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**AN EVALUATION OF THE POSSIBLE
MACROECONOMIC IMPACT OF THE INCOME TAX
REDUCTION IN MALTA**

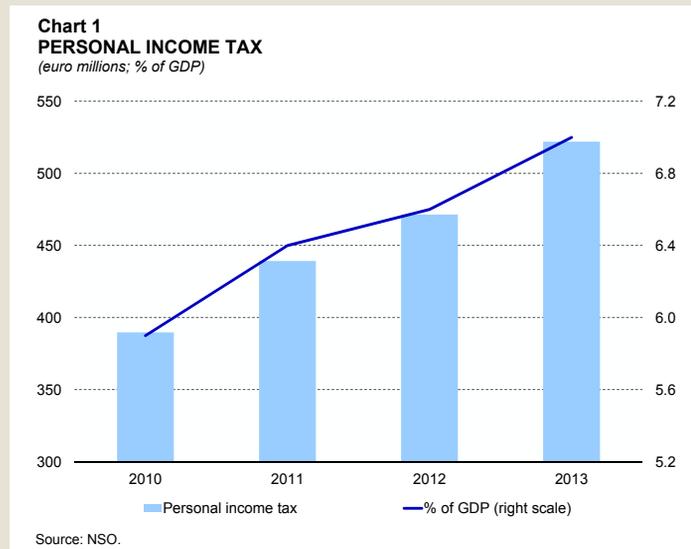
BOX 4: AN EVALUATION OF THE POSSIBLE MACROECONOMIC IMPACT OF THE INCOME TAX REDUCTION IN MALTA¹

In November 2012 the Government announced that the highest income tax rate of 35.0% would start to apply only to those earning more than €60,000.² The income bracket for the 25.0% tax rate would be gradually increased to cover a much larger share of the income distribution. This change followed a number of reforms, such as the introduction of a separate tax regime for parents which had primarily benefitted those on low to middle incomes. The new tax regime, which had been first mentioned in 2008, was implemented as part of the budget announced on 8 April 2013.³ That budget also addressed the fact that those on the minimum wage had fallen liable to tax at 15.0% on part of their income owing to the unchanging level of the minimum tax threshold. In this light, the Minister for Finance announced that anyone earning the minimum wage would remain tax-exempt. This exemption was extended in the following budget to pensioners earning the equivalent of the minimum wage.⁴ The 2014 budget also raised the minimum tax threshold by €500 for those opting for the parent-rate computation.

This Box will quantify the possible macroeconomic impact of these tax reductions using the structural model of the Central Bank of Malta.⁵ One of the main advantages of the model is its relatively disaggregated fiscal block, which was designed to estimate the impact of such shocks, amongst other things.⁶

The impact of the income tax reduction on government revenue

Personal income tax constitutes a major element of government revenue. Data from the NSO shown in Chart 1 indicate that between 2010 and 2013 income from personal income tax rose from €389.8 million, or 5.9% of GDP, to €522.0 million, or 7.0% of GDP. The relative strength of this revenue



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² According to the NSO's Survey on Income and Living Conditions, in 2012 average household gross income stood at €26,746.

³ See "Budget Speech", *Ministry for Finance*, 2013.

⁴ See "Budget Speech", *Ministry for Finance*, 2014.

⁵ See Grech, O. and Micallef, B., "A structural macro-econometric model of the Maltese economy", *Working Paper WP07/2014*, Central Bank of Malta.

⁶ See Grech, O., "A fiscal block for the Bank's structural macro-econometric model of the Maltese economy" *Quarterly Review*, 2014:3, Central Bank of Malta, pp. 60-67.

item has also resulted in its share of total tax revenue rising from 18.9% to 21.0% in just three years.

While Malta's personal income tax revenue as a share of wages and salaries (at 15.7%) is similar to the OECD average, the fact that tax thresholds tend to be held constant means that the tax burden grows over time.^{7,8} The fixed nature of tax thresholds has also meant that, as the minimum wage annually increases in line with the cost-of-living adjustment, those on the minimum wage and on pensions at similar income level, who are also awarded this adjustment, have an income above the minimum tax threshold.

