.82
United Kingdom	85.66	-2.65	60.06	-16.29
United States	35.02	-4.67	39.61	-34.81
English-speaking Countries (Mean)	60.34	-3.66	49.83	-25.55
Total Mean	42.9	-8.19	39.73	-5.88
Cross-country standard deviation	40.48	21.11	30.34	29.29

Sources: OECD. See Table A1 in the appendix.

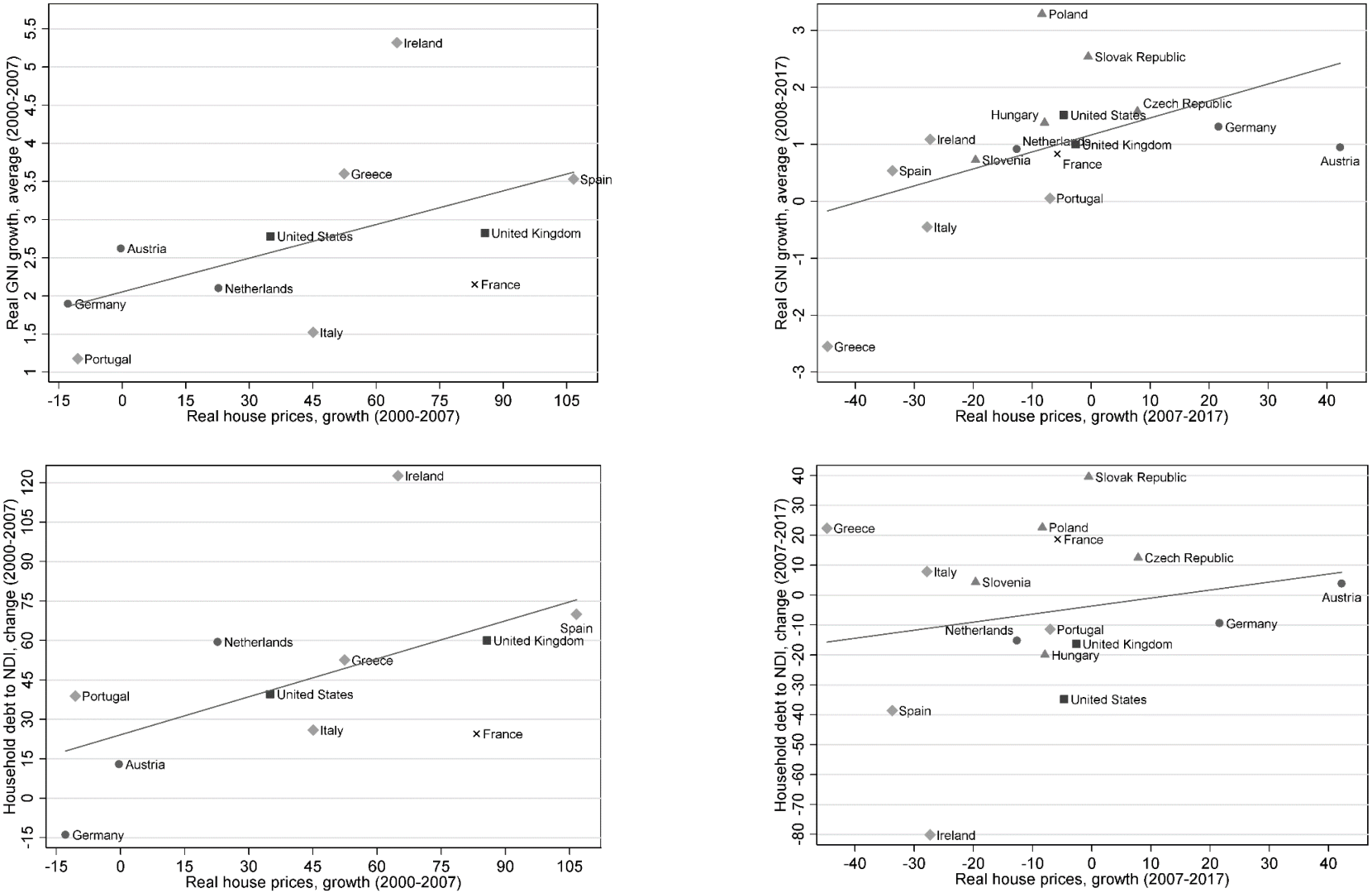
Notes: Δ denotes change over time. NDI: net disposable household income. *Only from 2001. °Only from 2008. ^Only from 2010.

Overall, these figures support the notion of a financialised growth model in southern Europe and the English-speaking country prior to the crisis. The left column of Figure 3 illustrates the positive link between property price inflation and income growth on the one hand, and surging household debt on the other.

