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Competitiveness and government expenditure: The Australian example

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ABSTRACT

This paper proposes a new measure of competitiveness based on the ratio of non-tradable goods and services prices to tradable goods and services prices. It first presents a straightforward framework for understanding how key macroeconomic variables determine this alternative competitiveness measure with reference to output and expenditure behaviour in a two sector open economy. It then econometrically examines its most significant determinants with reference to private and public sector consumption and investment in Australia. Results based on quarterly data from 1998 to 2013 suggest that government expenditure on non-tradable goods and services was the most significant factor to worsen Australia's competitiveness. This provides an alternative perspective on the efficacy of fiscal policy to those previously advanced in standard international macroeconomic models.

1. Introduction

Competitiveness has traditionally been thought to convey the capacity of an economy's producers to compete against foreign producers of goods and services that are substitutes. Approximated by the real exchange rate, competitiveness changes when nominal exchange rates and domestic prices move relative to trading partners. Productivity, a distinctly different concept, in contrast gauges how efficiently factor inputs combine to produce goods and services domestically. Both competitiveness and productivity bolster economic growth, although strong competiveness can compensate for low productivity as a source of growth and vice versa.

Many factors influence an economy's competitiveness. From a macroeconomic perspective these include monetary and fiscal policy settings at home and abroad, as well as economy wide wage growth.[1] Historically, the real exchange rate has most often been examined with reference to monetary policy, price levels, interest rates, purchasing power and interest parity, rather than fiscal variables. However, competitiveness also plays a key role in the classic Mundell (1963)–Fleming (1962) model for analysing the effectiveness of fiscal and monetary policies in open economies.[2] In that paradigm expansionary monetary policy is effective under floating exchange rates as a stabilisation instrument because it improves competitiveness and boosts net exports, whereas fiscal policy is ineffective because worsened competitiveness crowds out net exports.

Yet this approach implicitly assumes that all goods and services are internationally saleable, making no distinction between goods and services that are tradable and those that are non-tradable. Another stream of the international macroeconomics literature based on the tradable–nontradable dichotomy follows the tradition of the so-called dependent economy model, originally proposed by Salter (1959); Swan (1960). This approach has been adapted by, inter alia, Fischer and Frenkel (1972), Obstfeld and Rogoff (1996), Yano and Nugent (1999), and more recently Guest and Makin (2013) and Mohsin and Park (2015).

Other studies in this paradigm focus on the international macroeconomic effects of fiscal policy, with a particular emphasis on the government spending–exchange rate linkage, which include Dornbusch (1975), and Monacelli and Perotti (2010). Meanwhile, the empirical component of a sizeable literature on the effectiveness of fiscal policy in open economies has predominantly focused on the relationship between budget balances and current account balances (see Abbas et al., 2011 for a survey). In contrast, little research has explored the direct relationship between fiscal activity and the real exchange rate, with the exception of Galstyan and Lane (2009); Kollmann (2010).

In Australia's case, productivity performance has been central to economic policy debate, yet the macroeconomic role and impact of competiveness has largely been ignored, despite the real exchange rate being around 30% above its long term average value since the float of the dollar in 1983 during the period following the 2008–09 Global Financial Crisis (Fig. 1).[3] This proximately explains why Australia's tradable sectors — manufacturing, tourism and higher

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[1] A broader competitiveness measure devised by the World Economic Forum (WEF) focuses on a number of institutional "pillars" (economic institutions, macroeconomic environment, product and labour market efficiency and technological readiness) that contribute to sustainable economic growth.

[2] Makin (2010) extends this approach by including wealth, interest risk and foreign demand effects.

[3] Previous studies on Australia's business cycle and exchange rate include Narayan (2008a,b) and Manalo et al. (2015).

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education in particular — have struggled to compete internationally. The real exchange rate at any time also measures nominal exchange rate deviation from equilibrium purchasing power parity (PPP) values and this implies substantial recent overvaluation on this basis.

However, as an explanation of exchange rate behaviour, PPP falls short in practice due to different weightings in national price indexes, the existence of trade restrictions and transport costs, and the fact that a large proportion of goods and services produced and consumed in the economy are not internationally tradable. This last factor suggests a different competitiveness measure which recognises that economies produce two distinct classes of goods and services, tradables and non-tradables.

The aim here is to advance this alternative competitiveness measure and examine how aggregate expenditure influences it, with a particular focus on government spending. The theoretical rationale of our approach is proposed in the next section. Section 3 then empirically examines the impact of different forms of aggregate spending on competitiveness with reference to Australia's experience. Section 4 summarises the key finding, highlighting its significance for macroeconomic policy.

2. An alternative competitiveness measure

This section outlines the key relationships underpinning a straightforward two sector model, later used to examine how expenditure shocks affect competitiveness, alternatively defined.

