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**MEASURING INTERNATIONAL PRICE
COMPETITIVENESS OF THE
TOURISM SECTOR USING
REAL EFFECTIVE EXCHANGE RATES INDICES**

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Maintaining international price competitiveness is a crucial objective for a small open economy such as Malta's. Such competitiveness can be measured on the basis of movements in bilateral exchange rates and relative prices where Malta and its trading partners and competitors are concerned. Real effective exchange rate (REER) indices are often used in this regard. However, publicly available REER indicators for Malta measure variations in the overall economy's price competitiveness and are thus unable to capture heterogeneous developments characterising specific industries. Moreover, these indicators are usually computed using trade flows in manufactured goods. Thus, the weights used to construct these indicators might not be able to provide an adequate picture of the overall competitiveness of a country which has a substantial services sector.

This report attempts to shed some light on developments in the price competitiveness of Malta's tourism sector by looking at estimates derived through a sector-specific effective exchange rate (EER) index constructed for such a purpose. The study proceeds with a comparison of the evolution of price competitiveness in this sector with that of the overall economy by analysing developments in publicly available EER indices, which capture the international price competitiveness of the whole economy.²

The rationale behind EER indices is based on two related theories, the Law of One Price and Purchasing Power Parity.³ These theories predict that, assuming no transport costs and barriers to trade, an increase in the prices of goods and services in country X relative to its competitors must be accompanied by a depreciation of the exchange rate. This thus leaves country X prices unchanged when expressed in foreign currency and eliminates the opportunity for arbitrage to take place. On the contrary, when a price increase is not compensated by a depreciation of the exchange rate, the country's real exchange rate is said to appreciate, implying that the country has lost price competitiveness.

Following the above definition, nominal effective exchange rate (NEER) indices are computed as a weighted average of the bilateral rates of exchange vis-à-vis the currencies of the various trading partners of the country being analysed. The REER is the NEER, deflated by a similarly weighted average of relative price levels. The most widely used weighting system is the trade-based double weighting system. This system is superior to other systems because double weights take into consideration each of the competitor countries' contribution to the total supply in the home country's target markets, including the domestic market, and the relative importance of each market in the home country's international trade.⁴

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² These overall economy EER indices are constructed and published by the Bank for International Settlements (BIS). These indices are double weighted trade-based indices, with weights capturing bilateral manufacturing trade flows deflated by relative consumer prices. The weights of the overall economy EER indices are derived from the bilateral trade flows of 64 countries. Data are extracted from <http://www.bis.org/statistics/eer/>.

³ Rogoff, K., "The Purchasing Power Parity Puzzle", *Journal of Economic Literature*, Vol. XXXIV, June 1996, pp 647-668.

⁴ Turner, P. and Van't dack, J., "Measuring International Price and Cost Competitiveness", *BIS Economic Papers*, No. 39, November, 1993.

The REERs for the tourism sector in Malta and in six other countries were calculated using quarterly data between 2000 and 2012. The choice of countries included in this study – Greece, Cyprus, Portugal, France, Italy and Spain – was motivated by their geographical proximity to Malta, which makes them direct competitors as a destination for tourists.

In line with the methodology recommended in the relevant literature, the REERs were calculated using a trade-based double weighting scheme.⁵ Given the lack of detailed data on tourism expenditure, the weights were derived from overnight stays of non-resident tourists in all types of accommodation, as reported by the World Tourism Organisation. Domestic tourism was approximated by the number of tourism nights spent domestically as reported by Eurostat. Since it is not the intention of this exercise to construct an elaborate index given the lack of detailed data on Malta's tourism sector, the choice of trading partners for Malta and for the other countries was limited to 16 countries.⁶ The weights follow a variable weighting scheme, with a set of weights constructed for each year for every one of the seven direct competitor countries. The indices were derived as chain-linked geometrically weighted averages of the exchange rate and price indices of all trading partners.⁷

Other considerations for the choice of countries included in the study relate to the choice of the weighting system used, the availability and quality of data and the inclusion of high inflation countries.⁸ First, since a trade-weighted system attaches higher weights to countries with high actual trade flows, it gives less weight to those countries that have the potential to compete against the home country but which currently do not generate high flows. Second, data for some countries tend to be very limited. Finally, relevant literature suggests the exclusion of countries that have experienced prolonged periods of very high inflation in the computation of EER indices. For these reasons the computation of the tourism EER indices does not include countries such as Tunisia, Egypt and Turkey. Despite having the potential to compete against the Maltese tourism sector, these countries failed to attract a significant number of tourists from Malta's main target markets over the period reviewed. Also, consumer price data for most of these countries are not directly comparable with those used to deflate the NEER computed in this study. Moreover, these countries have experienced very high levels of inflation for a prolonged period of time.