In the decade after the crisis, the dynamics of financialisation of households change dramatically. Overall, it is a period of falling real estate prices and household deleveraging – with some exceptions. In northern Europe, Austria and Germany exhibit signs of a housing bubble with property prices growing by 42.2% and 21.6%, respectively. The countries that previously experienced booms, i.e. the Netherlands, southern Europe (except Portugal) and the English-speaking countries, are now going through a severe bust. In eastern Europe, house prices are likewise on a downward trajectory (except for the Czech Republic) but they do not fall as fast as in southern Europe. The second column of Figure 3 shows that the link between house prices and growth has become even tighter in the post-crisis period. Countries that underwent housing busts (e.g. Greece, Italy, Spain) performed poorly, whereas output in countries with strong house price growth grew comparatively fast (e.g. Germany).

Figure 3: House prices and GNI growth (upper panel); house prices and household debt (lower panel)

Pre-crisis **Post-crisis**

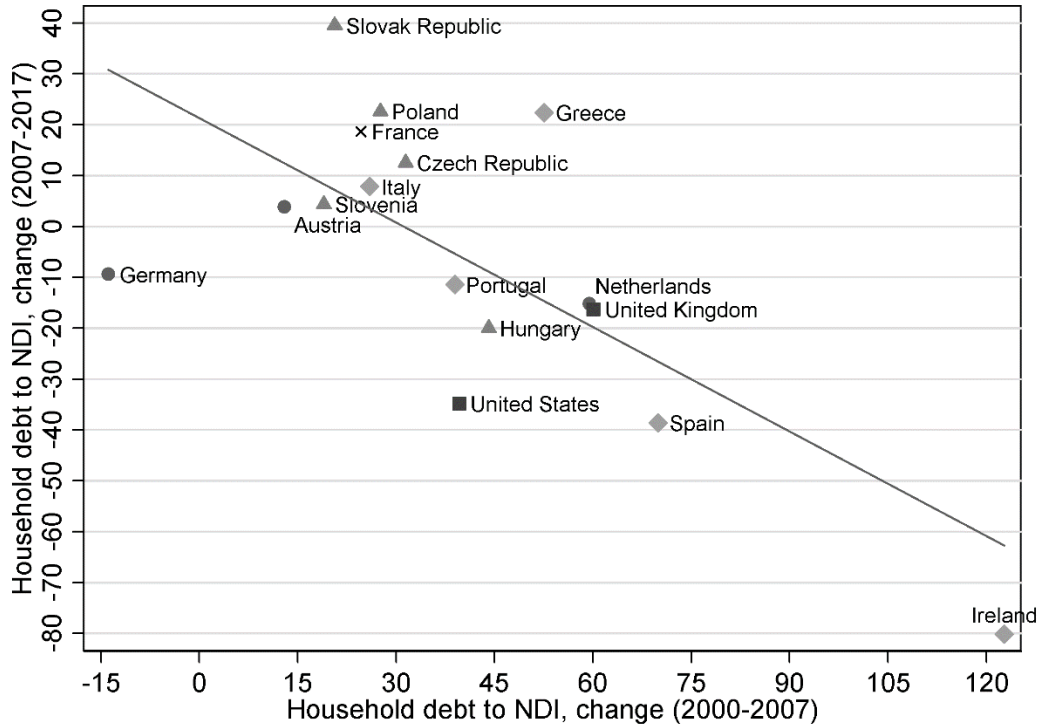


Note: The regression line for the upper-left chart is given by $\Delta GNI = 2.054 + 0.015\Delta HPR$ with $R^2 = 0.26$. The slope coefficient is not statistically significant (p-value: 0.106). The regression line for the upper-right chart is given by $\Delta GNI = 1.165 + 0.030\Delta HPR$ with $R^2 = 0.2$. The slope coefficient is statistically significant (p-value: 0.051). The regression line for the lower-left chart is given by $\Delta HHD = 24.158 + 0.481\Delta HPR$ with $R^2 = 0.30$. The slope coefficient is statistically significant (p-value: 0.079). The regression line for the lower-right chart is given by $\Delta HHD = -3.691 + 0.268\Delta HPR$ with $R^2 = 0.04$. The slope coefficient is not statistically significant (p-value: 0.474).

The dynamics of household debt in the post-crisis period are again positively correlated with house prices, but the link is not as close as before the crisis. Many countries that experienced a fall in house prices also underwent household deleveraging, for example, Ireland (-80.2%-pts), Spain (-38.6%-pts), Hungary (-20%-pts) and the United States (-34.8%-pts). Eastern Europe is the only group that displays, along with France and Greece, a significant increase in household leverage. Interestingly, there has been some decoupling between real estate prices and household debt in the post-crisis period. In some countries, household debt is on the rise despite falling house prices, notably Slovakia (+39.5%-pts) and Greece (+22.4%-pts). Austria and Germany undergo a strong increase in house prices, but this has not come with an increase in leverage so far.

This phenomenon must be understood in the context of the financial cycle. Those countries that experienced a surge in household debt prior to the crisis, underwent a housing bust in the post-crisis period (see Figure 4). However, while prices collapse fast, deleveraging in an environment of stagnating household incomes and disinflation takes time. This contrasts with the upswing of the financial cycle, where rising property prices quickly allow for more borrowing.

