

**Building for the  
Future? Interpreting an  
“Irish” Current  
Account Deficit**

by

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# BUILDING FOR THE FUTURE? INTERPRETING AN “IRISH” CURRENT ACCOUNT DEFICIT

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**1.  
Introduction**

In recent *Commentaries*, attention was drawn to the dramatic increase in the Irish current account deficit on the balance of payments. The deficit, which stood at -0.7 per cent of GNP in 2004, widened sharply to over -4 per cent of GNP in 2005 and at the end of 2006 was -4.9 per cent of GNP. Analysis of the Irish current account has taken on a new dimension in the context of European Monetary Union, where the union level current account is broadly in balance, while individual member states exhibit diverse balance of payments positions. Since Euro Area member states are insulated against speculative currency attacks as a result of the single currency, the traditional concerns about financing the deficits of countries with negative balance of payments positions do not directly arise. However, the dispersion between Euro Area countries current account balances has increased in recent years. Ireland is among a group of countries (Greece, Portugal and Spain) that have seen their current account deficits grow significantly within EMU.

Individual Euro Area member states current account positions may become less relevant over time, as is the case for individual

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states in the US. However, the relatively low level of labour mobility and the lack of a federalised fiscal structure in the Euro Area implies that their respective current account positions are important in highlighting country-specific issues and their adjustment and integration within EMU. If the determinants of balance of payments deficits/surpluses are structural and systematic as opposed to transitory some member states may be faced with difficult periods of adjustment. This arises when the single monetary policy adopted by the European Central Bank is pro-cyclical in these member states, not promoting an automatic stabilising force when the economy grows too far above trend (typically deficit countries) or too far below trend (typically surplus countries). In this context the responsibility is on domestic policymakers to use other tools to ensure any eventual correction is managed optimally, or more preferably to avoid the need for correction in the first instance.

Monetary union can be seen as both a blessing and a curse in terms of a country's balance of payments. The more benign approach relies on the definition of the current account balance as the corollary of flows on the capital account, identified by the difference in aggregate saving and aggregate investment in a country. Modern open economy macroeconomics<sup>1</sup> sees the current account as responding to easier flows of capital resulting from the financial integration brought about by a monetary union. If the member states of the monetary union have sufficiently developed domestic financial institutions (as is the case in the Euro Area) theory suggests capital will flow from countries with a lower return on capital to those with higher returns. This enables the latter to invest without having to have large domestic savings. Countries that exhibit higher rates of economic growth, such as Ireland, provide higher rates of return on capital and are therefore typically characterised by higher rates of inward investment. Theories of economic development suggest that this trend will continue until the return on capital in both sets of countries are equalised, as the countries with initially lower capital stock invests in the necessary infrastructure to promote sustainable growth. Typically, this is accompanied by per capita income levels in both sets of countries converging.

The less benign interpretation takes a more traditional approach, looking at the trade implications of movements in aggregate real incomes and real exchange rates between countries. In the context of monetary union these movements can result in significant shifts in relative competitiveness between member states. These developments are not necessarily worrying if they are consistent with the necessary adjustment to being part of a monetary union and are as a result transitory. However, if these movements in aggregate incomes and real exchange rates do not lead to an appropriate adjustment the current account balance may reflect an

<sup>1</sup> See for example Obstfeld and Rogoff (1995).

unsustainable competitiveness position. In this instance the particular member state obviously cannot devalue their currency in the light of competitiveness pressures. For a country with a current account deficit this is typically compounded by relatively higher inflation as a result of growth being above trend. Higher inflation leads to relatively lower real interest rates, adding further stimulus to an already overheating economy. This could potentially lead to long and painful adjustment periods where net exports and real activity in the economy steadily decline until such a time as competitiveness is regained.

This paper focuses on whether the recent development of the Irish current account balance within EMU reflects the benign or the worrying interpretations discussed above. As a small open economy, sustaining reasonable increases in the Irish standard of living in the medium to long-term requires a competitive traded sector. Does the evolution of the current account balance within EMU merely reflect higher relative growth in Ireland as opposed to significant losses in competitiveness, and if so is the nature of this growth consistent with the objective of maintaining sustainable growth in the future? Ahearne *et al.* (2007) show how for the Euro Area and some of its individual member states, higher rates of economic growth relative to their main extra-EMU trading partners leads to a fall in their trade balance. However for Ireland, Honohan (2006) noted that the scale and nature of foreign capital flows into the country may have contributed to the housing boom of recent years. To the extent that this foreign capital driven expansion in the construction sector impacted upon Ireland's competitiveness it has provided a "double-hit" on the trade side of the balance of payments.

The paper proceeds with both formal and comparative analysis to determine how we should interpret Ireland's growing current account deficit, paying particular attention to the role of competitiveness and the implications for policy. Section 2 outlines the development of Irish current account determinants. In Section 3 an econometric analysis examines which process, falling competitiveness or relatively higher economic growth, is more relevant to the long run determination of the current account. Section 4 places the Irish current account in a comparative Euro Area context and highlights the importance of the construction boom in the recent development of the Irish balance of payments deficit. Section 5 discusses the implications of the analysis and concludes.

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## 2. Determinants of the Current Account

The current account is dominated by the balance of trade (net exports) and net factor income from the rest of the world. The trade balance has been positive for many years as Irish merchandise exports continue to be greater than the deficit (albeit falling) on services trade that the country faces. However, the balance of trade has been narrowing since 2002 (20 per cent of GNP) to 12 per cent

of GNP in 2006. Net factor income, which includes profit repatriation by foreign multi-nationals operating in Ireland, has continued to be a major outflow, but has also contracted over the same period from -22 per cent of GNP to -17 per cent of GNP (see Table 1). The reduction in profit repatriation outflows concurrent with a fall in exports is unsurprising given Ireland's position as an export hub for many multinational companies. These credit (net exports) and debit (net factor income) flows have in the past cancelled each other out for the most part. However, in 2005 and 2006 the balance of trade fell much faster than the negative net factor income contracted resulting in a gap emerging between the two. Some of this may be explained by changes in the US tax regime<sup>2</sup> which incentivised US firms operating abroad to repatriate more profits back to their home country. By the end of 2006, however, this distortion should be fully accounted for. The balance of payments statistics for 2007 Q1 indicate no significant difference in income flows with respect to the preceding quarters suggesting the effect of the US tax changes may not have been of most significance.