Results

Chart 1 shows the evolution of the newly constructed Maltese tourism NEER compared with the overall economy NEER computed by the BIS for the period 2000 - 2012.

Between 2000 and 2005 the tourism NEER depreciated mildly, implying that the Maltese tourism sector gained competitiveness in nominal terms.⁹ Prolonged depreciations of both the US dollar and pound sterling had pushed down the value of the Maltese lira against

⁵ Turner, P. and Van't dack, J., "Measuring International Price and Cost Competitiveness", *BIS Economic Papers*, No. 39, November, 1993; Buldorini, L., Makrydakis, S. and Thimann, C., "The Effective Exchange Rates of the Euro", *Working Paper Series*, No. 2, ECB, February, 2002.

⁶ The 16 countries include Austria, Belgium, Croatia, Cyprus, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Spain, Sweden, Switzerland, United Kingdom and Malta.

⁷ For a discussion on geometric averaging and chain linking see Ellis, L., "Measuring the Real Exchange Rate: Pitfalls and Practicalities", *Economic Research Department*, Reserve Bank of Australia, 2001.

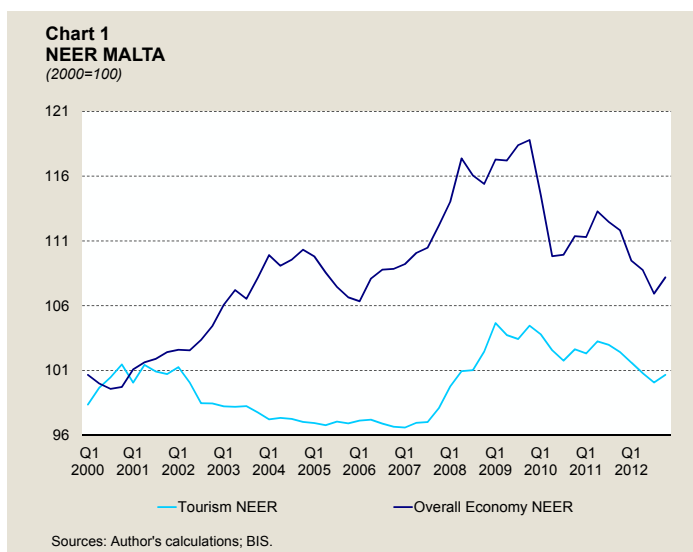
⁸ See Turner, P. and Van't dack, J. *op. cit* and Ellis, L. *op. cit*.

⁹ Developments of the Maltese NEER were influenced by changes to the exchange rate regime. Until May 2005, the Maltese lira was pegged against a currency basket made up of the euro, US dollar and pound sterling. In May 2005, the Maltese lira entered the Exchange Rate Mechanism II (ERM II) and was fully pegged to the euro. Malta adopted the euro on 1 January 2008.

the euro. However, given the substantial weight euro area countries have in the computation of the tourism NEER and the strong appreciation of the euro, the depreciation of the tourism NEER was less pronounced, at around 4%.

The depreciation seen until 2005 was reversed between 2008 and 2009. Driven by the depreciation of the pound sterling and, to a lesser extent, of the Swedish krona against the

euro, the tourism NEER appreciated by around 8%. This was, however, partly reversed by the depreciation of the euro in the wake of the sovereign debt crisis. This caused the Maltese NEER for the tourism sector to depreciate by around 4%, such that in 2012 the index was practically at the same level as in 2000.