Figure 4: The financial cycle: change in household debt before and after the crisis



Note: The regression line is given by $\Delta HHD_{post} = 21.311 - 0.0684\Delta HHD_{pre}$ with $R^2 = 0.5$. The slope coefficient is statistically significant (p-value: 0.002).

In sum, growth dynamics are strongly affected by the financial cycle, both in the pre- and post-crisis period. During the pre-crisis boom, rising property prices and surging household debt are tightly linked. In the post-crisis period, those countries that undergo a house price bust experience a stronger decline in output, while household debt dynamics vary across growth regimes.

3.3 Fiscal policy

To capture fiscal policy as a driver of public demand, Table 5 reports the cyclically adjusted primary (i.e. before interest) fiscal balance to potential output. The cyclically adjusted balance excludes those types of fiscal expenditures and revenues that are sensitive to the business cycle, e.g. income taxes and unemployment benefits (the so-called automatic stabilisers). The balance is normalised by potential output (defined as the maximum output that is compatible with a stable inflation rate) rather than nominal output in order to avoid distortions stemming from cyclical changes in the denominator.

The pre-crisis period involves a heterogeneous picture for the South, with Portugal and Greece running deficits (-2.3% and -2.1%, respectively), whereas Ireland and Spain achieved notable fiscal surpluses (1.45% and 0.5%, respectively). Indeed, it is well-known that not all countries that were hit by the Eurozone crisis were previously running fiscal deficits. The Northern countries had virtually balanced budgets (Austria) or consolidated their balances, whereas the English-speaking countries ran moderate deficits between -1% and -1.5%. Interestingly, it is Eastern Europe that displayed the strongest degree of fiscal expansion with an average budget balance of -2.6%. The figures hardly suggest that pre-crisis dynamics involved excessive government borrowing for most countries.

Table 5: Empirical indicator for fiscal policy; pre-crisis and post-crisis period

	Cyclically adjusted primary fiscal balance (%Potential output)	
	2000-2007	2008-2017
Austria	-0.01	-0.23
Germany	0.23	1.11
Netherlands	0.67	-0.58
Northern Countries (Mean)	0.3	0.1
France	-0.54	-2.01
Greece	-2.12	2.44
Ireland	1.45	-2.59
Italy	1.65	2.11
Portugal	-2.32	-0.95
Spain	0.48	-2.8
Southern Countries (Mean) w/o France	-0.17	-0.36
Czech Republic	-3.45	-1.04
Hungary	-3.51	1.36
Poland	-1.77	-1.79
Slovakia	-4.13	-2.05
Slovenia	-0.28	-0.51
Eastern Countries (Mean)	-2.63	-0.81
United Kingdom	-1.13	-3.41
United States	-1.45	-3.91
English-speaking Countries (Mean)	-1.29	-3.66
Total Mean	-1.02	-0.93