It would appear that the deterioration in the balance of trade is a driving force behind the widening of the current account deficit from 2002 to 2006. This may be evidence of underlying competitiveness problems for the Irish economy. Such problems are usually reflected in an appreciation of the real exchange rate. Figure 1 shows that Ireland's real exchange rate<sup>3</sup> has indeed appreciated in recent years. This reflects two realities: first the nominal appreciation of the Euro since the start of the century against the currencies of our main extra-Euro Area trading partners and second the rise in relative consumer prices in Ireland compared to those of our main trading partners both within and outside the Euro Area. The nominal exchange rate movements are obviously an issue which domestic factors have no influence over as Ireland has such a small share of the Euro Area economy. However, domestic factors can and have had an important effect on increases in relative consumer prices.

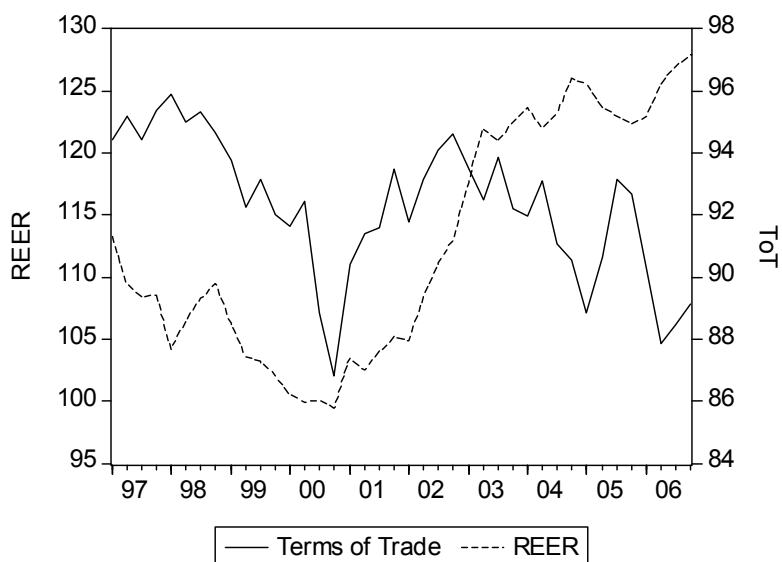
The rise in relative consumer prices can be attributed in part to strong domestic demand, spurred on by historically low interest rates, extremely favourable employment growth and fast wage growth. Many authors see this rise in relative prices as a necessary adjustment to Euro Area membership<sup>4</sup> as expectations of a faster

<sup>2</sup> The American Job Creation Act, 2004.

<sup>3</sup> The real exchange rate used in this paper is the OECD Real Effective Exchange Rate index, which is a weighted exchange rate index based on the country's share of both its domestic and foreign markets vis-à-vis its main competitors deflated by their relative consumer price indices. A rise in the index points to a fall in competitiveness. See Durand *et al.* (1992) for a more detailed discussion.

<sup>4</sup> See, for example, Traistaru-Siedschlag (2007).

**Figure 1: Irish Real Effective Exchange Rate and Merchandise Terms of Trade**



*Source:* OECD Main Economic Indicators Database (2000=100); External Trade Statistics, Central Statistics Office (1990=100).

convergence in living standards took hold. To the extent that the wage inflation experienced during this period was matched by productivity growth, the impact on competitiveness would be less and the divergence in real interest rates and real exchange rates across the Euro Area, exacerbated by the single monetary policy, would diminish over time. Table 1 highlights trends in key macroeconomic variables, which show that productivity growth has not matched real wage growth in recent years. This indicates underlying competitiveness pressures with which the economy cannot continue indefinitely. Eventually a period of competitive disinflation is required, where growth slows, and perhaps rising unemployment until such a time as real and nominal wage growth moderates and productivity growth improves. Ireland appears to be entering such a process at the moment.

Blanchard (2001) highlighted how Ireland's real exchange rate needed to appreciate during the EMU integration process given that excess demand was driven both domestically and internationally. Referring again to Table 1, both domestic consumption and net export growth were significant in the early years of monetary union. The growth in net exports has diminished over time as the real exchange rate has appreciated. To the extent that the appreciation, attributable in part to rising relative consumer prices, was in the context of productivity growth outstripping real wage growth it could be considered as part of the convergence process. However, the more recent reality of low productivity growth points towards

**Table 1: Various Macroeconomic Indicators, Growth Rates (Unless Specified\*)**

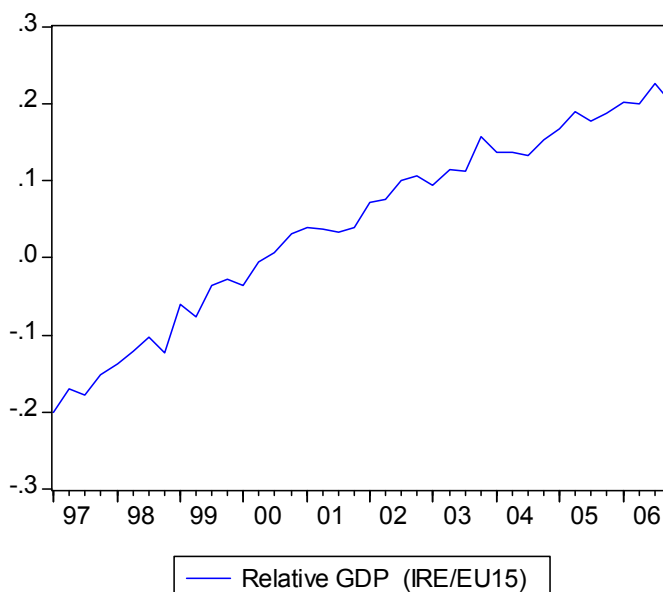
	1999	2000	2001	2002	2003	2004	2005	2006
GDP	11.3	13.2	5.3	5.9	5.1	3.2	5.9	5.7
GNP	8.5	12.2	3.9	2.8	5.5	3.9	4.9	6.5
Consumer Prices	1.6	5.6	4.9	4.6	3.5	2.2	2.5	4.0
Unemployment Rate*	5.6	4.3	3.9	4.4	4.6	4.4	4.4	4.4
Productivity (GDP per worker)	2.8	3.9	4.2	4.6	1.7	1.5	1.0	1.1
Real Wages	3.5	2.0	2.5	0.9	2.8	3.9	3.1	0.9
Consumer Expenditure	8.3	10.4	5.4	3.8	3.2	3.8	6.6	6.2
Exports	15.5	19.8	8.6	4.5	0.5	7.3	3.9	4.9
Imports	12.4	20.8	7.2	2.4	-1.2	8.6	6.5	5.3
Balance of Trade % GNP*	15.6	15.0	17.6	20.3	18.3	16.9	13.9	12.0
Net Factor Income % GNP*	-16.9	-16.5	-18.7	-22.2	-18.6	-17.9	-18.3	-16.6

