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Varieties of central banking: the Nordic Model beyond a fiscal-centric approach

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ABSTRACT

Since policymakers and scholars coined the term in the 1930s, the Nordic Model has often been considered to denote a homogeneous political entity in which the constituent countries are ostensibly interchangeable. As a result, seldom attention has been afforded to what fundamentally differentiates Denmark, Finland, Norway, and Sweden. By going beyond traditional 'fiscal-centric' accounts of the Nordic model, and instead focusing on the role of central banks and monetary policy, we show that each country bares far less similarities than has often been assumed in the literature. We trace this heterogeneity back to variegated responses to the 1970s crises of Fordist capitalism and draw on growth model theory to explain this divergent trajectory. We show how these differences shaped how each country responded to the Global Financial Crisis and the COVID-19 pandemic, where a variegated array of monetary measures was employed to uphold their own distinct growth model. By accounting for the role of central banks within the Nordic Model, we propose that it is better understood as a series of models, drawing attention to the function of monetary policy within the growth models perspective in the political economy literature.

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Introduction

For decades the Nordic Model, comprising Denmark, Finland, Norway, and Sweden (and sometimes Iceland) has been an alluring analytical subject for scholars hailing from a variety of disciplinary backgrounds. The model has, amongst various interpretations, been thought to typify the antithetical approach to neoliberal economic policymaking (Partanen 2018, Esping-Andersen 1985), of an integrated political entity (Oddbjørn 2017), one that might otherwise be considered emblematic of a coordinated market economy (Hall and Soskice 2001) or (neo) corporatism (Ahlqvist and Moisio 2014), but one that is often thought to be the pre-eminent democratisation of capitalism (Elder *et al.* 1982). Prominent amongst the Nordic Model scholarship is Esping-Andersen's (1985) work on Welfare regimes, where the Nordics have stood out as the most pronounced example(s) of social democratic states within the Comparative Political Economy (CPE) literature, associated with universal welfare coverage and egalitarian social arrangements since the 1930s.

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Elsewhere, recent alternative conceptualisations of the ensemble of Nordic countries have taken the form of Viking economics (Lakey 2016), the Scandinavian Model (Musiał 2002), and *the* archetype welfare states (Einhorn and Logue 2010). What can be distilled from these variegated interpretations is typically thought to be a series of socially democratic political economies, that exhibit a consistently high level of economic development, with a (relatively) fair wealth distribution that is competitive in international markets, whilst retaining a unique cultural identity (Vis 2014, Hilson 2008, Arter 2006). The Nordic model is subsequently treated as a unitarian concept, with similarities such as a labour market with strong demand for goods and services, (Jochem 2000), progressive gender equality (Segaard *et al.* 2023), and rising levels of immigration for the size of the economy (Bucken-Knapp *et al.* 2014). So recognisable have these features become that the constituent countries have often been reduced to ostensibly interchangeable case studies within the same model. Rarely then has a unit of analysis in the political economy scholarship been rendered underdeveloped to the point of tacit homogeneity more so than the Nordic Model.

Such has been the intrigue, and indeed romanticisation of the model (Booth 2016), particularly from those on the political left, that some scholars have increasingly begun to question whether it exists within the homogenised form often portrayed within the literature (Ryner 2007) or whether, in reality, there are different Nordic model(s) existing within the same rubric (Oddbjørn 2017). Regarding this question, Midttun and Witoszek (2020) have proposed an 'ambidextrous' understanding of the Nordic model that conceives of it as a simultaneous combination of collaborative and competitive strategies between the respective countries. Halvorsen *et al.* (2016) alternatively propose an 'intra-Nordic' variation perspective, resembling the Varieties of Capitalism (VoC) literature, to discern between the institutional arrangements found within the welfare states, just as Lofgren and Ringholm (2009) emphasised the differentiation found within local governance. Recent interdisciplinary scholarship has therefore (re)introduced the Nordic Model to comparative perspectives (Midttun and Witoszek 2020), akin to previous scholarship from the 1980s onwards (See: Mjøset 1987, 2011, Andersen 2010, Lakey 2016). Yet, how the differences amongst the Nordic's manifest in, and are conditioned by, central banks have remained ill-developed features of the literature. It is to this question that the following analysis is concerned.

To alight upon the difference between the constituent parts of the Nordic model, we utilise a growth models perspective (see: Coulter 2018, Oren and Blyth 2019, Evemy *et al.* 2023), to demonstrate that the actions of central banks during times of economic turbulence assist in revealing the discernible differences observable in each country. We depart from the welfare state as the unifying unit of analysis typically advanced within analyses of the Nordics. We afford attention instead to the central banks in each country as they experience a reemergence in the literature (Ronkainen and Sorsa 2018, Helgadóttir and Ban 2021, van 't Klooster 2022, Wansleben 2023a). Such a perspective has two contributions to our understanding. First, at the empirical level, few scholars have focused on the function of the central bank in each country, notwithstanding the Nordic Model as a whole (Ogren 2006, Young 2002, Thomassen 2017). Second, growth model scholarship, like the Nordic Model literature, has tended to focus on issues related to fiscal policy, notably that which influence aggregate demand, wealth distribution and labour markets as features of a given growth model. And whilst these bodies of scholarship have rarely overlapped, we show that they are acutely complimentary for the purpose of providing a deeper, more accurate, understanding of the Nordic Model as it presently exists.