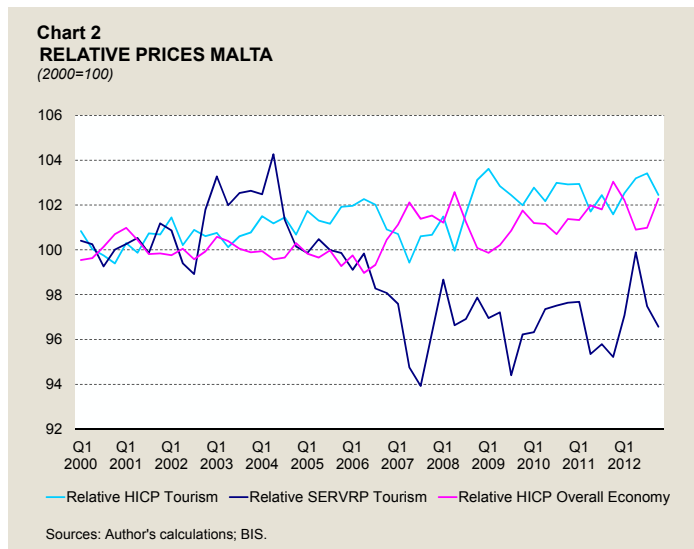


Malta's trading partners in the manufacturing sector differ considerably from those in the tourism industry. This difference implies that the weights used for the computation of the overall EER indices vary significantly from those used in the tourism EER indices. In particular, due to the significant weight attached to the US dollar and the relatively smaller role played by the pound sterling, the overall economy NEER exhibits dynamics which differ from those of the tourism NEER. Driven by the depreciation of the US dollar against the Maltese lira, and later on against the euro, the overall economy NEER experienced a prolonged period of appreciation between 2000 and 2009. As the euro started to depreciate against major currencies, the Maltese economy recouped some of its lost competitiveness, with the NEER depreciating by 9% from the last quarter of 2009 until the end of 2012.

Chart 2 shows the evolution of relative Maltese prices for the tourism sector and the overall economy. For this study, the overall HICP and the HICP sub-index that measures prices of services related to recreation, including repairs and personal care (SERVRP), were used as two different proxies for tourism prices. These two indices were then used to compute two separate REERs for tourism. The first, based on the overall HICP, is referred to as the tourism REER HICP and the second, based on the SERV RP, is called the tourism REER SERV RP.

Both relative price measures suggest that inflation in Malta's tourism prices remained fairly in line with that of competitors and trading partners in the tourism industry. While the overall HICP shows a moderate increase of 2% in Maltese relative prices, the relative SERV RP index shows a fall of around 3% over the period under consideration. The discrepancy

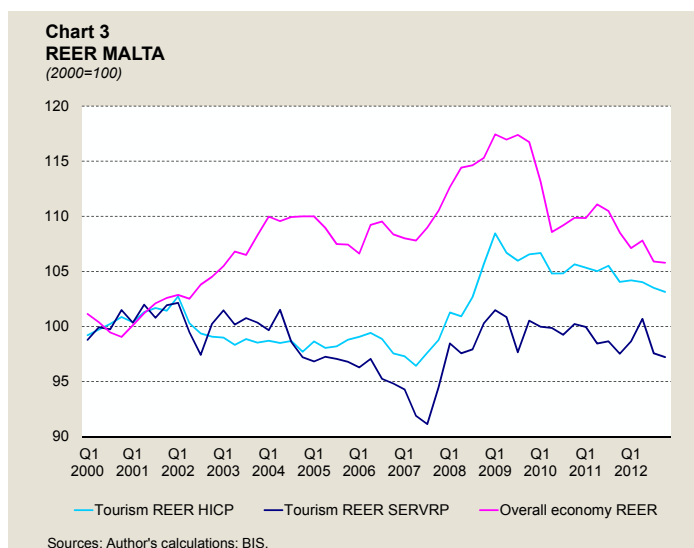
between the two REER indices is relatively narrow compared with the ranges that are usually reported in similar studies in the literature.¹⁰ The uncertainty surrounding these estimates, which mainly arises from the sensitivity of the REER to the underlying price index, highlights the importance of using more than one price index to inform a robust assessment about developments in external competitiveness.¹¹



Similarly, the overall HICP (aggregated with weights reflecting manufacturing trade flows) used by the BIS to deflate the overall economy NEER for Malta also shows that Malta's consumer prices have remained fairly in line with those of its manufacturing trading partners and competitors.