*Source: National Income and Expenditure Accounts 2006, Central Statistics Office.*

more structural constraints which may have to be addressed through competitive disinflation and a real adjustment.

Meanwhile, a simple comparison of Irish and Euro Area or EU15 economic growth rates would suggest that the widening of the balance of payments deficit is due at least in part to Ireland's higher growth in recent years. Figure 2 plots the ratio of an index of Irish GDP to EU15 GDP expressed in logs from 1997-2006. The steady rise in the series is attributable to Irish GDP growth being consistently above that of the EU15 over the period.

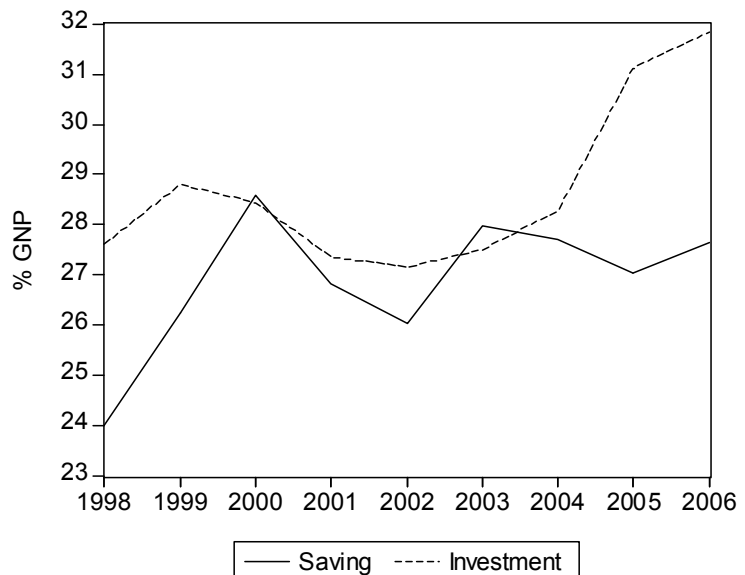
**Figure 2: Quarterly OECD Indices of Irish GDP Relative to EU15 GDP, 1997-2006**



## GROWTH AND CAPITAL FLOWS

The combination of higher growth rates and international financial market integration can have significant impact on a country's balance of payments position. Blanchard and Giavazzi (2002) highlight the potential effect on the current account in the context of Euro Area integration.<sup>5</sup> The process allows member states with potentially higher growth rates, due to coming from a low base, to borrow much more readily and invest without having to have high levels of domestic saving. Greater integration of international capital markets can cause capital to flow more readily to countries with higher potential growth rates. Ahearne *et al.* (2007) have found this to be the case in the Euro Area, where investment capital can now more easily flow from the core countries (Germany, France etc.) to the peripheral countries (Ireland, Greece, Portugal, Spain) where the rate of return can be higher because of the relatively low initial capital stock level. This aids in the integration process in that these peripheral countries can more easily finance expenditure on infrastructure and expand potential output. This investment, (Total Gross Domestic Physical Capital Formation in Figure 3), does not necessarily arise because of a current account deficit but may in fact cause it when the deficit is expressed as the excess of investment over saving. Thus, running a current account deficit is not necessarily a bad thing.

**Figure 3: Gross National Savings and Total Gross Domestic Physical Capital Formation (Investment), % of GNP**



Source: *National Income and Expenditure Accounts*, 2006, CSO.

<sup>5</sup> The analysis focused on the Greek and Portuguese deficits. Blanchard (2006) revises the opinion for Portugal indicating that structural competitiveness issues were more pertinent for that country than the income convergence theory.



The Irish experience in recent years has seen the excess of investment over saving increase, particularly from 2004 to 2005. This is particularly striking when one considers the relatively high rate of national savings in Ireland. Gross national saving stood at 27.6 per cent of GNP in 2006 whereas investment was 31.8 per cent of GNP. This interpretation of the current account is usually discussed in an inter-temporal setting, where neoclassical growth theory predicts investment capital will flow from high income countries to low income countries until the latter converges in terms of per capita income.

The recent development of the Irish current account does not fully fit the inter-temporal interpretation, as per capita income converged to EU15 levels before the balance of payments began its steady movement into deficit. However, higher relative growth can also impact negatively upon the trade balance, as seen in Ahearne *et al.* (2007). The construction sector boom in Ireland is undoubtedly a factor in the higher relative growth rate in most recent years. The extent to which the high rate of investment in construction was financed by foreign capital, as illustrated by Honohan (2006), is also reflected in the increasing gap between investment and national saving in Figure 3. The empirical analysis in this paper aims to highlight the relative importance of competitiveness pressures and higher growth rates by examining the role of both the real exchange rate and relative output levels in determining the current account.

## **COMPETITIVENESS AND THE REAL EXCHANGE RATE**

The real exchange rate has been a mainstay in the theoretical literature on current account determination, from the more traditional approaches (Friedman, 1953; Dornbusch, 1976) to the new open macroeconomics models (Obstfeld and Rogoff, 1995). The primary channel considered is through domestic and foreign consumers switching their expenditure away from domestically produced goods which become relatively more expensive as the real exchange rate appreciates. Krugman and Obstfeld (2001) highlight the “value” and “volume” effects that changes in the real exchange rate have on the balance of trade and hence the current account. The value effects refer to the fact that as a currency appreciates the value of each unit of exports rises vis-à-vis each unit of imports, leading to an increase in the terms of trade and an improvement in the balance of payments in the short run. The volume effects are expected to be more dominant in the long run as the fall in competitiveness as a result of the real exchange rate appreciation leads to net exports diminishing.<sup>6</sup> Therefore, in the long run determination of the current account we expect a negative relationship between changes in the real exchange rate and the evolution of the current account balance.