A dominant part of this understanding is what we call a 'fiscal-centric' account of the model. As a way of understanding the Nordics, it focuses on state spending for social programmes, labour market policies, and external competitiveness. In this view, we do indeed see large and consistent similarities between the Nordics. Fiscal policy is, however, only part of the economic power of the state, with monetary policy the other. Looking at the Nordics instead through the lens of monetary policy, we see much more divergence, and in contrast to this fiscal centricity, it hardly makes sense to talk about a singular model. The Nordic Model is thereby a paradoxical subject, for whilst it exhibits

social democratic features, central banking practises have diverged in the period since the 1980s, and especially since the Global Financial Crisis (GFC) of 2008–9 to the point that they bare more differences than similarities. To understand this variation in monetary policy regimes, we detail how each central bank has been uniquely shaped by economic crises, from the crisis of European Exchange Rate Mechanism (ERM) to the COVID-19 crisis.

To differentiate between the eclectic variations of the Nordic Model, we structure this analysis as follows: in the following section 'the political economy of the Nordics: Denmark, Finland, Norway, and Sweden' describes the different growth models of the Nordics, we use growth model theory, as well as European integration to explain the variation in monetary policy frameworks. In section 'central banking in the Nordic Model: beyond the fiscal to a monetary perspective' we outline the variegated monetary policy framework employed in each country, and to what degree it grants monetary sovereignty to each country. Section 'the Nordic Model(s) during crises: points of divergence during the financial and Covid crises' explores the policy responses to the GFC and the covid crisis, showing how the different monetary policy frameworks leads towards variegated post-crisis trajectories in the Nordic countries. We conclude with the implications of this analysis for the political economy literature on the Nordic model and growth model theory.

The political economy of the Nordics: Denmark, Finland, Norway, and Sweden

To move from a description of the differences in Nordic monetary policy arrangements and towards a causal explanation we propose to look at the underlying economic structure, sectoral organisation, and policy regime of each of the Nordics. To that end, we turn to the analytical framework of growth model theory to undertake this comparison in the following section. To lay the conceptual foundations of this analysis, we begin by combining the growth model perspective with historical scholarship on the development of the Nordic model. The reason is twofold: first, to refine the way in which we apply the growth model perspective, a conceptual body of scholarship that has risen to prominence in recent years. Second, to begin to distinguish between the underlying differences between Denmark, Finland, Norway, and Sweden when the central bank is situated as the main unit of analysis within the wider political economy. Combining these bodies of scholarship clears the ground to proceed with the analytical account of central banking in the Nordic model in later sections, tracing the divergence of the Nordics to the subsequent crisis of the ERM in the early 1990s, from which such events, and the measures that followed shaped each country in a different way. This, we contend, set into a motion a divergence in the political economic frameworks for the Nordics, whereby dependent national political coalitions influenced the ways in which central banks have engaged in different crisis responses.

The concept of growth models

Growth model theory is a framework originally developed by Pontusson and Baccaro (Baccaro and Pontusson 2016, Baccaro *et al.* 2022) as a theoretical model for typologising national economies within a comparative political economy framework. Macroeconomic policy choices shape distributive conflicts by depressing or stimulating aggregate demand, thereby deciding levels of earnings and profits within the economy (Baccaro *et al.* 2022, p. 29). The main sources of aggregate demand can either come from domestic consumption, in the form of wage-based or debt-based consumption, or from consumption abroad, in the form of exporting particular goods and services to the world market. Balanced models combine the two consumption varieties as, for Pontusson and Baccaro, these models are all ways of managing the end of the Fordist model of wage-led growth that characterised the post war period (Baccaro and Pontusson 2016, p. 180). In the post-Fordist period since the 1980s, countries developed ways of finding new avenues of effective demand, after the strong demand driver of high annual wage increases disappeared. Illustrative of this approach is Germany, which represents an export-led growth model, with low domestic demand replaced by high levels

of exports, primarily in manufacturing. By contrast the UK has developed a consumption-led growth model, reliant upon an array of financial instruments devised in the City of London (often considered to typify the process of financialisation) to allow consumers to leverage debt to stimulate domestic demand, and allow for rising asset prices (Jackson 2024). Italy, in contrast to such examples, is often considered to represent a failure to foster either exports or domestic demand, leaving the country on a low growth trajectory.