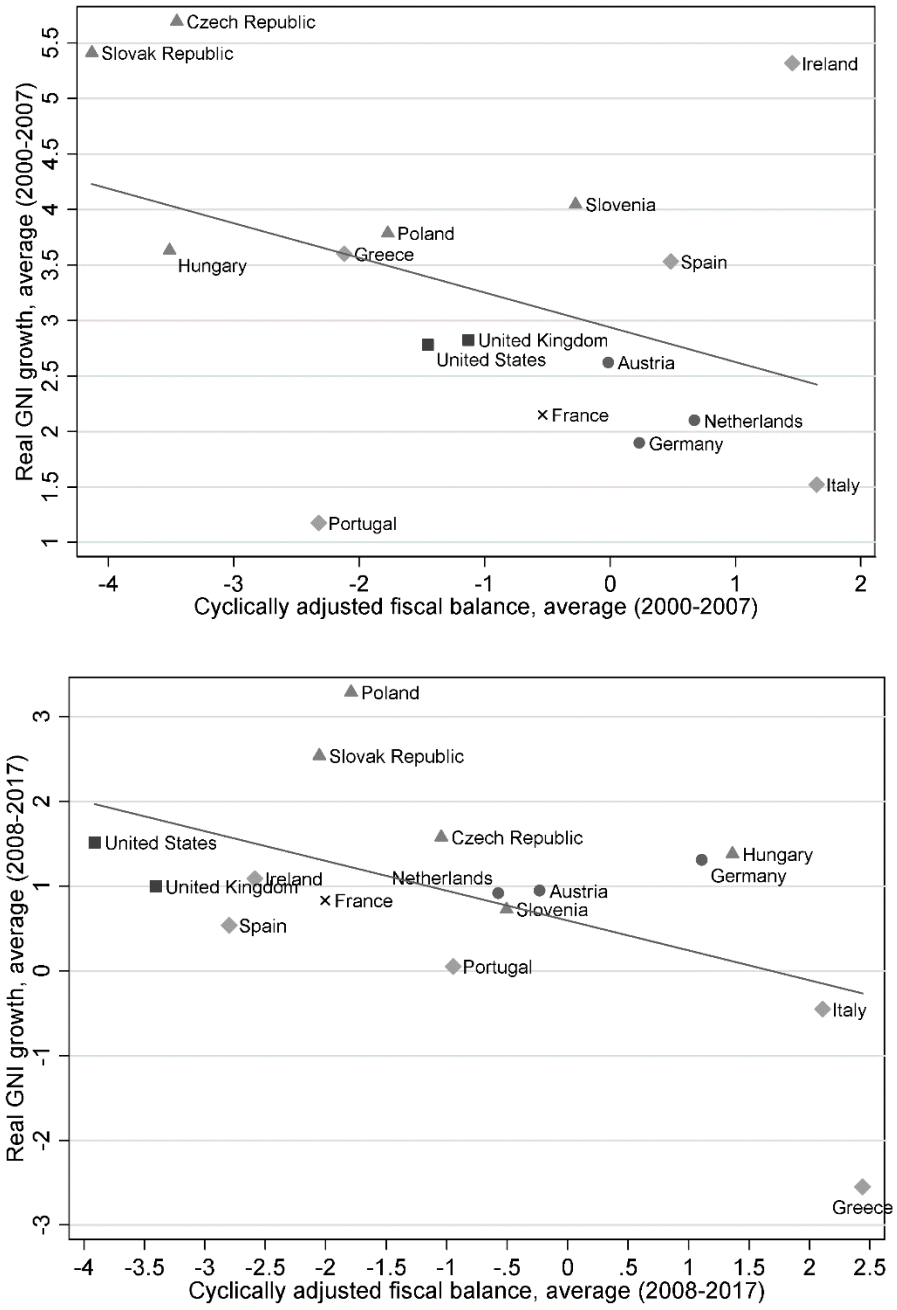
Cross-country standard deviation	1.77	1.92

Sources: IMF. See Table A1 in the appendix.

Figure 6 displays a negative link between budget balances and growth for the pre-crisis period, i.e. countries with more expansionary fiscal policies also enjoyed higher growth rates.

Almost all countries responded to the crisis with an initial fiscal expansion, which was especially strong in southern Europe and the English-speaking countries. Countries then embarked on gradual fiscal consolidation. However, the pace with which this was accomplished differs substantially across countries. Figure 5 suggests that the link between economic growth and public demand has become tighter in the post-crisis period. Indeed, it is precisely those countries that enacted vigorous austerity policies to attain a positive fiscal balance (Greece: 2.4%; Italy: 2.1%) that are at the bottom of post-crisis growth performances. Countries that allowed for more prolonged fiscal expansion in the aftermath of the crisis, such as the United States (-3.91%), the United Kingdom (-3.41%) or Slovakia (-2.1%), display a markedly better post-crisis growth performance. It appears that austerity heavily weighed upon output growth as it dragged down aggregate demand and weakened productivity via deficiencies in public infrastructure provision. Indeed, negative long-term effects of fiscal austerity on potential output growth have also been found in econometric research (Fatás and Summers, 2018; Gechert et al., 2019).

Figure 5: Fiscal balance and GNI growth, before and after the crisis



Note: The regression line for the upper chart is given by $\Delta GNI = 2.939 - 0.313 FISBAL$ with $R^2 = 0.16$. The slope coefficient is not statistically significant (p-value: 0.124). The regression line for the lower chart is given by $\Delta GNI = 0.594 - 0.352 FISBAL$ with $R^2 = 0.28$. The slope coefficient is statistically significant (p-value: 0.034).

3.4 Summary

Three main findings arise from our analysis of growth drivers. First, although there was a strong divergence in NULC growth prior to the crisis, wage inflation is only weakly associated with economic growth. Non-price competitiveness appears to have become more important after the crisis: as private demand fell, countries with higher export sophistication performed significantly better. Second, property price dynamics are strongly associated with growth, both in the pre- and post-crisis period. In the pre-crisis period, property price booms came with surges in household debt, while the post-crisis period is characterised by deleveraging at the downturn of the financial cycle. In the post-crisis period, some decoupling of house price dynamics from household debt has taken place, as households struggle to deleverage while prices drop fast. Third, expansionary fiscal policy is positively associated with growth. In the post-crisis period, austerity was an important factor in growth performance, with those countries allowing for more sustained counter-cyclical fiscal support being significantly better off than those pursing aggressive fiscal consolidation.

4 Post-crisis growth models and implications for comparative political economy

The comparison of macroeconomic performance in the pre-crisis period (2000-2007) and post-crisis period (2008-2017) reveals some striking changes. All countries converged on slower growth in the post-crisis period, and the vast majority of countries improved their current account balances. Overall, the post-crisis period can thus be characterised as convergence towards a greater export-orientation of all countries in our sample (except the English-speaking ones) in an environment of weak domestic demand due to austerity and the bust of a financial cycle. Some country-group specific trajectories emerge (see Table 5).