<sup>6</sup> These theoretical underpinnings are usually described in the context of a real depreciation, leading to the textbook J-curve effect on the balance of payments.

Ireland's terms of trade<sup>7</sup> increased substantially from 2000 Q4 to 2002 Q4 alongside the real exchange rate appreciation, as can be seen in Figure 2. This was accompanied by a reduction in the balance of payments deficit during 2002, moving into surplus in 2003. However, since 2003 the continued real exchange rate appreciation has not been matched by increasing terms of trade and the current account balance has moved steadily into deficit since the beginning of 2004 as the trade balance has fallen. Not only does this provide more evidence for the role of competitiveness pressures in analysing Ireland's balance of payments but it also may indicate that a real adjustment is inevitable in the context of continued real exchange rate appreciation, particularly through 2006. The extent to which this is the case depends on the overall importance of the real exchange rate in current account determination, particularly when compared to the independent effect of Ireland's relatively higher growth rate. If the long run current account position is mostly due to higher rates of economic growth, the situation as at the end of 2006 of a balance of payments deficit of over -4 per cent of GDP could be considered appropriate and the prospects for adjustment more benign.

Having discussed both potential drivers of the current account, the next section aims to determine empirically the independent role of competitiveness pressures and relatively higher economic growth rates respectively, on the long run determination of the current account balance.

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## DATA AND METHODOLOGY

### 3. Empirical Analysis

The purpose of this analysis is to examine the potential links between the current account expressed as a proportion of Gross Domestic Product ( $CA$ ), domestic output relative to foreign (EU15) output levels ( $Y_{ie}/Y_{eu}$ ) and the real exchange rate ( $Z$ ). More specifically, the results should isolate the relative importance of changes in competitiveness (as given by changes in the real exchange rate) and higher growth rates with respect to the EU15 in the evolution of the Irish current account balance.

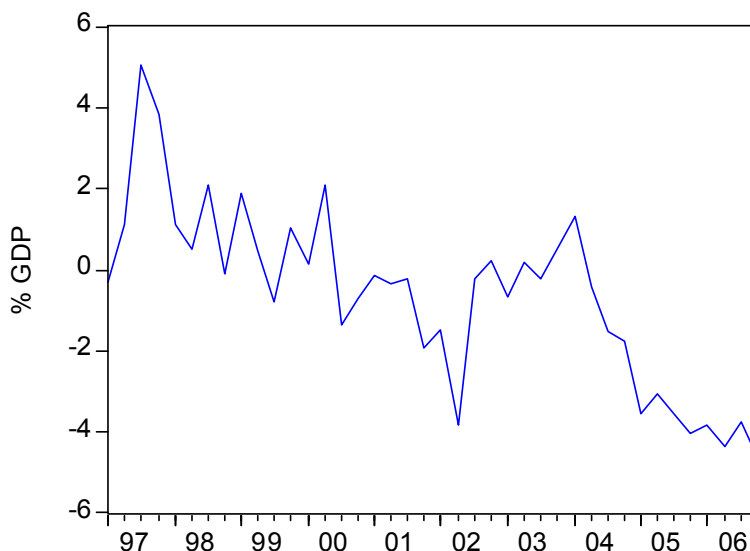
Data are quarterly in frequency from 1997 Q1 to 2006 Q4.<sup>8</sup> The current account to GDP series are derived from *Quarterly National Accounts* and *Balance of Payments* statistics (CSO). There was distinct evidence of seasonality in the series which was accounted for by an adjustment using the Census X-11 procedure in EViews. For domestic and foreign (EU15) income levels the seasonally adjusted real GDP indices from the OECD are used. The real exchange rate

<sup>7</sup> Terms of trade refer to merchandise imports and exports only.

<sup>8</sup> Given the limited time span and number of observations included, these results are indicative not definitive.

is the Real Effective Exchange Rate index published by the OECD. All OECD indices have a base year of 2000=100.

**Figure 4: Current Account Balance (% GDP, Seasonally Adjusted)**



The analysis is undertaken using an unrestricted cointegrated VAR set-up (Johansen and Juselius, 1990).<sup>9</sup> Essentially this procedure allows useful long run relationships between the variables of interest to be examined by exploiting the statistical properties of the individual time series. Comprehensive details of the analysis, including all the necessary preliminaries, are available from the author on request.

### ESTIMATION RESULTS

The result of the econometric analysis is given by the following long run relationship

$$CA = 1.05 + 0.01 (t) - 0.26 (Z) - 0.56 (Yie/Yeu)$$

[ 6.18]                    [-6.00]                    [-4.67]

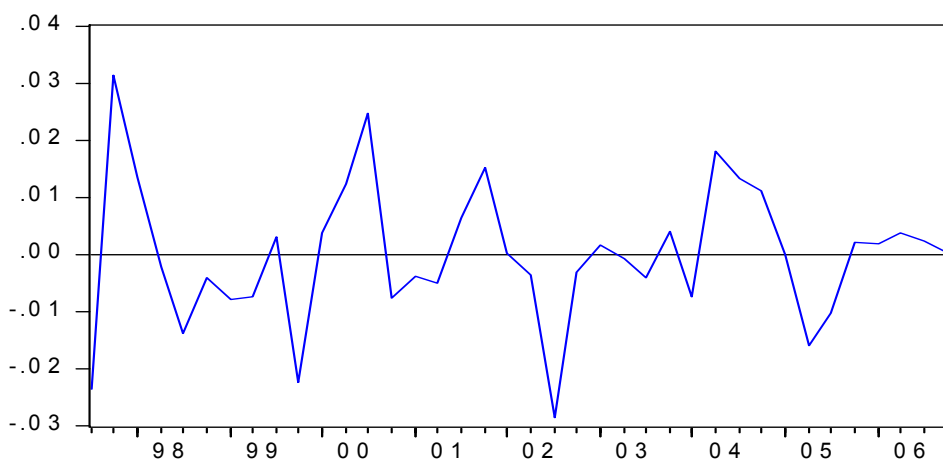
where  $t$  is a time trend,  $Z$  is the real exchange rate,  $Yie/Yeu$  is relative GDP and  $CA$  is the current account expressed as a proportion of GDP. The corresponding t-statistics for the coefficients are given in brackets and show that all the coefficients are statistically significant at conventional levels. The primary interest for this analysis is the sign and relative magnitude of the real exchange rate ( $Z$ ) and relative growth ( $Yie/Yeu$ ) coefficients. Both coefficients have the expected negative sign: a real appreciation