The growth model of any given country is underpinned by a so-called growth coalition, comprising the dominant alliance of social forces bound together by a shared set of beliefs about the national interest. This includes parts, though not necessarily all, of the business class, parts of the state bureaucracy, political elites, and, depending on context, representatives of labour as a collective force (Baccaro *et al.* 2022). The growth coalition is defined as a consensual, but hierarchical formation of social groups: 'They are not coalitions among equals, but rather characterised by hierarchical power relations, with firms in leading sectors (and the owners of those firms) constituting the core of the coalition and other organised groups occupying subordinate positions' (Baccaro *et al.* 2022, p. 33). It stresses insights from economist Michal Kalecki that distribution affects aggregate demand, and the French Regulation School, which in turn draws from the works of Keynes and Kaldor. Effective demand, they argue, both in the short and long run is crucial to the level of output (Baccaro *et al.* 2022, pp. 9–12) from which the particullar growth model of the country in question might then be understood.

There are numerous theories of growth in economics and CPE, from Peter Hall's (2022) notion of growth regimes, referring to the ways in which capitalism should be seen as an economic system where firms as well as government play important roles in shaping how growth is generated and distributed, to Hall's part in the VoC literature, which seeks to compare different kinds of policy regimes across market economies. VoC is most famous for the distinction between coordinated market economies (CME) and liberal market economies (LME) as two ideal types in the organisation of firms in industrial economies (see for example Hall and Soskice 2001, Thelen 2014, Iversen *et al.* 2000). Despite being theoretically sophisticated, however, the VoC literature has, been criticised for lacking a degree of analytical precision to capture the changing nature of economic systems, often instead considering them fixed categories within the CME-LME typology. As Howell (2003) puts it: 'it is a political economy better suited to explaining the mid 1990s than the mid 1970s … ' for its analysis of capitalism is static without the inherent tendencies towards crises, contradictions, and power struggles. A growth model perspective is therefore an extension of, and response to, the problematic features of the VoC.

Against this backdrop, this article uses the growth model framework that is more focused on crisis management rather than static institutional comparisons. To this end, we use the growth model framework for two main reasons. First, and most simply, when dealing with central banks and monetary policy, we need a framework with a focus on macroeconomics, rather than the firm-centred micro-economic orientation of the VoC framework. Second, the growth model framework, with its post-Keynesian foundations, is sensitive to the instability and crisis prone nature of capitalist economies. If different types of institutional settings surrounding monetary policy are used in the Nordic countries, as we know it to be, it should result in different crisis responses by central banks depending on what levels of aggregate demand each country has wanted to achieve.

To therefore address a prominent gap in the Nordic model literature, we continue Wansleben's (2023b) recent extension of the growth model framework into the realm of monetary policy to observe central banks as a key unit of analysis. We seek to draw attention to central banks in the Nordics to understand the macroeconomic divergence of the associated countries. Indeed, Wansleben has noted that contrary to the common view that central banks exhibit a broad homogeneity since the 1980s, there are less similarities than scholars have typically assumed. We thereby develop on Wanslebens utilisation of the growth model literature for a similar endeavour, providing a much-needed sense of clarity to a political and economic construct whose unique qualities have tended to be overlooked. As we show in the following, the case of the Nordic model not only offers a

useful means by which to demonstrate the utility of the growth model literature, but it too responds to scholars who have overstated the convergence of central banks.

The variegation of the Nordic growth models

To understand the current differentiation of the Nordic economies, we need an understanding of the divergent responses to the 1970s crises and how those policy choices of that period shaped later developments. A formative account of this divergence amongst were laid out by Mjøset (1987) whose previous work outlines how the Nordic countries during the troubled 1970s adjusted very differently to structural issues, despite the common nature of the external shocks. This argument negates the idea of a coherent model, for, whilst many countries internalised in diffusive US modernity, smaller countries such as the Nordics remained dependent upon specialised industry. Such instances suggest there were always differentiations within Nordic economies, notably Sweden's specialism in iron and metal, Denmark's high-value-added agriculture, and Norway's energy output due to the topographic flow of water through the mountains and fjords, to name only a few noticable examples. How best to utilitse national resources, mobilise the expertise honed in producing them, and maximise the relative value of these goods to both the domestic and global economy thereafter became a matter of political choice. For example, in Sweden, coaltion formed around the view that it should operate a budget surplus after the ERM crisis that transcended the traditional left-right political debate over fiscal contraction and expansion. Meanwhile, Denmark moved to fiscal consolidation a decade earlier and became the ideal for expansionary austerity advocates (Haffert 2019). The root of the divergence in the Nordics thereby centres around the 'growth compromise' in which dominant export sectors, contingent upon the countries' unique structural characteristic of domestic specialisms, trade links, geographic proximity, and class-industry relations gives rise to a political-institutional framework.