Income tax distribution data suggest that in 2013 there were 42,500 taxpayers who benefitted from the change in tax rates shown in Table 1. This constitutes 16.8% of all taxpayers. While the bulk of beneficiaries, approximately 27,700, were single computation taxpayers, in relative terms the main gainers were those on parent computation rates. In fact, the change in tax rates benefitted 36.0% of taxpayers in this group.

Chart 2 shows data for 2013 provided by the Inland Revenue Department at the start of 2015, when the processing of

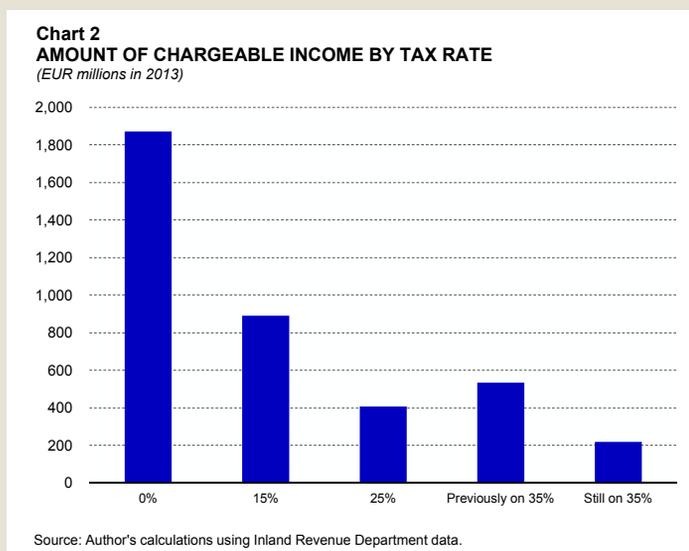


Table 1
CHANGES IN TAX RATES

Per cent

	2012	2013	2014	2015
Single computation				
€19,501 - €60,000	35.0	32.0	29.0	25.0
Married computation				
€28,701 - €60,000	35.0	32.0	29.0	25.0
Parent computation				
€21,201 - €60,000	35.0	32.0	29.0	25.0

Source: Inland Revenue Department.

⁷ See "Taxing Wages 2012-2013", *OECD*, 2014.

⁸ Countries like Canada, the Netherlands and the United States automatically adjust their income thresholds with inflation, while others like Spain, Switzerland and the United Kingdom apply some discretion, but also have rules in place to raise thresholds. See "International comparisons of Australia's Taxes", *Australian Government*, 2006.

income tax returns for basis year 2013 (the first year of the reform) was virtually finalised. Out of total chargeable income of €3.9 billion, nearly 48% were beneath the minimum tax threshold.⁹ This includes not only the income of those beneath this threshold, but also the element of non-taxable income of all other taxpayers. The proportion of chargeable income that previously was taxed at 35.0%, but which then benefitted from the cut in rates, amounted to approximately €530 million, or 26.0%, of all chargeable income on which tax was paid. Since the tax rate dropped by 3 percentage points, this implies that the foregone revenue amounted to €16.0 million.

While the estimate of the fiscal impact of the 2013 tax rate change (from 35.0% to 32.0%) is based on actual data, estimates for later years depend on the assumptions made on the number of taxpayers and their income. In this Box, we assume that chargeable income will grow in line with the Central Bank of Malta's growth projections of compensation of employees. As a result, the estimate of the impact of tax cuts for 2014 is €19.6 million, while that for 2015 is €28.2 million. Had we to assume that the 2013 chargeable income would stay constant till 2015, the impact of the tax cuts would be €16.0 million for 2014 and €21.4 million for 2015.