Northern Europe, above all Germany, reinforced its export orientation. Baccaro and Benassi (2017) argue that Germany already started in the 1990s to dismantle collective bargaining institutions, and enforce precarious work contracts to reduce wage costs and boost exports. These labour market policies may have helped keep NULC growth at a moderate pace in the post-crisis period and partly compensated for a loss of export sophistication. However, our analysis suggests that the non-price competitiveness of Germany (and Austria) remained comparatively high, contributing to its strong export orientation (see also Gräbner et al., 2017).

In southern Europe the downturn of the financial cycle was exacerbated by pro-cyclical fiscal policy in the form of aggressive fiscal consolidation. The collapse in house prices depressed domestic demand, which was reinforced by contractionary austerity policies. Southern Europe's post-crisis growth model may be described as asset-price and austerity-driven depression. Current account balances improved, but it would be misleading to interpret this as a shift towards an export-driven model. Structural labour market reforms have helped reduce wage cost but did not improve export sophistication. Indeed, most reforms were rather inspired by the LME model, but without a coherent plan to foster innovation or productivity (Hall, 2018). As a result, southern Europe continues to exhibit a low degree of export sophistication and has even lost non-price competitiveness in the post-crisis period.

Table 5: Post-crisis growth models

Countries	Growth performance	Current account	Competitiveness	Financial cycle	Fiscal policy	Post-crisis growth model
Northern Europe: Austria, Germany, the Netherlands	Modest	Strong surplus	High export sophistication; moderate wage inflation	Debt-less increase in property prices (except Netherlands)	Consolidation	Export-driven growth
Southern Europe: Greece, Italy, Portugal, Spain	Depression	Deficit	Low export sophistication; strong wage deflation	Severe downturn	Aggressive consolidation	Asset price and austerity-driven depression
Eastern Europe: Czech Republic, Hungary, Poland, Slovakia	Above average	Small deficit	Medium export sophistication; wage inflation (Czech Republic, Hungary, Slovenia) or wage deflation (Poland, Slovakia)	Mild decline in property prices plus household leveraging	Mixed	Export-oriented catching up
English-speaking: United Kingdom, United States	Modest	Strong deficit	High export sophistication; strong wage inflation	Severe deleveraging	Slow consolidation	Fiscally mitigated asset price-driven stagnation

A special case is Ireland. While severely hit by the European debt crisis and therefore often placed in the same category as southern European countries, Ireland's post-crisis growth performance sets it apart from the rest of the group. Brazys and Regan (2017) convincingly argue that the Irish recovery has nothing to do with fiscal consolidation and structural reforms, but rather with a state-led enterprise policy that managed to attract FDI in high-tech computer and information services. As a result, Ireland's export sophistication outperforms that of the other countries that were hit by the Eurozone crisis, and is likely to be the main source of its strong post-crisis performance.

The Visegrád countries display the most remarkable post-crisis developments. They appear to have undergone a change in their growth model, which still delivers comparatively high growth rates but is no longer characterised by large current account deficits. The pre-crisis growth model involved foreign direct investment (FDI)-based catching up (Stockhammer et al., 2016). Transnational corporations from northern Europe relocated parts of their production to eastern Europe through FDI, which allowed these countries to develop or deepen segments of high-tech manufacturing (e.g. cars, electronics, and pharmaceutical industries) (Bohle, 2018). In the

post-crisis period, eastern Europe seems to reap the benefits of this industrial upgrading strategy that boosted its productivity and non-price competitiveness. Its post-crisis growth model may therefore be described as export-oriented catching up.

Lastly, the English-speaking countries experienced strong deleveraging of households, but the fall in property prices was much less dramatic than in southern Europe. Importantly, the USA and the UK engaged in a slower fiscal consolidation than southern Europe.[13] This was supported by accommodating monetary policy in the form of Quantitative Easing. The financial centres thus managed to mitigate the recessionary effects of the financial bust by public demand. Correspondingly, the post-crisis growth performance of the English-speaking countries is markedly stronger than the South's. Unlike the latter, the English-speaking countries also maintained their large current account deficits. We characterise their post-crisis growth model as fiscally mitigated asset price-driven stagnation.

To what extent are there the emerging post-crisis growth models economically and politically viable? While export-driven continental Europe increased its current account surpluses in the post-crisis period, this strategy failed to deliver growth rates of magnitudes seen in the pre-crisis period. This phenomenon points to decreasing returns of the export-driven model. We see both economic and political constraints to export-driven growth. On the economic side, the dismantling of collective and centralised bargaining institutions in favour of a deregulated service sector has contributed to a fall in wage shares, which depresses consumption demand. Export-driven regimes therefore strongly depend on foreign demand. However, export-driven growth is a beggar-thy-neighbour policy that cannot be pursued globally. There always must be deficit countries that absorb the current account surpluses of export-driven countries. As more countries pursue export-driven growth, this strategy becomes self-defeating.