Tracing the current differentiation to the transformation of the global economy after the 1970s (Ryner 2007) reveals the Nordic Model(s) to be the product of economic crises brought into being by wavering US hegemony, most vividly manifesting in the unpegging of the dollar from gold, and the dollar devaluations that followed led to relative adjustment in the currencies used across the Nordics. Currency adjustments thereafter became entangled with the enveloping oil crises created by OPEC, leading to higher raw material costs as intensifying Western-Soviet relations were also acutely felt in the region, particularly in Finland, given its geography (Hilson 2008). The distinct 'national economic policy models', as proposed by Mjøset, that emerged over the proceeding decades became subject to external and internal pressures. Debates of national economic policy models can, in many ways, be considered a precursor to what we now call growth models, yet whilst the former has never been formalised, used instead as an analytical-descriptor of the structural characteristics at play, the latter has come to be an eminent conceptual heuristic in recent years. Both nonetheless attempt to accentuate the dominant export sector that conditions each country moves through the business cycle.

Understanding how central banks preside over different contemporary growth models then rests upon decisions taken in mid-to-late twentieth century, as the Nordics accentuated prior export specialisms to insulate from the worst impacts of crises. From remaining within the 'snake collaboration' indicative of the Bretton-Woods fixed exchange-rate regime, to Norway, Sweden and Finland leaving the arrangement to peg their currencies to a currency basket, divergences emerged in the initial attempts to revalue the domestic currencies. Denmark remained committed a fixed exchange rate by virture of it being a product of European membership during the 1970s. Similarly, a convergence of fiscal policies happened during the 1980s, as Norway and Sweden reduced fiscal spending, while Finland and Demark saw a relative upturn. They all then followed the Danish approach of interest rates rises and credit liberalisation that unfolded from the 1980s (Mojset 1987, Lakey 2016), with the liberalisation of credit during this time, often considered to reflect the Nordic's embrace of neoliberalism, in turn created instability as the deregulation of the financial system, to varying degrees,

induced reckless lending. Caps on bank lending were foregone in the belief that any endemic problem would be self-corrected by the market and associated actors within it (Andersen 2010, Mjoset 2011).

Such clear lines of divergence contrasts the typical virw of the Nordics which, as outlined in the introduction, are often linked to the fiscal-centric accounts of the Nordic Model, characterised by egalitarian and union-dominated labour markets, that characterised the post-war economy. This attributed might otherwise be understood as the Swedish so-called Rehn-Meidner model (Meidner 1980, Erixon 2010), indicative of how Sweden is often taken as the paradigmatic example of the overall Nordic model in international comparisons. Recently, Erixon and Pontusson (2022) has examined the features of the Rehn-Meidner model and its lingering effects on the Swedish political economy. Symbolic of the fiscal-centric accounts of the Nordics, the Rehn-Meidner model could be seen as part of a general Fordist model of wage-led growth, which defined the 'golden age' of post-World War II welfare capitalism in Western Europe. By indexing (social) wage increases to productivity growth, mass production and mass consumption were integrated and thereby generating stable and high growth in the 1945–70 period (Marglin and Schor 1992). With the neoliberal turn in the 1980s this link between social wages and productivity growth broke down, leading to the post-Fordist scramble for new sources of aggregate demand that characterise contemporary growth models (Baccaro and Pontusson 2016, p. 180).

The post-Fordist world of larger capital flows and leaner production models has also seen the rise of monetary policy as the main macroeconomic stabiliser. Fiscal policy during the post-war decades relied heavily on planning, whereas monetary policy, from the late 1970s onwards, came to be seen as the pinnacle of market confidence in economic policymaking (Altamura 2017). In comparison the Nordic countries have retained relatively large parts of the logic of the Fordist wage-led strategy, as the growth models continues to be relatively labour inclusive. Socially democratic labour market institutions remain relatively strong, integrating a larger segment of the working class in the core labour market, including the service sector, in contrast to dualised labour markets (Thelen 2014). As the analysis will show, in terms of retaining the Fordist model, the Nordics are similar, but in response to the ensuing financialisation of national monetary arrangements, they have drifted apart.

To thereby demonstrate the contemporary variability pervading this analysis, we briefly take each country in turn. Denmark has, at least in recent history, been considered to exhibit an economic model contingent upon services, particularly in the administrative, education, health, and social services sectors (Stahl 2022). Finland, whilst once characterised by an industrial sector comprised most notably of Nokia and maritime products industries, has experience a drastic structural change in the last decade (Holmström *et al.* 2014, Sorsa 2023). As the electronics industry has been reduced, the significance of services has significantly increased (Sorsa 2020). However, whereas Denmark is reliant upon foreign demand for its exported goods, Finland from the 2010s onwards has been classified as a domestic demand-led economy in the growth model literature (Hein *et al.* 2020, Sorsa 2020). Norway contrasts the reliance on services of its Nordic counterparts, by instead specialising in the exporting of oil and natural gas, where it also maintains a significant degree of state ownership (Lakey 2016, Nissen 2021). Sweden again departs from the broader Nordic picture, where it still retains a robust manufacturing capacity in telecommunications and automobile industries (Bergh 2014, Devore 2015). Therefore, whilst each country exhibits broadly export-driven models, there is an acute degree of divergence of the kinds of exported goods and services, prominent industrial sectors, and source of aggregate demand.