Besides the impact of the reduction of tax rates, one also needs to consider the influence of the exemption from tax for those on minimum wages or pensions equivalent to this amount, and the impact of the increase in the minimum tax threshold for those on parent computation. Data from the LFS and the Survey on Income and Living Conditions provided by the NSO indicate that in 2013 there were approximately 3,600 full-timers on the minimum wage, and nearly 3,500 pensioners receiving the equivalent of this amount. Projections for these two groups are not available. Hence, the number of those on the minimum wage was increased in line with overall employment according to the latest Central Bank of Malta projection, while the number of low-income pensioners was assumed to grow with the rate shown by the overall pension age population in Eurostat's EuroPop2013 projection for Malta. The minimum wage was raised in line with the cost-of-living adjustment, calculated using the Bank's projected inflation rate.

The exemption from income tax of minimum wage income is estimated to have resulted in foregone revenue of just over €0.2 million in the first year. In 2014 the decline in income tax revenue rose to €2.5 million, mainly on account of the increase in the minimum tax threshold for the parent-rate computation. The concessions for those on minimum wage and for low-income pensioners, in fact, are estimated to have cost close to €0.7 million. While the income tax reductions benefitted 18.3% of taxpayers, the rise in the minimum tax threshold for those opting for the parent computation favoured close to 26,000 taxpayers and exemptions for those on low income benefitted approximately another 7,500 taxpayers. In distributional terms, the group gaining the most was composed of those on parent computation, who earned above €21,201, as they pocketed the effects of both the decline in tax rates and the €500 rise in the minimum tax threshold for this category. The beneficiaries of the income tax reductions, and their average gain, are shown in Table 2. While the gain for those on the minimum wage may seem small in monetary terms, in relative terms it amounts to an income boost of 1.2%.

⁹ This figure is equivalent to 52.0% of GDP, or to 115.0% of compensation of employees.

Table 2
BENEFICIARIES OF THE INCOME TAX REDUCTIONS⁽¹⁾

	2013	2014	2015
Income tax reductions			
Average tax reduction	€380	€819	€1,440
Number of beneficiaries	42,500	43,500	44,400
Minimum wage exemption			
Average tax reduction	€70	€90	€100
Number of beneficiaries	3,600	7,300	7,500
Parent computation threshold			
Average tax reduction	€0	€70	€70
Number of beneficiaries	0	42,500	42,500

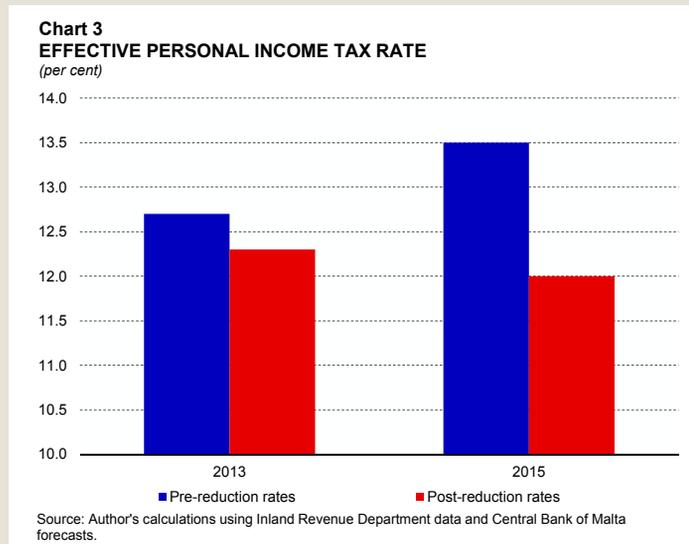
⁽¹⁾ Tax reduction rounded to next ten euros, while number of beneficiaries rounded to next 100.

Source: Author's calculations using data from Inland Revenue.

The €1,440 tax cut, using the married rate computation, for those earning €43,100, amounts to 3.3% of their income.

Before considering the macroeconomic impact of the income tax reductions, it is useful to look at how the effective tax rate changed as a result of the reform. To compute the effective tax rate, the applicable tax rate was multiplied by the share of chargeable income that

had been taxed at that rate. Given the progressive nature of the income tax system, and the constancy of the tax thresholds, growth in income results in a higher effective tax rate. In fact, as Chart 3 shows, had the pre-2013 tax rates remained in place, the effective tax rate would have risen from 12.7% to 13.5% by 2015. The 2013 tax reductions resulted in a decrease in the effective tax rate to 12.3% in that year, lowering it further to 12.0% by 2015. Thus, in effect, the tax reductions reduced the average burden of personal income tax by 1.5 percentage points, or by about a tenth, of its projected development.