On the political side, we see two major constraints for the export-driven model. Internationally, the beggar-thy-neighbour character of export-driven growth is likely to induce retaliation from trade partners. A prime example for such a response is the ongoing trade war between China and the USA, in which the Trump administration imposed severe import tariffs on Chinese goods to penalise China for what it regards as unfair practices behind China's vast trade surpluses. Trump has also repeatedly criticised Germany's current account surpluses and threatened to introduce tariffs on German cars. Domestically, most export-driven models face political coalitions that impede the transition towards a domestic demand-led model. Political dominance of export sectors has established a deep aversion among policy makers towards expansionary fiscal and monetary policies, often based on the argument that these were inflationary. Despite apparent decreasing returns to net exports, there are presently little signs for a shift in political coalitions towards domestic demand. Given these economic and political constraints, we doubt that multiple countries will be able to successfully pursue export-driven growth over longer periods. The situation in Eastern Europe is different in that export-oriented catching-up has not involved significant current account surpluses so far. However, insofar as their export gains depend on supply-chains that are dominated by the export-driven northern

[13] Nevertheless, fiscal consolidation in these countries was highly contested due to its detrimental effects on public services (see Lavery, 2018, on the UK post-crisis experience).

countries, eastern Europe's emerging growth model might be indirectly affected by the constraints of the export-driven countries.

With respect to the (formerly) debt-driven growth models, our analysis confirms their inherent instability. We show that debt-driven growth models must be understood in the context of Minskyan financial cycles that involve long up- and downswings of household debt and asset prices (Palley, 2011; Borio, 2014; Guttmann, 2016). The financialisation of households therefore has a cyclical component, and debt-driven growth will eventually give way to debt-driven depression. While debt-driven growth is thus faced with economic constraints stemming from financial instability, there are also political constraints – with notable differences across country-groups. Recent research shows that regions that were excluded from house prices gains were more likely to vote for Brexit, supporting the idea that regional inequality can be a source of political populism (Adler and Ansell, 2019). The volatility of house prices inherent to debt-driven growth models is therefore likely to trigger social discontent that may undermine its political stability. However, our analysis also revealed different political responses to the downturn of the financial cycle, which are linked to differences in political constraints. While the English-speaking financial centres were able to mitigate the financial bust through more accommodating public demand management, EMU membership and ECB conditionality severely constrained the policy space of southern Europe. This compelled the South to pursue procyclical austerity policies, while the private sector was trying to deleverage. This was a toxic blend that resulted in economic depression, vindicating the criticisms of austerity expressed by political economists and post-Keynesians (Fontana and Sawyer, 2011; Blyth, 2013; Truger, 2013; Stockhammer et al., 2019). The resulting rise in poverty and inequality triggered social protests (Perez and Matsaganis, 2018), which further compromise the political underpinning of debt-driven growth in the south.

Overall, the viability of the emerging post-crisis growth models is thus questionable. While an immediate restructuring of their political and economic foundations appears unlikely, we conjecture that these models will find it increasingly difficult to generate growth in the long run.

What are the implications of our analysis for the growth model debate?

First, our analysis is broadly in line with Blyth's (2016, p. 222) view that there were 'strong pressures for all of Europe's economies, regardless of their variety, to converge on the Northern model of export-led growth'. Export-orientation via wage moderation has become more important as more countries aim to improve their growth performance through exports. However, while net exports improved in all continental European countries in the post-crisis period (except France), growth performance was comparatively weak. Nevertheless, our results show that especially non-price competitiveness became strongly associated with growth in the post-crisis period. Only those countries that exhibit a high degree of export-sophistication managed to pursue export-driven growth, albeit with only moderate success. In the case of northern Europe, this implies continuity, whereas eastern Europe appears to be heading towards this strategy only after it had boosted its non-price competitiveness through FDI. By contrast, wage deflation in southern Europe may have helped improve their current account balances but has hardly transformed these countries into export-driven growth models. Overall, this

corroborates the emphasis on productive structures conducive to innovation and high-value added production made by both VoC (Iversen et al., 2016; Hall, 2018) and some heterodox macroeconomists (Simonazzi et al., 2013; Storm and Naastepad 2016; Gräbner et al. 2017). By contrast, our findings suggest only a limited role of price competitiveness, suggesting that the relevance of NULC has been overstated in some accounts (e.g. Flassbeck and Lapavitsas, 2013; Johnston et al., 2014; Johnston and Regan, 2016).