Despite most of the Nordic Models exhibiting a significant, though not always acknowledged, export-growth model, here Denmark stands out insofar that it employs a remarkably more export-oriented growth strategy. In the period 2009–18 Denmark had a growth contribution from exports of 54.8%, placing it far ahead of the other Nordic countries in export dependency and close to the German level of 59% (Baccaro and Hadziabdic 2022, p. 16). Likewise, Norway most closely reflects the post-Keynesian foundations of the growth models perspective, with an acute dependency on the government for domestic consumption and ownership of national industry (Lakey 2016). The

	Annual growth	Consumption	Investment	Government	Exports	Growth model
Denmark	1.69%	14.00%	31.95%	–0.83%	54.88%	very export-led
Finland	1.14%	22.34%	38.00%	6.64%	33.02%	balanced
Norway	1.48%	19.67%	31.37%	31.07%	17.89%	domestic demand-led
Sweden	2.58%	12.47%	27.79%	24.95%	34.79%	balanced

Source: (Baccaro & Hadziabdic, 2022)

Figure 1. Table of growth contributions: 2009–18. Source: (Baccaro and Hadziabdic 2022).

Swedish model has been described 'balanced' as its economic growth is based on both exports and consumption (Erixon and Pontusson 2022). These differences are initially outlined in Figure 1.

Whereas the composition of individual growth models is acutely different, the Nordic countries exhibit notable similarities in terms of the composition of their growth coalitions. Particularly noteworthy is the cross-class partnership between the dominant corporations, which are typically concentrated in the export sector, and the unions that organise the workforce of this sector. This partnership, driven by a shared objective of achieving international competitiveness, is often referred to as 'competitive corporatism' and continues to be a dominant force in the Nordic political economy (Bengtsson and Ryner 2017, p. 287). The Nordic Model is thereby a useful case in demonstrating how four countries that can be seen to be almost interchangeable yet have very different institutional setups on a vital area within the political economy. This contradiction is crucial to our analysis of central banking in the Nordic countries.

Central banking in the Nordic Model: beyond the fiscal to a monetary perspective

Following the formative account of Nordic divergence from Mjøset, Ryner and others, contemporary differences are nowhere starker than in the central banks. From the breakdown of the ERM, central banks in Sweden, Finland and Norway were made operationally independent. In both Denmark and Sweden, they were already autonomous from government. All Nordic central banks have a broad mandate to maintain price stability and all of them have introduced a 2 percent inflation target, although institutional arrangements regarding operational independence differ. For example, the Swedish central bank law allows *Riksbanken* to define its inflation target, with approval from parliament, while the Norwegian central bank law obliges the government to define the inflation target of *Norges Bank*. The *Bank of Finland,* as the only Nordic member of the European Central Bank (ECB), has its mandate defined in the Treaty on Functioning of the EU. Despite the formal mandates, the Danish *Nationalbank* operates with a single overarching goal, which is to maintain the currency peg of the Danish krone to the euro at the rate 7,46 with the fluctuation range of 2,25 percent (Spange and Toftdahl 2014).

Each central bank's monetary framework is to maintain price stability by keeping inflation at a stable level with the manipulation of short-term interest rates. This framework ensures that growth coalitions can negotiate based on relatively predictable price rises *vis-a-vis* wages and profits to maintain aggregate demand. The mechanism is twofold. First, their inflation targets, typical of central banks' inflation targets the world over (Wansleben 2023b), simultaneously sets the relative price of credit to stimulate spending. Second, the shorter to medium-term targets for inflation set a limit of increases in wages, from which point they cannot be exceed prices, to discipline labour when excess demand arises in

	Finland	Denmark	Sweden	Norway
Level of monetary sovereignty	No monetary sovereignty	De jure monetary sovereignty	Constrained monetary sovereignty	De facto monetary sovereignty
Details	Euro member. No individual sovereignty but share in collective sovereignty through ECB membership.	Currency peg to Euro means no de-facto monetary sovereignty. Also, no collective sovereignty through ECB membership	Independent monetary policy, but de facto constrained by internal market membership	Independent monetary policy, with cursory reference to the Euro as a bound within which to keep Krone exchange.

Figure 2. Table of monetary policy characteristics.

the economy. Central banks, therefore, manage the distributional impacts, potential or otherwise, by establishing the macroeconomic parameters within which economic actors must operate. Likewise, it demonstrates the role of central banks in the operations of modern social democracy. That is to say, the current Nordic social arrangements are based upon the framework of predictable prices as exercised by each central bank. The social democratic welfare model, whilst denoting a broad political-economic order, is thereby maintained through a variety of monetary mechanisms.