Quantifying the macroeconomic impact of the income tax reductions

The impact of fiscal policy on economic activity has been a highly debated topic in economic literature, with different schools of thought advocating diametrically opposite conclusions. In perspective, there has been little analysis of this subject in Malta.¹⁰ However, in

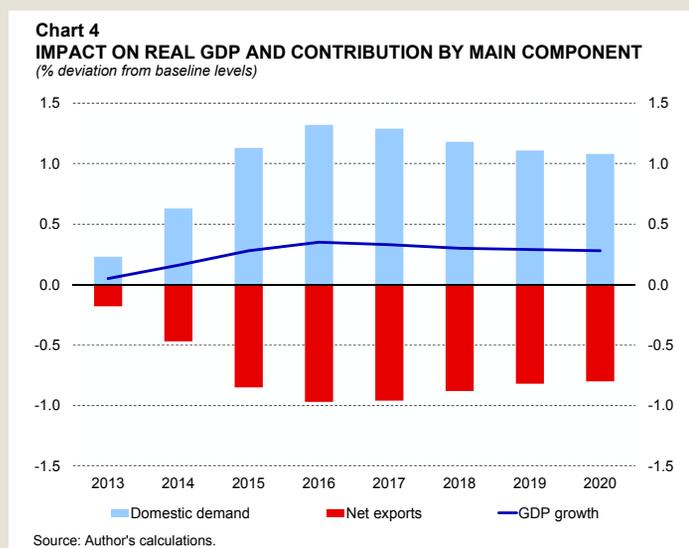
¹⁰ An exception is Cordina, G. "A structural econometric model of the Maltese Economy", *Quarterly Review*, 1996:4, Central Bank of Malta, pp. 44-61. This study had found that a permanent 2 percentage point increase in the marginal income tax rate would reduce consumption by 0.5% relative to the baseline solution and real GDP by 0.1%.

2014 two studies shed some light on the matter. Grech and Micallef simulated the effect of a 1.0% in GDP rise in government spending.¹¹ They concluded that by the second year this would have raised real GDP by 0.8%, but that the effect would have started declining from the third year onwards, as ensuing higher prices would reduce competitiveness and lower exports.

More directly relevant is Borg, who estimates fiscal multipliers for the Maltese economy using the well-known Blanchard-Perotti approach.¹² This paper suggests that an increase in taxation results in lower output and lower prices. The initial impact is estimated to be quite small in terms of output (a 5c decline for every €1 rise in taxes), but rises gradually over the subsequent two years, though it stays statistically below one-for-one. The main impact is on private consumption, with a much more contained effect on private investment. As for prices, these react with a significant lag, and the impact is not felt much in the first year.

In this Box the macroeconomic impact of the income tax reductions described above is quantified by carrying out simulations using the Central Bank of Malta's structural macro-econometric model. As in similar models, output in this model is driven by supply in the long run, but is demand-driven in the short run due to sluggish adjustment of quantities and prices. Thus, while initially a reduction in income tax rates could result in a significant boost in output, in the medium term this effect should subside and reflects only the impact that lower taxes would have on the size, and on more effective use, of factors of production. As explained by Grech, the main channel for the impact of a change in direct tax on households is through disposable income, which would then affect private consumption.¹³

Chart 4 illustrates the impact on real GDP of income tax reductions. The peak impact, of 0.35%, is reached in 2016, the first year after the implementation of the whole array of cuts. Subsequently, the impact declines gradually by 2020, but still remains significant at 0.28%. Given that by 2016 the cumulative cut amounts



¹¹ See Grech, O. and Micallef, B., "A structural macro-econometric model of the Maltese economy", *Working Paper* WP/07/2014, Central Bank of Malta.

¹² Borg, I., "Fiscal Multipliers in Malta", *Working Paper* WP/06/2014, available at <https://www.centralbankmalta.org>.

