Real Unit Labour Costs as a Measure of Competitiveness in Small Open Economies: The Case of Malta

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1. Introduction

In recent years, increasing attention has been paid to the role of unit labour costs (ULCs) in assessing a country's international cost competitiveness. For small open economies like Malta, the appropriate choice of competitiveness metric is especially critical, given their integration into global value chains and reliance on external demand.

This note argues that real unit labour costs (RULCs) — equivalent to the wage share in value added — are a theoretically sound and policy-relevant indicator of cost competitiveness in the context of a rapidly transitioning economy moving towards higher value added production. This conclusion is derived from microeconomic principles under perfect competition and consistent with Malta's status as a price taker in international markets.

2. Definitions and Derivations

2.1 Nominal Unit Labour Cost (NULC)

Nominal ULC is defined as the ratio of nominal compensation per employee to labour productivity, i.e. real output per employee:

$$\text{NULC} = \frac{W}{Y_r}$$

Where:

- W= nominal compensation per employee
- Y_r= real output (GDP) per employee

NULC indicates how much nominal labour cost is incurred to produce one unit of real output.

[1] The views expressed in this research article are those of the authors and do not necessarily reflect those of the Economic Policy Department, Ministry for Finance. Any errors and omissions are the authors' own.

2.2 Real Unit Labour Cost (RULC)

Real ULC adjusts nominal labour costs for changes in the price level, typically using the GDP deflator P:

$$\text{RULC} = \frac{\text{Nominal ULC}}{P} = \frac{W}{Y_r \cdot P}$$

Noting that:

$$Y = Y_r \cdot P \Rightarrow \text{RULC} = \frac{W}{Y}$$

[2].

3. Microeconomic Rationale for Using RULC

In a perfectly competitive labour market, firms employ labour until the real wage equals the marginal product of labour (MPL):

$$\frac{W}{P} = MPL$$

Notice that this is not the real wage as we normally understand it, i.e. the wage deflated by consumer prices, but the wage deflated by the price of the product being produced. To put it differently, firms maximise profits by equating the nominal wage to the value of the marginal product of labour, which essentially is the marginal product of labour multiplied by the prices of the product produced by labour and sold on the market.

Recasting the per capita formulation into aggregate terms reveals the ratio of total compensation to nominal GDP, i.e. the wage share:

$$\text{RULC} = \frac{\text{Total Compensation}}{\text{Nominal GDP}}$$

$$= \text{Wage Share}$$

This implies that RULC is equivalent to the wage share of output, provided that both wages and output are deflated using the same price index (typically the GDP deflator)

In a perfectly competitive product market, which is characteristic of small open economies like Malta, firms are price takers in international markets. This implies that output prices $P$are exogenously determined.

The nominal wage is thus set equal to the value of the marginal product of labour:

$$W = P \cdot MPL$$

From this, it follows that to preserve competitiveness, nominal wages must move in line with changes in international prices and productivity:

$$\Delta W = \Delta P + \Delta MPL$$

Any deviation - for example, if wages rise faster than productivity and output prices -implies a misalignment between labour costs and the value of output, and leads to a rising wage share (i.e., rising

[2] Often whilst total compensation of employees is divided by employment to derive the wages per employee, productivity is calculated as GDP divided by total employed including self-employed. As a result, there may be slight differences between RULC and the wage share.

RULC). This signals a decline in cost competitiveness.

Hence, in such an environment, real ULC (or the wage share) becomes the most theoretically grounded measure of competitiveness, as it reflects the degree to which labour is being paid in line with its marginal contribution to value added under prevailing international prices.

4. Practical Implications on Measuring Competitiveness

In the general discourse on unit labour costs and competitiveness it is often argued that wage determination should move in line with labour productivity in order to maintain cost competitiveness. Viewed from this microeconomic perspective, such inference is partial. The notion that in perfect competition prices are fixed is often mistaken for the notion that prices do not change, which is not the case. Even in perfect competition, or especially in perfect competition, prices change as demand and supply change constantly. Therefore, to the extent that the global demand for commodity is rising, international prices may also rise accordingly and the price of that commodity produced domestically will follow. Such price movements could support changes in nominal wages beyond the real productivity gains, which changes would not undermine cost competitiveness.

Now prices can move up or down, depending on market conditions, whilst wages are often sticky on the downward direction. Hence equating nominal wages to the value of the marginal product of labour may not always be a useful guide to determine economic policy in the face of such asymmetries. It can lead to a situation where wage increases are justified by upward price movements whilst downward price movements lead to loss of competitiveness and pressures on corporate profits. This is especially the case in a monetary union or a fixed exchange rate regime where nominal exchange rates are not free to move to correct price differentials. However there is a specific case where the use of real ULC to guide policy remains relevant.

This applies particularly, at a macro level, to the case of transition economies. These are economies which are still in the process of economic development often characterised by rapid changes in the industrial landscape and the move towards higher value added production activities. Such transitions often manifest themselves in the move towards sectors which produce lower volume but better quality products which can fetch a higher market price by virtue of scarcity of supply.