To further differentiate between the constituent parts of the Nordic Model, we here turn to the subject of monetary sovereignty (e.g. Kelton 2020, Murau and van 't Klooster 2022), understood as the ability of states to issue, and to regulate their currency. As Nordic monetary policy regimes are substantially influenced and constrained by the EU's internal markets, the Eurozone, and the actions of the ECB, a way of simplifying the structure of the policy space of the Nordic central banks are through their relationship with the European single currency (the euro), and thus their *de jure* and *de facto* monetary sovereignty. Such a simplification gives us a range of integration in the Eurosystem and inverted to this level of monetary sovereignty, as laid out in Figure 2.

On the most integrated level, we have Finland, which, as a Euro-member state, has no monetary sovereignty, as all monetary policy decisions are taken in Frankfurt. However, as the only Nordic country formally within the ECB, Finland has influence within the Eurozone, and thus participates in the collective sovereignty, through its membership in the governing bodies of the ECB. The ECB's Governing Council is responsible for monetary policy decision-making and defines the ECB's monetary policy strategy, including the inflation-target. The ECB's decisions cannot be vetoed, it is forbidden to take instructions from politicians, and it is prohibited from financing the Euro Member States or EU institutions. Because of a high level of discretion and the fact that the ECB's mandate is an international treaty which is politically hard to modify, the ECB is in practice the most independent central bank in the world.

Denmark, on account of its optout of the Maastricht Treaty, remains a non-euro member, and as such has *de jure* independence and thus full monetary sovereignty. Yet, due to its currency peg to the Euro and earlier to the German *Deutsche mark*, the country has had little *de-facto* monetary sovereignty since 1982. This means that Denmark has virtually no room for an independent monetary policy, and functions as a *de-facto* member of the Eurozone, despite not having representation in the ECB or the Eurogroup. The fixed-exchange-rate policy is central to the Danish post-Fordist growth model, and as such is hard to change. Additionally, the *Nationalbank*'s independence is tempered by a high level of integration into the political system, as well as the corporate network of the Danish political economy, with representation of politicians, civil servants, business leaders and organised labour in various parts of the bank's governance structure.

Sweden has more exchange rate flexibility and larger space for independent and domestically oriented monetary policy than either Finland or Denmark. Sweden does not have a fixed peg to the Euro, nor is it a member of the Eurozone. This is not the product of a formal opt-out, but rather the result of a referendum in 2003, subsequently implemented into government policy.

However, although the *Riksbanken* is a self-governed institution under the Swedish parliament, regulated by the central bank law, Sweden's membership of the EU's internal market, with free capital mobility, sets quite clear limits to the scope of its monetary experimentation. Too large a divergence from the ECB's interest rate could prove problematic to financial flows in and out of the country. Research from the *Norges Bank* has incidentally found that spillover effects from ECB policy announcements affect long-term real economic variables in Sweden as well as Norway and Denmark, though domestic policy still controls short to medium-term yields (Ellen *et al.* 2018).

In the Nordic context, Norway stands out as the country with the most monetary sovereignty. By operating outside of the EU, and the Eurosystem, the *Norges Bank* has sole authority over the issuance of Norwegian krone, setting of interest rates and foreign exchange rates. Like Sweden the currency is floating towards the Euro, and Norway belongs to the EU's single market and Schengen area even though it is not an EU member state. As a small open economy, Norway is still constrained by the global monetary and financial system. Norwegian equity prices are nonetheless significantly affected by abrupt policy changes from the ECB (though not affecting Denmark or Sweden) (Ellen *et al.* 2018). The *Norges Bank* also notably differs from other Nordic central banks in its close relationship with the Norwegian government in its 'separate management agreement' with the Ministry of Finance to manage Norway's Sovereign Wealth Fund (SWF) or Government Pension Fund Global (GPFG), by maintaining long-term returns with as little risk as possible. Through the fund, the *Norges Bank* plays a significant role in Norway's fiscal policy, with 3 percent of the fund transferred to the government's current account. The transfer of capital is intended to cover any deficits in Norwegian fiscal policy, with any surplus is also reinvested back into the fund. The operation of the budgetary/fiscal rule is often considered key to the Norwegian economy by way of maintaining national prosperity, domestic demand, and key public services.

The Nordic Model(s) during crises: points of divergence during the financial and Covid crises

Already we have demonstrated that by moving from a fiscal to a monetary perspective there are several dissimilarities within the Nordic Model. Such difference is most vividly brought to bear during moments of economic crises, as the central banking operations institutionalised within each context give rise to a markedly different approach in turn. That is to say that the monetary operations and practises shaped by the country's unique fiscal preoccupation, membership of, or relation to, the European Union and degree of monetary sovereignty precede an economic response that can be deconstructed case by case. As such, we argue that it is during periods of economic crises that the notion of a singular Nordic Model breakdown, and a series of Nordic Model(s) instead emerge. To illustrate this, we focus on the events that followed the GFC and COVID-19 across the Nordics.

Monetary response to the Global Financial Crisis

As the profound economic contraction of the GFC and the following period of secular stagnation, enveloped the global political economy, the Nordic countries, like all other polities, employed a variety of economic policies to uphold their growth model. In the context of monetary policy, such response was shaped by what Blyth and Matthijs (2017) have referred to as the 'macroeconomic regime' that preceded the crisis. As we will explore below, there is considerable variation within the Nordic countries when it comes to growth models and growth coalition, and as such it should not come as a surprise if there is also variation when it comes to monetary policy formation.