<sup>9</sup> Many authors have applied VAR analysis to the determination of the current account balance, recent examples of which include Nason and Rogers (2002), Lee and Chinn (2006) and Bems *et al.* (2007).

results in a fall in the current account balance and the same dynamic holds as the pace of growth in Ireland is above that of the EU15. However, the relative growth coefficient is greater than that of the real exchange rate, indicating that this has more relevance in the long run determination of the Irish current account balance.

A further step in the analysis allows us to examine whether the current magnitude of the deficit is an equilibrium position or whether some manner of adjustment is necessary. Figure 5 plots the estimated cointegrating relationship highlighted above over recent years, where deviations from zero indicate the current account balance being away from its long run equilibrium. It is evident that at the end of 2006 the seasonally adjusted current account deficit of over -4 per cent of GDP was an equilibrium position justified by the determinants of real exchange rates and relative growth.

**Figure 5: Current Account Balance Long Run Cointegrating Relationship**



The results above indicate that at a macro-level the scale of the Irish balance of payments deficit is appropriate. Higher relative growth in Ireland as opposed to our trading partners is more important than real exchange rate appreciation in determining the current account balance. However, much of that growth in most recent years has been driven by a boom in construction, a sector with low productivity growth not open to international competition. The increasing importance of construction in overall economic activity has contributed to the economy-wide slowdown in productivity growth noted in Table 1. Combined with the low productivity growth in other sectors not open to international competition it has possibly contributed to Ireland's loss of competitiveness as wage growth outstripped productivity growth in the most recent past. The next section places the Irish balance of payments deficit in a comparative European context by explicitly examining some of these factors, specifically the nature of capital

investment and, following on from that, the impact this has had on Ireland's competitiveness.

#### 4. Ireland – A Euro Area Comparison

Estimates for the Euro Area balance of payments indicate that the current account was broadly in balance at the end of 2006, with sharp differences across individual member states: Portugal at one end with a deficit touching double-figures as percentage of GDP, and the Netherlands at the other with a near mirror opposite surplus position.<sup>10</sup> In effect, individual Euro Area member states find themselves as net borrowers (deficit position) and net lenders (surplus position). The development of Ireland's current account position in recent years is not particularly unique among Euro Area member states. The trend since 2003 to deficit is similar to that of Spain, Greece and Portugal, although not at the same scale. However, the underlying components of the current account tell a familiar tale for Ireland which differs from all other Euro Area states. Unlike these countries Ireland exhibits a trade surplus, and indeed the largest surplus in the Euro Area. As discussed above, Ireland's position as a major export hub for multi-nationals lends itself towards a large negative flow of income, which as a percentage of GDP is the highest among Euro Area "net borrowers", as per Table 5.

**Table 5: GDP Growth, Net Exports and Factor Income as Percentage of GDP, 1999-2006**

	1999	2000	2001	2002	2003	2004	2005	2006
<b>Real GDP Growth</b>								
Ireland	11.3	13.2	5.3	5.9	5.1	3.2	5.9	5.7
Greece	3.4	4.5	5.1	3.8	4.8	4.7	3.7	4.3
Spain	4.7	5	3.6	2.7	3.1	3.3	3.6	3.9
Portugal	3.9	3.9	2	0.8	-0.7	1.5	0.5	1.3
Euro Area	3	3.8	1.9	0.9	0.8	2	1.5	2.8
<b>Net Exports</b>								
Ireland	13.3	13.4	14.8	16.3	15.5	14.4	12.1	10.8
Greece	-8.5	-10.5	-9.4	-8.3	-7.2	-5.9	-6.5	-3.9
Spain	-1.9	-3	-2.3	-1.9	-2.1	-3.8	-5.1	-5.9
Portugal	-10.3	-11.1	-9.8	-7.9	-6.5	-7.6	-8.7	-7.6
Euro Area	0.9	0.2	1	2	1.7	1.7	1	0.8
<b>Net Factor Income</b>								
Ireland	-14	-14.3	-15.7	-18.1	-15.8	-15.2	-15.1	-14
Greece	-0.5	-0.8	-1.5	-1.4	-2.4	-2.4	-3	-0.7
Spain	-1.5	-1.2	-1.8	-1.7	-1.3	-1.4	-1.9	-2.1
Portugal	-1.5	-2.2	-3	-2.3	-1.7	-2	-2.6	-3.5
Euro Area	-0.6	-0.7	-0.6	-0.5	-0.5	-0.2	-0.1	0

Source: Eurostat.

<sup>10</sup> See Ahearne *et al.* (2007) for a more detailed appraisal of individual Euro Area member states balance of payments positions.

All the countries listed in Table 5 have experienced an appreciation of their real exchange rate since EMU along with Ireland. While the respective fiscal positions are quite different, the most interesting contrast is found in the role of investment and its contribution to growth. Ireland, Greece and Spain have consistently enjoyed rates of economic growth higher than the Euro Area since 1999. The scale of total investment as a proportion of GDP is, as would be expected, higher in these countries than for the Euro Area as a whole. However, Table 6 presents a worrying trend in the composition of investment use in Ireland in comparison to the Euro Area average. The share of housing in overall investment in Ireland has soared since 2002 to almost two and a half times the Euro Area average in 2006. This is possibly crowding out investment in more productive areas such as transport, commercial machinery and equipment and commercial buildings despite the overall increase in total investment. McElligot and Stuart (2007) have shown that lending by Irish banks has become more concentrated in construction and real estate sectors alongside the sharp increase in overall lending in recent years. While their analysis excludes the household sector, and property related lending includes commercial property, it is noteworthy that the increasing concentration in property related lending they find was at the expense of manufacturing. Spain, a fellow Euro Area “borrower”, has similar levels of overall investment, yet its housing investment has been significantly lower than that of Ireland since 1999. For the years that comparable data are available (2000-2004), Portugal’s level of productive investment has been above Ireland’s except in the area of transport. Meanwhile, Portuguese housing investment was significantly lower than the Irish level. A similar pattern is evident when comparing Ireland and Greece, although the high levels of non-housing investment in the latter could be attributable to preparations for the Olympic games in 2004.