Second, our results are consistent with the view that property price dynamics are an important driver of private demand as claimed by the notions of debt-driven growth and privatised Keynesianism (Hay, 2009; Crouch, 2009; Hein, 2013; Hay and Smith, 2013; Stockhammer et al., 2016). However, the cyclical nature of this growth model highlighted in this paper has not been fully appreciated in the previous literature. As asset prices have a closer link to growth than household debt, we suggest that the term asset-price driven growth (as opposed to debt-driven growth) may more aptly describe how financial cycles in property prices affect growth.

Thirdly, our results point to an important role of fiscal policy as a driver of public demand that has hitherto been overlooked. Fiscal policy shaped domestic-demand oriented growth models in the post-crisis period, albeit in two very different forms (stabilising in the English-speaking financial centres; destabilising in southern Europe). In conjunction with empirical evidence that austerity can harm growth in the long-term (Fatás and Summers, 2018; Gechert et al., 2019), this means that government spending and taxation must be considered as a key determinant of growth models. Fiscal policy is a socially highly contested field and has important feedback effects on social cohesion. The inclusion of fiscal policy into the analysis of growth models thereby also provides fertile ground for examining the political viability of growth models (Haffert, 2019; Haffert and Mertens, 2019; Martin and Gabay, 2013; Martin, 2015).

5 Conclusion

The aim of the present article was to analyse macroeconomic drivers of growth in the post-crisis period and to examine their implications for the growth model debate. We examined competitiveness, finance and fiscal policies as potential drivers of foreign, private and public demand. We found an overall convergence on slower growth and greater export-orientation, but uneven macroeconomic performance. Our results have three main implications: first, non-price competitiveness in the form of export sophistication has gained importance for foreign demand relative to price competitiveness through wage restraint. This calls for a shift in attention from labour market institutions and wage coordination towards the institutional and political determinants of increases in productivity and economic complexity (see Storm and Naastepad, 2016; Vermeiren, 2017; Brazys and Regan, 2017; Hall, 2018). Second, household financialisation dynamics are cyclical, implying that debt-driven growth models are strongly affected by the downturn of financial cycles. The growth model debate should thus integrate the Minskyan notion of financial cycles allowing for periods of asset-price driven growth and depression (Palley, 2011; Borio, 2014; Guttmann, 2016). Third, austerity had negative effects on growth after the crisis, while counter-cyclical fiscal policies helped stabilise growth rates.

While political economists warned about negative effects of austerity (Fontana and Sawyer, 2011; Blyth, 2013; Truger, 2013; Stockhammer et al., 2019), fiscal policy overall has been neglected in growth model debate. We argue that it is an important growth driver in the post-crisis period, especially for domestic demand-led growth models, and suggest a more systematic treatment of fiscal policy in growth model analyses.

The focus of this paper has been on macroeconomic drivers of growth. Recent CPE research examines how different hegemonic blocs and business-political elites underpin distinct growth models. Our study could be complemented with analyses of the institutional, political, and socio-economic configurations that shaped growth models in the post-crisis period. For example, recent work on the political economy of fiscal policy examines how social conflict between different fiscal coalitions can lead to different fiscal outcomes (Martin and Gabay, 2013; Haffert, 2019). As our findings show, these outcomes can potentially have strong implications for economic growth. While austerity in Greece and Hungary was partially externally imposed, the motives behind the adoption of certain fiscal policies in other countries are less obvious. An analysis how different 'hegemonic sectoral blocs' as outlined by Baccaro and Pontusson (Amable et al., 2019, pp. 15–20) pushed for or against counter-cyclical policies would be highly promising to understand cross-country differences in fiscal policy.