Since 2008, central banks' legal mandates were not changed, but they were granted new macroprudential responsibilities and regulation was tightened through the Basel III accord. Additionally, unconventional crisis responses broadened the scope of monetary policy. Crisis measures thereafter differed considerably between Nordic central banks. As seen in Figure 3, their crisis responses

	Finland	Denmark	Sweden	Norway
Main response to 2008 GFC	1.Concerted interest rate cuts with other major central banks 2. Several measures for supporting bank liquidity and funding, like longer-term refinancing operations, eased collateral requirements and currency swap lines with the major central banks 3. Private and public asset purchase programmes	1. Credit and depositor guarantees for all banks by Nationalbanken and finance ministry. 2. Swap lines established with US Federal reserve, ECB, and Norges Bank. 3. Recapitalization of troubled banks by state, and access to extraordinary loans in DKK and foreign currency in Nationalbanken.	1. Credit guarantees to Swedish banks by the Riksbank and Treasury. 2. Swap line agreements with Federal Reserve, Bank of Australia, Norges Bank and Danmarks Nationalbank. 3. Eased collateral requirements and extraordinary liquidity provisions in both SEK and foreign currencies.	1. Government Bond Fund created to exchange stressed assets for short-term government bonds. 2. Eased collateral requirements 3. Credit agreement with Federal Reserve.
Details	Weaker growth trajectory than other Nordics due to the export sector's problems, the single currency, and measures suppressing domestic demand	Weaker growth trajectory due to weak internal demand and limited fiscal monetary policy space due to peg to Euro. Strengthened export sector and higher international competitiveness.	Better growth trajectory than other Nordics post-2008 because of greater flexibility due to floating exchange rate, and early intervention in the banking market.	Steady growth post-2008 due, in part, to capital requirements and supervisory measures introduced after 1992 Norway banking crisis precluded sub-prime mortgages holdings in domestic banks.

Figure 3. Table of monetary responses of GFC.

reflected the different institutional settings; Finland adhering to the ECB crisis management, Denmark defending its currency peg, and Sweden and Norway stabilising financial markets independently with their respective central banks. The Swedish and Finnish central banks introduced large-scale asset purchases through Quantitative Easing (QE) operations and negative interest rates. Additionally, the Riksbanken needed constantly to expand its QE to limit the influence of the ECB's QE over the Swedish krona's exchange rate (Erixon and Pontusson 2022). In turn, the Danish and Norwegian central banks did not engage in QE and the *Norges Bank* never cut interest rates below zero.

Monetary policy response to COVID-19

Illustrative again of the absence of an invariable Nordic Model is how each country responded to the economic contraction that followed the COVID-19 pandemic. There we can see different monetary tools deployed to stabilise the economy to avoid recessionary falls in aggregate demand. The impact of COVID-19 on the Nordics is twofold: First, although economic activity contracted across all sectors, its precise impact on Denmark, Finland, Norway, and Sweden had differentiated impacts depending on the composition of the economy we detailed in section 'the political economy of the Nordics: Denmark, Finland, Norway, and Sweden'. For example, such is the relationship between oil demand and economic growth, insofar as it is used in industrial processes, one might assume Norwegian exports were more acutely impacted than Finland and Sweden where telecommunication

	Finland	Denmark	Sweden	Norway
Main response to COVID-19 pandemic	Pandemic QE of €1850bn. Support access to credit for firms and households via a) long-term targeted refinancing operations, b) eased standards for collateral and expanded list of assets to be used as collateral by banks.	Countercyclical capital buffer released pre-emptively, and planned increases cancelled in March 2020. Relaxation of LCR requirement regulations by Danish Financial Stability Authority (DFSA).	Increased QE of 700bn SEK. Lending of up to 500bn SEK to companies via banks (Funding for lending). New lending facility where monetary policy counterparts could borrow unlimited amounts at repo rate given adequate collateral.	To assist transmission mechanism three-month F-loans with floating interest rate to registered organisations was offered.
Interest rate changes	Deposit facility rate kept at -0.50 %; main refinancing operation at 0.00 % and marginal lending facility at 0.25 % from 2020 to 2022	Interest rate cut to -0.75 % in March 2020 to boost economic activity.	Repo rate left unchanged at 0.0 % 2020-2022.	Two cuts from 0.75 to 0.25 to 0.0 %. First Nordic CB to raise interest rates to increase demand for Norwegian Krone.
Swap line contracts	ECB swap lines reactivated or extended with the major central banks	Extended swap lines agreements with Federal Reserve of $24bn and ECB of 24bn EUR.	Extended swap lines agreement with Federal Reserve of $60bn.	Extended swap lines agreement with Federal Reserve of $30bn.
Main fiscal responses	Fiscal measures included state aided financial support to companies, state-backed loans to affected companies, tax advantages, and investment guarantees.	Help packages and guarantees total of 300bn DKK. Packages included wage compensation, tax deferment schemes, and state-backed loans to increase access to liquidity.	Fiscal measures total of 1003bn SEK 2020-2022. Support included a) capital injections, liquidity support and guarantees, b) wage subsidies for short-term leave, and extended sick-leave and unemployment benefits.	Fiscal policy expanded by 4.5 % of GDP in a variety of liquidity support measures to 100bn NOK.