Demographically Ireland, Greece, Spain and Portugal have similar proportions of their population in the typical first time homeowner age bracket (25-34 years). In 2005, the last year comparable data is currently available, Ireland had an estimated 16.7 per cent of its population in this age bracket,<sup>11</sup> behind Spain (17.2 per cent), and ahead of Portugal (15.6 per cent) and Greece (15.4 per cent).<sup>12</sup> At a first glance there should be no apparent reason why Ireland has such a demand for housing over and above the other “net borrower” Euro Area countries given the similar demographic profiles. Other fundamental factors, such as the relatively larger increases in real disposable incomes in Ireland, lower initial dwelling stock and more favourable tax and credit regimes can explain much of the higher demand for housing (Rae and van de Noord, 2006). However, the demographic component is also more complicated

<sup>11</sup> According to *Census 2006* the proportion of 25-34 year olds in the total population was 17 per cent.

<sup>12</sup> Eurostat.

than the simple comparison of population age profiles would have us believe. Ireland has had a population shock since 2004 with the accession of the New Member States (NMS) to the EU. Alongside the UK and Sweden, Ireland opened up its labour market to NMS citizens, unlike Spain, Portugal and Greece. When the Irish and the UK levels of investment are compared (Table 6), housing has

**Table 6: Investment Total and by Type, as Percentage of GDP, 1999-2006**

		1999	2000	2001	2002	2003	2004	2005	2006
<b>Total</b>									
	Euro Area	20.9	21.4	20.9	20.2	20.1	20.2	20.5	21.2
	Ireland	24.0	23.4	22.6	21.7	22.3	23.6	26.1	26.3
	Greece	22.7	23.1	23.5	23.5	25.3	25.2	23.7	25.7
	Spain	24.6	25.8	26.0	26.3	27.2	28.1	29.3	30.3
	Portugal	26.8	27.1	26.5	25.0	22.9	22.6	21.9	21.2
	UK	17.1	16.8	16.5	16.4	16.0	16.4	16.7	17.2
<b>Housing</b>									
	Euro Area	5.5	5.4	5.2	5.1	5.2	5.3	5.5	5.7
	Ireland	7.4	7.8	8.2	8.3	9.9	11.4	13.0	13.3
	Greece	5.3	4.8	4.8	5.0	5.0	4.8	4.5	:
	Spain	5.5	6.1	6.5	7.1	7.8	8.4	8.9	9.3
	Portugal	13.6	5.6	5.3	5.0	4.1	4.0	11.5	10.7
	UK	2.8	2.9	3.0	3.3	3.4	3.7	3.9	4.3
<b>Other Construction*</b>									
	Euro Area	5.2	5.3	5.4	5.3	5.3	5.3	5.3	5.5
	Ireland	6.2	6.3	6.4	6.1	5.4	5.2	5.0	5.1
	Greece	7.7	8.1	8.5	8.2	8.8	9.0	8.2	:
	Spain	7.1	7.2	7.5	7.7	7.7	7.9	8.3	8.4
	Portugal	:	8.3	8.7	8.4	8.1	8.0	:	:
	UK	4.7	4.5	4.5	4.5	4.7	4.6	4.9	5.2
<b>Machinery (Industry)</b>									
	Euro Area	5.8	6.1	5.8	5.3	5.1	5.0	5.0	5.1
	Ireland	4.3	4.6	3.7	3.0	3.0	2.5	2.8	2.6
	Greece	5.7	6.2	5.9	5.5	5.9	4.9	4.8	:
	Spain	5.6	5.7	5.3	4.9	4.7	4.6	4.7	5.0
	Portugal	6.4	6.5	6.3	5.6	5.2	5.3	4.9	4.7
	UK	6.6	6.6	6.0	5.3	4.8	4.7	4.6	4.5
<b>Transport Equipment</b>									
	Euro Area	2.0	2.1	2.0	1.9	1.9	2.0	2.0	2.1
	Ireland	4.1	2.9	2.5	2.6	1.9	2.2	2.7	2.2
	Greece	2.7	2.7	3.1	3.5	4.0	5.0	4.5	:
	Spain	2.3	2.4	2.3	2.1	2.2	2.2	2.3	2.4
	Portugal	3.1	3.0	2.6	2.1	1.9	1.8	1.8	2.0
	UK	1.6	1.4	1.5	1.5	1.4	1.3	1.2	1.2

Source: Eurostat and CSO.

\* Includes roads.

increased in both since 2004, but the magnitude of the Irish increase is significantly greater. This is not surprising given that proportionately the UK has not had as large a population shock and it has a long history of in-migration. However, the investment in machinery in Ireland has fallen significantly in the face of the increased dependence on residential construction, a trend that is not

as stark in the UK. Barrell *et al.* (2007) show how the migration into Ireland from the NMS leads to productivity growth below what it would have been without the population shock, as public infrastructure and in particular the housing stock<sup>13</sup> do not rise sufficiently to curb a fall in the ratio of capital to labour. The resulting increase in the rate of return on capital causes capital flows into Ireland to increase and a balance of payments deficit on the current account. Despite evidence of the dampening effect on wage growth immigration has had in Ireland (Barrett *et al.*, 2006) it has still not been sufficient to curb wage growth in excess of productivity growth. This may be due to the concentration of migrant labour in sectors with lower productivity growth i.e. construction and services.