Chart 3 compares the two newly constructed REER indices for the Maltese tourism sector with the overall economy REER index constructed by the BIS.

Both tourism REER indices remained broadly stable in the early years of the last decade. Between 2004 and 2007, however, a fall in relative SERVRP prices led to an improvement in tourism competitiveness as measured by the REER deflated using this sub-index. From then onwards, both measures of tourism competitiveness evolved in line with each other. Aided by the appreciation of the NEER, and to a lesser extent by an increase in relative prices, both REER measures appreciated sharply between 2007 and



¹⁰ See, for instance, Bayoumi, T., Harmsen, R. and Turunen, J., "Euro area export performance and competitiveness", *Working Paper WP/11/140*, International Monetary Fund, 2011.

¹¹ A more comprehensive analysis of competitiveness and export performance usually includes an assessment of both price and non-price competitiveness.

2009. In the aftermath of the crisis, the Maltese tourism industry appears to have regained some of its lost competitiveness as the NEER depreciated and relative prices stabilized.

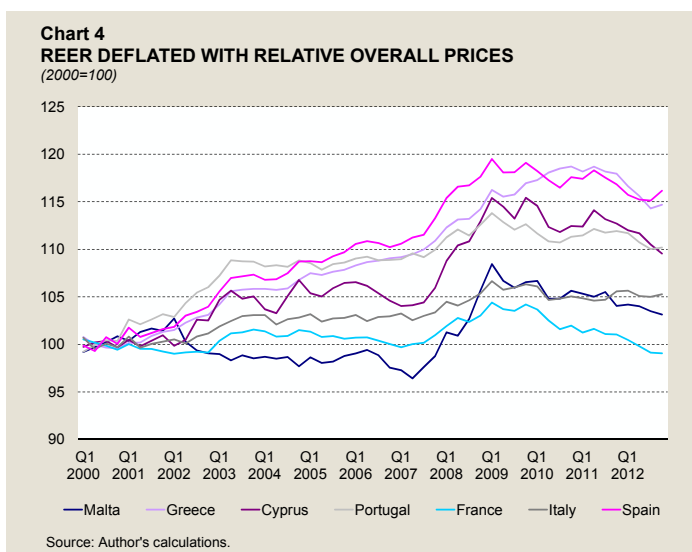
Over the entire period analysed, the Maltese tourism REER deflated by using the overall HICP registered an appreciation of 3.1%, implying a loss of price competitiveness. This was driven by a 0.7% appreciation of the NEER and a 2.4% increase in relative overall prices. In contrast, over the same period the Maltese tourism REER, deflated using the SERVVP sub-index, shows a gain of around 2.7% in tourism price competitiveness, owing to a fall in relative SERVVP prices of 3.4%.

Due to the relatively stable overall HICP, the overall economy REER is mainly driven by the evolution of its nominal counterpart. Indeed, owing to the significant appreciation registered by the overall economy NEER between 2000 and 2009, the overall economy REER shows a more pronounced appreciation when compared with the tourism REER measures. After 2009, the overall economy REER index depreciated steadily, such that, at the end of the period under consideration, the index approached the tourism REER deflated by the overall HICP.