Figure 4. Table of monetary responses to COVID-19.

technologies pluralised as working practices shifted from the workplace to the domestic sphere (Ferragina and Zola 2022). Mitigating against the subsequent downturn accordingly reiterates the need to account for central banks.

As a result, the second important element to consider from the events of COVID-19 is the monetary instruments used to in maintaining aggregate demand, particularly that which operated in the background of the overt furlough schemes that came to define the state's buttressing of the economy (Baines and Hager 2021, Jones and Hameiri 2022). Beyond the expanded fiscal policies of countries across the global political economy, not least the four we focus on here, central banks performed a key function in maintaining demand for credit, exchange rate alignment and preventing contagious illiquidity compounding the slowdown in economic activity. This element is acutely brought to bear in the cases of Denmark, Norway, and Sweden, who reside outside of the Eurozone, but to varying degrees within the Economic and Monetary Union. There is perhaps no

greater inidcation as to the differences at play is that while the Bank of Finland and the Riksbank responded to the pandemic with expanded QE programmes, the Danish and Norwegian central banks still have not introduced large-scale asset purchase programmes. As a result, as demonstrated in Figure 4, we arguer that the expansion of the monetary frontiers, in a number of different directions, brought about by COVID-19 once again serves to show that there is no singualr Nordic Model, but instead a variety of Nordic Models. Whilst the implications of this analysis casts doubt over the utility of the Nordic Model as an analytical subject, each model nonetheless has much to offer for future political economy scholarship.

Conclusion

In this article, we have shown that contrary to the prevailing view of the unitary nature of the Nordic model, often reduced to an unvarying political construct, there exists an acute degree of institutional variation. By shifting the focus, from the fiscal-dominated accounts of the quintessential socially democratic politics in the political economy literature, to monetary policy we see far more variation than has long been assumed. In shifting focus to the role of central banks and monetary policy, we address a gap in the literature on the post-Fordist political economy where the Nordics have displayed a greater variegation than has been assumed. For subsequent analyses of the Nordic Model in the political economy, notably CPE literature, we argue that a more accurate understanding would be to consider the Nordic Model as consisting of different institutional monetary formations within a shared political construct, as Finland, Denmark, Norway, and Sweden have chosen different paths to cope with economic globalisation. As such, rather than a monolithic model per se, we argue that there is, in reality, a variety of Nordic model(s) that should be observed accordingly. In other words, all the Nordic countries are markedly different, and *that's* what makes them the same.

Adding to this important clarification, we have made two further contributions to the literature. One is ostensibly an extension of the first, where we detail the operations of central banks within Denmark, Finland, Norway, and Sweden, which itself has received only limited attention, save a few exceptions (Iversen *et al.* 2000, Bech and Malkhozov 2016, Thomassen 2017). This is perhaps where the starkest contrasts of the Nordic Model exist, as inflationary targets, mandated responsibilities for maintaining price stability and inclusion in the European single currency all act as variables that require greater attention when considering the comparability of these countries. The implication of this is that greater a consideration is required when examining those countries that comprise the Nordic Model for, as we have shown, they bear arguably more differences than similarities. This, if nothing else, demands greater methodological sensitivity when dealing with this analytical construct in future, requiring scholars to move beyond the pervasive generality with which the Nordic Model has been treated towards one that is more empirically precise. Whilst we draw attention to this feature, it is undoubtedly a subject for subsequent scholarship. It nonetheless demonstrates that it is important to consider the variegated monetary mechanics that lie beneath the typically, and often solely, socially democratic fiscal considerations.

Outside of the Nordic geography, the contribution made in this analysis may likely be realised in the growth models literature, where we demonstrate the importance of central banks in the reproduction of the growth model in question. Here, we seek to build upon Wansleben's (2023b) formative inclusion of central banks into the growth models literature. As an abridgement to this theoretical body, we seek to further draw on the growing insights of central banks in the political economy literature to propose the growth model for the four countries of concern. Such clarifications thereby contribute to the ongoing attempt by political economy scholars to define the growth model of any and all countries in the global economy (Bondy and Maggor 2023, Frank *et al.* 2023). In doing so, we have provided an account of the growth models in Denmark, Finland, Norway, and Sweden in isolation from one another as much as other countries, by exploring their unique monetary characteristics (Fuglsang 2023). Combined, we seek to cut across several abounding debates in political economy with the intention of making a useful contribution to each.

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