Although statistically such quality improvements should be captured in the estimation of real output indicators, this is often not always possible to capture entirely in national accounts statistics. Hence, most of the value added captured in such transitions is often

more evident in product prices as captured by the GDP deflator. A good example is the production of cars. Despite technological improvements the price of cars has gone up significantly over the years and the value of cars sold on international markets has probably gone up in excess of the quantity of cars sold. To the extent that the volume of cars sold over time is taken as a measure of real output, that increase in value in excess of volume increases would be captured in the GDP deflator. In reality however the function of today's car is different from the function of the cars produced fifty years ago. Today the car is not just a means of transport. It has become a luxury commodity, capable of self-diagnosis, capable of communicating with the outside world and its users, almost autonomous in driving and has in-built safety mechanisms to protect passengers and commuters alike. If such quality improvements are not accounted for, improvements which are the product of labour productivity, the use of nominal ULC as a measure of competitiveness would be flawed, especially in the case of transition economies which are progressing on the value chain of production.

We argue that the use of real ULC is thus more appropriate in the context of transition economies moving towards high value production since it takes into account changes in the price level.

5. Policy Relevant Implications for Malta

Malta is a small open economy with:

- High trade openness,
- No ability to influence the nominal exchange rate to correct competitiveness misalignments,
- Minimal pricing power on international markets,
- Rapidly transitioning towards high value added manufacturing and service activities.

Given this, using nominal ULC as a competitiveness indicator may be misleading and, by disregarding the upward trend in product prices over time as the economy moves, a declining wage share can have very significant repercussions on the economic development of a transition economy like Malta.

A declining wage share implies that the returns to education are not rising sufficiently to reflect the desirability to move towards high value added production as wage growth lags the value of the marginal productivity of labour. In an economy like Malta's this will reduce the incentive to invest in education and training by individuals and enterprises alike and in the process undermine future productivity gains. This is a risk which we have already witnessed materialising over recent years.

The reliance on low wages to sustain competitiveness is also a disincentive to invest in capital accumulation per

employee, as firms find it more profitable to engage cheaper labour rather than invest in capital equipment. In line with economic theory, such labour/capital substitution can also undermine labour productivity. In the local context this also creates pressure to sustain labour-intensive economic activity which is becoming increasingly problematic in a densely populated island like Malta.

The falling wage share could also be a source of rising income and eventually wealth inequality which itself undermines social cohesion and economic development.

Instead, RULC (the wage share) provides a more stable and structurally relevant metric to measure competitiveness in a transition economy like Malta.

It may be argued that targeting RULC is tantamount to domestic firms justifying wage increases by rising commodity prices, in the process undermining competitiveness. This may be a relevant risk for domestically oriented sectors of the economy particularly those that operate in markets characterised by lack of competition and could endanger price stability. We argue that the risk for Malta is overall quite low because Malta is a very open economy and most of its production is targeted to the international market where operators are generally price takers and international competition would prevent such risks from materialising. If it were to happen, Malta would quickly lose its export market share. In this context we argue that the best way of measuring competitiveness is indeed the combined use of export market share indicators and real ULC indicators.

As for the domestic oriented sectors, this risk is very specific and limited, and only material to sectors dominated by monopolistic competition where firms may have some measure of control on domestic prices, which control could be exerted to the detriment of the domestic consumer and price stability. We believe that such a risk, though worth highlighting, is likely to be limited and in any case best addressed by market surveillance, regulation and antitrust policies rather than intervening on wage bargaining and industrial policy per se. Overall the benefits of ensuring a stable wage share outweighs the risk of a potential loss in price stability in a select number of domestic-oriented sectors which are characterised by market concentration.

5.1 Decomposing Changes in Real ULC

We express RULC as:

$$\text{RULC} = \frac{\text{Nominal ULC}}{P} = \frac{W}{Y_r \cdot P}$$

Taking natural logs:

$$\log(\text{RULC}) = \log(\text{W}) - \log(Y_r) - \log(P)$$

Taking differences over time (e.g., annual growth rates):

$$\Delta\log(\text{RULC}) = \Delta\log(\text{W}) - \Delta\log(Y_r) - \Delta\log(P)$$

This means that the growth rate of RULC is equal to the growth rate of compensation per employee, less the growth rate of productivity and less the growth in the GDP deflator. The log difference approximates the compounded growth rate of a variable from one period to another.

The evolution of RULC and its determinants is shown in Fig.1. Between 2011 and 2017 RULC generally declined as rising wages were compensated by higher labour productivity and an ability to fetch higher prices on domestic products.

