Government size, institutions, and export performance among OECD economies

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ABSTRACT

With a panel of 18 OECD countries, 1980–2005, we investigate the determinants of export performance, in particular the effects of the size of government and institutional features. In a model of endogenous extent of domestically-produced goods, government size has a non-linear effect on export performance; the export-maximising size of government (tax receipts) is around 40–45% of GDP; the best size of productive government spending is around 16% of GDP. Product market and labour market-related rigidities affect negatively the export performance both on their own and via a negative effect on the effectiveness of R&D and slow down the speed of adjustment. Among traditional variables, relative unit labour cost, R&D shares in GDP, TFP growth and human capital show up significantly and with the expected signs.

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1. Introduction

A country's export performance is of great concern to both academic economists and policy-makers for a number of inter-related reasons: Exports are a source of demand with beneficial effects on GDP and employment; they help improve the trade balance and alleviate external deficits; the export sectors may be among the most dynamic in an economic, providing an impetus for innovation and technological advancement. At a time when stagnation seems to be setting over large sections of the world economy, there is renewed focus on exports as a strategy for economic revival. As a result, the interest in the determinants of a country's export performance is ongoing. This paper's broad aim is to contribute to these debates. Our departure point is the landmark paper by Carlin et al. (2001), which investigates factors affecting the relative exports among 14 OECD countries. They conclude that while well-known variables such relative unit labour costs and indices of technological advancement are important, they cannot by themselves explain entirely the developments in export shares. Among the factors that are suggested as missing include 'deep structural characteristics' of these economies. This paper's aim is to investigate the role of two sets of such deep characteristics in shaping export performance, namely the size of the government sector, and labour and product market 'institutions'. The findings should be of direct policy relevance, as well as constituting contributions to the literature.

More specifically, the paper accomplishes a number of objectives. Firstly, it investigates the empirical relevance of traditionally highlighted factors, such as the following: Unit labour costs, as they are widely found to be significant determinants in empirical export regressions (Carlin et al., 2001; Cavallaro and Mulino, 2009; Fagerberg, 1988; León-Ledesma, 2005); and the extent of research and development (R&D), as this underlies the product differentiation emphasised by new trade theory as a key export driver (see Helpman and Krugman, 1985; empirical validation of these models can be found in Hummels and Levinsohn, 1993; León-Ledesma, 2005; Cavallaro and Mulino, 2009; Athanasoglou and Bardaka, 2010). A second objective is to include 'institutions' among the determinants of export performance, particularly labour market and product market institutions, and the regulatory environment. The role of the former in affecting unemployment has been widely investigated and debated (see Blanchard and Wolfers, 2000; Nickell, 1990, 1997); product market competition has been argued to affect wages and unemployment (Griffith et al., 2007); and entry regulation for new firms is seen as detrimental to firm entry and growth (Djankov et al., 2002; Koeniger and Prat, 2007). Knack and Keefer (1995), Acemoglu et al. (2001), Paldam and Gundlach (2008) and Drine (2012) (among others) show that the quality of institutions matters for growth and development; and Gwartney et al. (2006) show that it also matters for the level and productivity of investment. These institutional features and rigidities may also impact on export performance; this should be expected from the findings of Nicoletti and Scarpeta (2003), for instance, that a high degree of rigidity in the labour market raises the cost of production substantially, preventing resources from moving quickly and costlessly towards more productive activities. To preamble, we find that many, though not all, of these institutional variables are important determinants of export performance; we are thus able to go forward in the direction suggested by Carlin et al. (2001) and to provide information of help in the design of sound institutions.

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A further contribution of this paper is to investigate the role of government size in promoting exports. The role of government in economic development continues to be debated. Critics argue that government crowds out utility-enhancing private consumption by wasteful public consumption (Mitchell, 2005); moreover, redistributive taxation may breed corruption, dependence or moral hazard (Sinn, 1995). Proponents of government spending and the welfare state (Atkinson, 1995a, 1995b) question the specifics of many of these arguments and view the international evidence on the government spending–growth relation as mixed. The empirical link between government size and economic performance is mixed (La Porta et al., 1999; Temple, 1999). Theoretical approaches emphasise the beneficial effects of productive public services such as maintenance of the rule of law, investment in infrastructure, promotion of human capital via education and health, and delineation of property rights and contract enforcement (Aschauer, 1989; Fisher and Turnovsky, 1995; Ghosh and Roy, 2004; Tsoukis and Miller, 2003; Turnovsky, 2000); Irmen and Kuehnel (2009) provide a survey of this literature. Barro (1990) analyses both aspects of public services, the productivity-enhancing one and the disincentives induced by higher taxation; the growth–government size relation may be summarised by a hump-shaped curve. There is thus a conceptually clear optimal size of government.[1] Empirically, public investment on infrastructure has a beneficial effect on growth (Canning and Pedroni, 2008; Demetriades and Mamuneas, 2000; Easterly and Rebelo, 1993). We continue this debate by investigating the contribution of government size to relative exports, another measure of macroeconomic performance. To preamble, both theoretically and empirically, we consistently and robustly find a hump-shaped curve of export performance versus government size along the lines of Barro (1990). There is a clear policy relevance of this finding: There is a government size that is best from the point of view of maximising exports; we discuss this government size suggested by our estimated regression coefficients.[2]