Developments in tourism based REERs of Malta's main competitors

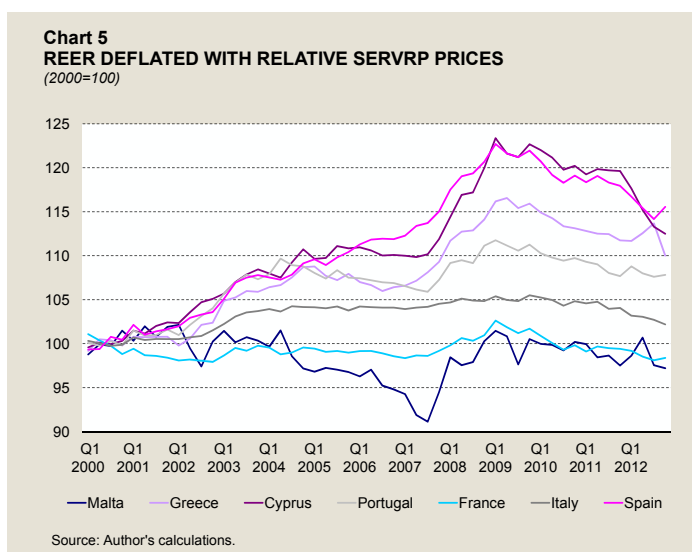
Charts 4 and 5 compare the two Maltese tourism REER indices with the corresponding indices of Malta's main competitors in the Southern European region. On the basis of both measures, the tourism sector in Malta performed relatively well, recording only a modest appreciation in the HICP-deflated REER and a slight depreciation in the SERVVP-deflated REER. The REER indicators also show that the French tourism sector demonstrated relatively strong competitiveness as did the Italian tourism sector, though to a lesser extent.

Spain, Greece, Portugal and Cyprus are among the countries which have experienced the most significant losses in the price competitiveness of their tourism sectors. Indeed, both REER measures presented in this study show that the tourism REERs of these countries appreciated between 8% and 16% over the review period (see Table 1). In the case of Greece and Spain, most of the REER appreciation was driven by higher relative inflation in the tourism sectors, with relative prices increasing by around 10% between 2000 and 2012. Conversely, Portuguese and Cypriot relative prices remained quite stable, implying that the appreciation in their tourism REER indices was mainly driven by the



evolution of their NEER indices.¹²

This study has highlighted the fact that, over the period under consideration, developments in Malta's tourism REER indices have varied considerably from those of the overall economy REER indices. This was especially the case between 2000 and 2007 when the overall economy REER appreciated substantially, whereas the tourism REER depreciated



slightly. Over the entire review period, the REER deflated by the HICP recorded an appreciation of 6.6%, indicating a deterioration in price competitiveness in the overall economy. On the other hand, the tourism based REER deflated by the HICP appreciated by 3.7%, while the tourism based REER deflated by the SERVVP sub-index depreciated by around 1.5%. This compares favourably with Malta's competitors in the Southern European region, most of which have experienced higher levels of appreciation in their respective tourism REER indices. The divergence between developments in Malta's tourism REER indices and those of the overall economy indicate that the tourism industry is more responsive to competitive pressures, possibly owing to structural factors affecting the industry. The underlying factors leading to this relatively favourable outcome would merit further research.

Finally, it should be emphasised that the concept of price competitiveness investigated in this study is only a narrow aspect of the much wider concept of international competitiveness that ultimately affects the export performance of the Maltese economy as a whole. Thus, the ability of a country's industry to compete in international markets, in this case the

Table 1
PERCENTAGE CHANGE IN EER BETWEEN 2000 AND 2012

	NEER	REER HICP	REER SERVVP
Malta	0.79	3.71	-1.45
Cyprus	7.22	10.93	14.67
France	3.67	-0.39	-1.45
Greece	2.10	15.31	12.02
Italy	1.55	5.25	2.79
Portugal	6.39	10.66	8.07
Spain	6.49	15.56	15.48

Source: Author's calculations.

¹² For a more in-depth analysis of the export competitiveness in selected Southern euro area countries, see IMF *Country Report* No. 08/145 entitled "France, Greece, Italy, Portugal and Spain – Competitiveness in the Southern Euro area".

tourism sector, is not simply determined by its relative prices or costs, but also depends on other factors which are not easily quantified, such as product and service quality and the capacity to respond to changing consumer needs. In this light, the results described above need to be supplemented by other indicators in an attempt to comprehensively capture changes in the international competitiveness of the Maltese tourism sector.¹³

¹³ According to the World Economic Forum *Travel and Tourism Competitiveness Report 2013*, Malta ranked as the 24th most competitive country in this sector out of 140 countries, above Italy, Cyprus and Greece but lower than Spain, France and Portugal. The index is composed of a number of separate sub-indices, covering both price and non-price competitiveness aspects. In the sub-index that is mostly related to this study – price competitiveness in the travel and tourism industry – Malta ranked first among the seven countries considered in this study.