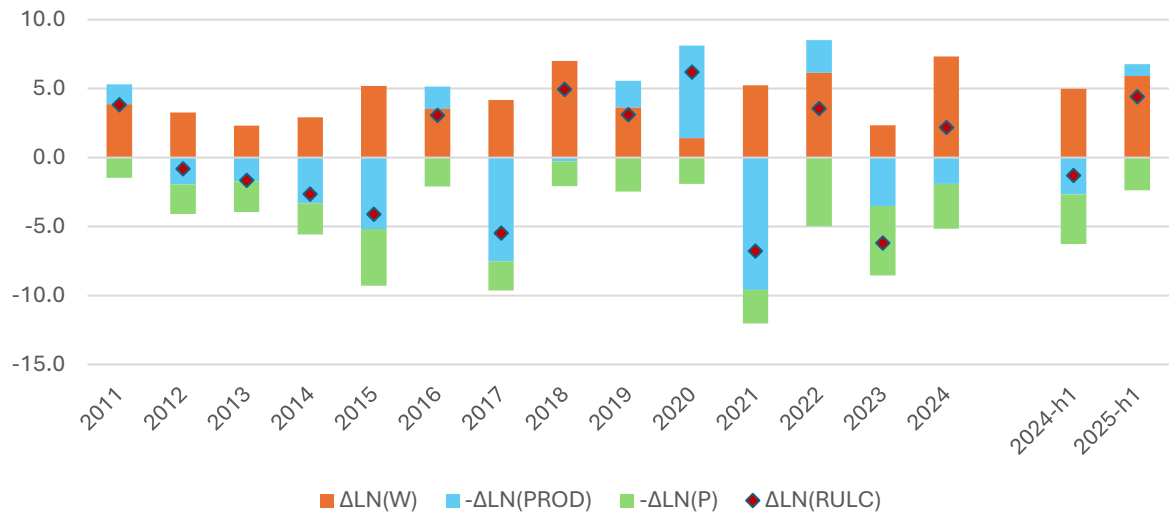
Between 2018 and 2022 the situation changed, labour productivity weakened whilst wages continued to grow. The consequent rise in unit costs was not compensated sufficiently by rising product prices leading to a deterioration in RULC during this period.

In 2023 a recovery in labour productivity was evident whilst price levels increased significantly leading to lower RULC and an increase in profitability. Real unit labour costs increased again in 2024, owing to a large increase in compensation per employees. Whilst, productivity and the GDP deflator increased, this was not sufficient to stem the rise in real unit labour costs, increasing the costs of employers and reducing Malta's competitiveness.

Comparing the first half of 2025 with the corresponding period in 2024, shows that real unit labour costs increased further by 4.4 per cent. The biggest contributor to this increase was compensation per employees which grew by 5.9 per cent. Exacerbating this, was the decline in productivity in the first half of 2025 of 0.8 per cent whilst the GDP deflator increased to mitigate some of the increase in the overall real unit labour cost.

Fig. 1 Decomposition of the Real ULC changes

$\Delta\log(RULC)=\Delta\log(CPE)-\Delta\log(Prod)-\Delta\log(P)$



5.2 Export Market Shares

Overall RULC rose after 2018 suggesting deteriorating price competitiveness. Did this translate into an overall loss in competitiveness when measured by export market shares? A country's export market share serves as an indicator of its global importance measured by calculating its share of exports of goods and services in relation to the total exports of goods and services of the rest of the world. Export market shares shed light on a country's competitiveness by including non-price competitiveness developments and it is a critical measure for small open economies like Malta where producers are mainly price takers on the international markets. The evolution of export market shares in Malta since 2011 is illustrated in Fig. 2.

Fig. 2 Export Market Shares

Malta's export share of goods has generally weakened since 2011 or when compared to 2018. This suggests that the recent rise in RULC may have played a role in the loss of competitiveness in goods exports. Nevertheless the export market shar of goods has been recovering since 2021 suggesting non-price competitiveness elements are playing an important role.

Of relevant interest is the country's share in services given that the services sectors are the main drivers of the country's gross value-added growth. On average, Malta's exports of services dominate 0.27% of the world's total exports of services. Malta's export share in this regard peaked in 2020 and then declined, however it started rising again in 2023. In 2024 the export share in services surpassed Malta's average, surpassed the pre-Covid share and surpassed its 2011 share, indicating that the country generally improved its competitiveness in services.

6. Conclusion

In a small open economy like Malta, where firms are price takers in international markets, and the economy is fast transitioning into higher value-added sectors, real unit labour cost (RULC) - or the wage share of value added - is the most appropriate measure of cost competitiveness. It is consistent with microeconomic theory particularly in the context of an open economy which is a price taker. It captures whether wages are aligned with productivity and international prices, and therefore

whether the economy can maintain profitability and external balance in a global setting.

In the Maltese context policymakers should prioritise this indicator over the alternative nominal unit labour cost (NULC) measure in wage-setting frameworks and macroeconomic surveillance. This should promote wage share stabilisation which is essential for a balanced and inclusive long term economic development.

The role of non-price competitiveness element may also be extremely relevant. We argue that in this context an analysis of RULC should be complemented with an evaluation of export market shares.

Based on these variables the Maltese economy has generally experienced an improvement in price competitiveness until 2017, particularly when compared to 2012. This was generally mirrored in a general improvement in export market share in services whilst export market shares in goods generally weakened suggesting non-price competitiveness elements contributed materially to the developments in goods production and exports over this period.

In subsequent years RULCs have generally increased indicating a deterioration in price competitiveness. Whilst export market share of goods continued to deteriorate, that of services showed continued improvement again suggesting that non-price competitiveness elements continue to play a dominant role in export of services. This article calls for an in depth investigation of non-price competitiveness elements as they seem to have played an important role in Malta's recent economic development.