## CONSTRUCTION AND COMPETITIVENESS

Has Ireland's reliance on construction to drive overall economic growth impacted negatively on competitiveness? One way of judging this is to refer to a theoretical definition of the measure of competitiveness used in this paper, the real exchange rate. Movements in the real exchange rate between two markets (in this case Ireland and the Euro Area) can be decomposed into changes in the deviation from purchasing power parity (PPP)<sup>14</sup> and the difference between the relative price of non-traded and traded goods in the home (Ireland) market and the foreign (Euro Area) market. For our purposes traded goods are taken as the output from the manufacturing industry and non-traded goods as the output of the construction industry, which in Ireland has been heavily biased in house building.<sup>15</sup> Nominal exchange rate movements do not feature as the Euro Area is used as the foreign market. A back of the envelope calculation of these movements of the Irish real exchange rate vis-à-vis the rest of the Euro Area yields the results in Table 7.

The "Total" column in Table 7 shows that Ireland's real exchange rate has consistently appreciated with respect to the rest of the Euro Area since 1999, indicating a loss of competitiveness. In terms of the decomposition of these changes, the contribution of changes in the relative price of non-traded goods was larger than deviations from PPP in the traded sector in every year. As detailed in the Appendix, the relative price of non-traded goods with respect to traded goods is a proxy for the domestic price level. Therefore, as the price of the construction sector output increased faster than that

<sup>13</sup> See also Duffy *et al.* (2005) for more detailed discussion of the relationship between immigration and the Irish housing market.

<sup>14</sup> The PPP hypothesis holds if the price of internationally traded goods are equal in both the home and foreign markets when expressed in terms of the same currency.

<sup>15</sup> See Appendix 1 for details. A more comprehensive decomposition would also incorporate the services sector, which is becoming increasingly tradable. This is an avenue for further research.



of manufacturing industry in Ireland as compared to the Euro Area, the overall Irish price level increased more rapidly also. This led to the appreciating real exchange rate and a fall in competitiveness. The effect is compounded by the increasing share of construction in total output over the period, driven in part by housing investment financed by foreign capital.

**Table 7: Decomposition of Movements (Annual Percentage Changes) in Irish Real Exchange Rate Vis-à-Vis the Euro Area, 1999-2006**

	Total	PPP Deviations	Relative Price of Non-traded	of which	
				Relative Price of Non-traded (Ireland)	Relative Price of Non-traded (Euro Area)
1999	8.9	3.6	5.3	8.5	3.3
2000	18.2	2.4	15.8	19.1	3.4
2001	7.6	1.9	5.7	8.2	2.5
2002	3.1	-0.4	3.5	5.9	2.5
2003	1.7	-6.4	8.0	12.4	4.3
2004	3.1	-7.2	10.4	14.3	3.9
2005	3.0	-2.7	5.7	9.4	3.7
2006	1.4	-2.0	3.5	7.9	4.4

*Source:* Own calculations based on *National Income and Expenditure Accounts, 2006* (CSO), and Eurostat. See Appendix 1 for details.

Extending this type of analysis, as seen in Canzoneri *et al.* (2002), relates the relative price of non-traded goods to relative productivity in the traded and non-traded sectors via the supply side Balassa-Samuelson hypothesis. Since the formation of the single currency the average annual rate of productivity growth for the Irish economy has been 2.6 per cent. When broken down on a sectoral basis average annual productivity growth for the same period in industry was 7.4 per cent, whereas in construction productivity actually fell by 3 per cent on average each year since 1999. The higher productivity growth in the traded industry sector is consistent with the relative price of the non-traded construction sector increasing, thus contributing to a higher inflation in Ireland, à-la Balassa-Samuelson.

An equally valid interpretation focuses on the demand side, as per De Gregorio *et al.* (1994). They highlight the role of higher aggregate demand in increasing the share of the non-traded sector in employment, reducing productivity and raising the relative price of non-traded goods since these goods cannot be imported. The strong growth in aggregate demand in Ireland, thanks to low interest rates and robust employment and wage growth, has undoubtedly contributed to a rise in the relative price of non-traded goods, in particular housing. Honohan (2006) noted the sharp rise in mortgage related credit in tandem with a sharp rise in the net

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## 5. Discussion and Conclusion

external liabilities of the Irish banking sector, which imported foreign capital equal to about 40 per cent of GDP in 2005 to lend to Irish residents. Monetary union has not only provided a low interest rate environment for Irish households and banks to borrow from abroad but has also contributed to the integration of financial markets to make the process much easier.

In a broad sense, the scale of the current account deficit witnessed towards the end of 2006 is appropriate given its determinants. The primary determinant of the current account balance, as seen from Section 3, is Ireland's relatively high rate of economic growth. The scale of investment financed by foreign capital is what can be expected when financial markets become more integrated, as has been fostered by EMU. This investment is best put to use in those sectors that have the scope to increase potential output and have prospects for reasonable productivity growth. Private productive infrastructure and the necessary supporting public infrastructure would be prioritised in a best-case scenario. The trends highlighted in Sections 2 and 4 show that the recent development of the Irish current account deficit does not fit this scenario.

Ireland is unique in the Euro Area concerning the relationship between the scale of housing investment and the development of the current account deficit, with damaging effects on Ireland's competitiveness. Despite the evidence in favour of the benign interpretation for the current account position at the end of 2006 in Section 3, it is evident that the nature of economic growth in recent years, dominated by growth in non-traded sectors, cannot be maintained. Indicators such as the divergence between movements in the terms of trade and the real exchange rate (Figure 1), and the relatively much higher wage and asset price growth in Ireland, are somewhat consistent with a "dis-equilibrium" real appreciation, as discussed by Boz (2007), particularly since 2003. The crowding out effect that the dominance of the non-traded construction sector appears to have had on the traded sector needs to be undone. As 2007 progresses, a slowdown in housing investment is apparent. Can this be accompanied by an increase in Ireland's traded sector performance?

Without government intervention, be it through fiscal policy or more structural reform such as eliminating barriers to competition in sectors with low productivity growth and promoting labour mobility, the lack of competitiveness for exports is usually addressed through competitive disinflation. Faced with increasing costs and low productivity gains relative to their international competitors, firms in Ireland would streamline by laying off workers in an effort to reduce costs. Nationally this would result in increasing unemployment until such a time as nominal and real wages have reduced to a level where firms exporting from Ireland regain competitiveness. The real exchange rate Irish firms face in this instance would thus depreciate making exports more attractive

internationally and imports more expensive for the domestic market. This could be a long and difficult adjustment.