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Appendix

Table A1: Data definition

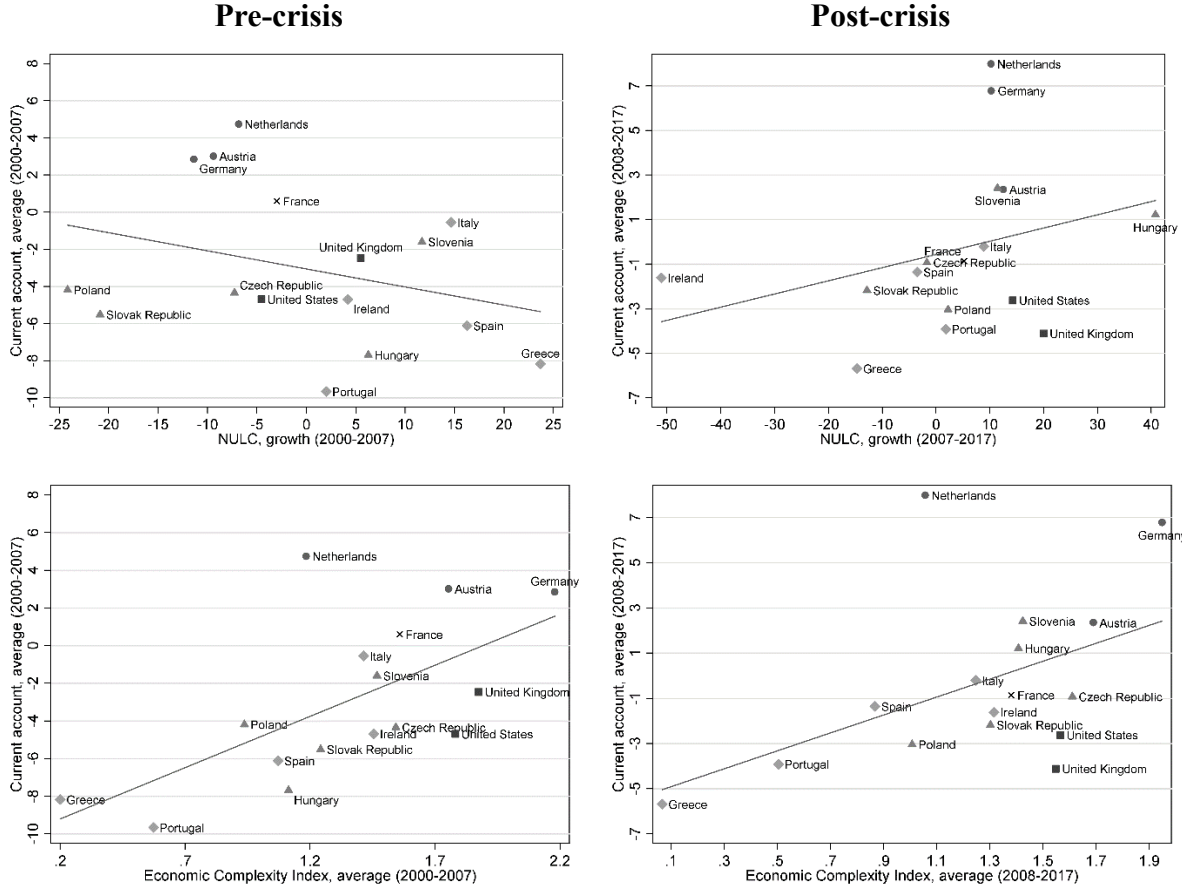
Variable	Definition/unit	Notes	Sources
Real GNI growth	Annual growth rate of real gross national income (real gross	For Ireland, a modified GNI measure was used that adjusts 'for factor income of redomiciled companies,	World Bank: World Development Indicators;

	domestic product plus net factor incomes from abroad); percent	depreciation on R&D service imports and trade in IP, and depreciation on aircraft leasing'.[14]	Central Statistics Office Ireland
Current account to GNI ratio	Percent	Author's computation based on current account to GDP ratio. For Ireland, a modified current account measure was used for the data points 2008-2017 that adjusts 'for the depreciation of capital assets sometimes held outside Ireland owned by Irish resident foreign-owned firms, e.g. IP and leased aircraft, alongside the repatriated global income of companies that moved their headquarters to Ireland (e.g. redomiciled firms or corporate inversions)'.[15]	World Bank: World Development Indicators; Central Statistics Office Ireland
Nominal unit labour cost (NULC) in manufacturing	Index	Data for USA from FRED.	OECD; FRED
Economic complexity index (ECI)	Index	For further information on construction, see Hidalgo and Hausmann (2009) and https://oec.world/en/resources/methodology/	Observatory of Economic Complexity (OEC)
Real house prices	Index	For Czech Republic available only from 2008. For Poland available only from 2010.	OECD
Household debt to net household disposable income (NDI)	Percent	Debt is primarily mortgage loans and consumer credit. Includes debt of non-profit institutions serving households. Net disposable household income plus net interest and dividend income minus taxes net of transfers. For Ireland available only from 2001.	OECD
Cyclically adjusted primary fiscal balance to potential output	Fiscal balance minus net interest payments, adjusted for the components of the fiscal balance that are sensitive to the output gap; percent		IMF Fiscal Monitor

[14] See https://www.cso.ie/en/releasesandpublications/ep/p-nie/nie2017/mgni/

[15] See https://www.cso.ie/en/releasesandpublications/in/acabi/amodifiedcurrentaccountbalanceforireland2007-2017/

Figure A1: Competitiveness and current account balances: NULC (upper panel) and ECI (lower panel)



Note: The regression line for the upper-left chart is given by $CA = -1.129 - 0.048\Delta NULC$ with $R^2 = 0.01$. The slope coefficient is not statistically significant (p-value: 0.58). The regression line for the upper-right chart is given by $\mathrm{CA} = 0.019 + 0.068\Delta NULC$ with $R^2 = 0.07$. The slope coefficient is not statistically significant (p-value: 0.226). The regression line for the lower-left chart is given by $\mathrm{CA} = -5.825 + 3.693ECI$ with $R^2 = 014$. The slope coefficient is statistically significant (p-value: 0.079). The regression line for the lower-right chart is given by $\mathrm{CA} = -3.266 + 3.067\mathrm{ECI}$ with $R^2 = 0.17$. The slope coefficient is statistically significant (p-value: 0.053).