2.1. Competitiveness and national output

The economy produces and consumes two distinct classes of goods and services — tradables and nontradables. Gross domestic product is the total quantity of tradable and non-tradable goods and services produced in the economy and can be expressed as

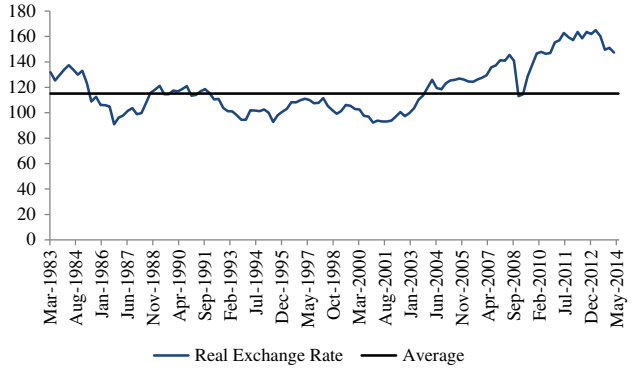
$$Y = O_T + O_N \tag{1}$$

where Y is real national output comprised of tradable, O_T, and non-tradable goods and services, O_N.

The foreign currency prices of tradable goods and services are set in world markets, and converted to domestic values via the prevailing exchange rate, such that

$$P_T = eP_T^* \tag{2}$$

where P_T is an index of the price of tradables, P_T^*, is an index of the world price of tradables and e is the nominal effective exchange rate, defined as the price of foreign currency. On the other hand, the price of non-tradables, reflected in the index measure, P_N is set by domestic demand and supply conditions.



Source: Reserve Bank of Australia (available at www.rba.gov.au/statistics)

Fig. 1. Australia's real exchange rate 1983–2014.
Source: Reserve Bank of Australia (available at www.rba.gov.au/statistics).

The real exchange rate, R, is the ratio of the domestic currency price of non-tradables to tradables, a rise in which signifies a real appreciation, or loss of international competitiveness. Hence,

$$R = {}^{P_N}\Big/_{eP_T^*} = {}^{P_N}\Big/_{P_T}. \tag{3}$$

If nontradables' prices are rising faster than tradables' prices, competitiveness is worsening, whereas if the prices of tradables are rising faster than those of nontradables, competitiveness is improving.[4] Change in this key relative price thereby alters the pattern of production and expenditure in the tradable and non-tradable sectors of the economy as shown in Fig. 2.

If this ratio is rising labour and capital will be drawn away from the tradable sector to the non-tradable sector. Hence a diminishing share of the economy's output will be exposed to international competition, other things the same, de-internationalising the economy's production. In other words, this relative price reflects the opportunity cost of shifting resources between the traded and non-traded sectors. As increased demand for non-traded goods raises their relative price, and increases the opportunity cost of using resources in the traded goods sector, a country's competitiveness declines and conversely when the price of non-traded goods falls relative to that for traded goods.

The capital stock is assumed fixed in the short run, such that $\overline{K} = \overline{K}_T + \overline{K}_N$. Within this time frame the available supply of non-tradable and tradable output for sale is a function of competitiveness, the change in the level of inventories, V, and hours worked by labour, H, in both sectors, such that

$$O_{T,N} = f\left(R; V_{T,N}, H_{T,N}\right)$$
$${}^{\partial O_T}\Big/_{\partial R} < 0, \quad {}^{\partial O_N}\Big/_{\partial R} > 0, \quad {}^{\partial O_{T,N}}\Big/_{\partial V_{T,N}} > 0, \quad {}^{\partial O_{T,N}}\Big/_{\partial H_{T,N}} > 0. \tag{4}$$

2.2. Competitiveness and aggregate expenditure

Expenditure by resident entities on tradable and non-tradable output is E_T and E_N respectively, and TB is the trade balance expressed as the difference between domestic spending and national output following Alexander (1952).

$$Y = O_T + O_N = E_T + E_N + G + TB \tag{5}$$

Total expenditure is the sum of private consumption and investment expenditure on tradables and non-tradables, $E(=E_T + E_N)$, plus government spending, G, assumed to be exogenous.

It is assumed that private consumption does not rise proportionately with temporary income variation and so is independent of short run output variation, consistent with the life cycle (Modigliani, 1986) and permanent income (Friedman, 1957) theories of consumption as well as more recent intertemporal approaches (see Wickens, 2011). Hence, private consumption is responsive to changes in the real exchange rate, permanent income, ρ, wealth, q, and the domestic interest rate, r. Private investment is also a function of the real exchange rate, wealth, q, and the domestic interest rate, r.

In reality government spending is overwhelmingly on non-tradable goods and services, such as construction, welfare and public service provision. Hence, an increase in government spending will boost demand

[4] The Balassa (1964) and Samuelson (1964) hypothesis is also relevant here. It proposes that real exchange rates should be higher in faster growing economies with relatively more productive tradable sectors than in slower growing economies, although empirical support for this hypothesis is mixed across a range of countries.