¹³ See Grech, O., "A fiscal block for the Bank's structural macro-econometric model of the Maltese economy" *Quarterly Review*, 2014:3, Central Bank of Malta, pp.60-67.

to about 0.7% of GDP, this implies a multiplier effect of 0.5. This is very similar to the results in Borg.¹⁴

The main impact of the reductions in income tax is a boost in disposable income, as can be seen from Table 3. This, in turn, leads to higher private consumption and gradually to increased investment. The impact on private consumption peaks in 2016, when its level is 1.84 percentage points higher. On the other hand, the effect on investment continues to accelerate till 2017, though the difference from the baseline is much less pronounced than in private consumption. The improvements in domestic demand are partially offset by weakening net exports. Besides the rise in imports of consumer and capital goods, the tax reductions also lead to a gradual decline in exports. This occurs because higher demand for labour pushes wages upwards, leading to lower competitiveness. This impact dampens over time, as the growth in employment moderates from its peak of 0.39% in 2017. The unemployment rate declines initially as a result of a higher demand for labour, but this impact disappears when the labour supply starts responding to higher wages.

Finally, it is important to note that while the income tax reductions lead to a widening of the fiscal deficit, this is smaller than the size of the tax cuts. This reflects two developments, namely, the foregone revenue is partially offset by an increase in chargeable income due to higher wages and employment, while government expenditure initially slightly declines owing to lower spending on unemployment benefits. Spending on other benefits grows, however, as the policy raises inflation and wage growth, which affects benefit indexation.

Table 3
IMPACT ON MAIN MACROECONOMIC INDICATORS (% DEVIATION FROM
BASELINE)

	2013	2014	2015	2016	2017	2018	2019	2020
Economic activity								
Real GDP	0.05	0.16	0.28	0.35	0.33	0.30	0.29	0.28
Private consumption	0.35	0.97	1.69	1.84	1.78	1.69	1.63	1.63
Investment	0.03	0.20	0.45	0.67	0.71	0.63	0.54	0.49
Exports of goods & services	0.00	-0.03	-0.09	-0.16	-0.21	-0.20	-0.16	-0.14
Imports of goods & services	0.18	0.44	0.74	0.79	0.74	0.68	0.65	0.64
Prices and cost developments								
HICP	0.00	0.01	0.05	0.13	0.25	0.33	0.35	0.32
Unit labour costs	-0.03	-0.02	0.03	0.16	0.26	0.31	0.33	0.32
Labour market								
Employment	0.01	0.08	0.20	0.33	0.39	0.38	0.35	0.33
Unemployment rate	0.00	-0.01	-0.02	-0.04	-0.03	-0.02	0.00	0.00
Real disposable income	0.44	1.08	1.80	1.81	1.76	1.69	1.65	1.64
Fiscal developments (% of GDP)								
Fiscal balance	-0.20	-0.43	-0.68	-0.60	-0.59	-0.59	-0.59	-0.58
Public debt	0.16	0.47	0.98	1.41	1.96	2.62	3.29	3.90

Source: Author's calculations.

¹⁴ See Footnote 12.

Conclusion

This Box has estimated the possible macroeconomic impact of the recent reduction in income tax rates. Using the Bank's macro-econometric model, we find that this policy has a positive effect on economic activity, with its impact on GDP peaking at 0.35% in 2016. Subsequently, the impact stabilises at 0.28% in the medium term, as the initial boost to consumption from disposable income is eroded by a decline in net exports due to higher domestic prices. Employment and investment are both expected to grow significantly.

The Box confirms the presence of positive, but relatively moderate, multiplier effects of fiscal policy. Like in other small economies, the main constraint on the macroeconomic impact of tax cuts is the leakage of domestic demand into imports, especially of consumer goods. Moreover, part of the impact of the increase in investment also tends to seep out of the local economy.

Finally, it should be noted that a somewhat conservative modelling approach was used here. For instance, if income earners are assumed to target their real post-tax income, then a cut in income tax may lower future wage claims. This would improve competitiveness, and lead to further economic growth and larger employment effects than shown here.