Our investigation is related to a number of strands in the literature. Alesina and Perotti (1997) study theoretically and empirically the effects on competitiveness of redistribution financed by distortionary taxation. Their empirical part confirms the theoretical predictions: For instance, a rise in labour tax by 1% of GDP increases unit labour costs by as much as 3%. Our line of investigation has a different focus from this paper, namely we enquire about the determinants of export performance; competitiveness is an explanatory, rather than a dependent, variable. Moreover, we use a more recent and extensive panel data set than the one applied in Carlin et al. (2001). Elsewhere, the possibly bidirectional links between institutions and trade openness have been investigated by Dollar and Kraay (2003), Giavazzi and Tabellini (2005), and Meon and Sekkat (2008). Institutions and their quality have also been linked to the pattern of trade. Levchenko (2007) and Nunn (2007) have shown that differences across countries in institutions such as the quality of contract enforcement and property rights are an important determinant of trade flows. Our paper is also related to a strand of literature that investigates the causality between trade openness and government size, with mixed conclusions: Among others, Epifani and Gancia (2009) show that higher openness leads to bigger government, while Benarroch and Pandey (2008) reach exactly the

opposite conclusion (greater government leads to lower openness). Despite their relevance, our paper seeks to address different questions: In particular, export performance (as measured by relative export shares) is linked to the pattern of trade and openness but also encompasses questions of price and non-price competitiveness. From a different perspective our analysis is also linked to the trade imbalances literature; see Hall et al. (2010) and Belke et al. (2015).

To gain intuition, we firstly build a theoretical model, reviewed in Section 2: We analyse relative export performance in a setup that draws on the vintage model of Dornbusch et al. (1977). This model determines market structure (share of a unit-mass of goods produced by each of two countries) based on unit labour costs in a monopolistically competitive product market. In this basic setup the role of the state sector and institutions in promoting export performance is investigated. In the empirical Section 3, we investigate the relation between export performance, labour and product market institutions, and the size of government as measured by the total tax revenue–GDP ratio using a panel of 18 OECD countries, 1980–2005. The 'institutions' refer to labour (employment protection legislation) and product (barriers to entrepreneurship, competition, and FDI; and overall product market regulation) markets. The product market-related institutional features considered in the study impact negatively on international export shares via lowering the effectiveness of R&D; nonetheless we could not uncover any significant role for labour market-related rigidities. Among more traditional determinants of export performance, relative unit labour costs and R&D turn up as expected, while purely social (i.e., non-productive) expenditures harm international competiveness, in a way consistent with Alesina and Perotti (1997). Section 4 carries out further robustness and sensitivity tests, while Section 5 concludes. An online Appendix outlines in greater detail the theoretical model of the paper.

2. A model of government size and export performance

The theoretical model seeks to uncover the channels of influence of the size of the state sector on export performance. While the tax rate reduces competitiveness (Alesina and Perotti, 1997), it may also increase productivity via its support of productive public services (Barro, 1990). To bring these arguments to bear on export performance, we adapt the dynamic Ricardian model of Dornbusch, Fischer and Samuelson (henceforth DFS, 1977; see also Obstfeld and Rogoff, 1996, Chapter 4) coupled with monopolistic competition in the product and labour markets (something missing from the original model). We also combine this with productive public services in the manner of Barro (1990). In contrast to the supply-side model of Barro (1990), here demand is determined first, and then labour demand is determined residually. The production function is characterised by a constant elasticity of substitution. There is also the possibility of unemployment in the labour market, and hence a meaningful role for trade unionism. This links up with a rich literature on the effects of union behaviour (see Nickell, 1990, for a survey). These are valuable extensions of DFS (1977) in their own right and never so far incorporated into the same model. The main focus here is to highlight the effects of state size and institutions on competitiveness and ultimately export performance.

There is a continuum of goods, $i \in [0,1]$ that are internationally tradable. A fraction, $0 < z < 1$ of them is produced by the Home economy (H), and the rest by the Foreign economy (F — the latter will be indicated by starred variables). We indicate by α_i and α_i^* the unit labour requirements (inverse productivity) for each good i in each of the two countries. Thus, the ratio $A(i) \equiv \alpha_i / \alpha_i^*$ indicates the relative productivity of H concerning good i. Later on, we shall consider also broader interpretations of productivity and $A(i)$ that bear on institutions. We index the goods such that $A'(i) < 0$; thus, H has a relative productivity advantage for goods with a low i and F in those with a high i.

Due to the monopolistic structure of the goods market, producers in all sectors enjoy a monopolistic markup of price over marginal cost

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[1]   Karras (1996) provides one of few attempts to empirically implement this idea and determine whether public services are optimally provided or not. Alesina (1999) argues that countries with low incomes tend to have inefficient, insufficient and corrupt government, while at high incomes, government is too much and generates some kind of addiction from public services. This view parallels the reasoning of Barro (1990) but reverses the order of causality (in Barro, causality goes from public services to growth, in Alesina it is the opposite).

[2]   This does not mean that governments do, or even should, care about export performance. Our point is that, if governments do care, they ought to aim for the government size that we show as maximising the export share.