Prior to the days of independent central banks policymakers often devalued their domestic currency to avoid such a painful adjustment. This nominal policy instrument is not available to the Irish government given membership of EMU, and as such any domestic policy to minimise the detrimental effects of the adjustment must come from the real side of the economy and an increase in unemployment. In any case, if wage growth is not curbed simultaneously a nominal devaluation of the currency can only delay the necessary real adjustment. The imported inflation through the higher price of goods and services bought in from abroad would feed through to wages and eventually end up impacting negatively on competitiveness.

What are the options available to the government to alleviate the impact of the adjustment process on unemployment? There are obvious incentives to promote productivity growth as a medium to long-term objective. Short-term actions can be taken to tackle the sources of the increasing costs faced by Irish exporters which have contributed to the contraction of net exports. These immediate policy options should also aid in the medium-term objective of productivity growth.

The first option is to reduce nominal wages (or at least nominal wage growth) relative to that of our trading partners. As part of the National Wage Agreements, government only directly effects the wages in the public sector, while the effect on wages in the private sector are considered to be minimal. Despite this, the containment of costs in non-market public services as a result of wage restraint would be more consistent with the reality of public sector productivity growth being much lower than that in the market economy. As with productivity in the construction sector, public sector productivity has actually fallen in recent years at an average annual rate of 2.6 per cent over the period 1999-2006.

An accompanying measure is to increase competitiveness and reduce prices in the non-traded sector relative to the traded sector (Blanchard, 2006). There are two elements to this strategy.

First, in promoting competition in previously closed sectors, particularly services, significant gains in efficiency and productivity can be achieved. This also promotes more flexible wage and price-setting behaviour in labour and product markets, which in turn can offset the need for significant increases in unemployment. Competition and regulation reform in utilities, transport services,<sup>16</sup> and the professions could benefit both consumers and Irish

<sup>16</sup> See, for example, Malaguzzi-Valeri (2006) and Lyons *et al.* (2007) in terms of electricity and Massey (2007) in terms of bus transport.

exporters. In a comparative study of twenty-one OECD countries Ireland is ranked twentieth, ahead only of Greece, in relation to regulatory barriers in energy, transport and communications (Conway and Nicoletti, 2006).

Second, and more immediately, government spending on non-tradables can be curtailed thereby reducing the overall demand for these goods and services. By reducing the relative price of non-tradables, the costs that exporting firms and their workers face in consuming these non-tradables decreases, which in turn increases the relative price of tradables in the domestic economy, increasing profitability in the traded sector. This adjustment would also send important price signals to investors concerning the relative returns on traded and non-traded sectors. In the Irish case, for example, the returns to investment in the domestic construction sector, which has relatively low productivity, may be diverted to the more productive traded sector as the relative price of the latter increases thus supporting the long-term objective of productivity growth. Any incentive to stimulate investment in the residential construction sector would not be advisable. Workers would be more likely to agree to nominal wage restraint in an environment where the prices of non-tradables would be reduced. The nominal wage restraint would then be passed on in the form of reduced relative prices for Irish exports on international markets and the necessary real depreciation would occur. Blanchard (2006) argues that there is also scope for a government to run a somewhat expansionary fiscal policy to smooth the adjustment in this case, in so far as the expenditure is biased toward the traded sectors as opposed to the non-traded. The provision of economically viable public infrastructure should also be continued.<sup>17</sup>

Government action in this latter regard may be desirable, but only if necessary. There are signs that an adjustment is taking place in 2007 as the construction sector slows. Now that the scale of economic activity devoted to housing in Ireland is winding down, investment in productive sectors in the economy should pick up. This has the potential to increase the role of the traded sector and contribute more positively to productivity growth and potential output thus making the appropriate balance of payments deficit (in terms of scale) more acceptable (in terms of its determinants lending themselves towards more sustainable growth). The market, therefore, may be leading the adjustment process and government intervention may not be necessary. The coming months will reveal how well the transition process out of construction is faring and whether policy intervention is warranted. Inappropriate intervention, particularly if it stimulated the residential construction sector would be worse than doing nothing at this juncture.

<sup>17</sup> See Morgenroth and Fitz Gerald (2006) for a discussion of the role of public infrastructure in promoting growth and competitiveness.

# APPENDIX 1: THEORETICAL DECOMPOSITION OF THE REAL EXCHANGE RATE

Assume that national price levels are given by a weighted average of the price of non-traded and traded goods

$$p_{i,t} \equiv \alpha_i p_{i,t}^{NT} + (1 - \alpha_i) p_{i,t}^T \quad (1)$$

where the superscripts  $NT$  and  $T$  refer to non-traded and traded goods respectively and  $\alpha_i$  is the share of non-traded goods in Gross Value Added (GVA) in country  $i$ . In the following decomposition of the real exchange rate, industrial goods are considered tradable ( $T$ ) and construction output considered non-tradable ( $NT$ ). The real exchange ( $z$ ) rate of Ireland  $i$  with respect to the Euro Area  $j$  is thus

$$z_{i,t} = d_{i,t} + p_{i,t} - p_{j,t} \quad (2)$$

where all variables are expressed in natural logarithms and  $d_{i,t}$  is the deviation from PPP, given as

$$d_{i,t} = p_{i,t}^T - p_{j,t}^T \quad (3)$$

Using (1) and (3), (2) can be written as

$$z_{i,t} = d_{i,t} + \alpha_i q_{i,t} - \alpha_j q_{j,t} \quad (4)$$

where  $q = \ln(p^{NT}/p^T)$ , the relative price of non-traded goods in the respective markets. Using the difference operator  $\Delta$ , real exchange rate movements can be decomposed into deviations from PPP in

traded goods and movements in the relative price of non-traded goods in both markets.

$$\Delta z_{i,t} = \Delta d_{i,t} + \alpha_i \Delta q_{i,t} - \alpha_j \Delta q_{j,t} \quad (5)$$

Data for the respective series were taken from the National Income & Expenditure Accounts, 2006 (CSO), and Eurostat. All series have 2005 as the base year.

$p^{NT}$  = price deflator for construction GVA

$p^T$  = price deflator for industry GVA

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